HARTING

Pushing Performance

# HARTING Industrial Connectors Han®



People | Power | Partnership

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# Transforming customer wishes into concrete solutions



The HARTING Technology Group is skilled in the fields of electrical, electronic and optical connection, transmission and networking, as well as in manufacturing, mechatronics and software creation. The Group uses these skills to develop customized solutions and products such as connectors for energy and data transmission applications including, for example, mechanical engineering, rail technology, wind energy plants, factory automation and the telecommunications sector. In addition, HARTING also produces electro-magnetic components for the automobile industry and offers solutions in the field of Enclosures and Shop Systems.
The HARTING Group currently comprises 32 subsidiary companies and worldwide distributors employing a total of approximately 3,000 staff.

HARTING Subsidiary company  HARTING Representatives



## We aspire to top performance.

Connectors ensure functionality. As core elements of electrical and optical wiring, connection and infrastructure technologies, they are essential in enabling the modular construction of devices, machines and systems across a very wide range of industrial applications. Their reliability is a crucial factor guaranteeing smooth functioning in the manufacturing area, in telecommunications, applications in medical technology – in fact, connectors are at work in virtually every conceivable application area. Thanks to the consistent further development of our technologies, customers enjoy investment security and benefit from durable, long term functionality.

## Always at hand, wherever our customers may be.

Increasing industrialization is creating growing markets characterized by widely diverging demands and requirements. The search for perfection, increasingly efficient processes and reliable technologies is a common factor in all sectors across the globe.

**HARTING** is providing these technologies – in Europe, America and Asia. The **HARTING** professionals at our international subsidiaries engage in close, partnership based interaction with our customers, right from the very early product development phases, in order to realize customer demands and requirements in the best possible manner.

Our people on location form the interface to the centrally coordinated development and production departments. In this way, our customers can rely on consistently high, superior product quality – worldwide.

## Our claim: pushing performance.

**HARTING** provides more than optimally attuned components. In order to serve our customers with the best possible solutions, **HARTING** is able to contribute a great deal more and play a closely integrative role in the value creation process.

From ready assembled cables through to control racks or ready-to-go control desks: Our aim is to generate the maximum benefits for our customers – without compromise!

## Quality creates reliability – and warrants trust.

The **HARTING** brand stands for superior quality and reliability – worldwide. The standards we set are the result of consistent, stringent quality management that is subject to regular certifications and audits.

EN ISO 9001, the EU Eco-Audit and ISO 14001:2004 are key elements here. We take a proactive stance to new requirements, which is why **HARTING** ranks among the first companies worldwide to have obtained the new IRIS quality certificate for rail vehicles.



## HARTING technology creates added value for customers.

Technologies by **HARTING** are at work worldwide. **HARTING**'s presence stands for smoothly functioning systems, powered by intelligent connectors, smart infrastructure solutions and mature network systems. In the course of many years of close, trust-based cooperation with its customers, the **HARTING** Technology Group has advanced to one of the worldwide leading specialists for connector technology. Extending beyond the basic functionalities demanded, we offer individual customers specific and innovative solutions. These tailored solutions deliver sustained effects, provide investment security and enable customers to achieve strong added value.

## Opting for HARTING opens up an innovative, complex world of concepts and ideas.

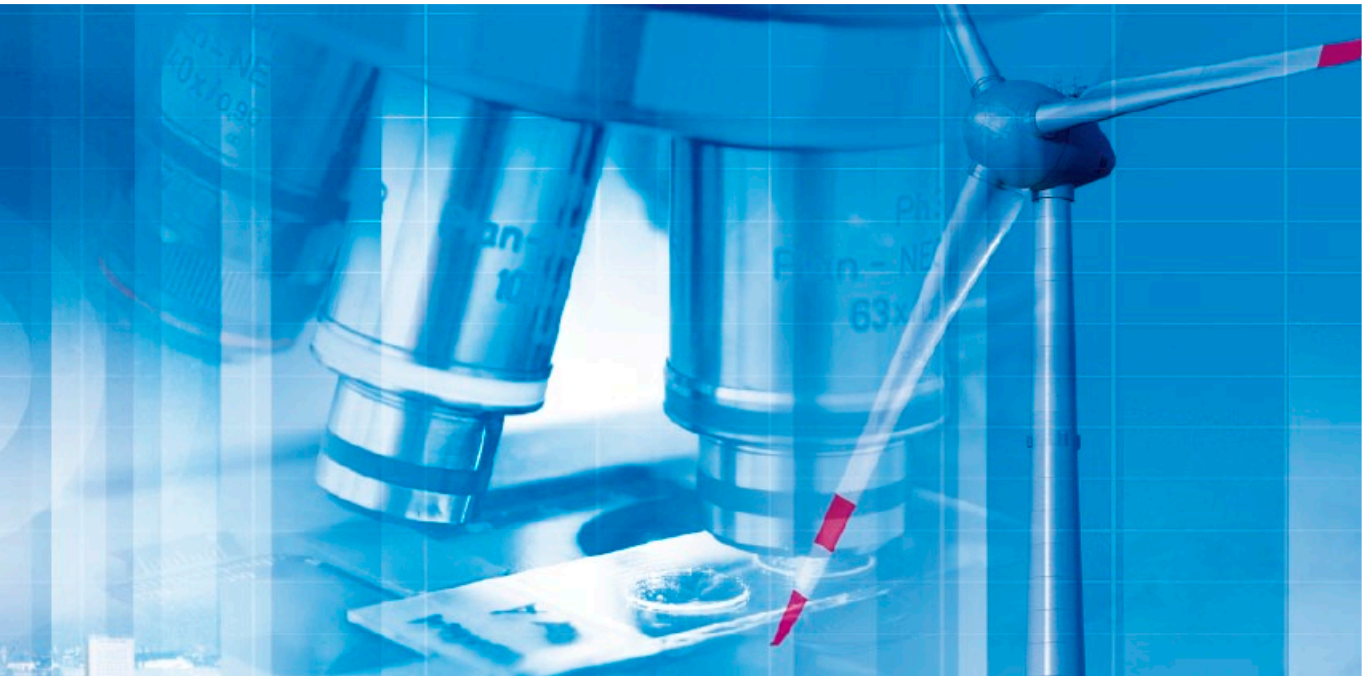
In order to develop connectivity and network solutions serving an exceptionally wide range of connector applications and task scopes in a professional and cost optimized manner, **HARTING** not only commands the full array of conventional tools and basic technologies. Over and beyond these capabilities, **HARTING** is constantly harnessing and refining its broad base of knowledge and experience to create new solutions that ensure continuity at the same time. In securing this know-how lead, **HARTING** draws on a wealth of sources from both in-house research and the world of applications alike.

Salient examples of these sources of innovative knowledge include microstructure technologies, 3D design and construction technology, as well as high temperature or ultrahigh frequency applications that are finding use in telecommunications or automation networks, in the automotive industry, or in industrial sensor and actuator applications, RFID and wireless technologies, in addition to packaging and housing made of plastics, aluminum or stainless steel.

## HARTING solutions extend across technology boundaries.

Drawing on the comprehensive resources of the group's technology pool, **HARTING** devises practical solutions for its customers. Whether this involves industrial networks for manufacturing automation, or hybrid interface solutions for wireless telecommunication infrastructures, 3D circuit carriers with microstructures, or cable assemblies for high-temperature applications in the automotive industry – **HARTING** technologies offer far more than components, and represent mature, comprehensive solutions attuned to individual customer requirements and wishes. The range covers ready-to-use cable configurations, completely assembled backplanes and board system carriers, as well as fully wired and tested control panels.

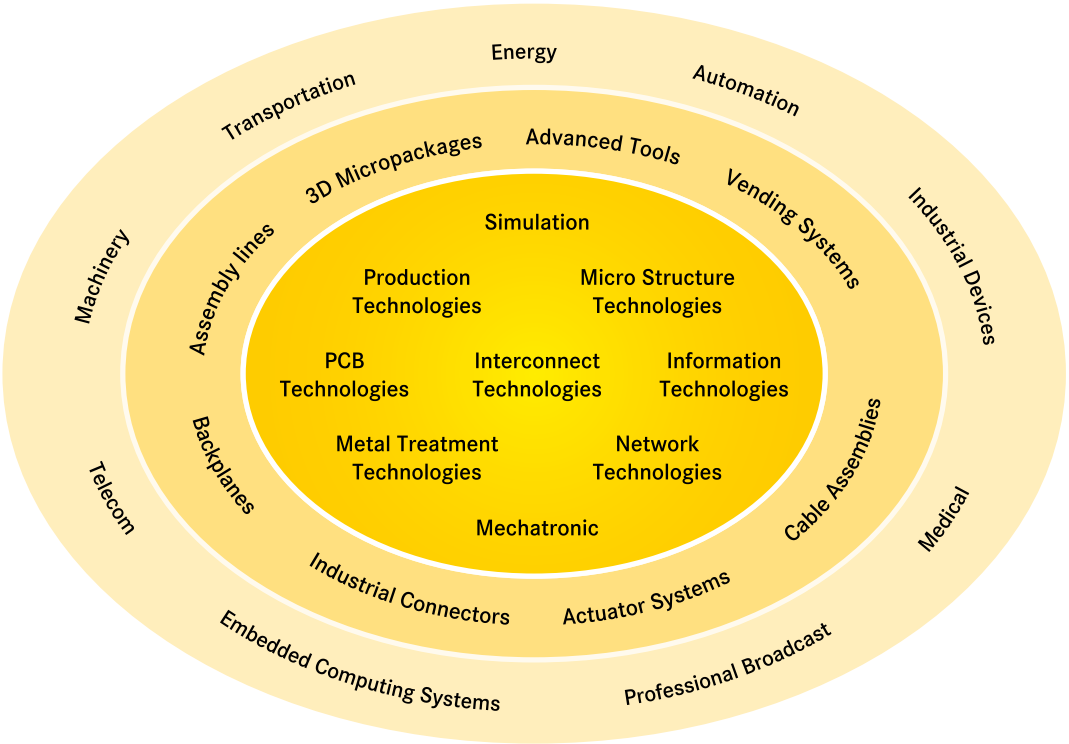
In order to ensure the future proof design of RF- and EMC-compatible interface solutions, the central **HARTING** laboratory (certified to EN 45001) provides simulation tools, as well as experimental, testing and diagnostics facilities all the way through to scanning electron microscopes. In the selection of materials and processes, lifecycle and environmental aspects play a key role, in addition to product and process capability considerations.



## HARTING knowledge is practical know-how generating synergy effects.

**HARTING** commands decades of experience with regard to the applications conditions of connectors in telecommunications, computer and network technologies and medical technologies, as well as industrial automation technologies, such as the mechanical engineering and plant engineering areas, in addition to the power generation industry or the transportation sector. **HARTING** is highly conversant with the specific application areas in all of these technology fields.

The key focus is on applications in every solution approach. In this context, uncompromising, superior quality is our hallmark. Every new solution found will invariably flow back into the **HARTING** technology pool, thereby enriching our resources. And every new solution we go on to create will draw on this wealth of resources in order to optimize each and every individual solution. In this way, **HARTING** is synergy in action.



# Economic and Reliable Connections

**Specifications**

DIN EN 60 664-1 (VDE 0110-1)
Principles,
requirements and tests

DIN EN 61 984 (VDE 0627)
Connectors,
Safety requirements and tests

**Note:**

**The connectors included in this catalogue should not be coupled or decoupled under electrical load unless otherwise stated.**

**The provision of protection against electric shock is the responsibility of the user. Protection can be achieved by the use of HARTING hoods and housings coupled with/or alternatively appropriate installation methods provided by the user.**

**The female connector in a HARTING hood or housing offers finger safe protection according to relevant standards for the mating face, even in the unmated condition, unless otherwise stated.**

**Connectors of the same or different series being mounted side by side may be protected against incorrect mating by the use of coding options.**

**Standard**

DIN EN 175 301-801

**Approvals**

UL File No. E 23 50 76 (www.ul.com)

CSA File No. LR 18 753, SEV
for inserts

Certified according to EN ISO 9001
in design/development, production,
installation and servicing

**Terminations**

- Screw terminal
- Crimp terminal
- Cage-clamp terminal
- Wrap terminal
- Solder terminal
- Axial-screw terminal
- Rapid terminal
- IDC termination

**Inserts**

- Leading protective ground
- Polarised for correct mating
- Interchangeability of male and female inserts in hoods and housings
- Captive fixing screws
- Can be used with hoods and housings, or for rack and panel applications

**Hoods/Housings**

- Standard Hoods/Housings
- Hoods/Housings for harsh environmental requirements
- Hoods/Housings for intrinsically safe plant
- Degree of protection IP 65
- Electrical connection with protective ground
- High mechanical strength and vibration-resistance ensured by locking levers
- Spring-loaded covers in shockproof thermoplastic or metal covers, both lockable

**Accessories**

- Extensive range of cable protection and sealing accessories
- Protective covers available
- Coding options for incorrect mating protection

For "non standard applications" we can manufacture designs to match your requirements.
Please discuss requirements with us.

HARTING components help you to construct top quality products – economically and in line with market requirements.

General information

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We reserve the right to modify designs in order to improve quality, keep pace with technological advancement or meet particular requirements in production.

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## Contents


| | | Chapter | |
|---|---|---|---|
| **Industrial Connectors Han®** | Technical Characteristics | **00** | Han |
| **Slim Construction Size** (up to 16 amperes) | Han A® | **01** | Han A |
| **High pin count connectors** up to 216 contacts | Han D® / DD® | **02** | Han D / DD |
| **Connectors** for 16 amperes – proven and reliable | Han E® / Han® ES/ESS/EE/EEE | **03** | Han E / EE |
| **Connectors** for higher voltages | Han Hv E® / Han® Hv ES | **04** | Han HvE |
| **Combination Connectors** | Han-Com® | **05** | Han Com |
| **Modular Connectors** | Han-Modular® | **06** | Han Modular |
| **Connectors** for higher currents | Han® HsB | **07** | Han HsB |
| **Terminal Block Connectors** | Han® AV | **08** | Han AV |
| **Connectors** for low voltages | Staf® | **09** | Staf |
| **Circular Connectors** | R 15 | **10** | R 15 |
| **Connectors** for the use in switch cabinets | Han-Snap® | **11** | Han Snap |
| **Interface** for power and signals | Han-Port® | **12** | Han-Port |
| **Connectors** (not only for drives) | Han® Q | **13** | Han Q |
| **High Current Connectors** | Han® K 3/0, K 3/2 / Han® HC-Modular | **14** | Han HC-Modular |
| **Energy Bus Components** | Han-Power® | **15** | Power Distribution |
| **Industrial Bus Interface** | Han-Brid® | **19** | Han-Brid |
| **Han® PCB-Adapter** | | **20** | PCB-Adapter |
| **Han® Hoods and Housings** with Pg entries | for shielding, for harsh environments with various locking systems | **30** | Han Hoods Housings |
| **Han® Hoods and Housings** with metric thread | for shielding, for harsh environments with various locking systems | **31** | Han Hoods Housings |
| **Accessories** for Hoods and Housings / Han® Inserts | | **40** | Accessories |
| **Han® Thermocouple** | | **41** | Thermo-couple |
| **Tools** | | **99** | Tools |
| **Application Overview** | | | Applica-tions |
| **List of Part-Numbers** | | | Part No. |

## Contents


| | Page |
|---|---|
| *HARKIS*® – part configuration/CAD library | **00.05** |
| Summary Han® – Sizes A | **00.06** |
| Summary Han® – Sizes B | **00.07** |
| How to order connectors | **00.08** |
| Hoods/housings connector insert protection | **00.09** |
| Summary hoods/housings | **00.10** |
| Hoods/Housings variants | **00.11** |
| Summary locking systems | **00.12** |
| Terminations technology | **00.13** |
| Electrical engineering data | **00.22** |
| Current carrying capacity | **00.25** |
| Cross Reference from Pg thread to metric cable thread | **00.27** |
| Declaration of Comformity | **00.28** |


Visit our homepage:

**www.HARTING.com**

***HARKIS***® is the abbreviation
for **HAR**TING-**K**atalog-**I**nformations-**S**ystem
(HARTING catalogue information system).

***HARKIS***® is an electronic catalogue with part configuration and 3D components library. Here you can choose a connector according to your demands. Afterwards you are able to send your inquiry created with the listed parts. The drawings to every single part are available in PDF-format. The parts are downloadable in 2D-format (DXF) and 3D-format (IGES, STEP). The 3D-models can be viewed with a VRML-viewer.

You can find ***HARKIS***® at **www.HARKIS.HARTING.com**. It is also available on CD-ROM and DVD.



***HARKIS***®

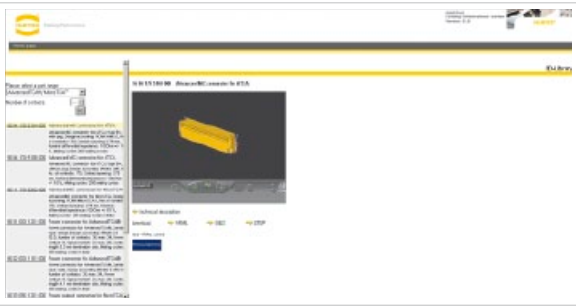


**Piece part consulting**

**Product samples:**
**Fast-track delivery to your desk, free of charge**

With immediate effect, the new express sample dispatching service in the HARTING catalogue information system (***HARKIS***®) allows customers to order samples immediately, easily and free of charge on express delivery. A broad selection from the device connectivity product portfolio is now available. In the case of unavailable items the system offers alternative products with similar features that can be requested at a mouse click.

The samples are shipped within 48 hours after your order, free of charge. This service enables tremendous flexibility, especially in the design phase of projects.



**CAD library**

| Identification | Part number | |
|---|---|---|
| ***HARKIS***® CD-ROM<br>Basic product catalogue | 98 40 000 0401 |  |
| ***HARKIS***® DVD<br>Basic product catalogue<br>2D and 3D CAD files inclusive | 98 40 000 0405 | |



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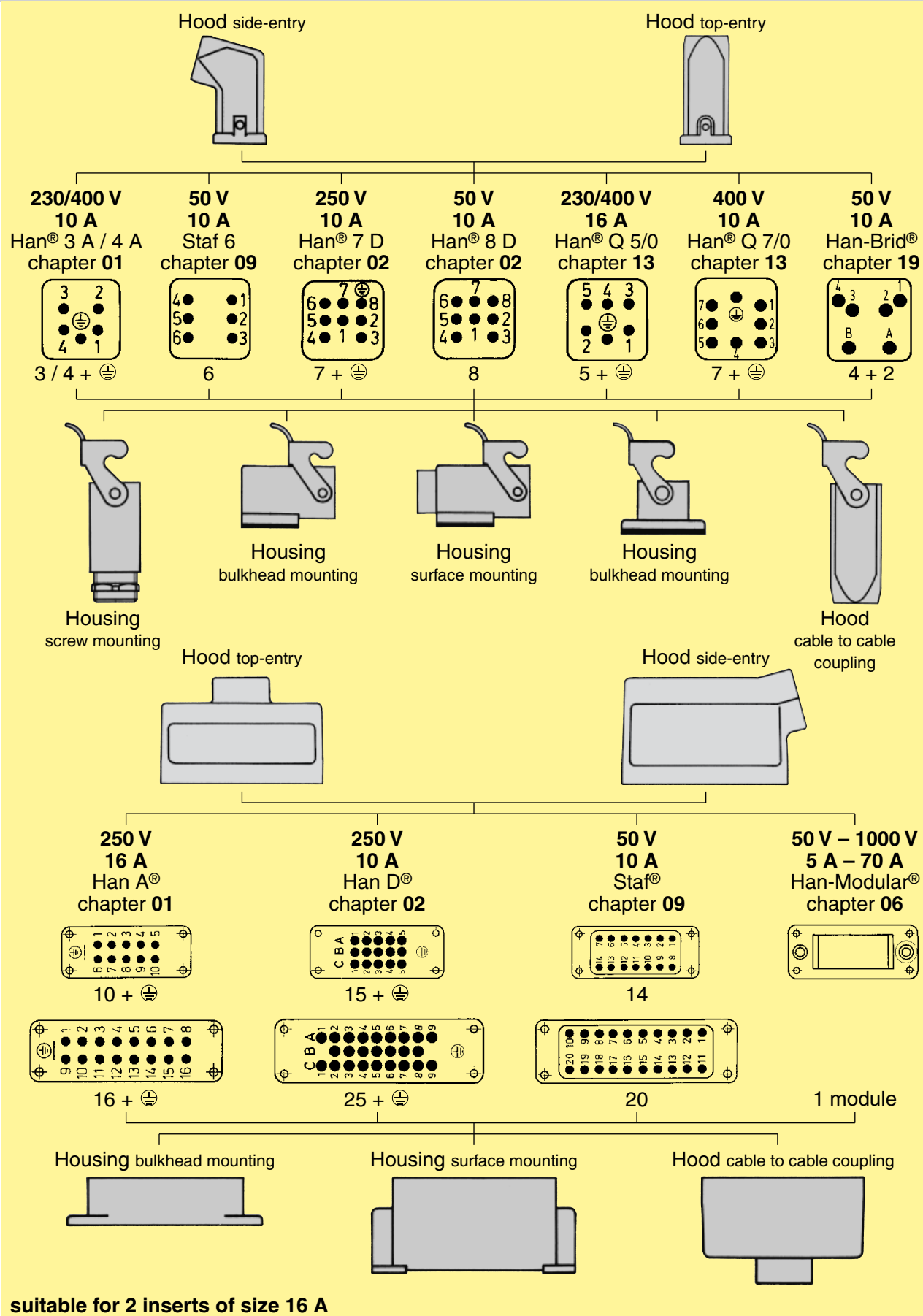
Size | Description

Han

**A**



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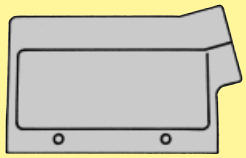
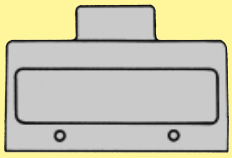


Hood side-entry



Hood top-entry

| | **250 V 10 A** Han D® chapter **02** | **250 V 10 A** Han DD® chapter **02** | **500 V 16 A** Han E® Han® ES chapter **03** | **500 V 16 A** Han® EE chapter **03** | **400/690 V 35 A** Han® HsB chapter **07** | **830 V 16 A** Han Hv E® Han® Hv ES chapter **04** | **160 V – 690 V 10 A – 100 A** Han-Com® chapter **05** | **50 V – 5000 V 5 A – 200 A** Han-Modular® chapter **06** |
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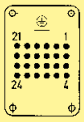
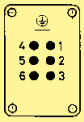
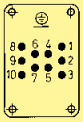
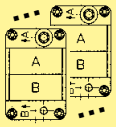
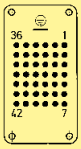
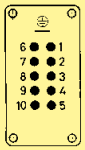
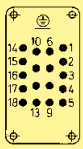
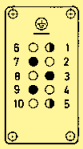
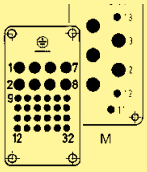
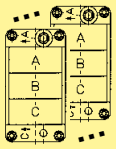
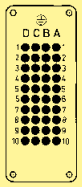
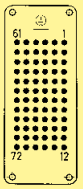
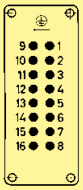
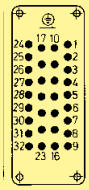
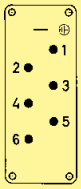
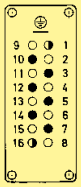
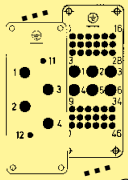
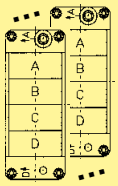
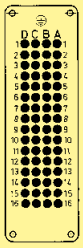
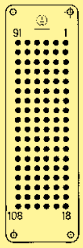
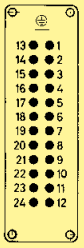
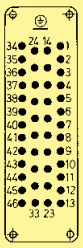
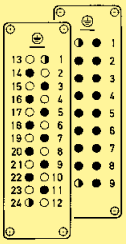
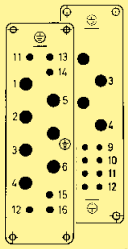
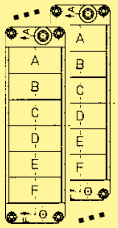
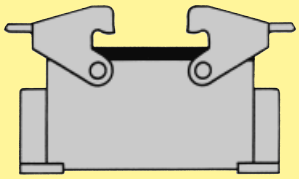
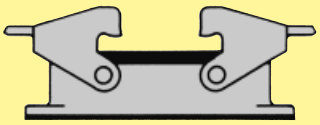
| **6** | |  24 + ⏚ |  6 + ⏚ |  10 + ⏚ | | | |  2 modules |
| **10** | |  42 + ⏚ |  10 + ⏚ |  18 + ⏚ | |  3 + ⏚ |  4/4 + ⏚ 8/24 + ⏚ |  3 modules |
| **16** |  40 + ⏚ |  72 + ⏚ |  16 + ⏚ |  32 + ⏚ |  6 + ⏚ |  6 + ⏚ |  6/36 + ⏚ 4/2 + ⏚ |  4 modules |
| **24** |  64 + ⏚ |  108 + ⏚ |  24 + ⏚ |  46 + ⏚ | |  16 + ⏚ 10 + ⏚ |  4/8 + ⏚ 6/6 + ⏚ |  6 modules |

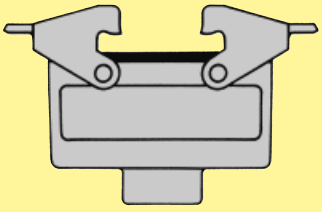
Housing surface mounting



Housing bulkhead mounting



Hood cable to cable coupling



**32** **suitable for 2 inserts of size 16 B**

**48** **suitable for 2 inserts of size 24 B**

For a complete connector components may be ordered from the following sub headings

## Cable entry protection

Universal cable glands

Special cable clamp with strain relief, bell mouthed cable fitting and anti-twist devices

Cable gland with normal or multiple seal

Extensive range of accessories

## Hoods

low or high construction
top or side cable entry
1 or 2 locking levers

## Male insert with

screw terminal or
crimp terminal (order contacts separately)
or cage-clamp terminal

## Female insert with

screw terminal or
crimp terminal (order contacts separately)
or cage-clamp terminal

## Housings

Housing (bulkhead mounting)
with or without thermoplastic
or metal covers
1 or 2 locking levers

Housing (surface mounting)
low or high construction
with or without thermoplastic
or metal covers
1 or 2 locking levers
1 or 2 cable entries

Hood (cable to cable)
low or high construction
for cable to cable connections

## Accessories

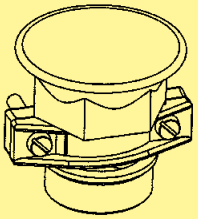
Protective covers available

Code and guide pins for coding

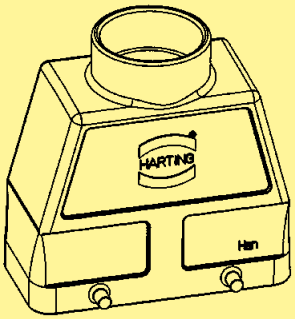
Special insert fixing screws for use without hoods and housings

Label according to CSA-approval

**Suitable hoods and housings will be found on the same page.**



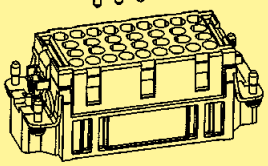
Cable clamp



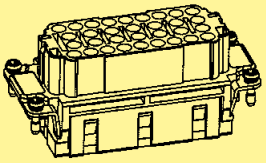

Hood



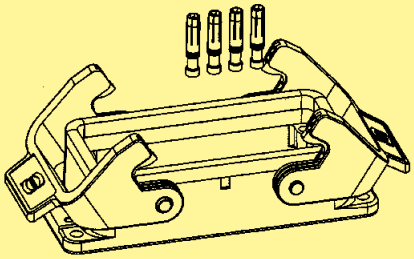
Male contacts



Male insert



Female insert

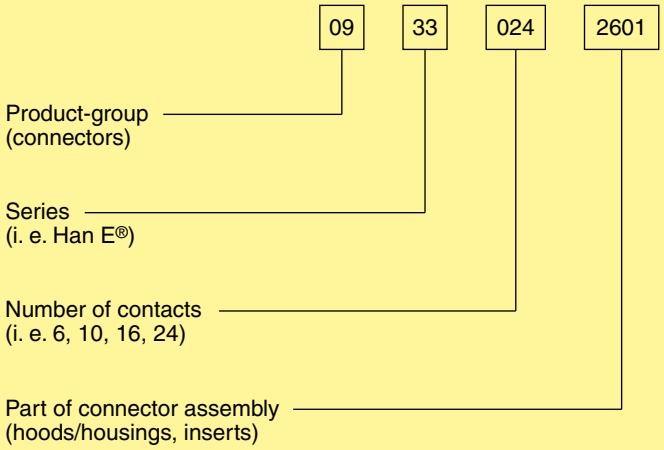


Female contacts

Housing

## Part number explanation

**Our computerized ordering system uses the following code:**



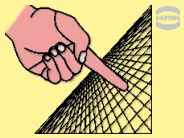
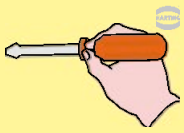
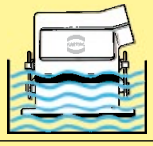
The connector's housing, sealing and locking mechanism protect the connection from external influences such as mechanical shocks, foreign bodies, humidity, dust, water or other fluids such as cleansing and cooling agents, oils, etc. The degree of protection the housing offers is explained in the IEC 60 529, DIN EN 60 529, standards that categorize enclosures according to foreign body and water protection.

The following table shows the different degrees of protection.

**Code letters** (International Protection) — **IP**

**First Index Figure** (Foreign bodies protection) — **6**

**Second Index Figure** (Water protection) — **5**

| Index figure | Degree of protection | | | Index figure | Degree of protection | | |
|---|---|---|---|---|---|---|---|
| **0** | No protection |  | No protection against accidental contact, no protection against solid foreign bodies | **0** | No protection against water | | No protection against water |
| **1** | Protection against large foreign bodies |  | Protection against contact with any large area by hand and against large solid foreign bodies with Ø > 50 mm | **1** | Drip-proof |  | Protection against vertical water drips |
| **2** | Protection against medium sized foreign bodies |  | Protection against contact with the fingers, protection against solid foreign bodies with Ø > 12 mm | **2** | Drip-proof |  | Protection against water drips (up to a 15° angle) |
| **3** | Protection against small solid foreign bodies |  | Protection against tools, wires or similar objects with Ø > 2.5 mm, protection against small foreign solid bodies with Ø > 2.5 mm | **3** | Spray-proof |  | Protection against diagonal water drips (up to a 60° angle) |
| **4** | Protection against grain-shaped foreign bodies |  | As 3 however Ø > 1 mm | **4** | Splash-proof |  | Protection against splashed water from all directions |
| **5** | Protection against injurious deposits of dust |  | Full protection against contact. Protection against interior injurious dust deposits | **5** | Hose-proof |  | Protection against water (out of a nozzle) from all directions |
| **6** | Protection against ingress of dust |  | Total protection against contact. Protection against penetration of dust | **6** | Strong hose-proof |  | Protection against strong water (out of a nozzle) from all directions |
| | | | | **7** | Protected against immersion |  | Protected against temporary immersion |
| | | | | **8** | Water-tight |  | Protected against water pressure |
| | | | | **9k *** | Protected against high-pressure |  | Protected against water from high-pressure / steam jet cleaners |

Description according to DIN EN 60 529, IEC 60 529

* ... IP 9k is not part of DIN EN 60 529 or IEC 60 529, but it is specified in DIN 40 050-9.

## Standard Hoods/Housings

| | |
|---|---|
| Field of application | for excellent mechanical and electrical protection in demanding environments, for example, in the automobile and mechanical engineering industries also for process and regulation control applications |
| Distinguishing feature | hoods/housings colour-coded grey (RAL 7037) |
| Material of hoods/housings | Die cast light alloy |
| Locking levers | Han-Easy Lock® |
| Cable entry protection | Optional special cable clamp for hoods with strain relief, bell mouthed cable fitting and anti-twist devices |



## Han® M Hoods/Housings for harsh environmental requirements

| | |
|---|---|
| Field of application | for all applications where aggressive environmental conditions and extreme climatic atmospheres are encountered |
| Distinguishing feature | hoods/housings colour-coded black (RAL 9005) |
| Material of hoods/housings | Die cast light alloy, corrosion resistant |
| Locking levers | Corrosion resistant stainless steel |
| Cable entry protection | Special cable clamp for hoods with strain relief, bell mouthed cable fitting and anti-twist devices |



## Han® EMC Hoods/Housings with high shielding efficiency

| | |
|---|---|
| Field of application | For sensitive interconnections that have to be shielded against electrical, magnetic or electro-magnetic interferences |
| Distinguishing feature | Electrically conductive surface, internal seal |
| Material of hoods/housings | Die cast light alloy |
| Locking levers | Han-Easy Lock® |
| Cable entry protection | EMC cable clamp in order to connect the cable shielding to the hood without interruption of the shielding |



## Han® HPR Hoods/Housings, pressure tight

| | |
|---|---|
| Field of application | For external electrical interconnections in vehicles, in highly demanding environments and wet areas, as well as for sensitive interconnections that have to be shielded |
| Distinguishing feature | hoods/housings colour-coded black, internal seal (RAL 9005) |
| Locking parts | Stainless steel |
| Material of hoods/housings | Die cast light alloy, corrosion resistant |
| Cable entry protection | Optional universal cable clamp for hoods with strain relief, or special cable clamp with bell mouthed cable fitting and anti-twist devices (use of adapter is necessary) |



## Han-INOX® Hoods/Housings

| | |
|---|---|
| Field of application | for excellent mechanical and electrical protection in demanding environments, for example, in the food, automobile and mechanical engineering industries also for process and regulation control applications |
| Distinguishing feature | matt-finished metal surface |
| Material of hoods/housings | Stainless steel |
| Locking levers | Stainless steel |



## Recommended tightening torque for housings, bulkhead mounting

| Series | Number of screws | Size of screws | Recommended Tightening torque (Nm) | Remarks |
|---|---|---|---|---|
| Han® 3 A | 2 | M 3 | 0.8 ... 1.0 | Gasket |
| Han® 10 A / 16 A | 4 | M 3 | 0.8 ... 1.0 | Gasket |
| Han® 15 EMV / 25 EMV | 4 | M 3 | min. 1.0 | O-ring |
| Han® 32 A | 4 | M 4 | 0.8 ... 1.0 | Gasket |
| Han® 6 B / 10 B / 16 B / 24 B | 4 | M 4 | 0.8 ... 1.0 | Gasket |
| Han® 32 B | 4 | M 5 | min. 2.5 | O-ring |
| Han® 48 B | 4 | M 6 | min. 3.0 | O-ring |
| Han® 3 HPR | 2 | M 4 | min. 1.0 | O-ring |
| Han® 6 / 10 / 16 / 24 HPR | 4 | M 6 | min. 3.0 | O-ring |
| Han® 48 HPR | 4 | M 8 | min. 5.0 | O-ring |

To offer safe protection the surface condition for mounting panel should be according to DIN 4766:

- Waviness ≤ 0.2 mm on 200 mm distance
- Roughness $R_a$ ≤ 16 µm

## Housing with 2 levers Han-Easy Lock®

- ❑ easy operation
- ❑ high degree of pressure tightness
- ❑ reliable locking guaranteed by 4 locking points
- ❑ space saving mounting
- ❑ ideal for mounting side by side
- ❑ cable to cable connection is possible
- ❑ high seal force

Details of Han-Easy Lock® see chapter 30 and chapter 31



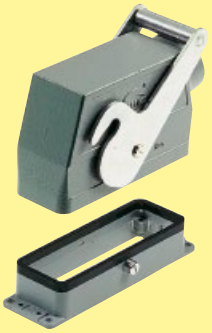
## Housing with 1 lever Han-Easy Lock®

- ❑ easily accessible, even with side entry
- ❑ possibility to lock protective covers on the housing
- ❑ cable to cable connection is possible
- ❑ 2 locking points on the longitudinal axis



## 1 lever in central position

- ❑ easily accessible, even with side entry
- ❑ 2 locking points on the lateral axis
- ❑ space saving mounting
- ❑ ideal for mounting side by side
- ❑ single hand operation



## Screw locking / toggle locking

- ❑ hexagon nuts tightened with spanner
- ❑ highest degree of pressure tightness
- ❑ easily accessible, also with side entry
- ❑ use of tools avoids access by unauthorized persons



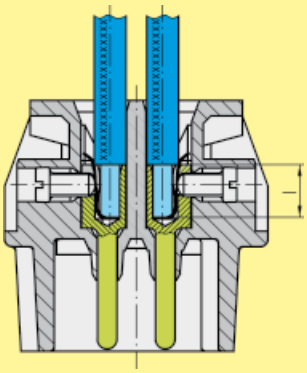
## Hood with 2 levers Han-Easy Lock®

- ❑ easy operation
- ❑ high degree of pressure tightness
- ❑ ideal for mating to housings with protection cover
- ❑ high seal force

Details of Han-Easy Lock® see chapter 30 and chapter 31



## Screw terminal



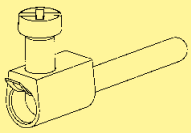
Screw terminals meet VDE 0609 /EN 60 999. Dimensions and tightening torques for testing are shown in following table.
Screw dimensions and tightening torque for screw terminals

| Wire gauge (mm²) | 1.5 | 2.5 | 4 | 6 | 10 | 16 |
|---|---|---|---|---|---|---|
| Screw thread | M3 | M3 | M3.5 | M4 | M4 | M6 |
| Test moment of torque (Nm) | 0.5 | 0.5 | 0.8 | 1.2 | 1.2 | 1.2* |
| min. pull-out for stranded wire (N) | 40 | 50 | 60 | 80 | 90 | 100 |

* for screws without heads

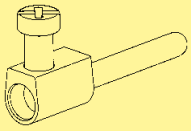
The relevant regulations state that in the case of

- Terminals with wire protection



the use of ferrules is not necessary. Series Han E®, Han® HsB, Han Hv E®, Han® K 6/12, Han® K 6/6

- Terminals without wire protection



The insulation is first stripped and then a wire ferrule must be used.
Series Han® K 4/x, Han A®, Staf®

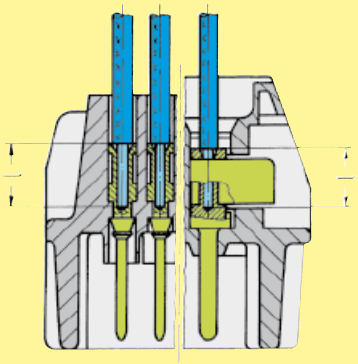
| Inserts | max. wire gauge | | Stripping length |
|---|---|---|---|
| | (mm²) | AWG | l (mm) |
| Han® 3 A, Han® 4 A | 2.5 | 14 | 4.5 |
| Han E®, Han A®, Han Hv E®, Han® K (signal contacts) | 2.5 | 14 | 7.5 |
| Han® HsB | 6.0 | 10 | 11.5 |
| Staf® | 1.5 | 16 | 4.5 |
| Han® K (power contacts) | 16.0 | 6 | 14.0 |

## Recommended tightening torque and size of screw driver

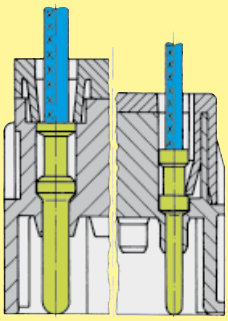
| Screw size | Connector type | Ø Tightening torque* (Nm) | Ø Tightening torque (lbft) | Recommended size of screw driver |
|---|---|---|---|---|
| M 3 | • Screw terminal Han® 3 A /4 A /Q 5/0 / Staf® | 0.25 | 0.20 | 0.4 x 2.5 |
| M 3 | • Screw terminal Han®10 A –32 A | 0.50 | 0.40 | 0.5 x 3.5 or ± size 1 |
| M 3 | • Screw terminal Han E®, Hv E®<br>• Fixing screws of all kinds,<br>• Guiding pins and bushes | 0.50 | 0.40 | 0.5 x 3.5 or ± size 1 + 2 |
| M 4 | • Ground terminal Han A®, Han E®, Han D®, DD®,<br>• Ground terminal Han® K 8/24, K 6/6, K 8/0 | 1.20 | 0.90 | 0.5 x 3.5 or ± size 1 + 2 |
| M 4 | • Screw terminal Han®HsB | 1.20 | 0.90 | 0.8 x 4.5 |
| M 5 | • Ground terminal Han® HsB, Han® K 12/2, K4/x, K 6/12, K 6/36 | 2.00 | 1.40 | 0.8 x 4.5<br>1.2 x 8 |
| M 6 | • Screw terminal Han® K (power contacts) | see chapter 05 | | 0.8 x 4.5 |

Increasing the tightening torque does not improve considerably the contact resistances.The torque moments were determined when optimum mechanical, thermal and electrical circumstances were given. If the recommended figures are considerably exceeded the wire or the termination can be damaged.

## Crimp connection



Han DD®
Han D®
R 15
Han-Modular® (10 A)
Han E®
Han A®
Han Hv E®



Han-Com® (40 A)
Han-Modular® ( 40 A)
Han E®
Han A®
Han Hv E®
Han® EE
Han® EEE
Han-Modular® (16 A)
Han® Q

A perfect crimp connection is gastight, therefore corrosion free and amounts to a cold weld of the parts being connected. For this reason, major features in achieving high quality crimp connections are the design of the contact crimping parts and of course the crimping tool itself. Wires to be connected must be carefully matched with the correct size of crimp contacts. If these basic requirements are met, users will be assured of highly reliable connections with low contact resistance and high resistance to corrosive attack.

The economic and technical advantages are:

- Constant contact resistance as a result of precisely repeated crimp connection quality
- Corrosion free connections as a result of cold weld action
- Pre-preparation of cable forms with crimp contacts fitted
- Optimum cost cable connection

Requirements for crimp connectors are laid down in DIN EN 60 352-2 as illustrated in the table.

### Pull out force of stranded wire

The main criterion by which to judge the quality of a crimp connection is the retention force achieved by the wire conductor in the terminal section of the contact. DIN EN 60 352-2 defines the extraction force in relation to the cross-section of the conductor. When fitted using HARTING crimping tools and subject to their utilization in an approved manner, our crimp connectors comply with the required extraction forces.

### Crimping tools

Crimping tools (hand operated or automatic) are carefully designed to produce with high pressure forming parts a symmetrical connection of the crimping part of the contact and the wire being connected with the minimum increase in size at the connection point. The positioner automatically locates the crimp and wire at the correct point in the tool.

A ratchet in the tool performs 2 functions:

- It prevents insertion of the crimp into the tool for crimping before the jaws are fully open
- It prevents the tool being opened before the crimping action is completed

Identical, perfectly formed, connections can be produced using this crimping system.

Crimp-cross section



HARTING-crimp profile



BUCHANAN crimp profile

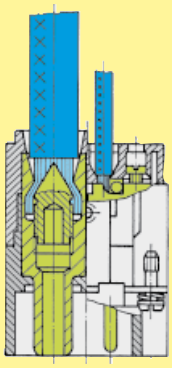
Tensile strength of crimped connections
(Table 1 of the DIN EN 60 352-2)

| Conductor cross-section | | Tensile strength |
|---|---|---|
| mm² | AWG | N |
| 0.05 | 30 | 6 |
| 0.08 | 28 | 11 |
| 0.12 | 26 | 15 |
| 0.14 | | 18 |
| 0.22 | 24 | 28 |
| 0.25 | | 32 |
| 0.32 | 22 | 40 |
| 0.5 | 20 | 60 |
| 0.75 | | 85 |
| 0.82 | 18 | 90 |
| 1.0 | | 108 |
| 1.3 | 16 | 135 |
| 1.5 | | 150 |
| 2.1 | 14 | 200 |
| 2.5 | | 230 |
| 3.3 | 12 | 275 |
| 4.0 | | 310 |
| 5.3 | 10 | 355 |
| 6.0 | | 360 |
| 8.4 | 8 | 370 |
| 10.0 | | 380 |

| Wire gauge | | Internal diameter | Stripping length l (mm) | | |
|---|---|---|---|---|---|
| (mm²) | AWG | Ø (mm) | Han® DD<br>Han® D<br>R15<br>Han-Modular®<br>(10 A) | Han E®<br>Han A®<br>Han Hv E® | Han® C |
| 0.14 ... 0.37 | 26 ... 22 | 0.9 | 8 | - | - |
| 0.5 | 20 | 1.15 | 8 | 7.5 | - |
| 0.75 | 18 | 1.3 | 8 | 7.5 | - |
| 1 | 18 | 1.45 | 8 | 7.5 | - |
| 1.5 | 16 | 1.75 | 8 | 7.5 | 9 |
| 2.5 | 14 | 2.25 | 6 | 7.5 | 9 |
| 4 | 12 | 2.85 | - | 7.5 | 9.6 |
| 6 | 10 | 3.5 | - | - | 9.6 |

| | Conductor cross-section | ø | Stripping length |
|---|---|---|---|
| Han® 100 A Modul | 16 mm² | 5.5 mm | 19.0 mm |
| | 25 mm² | 7.0 mm | 19.0 mm |
| | 35 mm² | 8.2 mm | 16.0 mm |
| Han® HC Modular 350 | 35 mm² | 8.2 mm | 26.0 mm |
| | 50 mm² | 10.0 mm | 28.0 mm |
| | 70 mm² | 11.5 mm | 28.0 mm |
| | 95 mm² | 13.5 mm | 30.0 mm |
| | 120 mm² | 15.5 mm | 24.0 mm |
| Han® HC Modular 650 | 240 mm² | 22.5 mm | 50.0 mm |
| for fine stranded wires according to IEC 60 228 class 5 | | | |

## Axial screw terminal



This termination combines the benefits of screw and crimp terminations:

- Less space required
- Easy handling
- No special tools

### Remarks on the axial screw technique

The wire gauges mentioned in the catalogue refer to geometric wire gauges of cables.

Background:

According to DIN VDE 0295 for cables and insulated wires the wire gauge will be determined by conductance (Ω/km) and maximum wire diameter. A minimum cable diameter is not specified! (Example:nominal wire gauge 95 mm² → real, geometric wire gauge 89 mm²)

Recommendation:

The use of cables with an extreme geometric wire gauge deviation should be checked separately with the use of the axial screw termination.

Strain relief:

For safe operation the cable must be fixed at an adequate distance from the terminal to ensure that the contact is protected against radial stress.

Details for professional strain relief design can be found in the standard DIN VDE 0100-520: 2003-06 (see enclosed table).

| Outer cable diameter (mm) | Maximum fixing distance (mm) | |
|---|---|---|
| | horizontal | vertical |
| D ≤ 9 | 250 | 400 |
| 9 < D < 15 | 300 | 400 |
| 15 < D < 20 | 350 | 450 |
| 20 < D < 40 | 400 | 550 |

Cables:

The axial screw technology is developed for wires according to DIN EN 60 228 class 5 (see table: Wire assembly according to DIN EN 60 228). Deviating cable assemblies have to be tested separately.

Assembly remarks:

Before starting the assembly the user must ensure that the axial cone is screwed fully downward to completely open the contact chamber.

After stripping the cable insulation the strands must not be twisted and the maximum cable insulation must not exceed the recommended dimension.

Insert the wire completely into the contact chamber until the copper strands reach the bottom. Keep the cable in position while applying the recommended tightening torque.

Maintenance of the axial screw termination:

After initial assembly it is only allowed to reapply the recommended tightening torque once in order to avoid damage to individual cable strands.

| Wire gauge (mm²) | Stranded wires DIN EN 60228 class 2 | Fine stranded wires DIN EN 60228 class 5 | Super fine stranded wires DIN EN 60228 class 6 | | | |
|---|---|---|---|---|---|---|
| 0.5 | 7 x 0.30 | **16 x 0.20** | 28 x 0.15 | 64 x 0.10 | 131 x 0.07 | 256 x 0.05 |
| 0.75 | 7 x 0.37 | **24 x 0.20** | 42 x 0.15 | 96 x 0.10 | 195 x 0.07 | 384 x 0.05 |
| 1 | 7 x 0.43 | **32 x 0.20** | 56 x 0.15 | 128 x 0.10 | 260 x 0.07 | 512 x 0.05 |
| 1.5 | 7 x 0.52 | **30 x 0.25** | 84 x 0.15 | 192 x 0.10 | 392 x 0.07 | 768 x 0.05 |
| 2.5 | 7 x 0.67 | **50 x 0.25** | 140 x 0.15 | 320 x 0.10 | 651 x 0.07 | 1280 x 0.05 |
| 4 | 7 x 0.85 | **56 x 0.30** | 224 x 0.15 | 512 x 0.10 | 1040 x 0.07 | |
| 6 | 7 x 1.05 | **84 x 0.30** | 192 x 0.20 | 768 x 0.10 | 1560 x 0.07 | |
| 10 | 7 x 1.35 | **80 x 0.40** | 320 x 0.20 | 1280 x 0.10 | 2600 x 0.07 | |
| 16 | 7 x 1.70 | **128 x 0.40** | 512 x 0.20 | 2048 x 0.10 | | |
| 25 | 7 x 2.13 | **200 x 0.40** | 800 x 0.20 | 3200 x 0.10 | | |
| 35 | 7 x 2.52 | **280 x 0.40** | 1120 x 0.20 | | | |
| 50 | 19 x 1.83 | **400 x 0.40** | 705 x 0.30 | | | |
| 70 | 19 x 2.17 | **356 x 0.50** | 990 x 0.30 | | | |
| 95 | 19 x 2.52 | **485 x 0.50** | 1340 x 0.30 | | | |
| 120 | 37 x 2.03 | **614 x 0.50** | 1690 x 0.30 | | | |
| 150 | 37 x 2.27 | **765 x 0.50** | 2123 x 0.30 | | | |
| 185 | 37 x 2.52 | **944 x 0.50** | 1470 x 0.40 | | | |
| 240 | 61 x 2.24 | **1225 x 0.50** | 1905 x 0.40 | | | |

Wire assembly according to DIN EN 60 228

| Insert | Wire gauge | Stripping length | Tightening torque | Max. cable insulation diameter | Size hexagon recess | Insert dimension for cable indication (ISK) |
|---|---|---|---|---|---|---|
| | (mm²) | (mm) | (Nm) | (mm) | (SW) | (mm) |
| Han® K 4/4 finger proofed | 6 ... 16 | 6 mm²: 11+1<br>10 mm²: 11+1<br>16 mm²: 11+1 | 6 mm²: 2<br>10 mm²: 3<br>16 mm²: 4 | 8.9 | 2.5 | 7.4<br>PE: 8.9 |
| | 10 ... 22 | 10 mm²: 11+1<br>16 mm²: 11+1<br>22 mm²: 11+1 | 10 mm²: 3<br>16 mm²: 4<br>22 mm² 5 | 8.9<br>8.9<br>11 | 2.5 | 7.4<br>7.4<br>5.4<br>PE: 8.9 |
| Han® K 4/4 | 6 ... 16 | 6 mm²: 11+1<br>10 mm²: 11+1<br>16 mm²: 11+1 | 6 mm²: 2<br>10 mm²: 3<br>16 mm²: 4 | 8.9 | 2.5 | 7.4<br>PE: 8.9 |
| | 10 ... 22 | 10 mm²: 11+1<br>16 mm²: 11+1<br>22 mm²: 11+1 | 10 mm²: 3<br>16 mm²: 4<br>22 mm² 5 | 8.9<br>8.9<br>11 | 2.5 | 7.4<br>7.4<br>5.4<br>PE: 8.9 |
| Han® K 6/12 | 2.5 ... 8 | 2.5 mm²: 8+1<br>4 mm²: 8+1<br>6 mm²: 8+1<br>8 mm²: 8+1 | 2.5 mm² 1.5<br>4 mm²: 1.5<br>6 mm²: 2<br>8 mm²: 2 | 6.2 | 2 | 7.4 |
| | 6 ... 10 | 6 mm²: 8+1<br>8 mm²: 8+1<br>10 mm²: 8+1 | 6 mm²: 2<br>8 mm²: 2<br>10 mm²: 2 | 6.2 | 2 | 4.7 |
| Han® K 6/6 | 10 ... 25 | 10 mm²: 13+/-1<br>16 mm²: 13+/-1<br>25 mm²: 13+/-1 | 10 mm²: 6<br>16 mm²: 6<br>25 mm²: 7 | 11.4 | 4 | 4.9 |
| | 16 ... 35 | 16 mm²: 13+/-1<br>25 mm²: 13+/-1<br>35 mm²: 13+/-1 | 16 mm²: 6<br>25 mm²: 7<br>35 mm²: 8 | 11.4 | 4 | 4.9 |
| Han® K 8/0 | 10 ... 25 | 10 mm²: 13+/-1<br>16 mm²: 13+/-1<br>25 mm²: 13+/-1 | 10 mm²: 6<br>16 mm²: 6<br>25 mm²: 7 | 11.4 | 4 | 4.75 |
| Han® Q 2/0<br>Han® Q 2/0 High Voltage | 2.5 ... 10 | 2.5 mm²: 8+1<br>4 mm²: 8+1<br>6 mm²: 8+1<br>10 mm²: 8+1 | 2.5 mm²: 1.8<br>4 mm²: 1.8<br>6 mm²: 1.8<br>10 mm²: 1.8 | 7.3 | 2 | 5.6 |
| Han® Q 4/2<br>Han® Q 4/2 with Han-Quick Lock® | 4 ... 10 | 4 mm²: 8+1<br>6 mm²: 8+1<br>10 mm²: 8+1 | 4 mm²: 1.8<br>6 mm²: 1.8<br>10 mm²: 1.8 | 7.3 | 2 | 5.6 |
| Han® 200 A module without PE<br>Han® 200 A module with PE | 25 ... 40 | 25 mm²: 16<br>40 mm²: 16 | 25 mm²: 8<br>40 mm²: 8 | 12<br>16 | 5 | 3 |
| | 40 ...70 | 40 mm²: 16<br>70 mm²: 16 | 40 mm²: 9<br>70 mm²: 10 | 12<br>16 | 5 | 3 |
| Han® 100 A module | 6 ... 10 | 6 mm²: 13+/-1<br>8 mm²: 13+/-1<br>10 mm²: 13+/-1 | 6 mm²: 4<br>8 mm²: 4<br>10 mm² 4 | 11.4 | 2.5 | 4.9 |
| | 10 ... 25 | 10 mm²: 13+/-1<br>16 mm²: 13+/-1<br>25 mm²: 13+/-1 | 10 mm²: 6<br>16 mm²: 6<br>25 mm²: 7 | 11.4 | 4 | 4.9 |
| | 16 ... 35 | 16 mm²: 13+/-1<br>25 mm²: 13+/-1<br>35 mm²: 13+/-1 | 16 mm²: 6<br>25 mm²: 7<br>35 mm²: 8 | 11.4 | 4 | 4.9 |
| | 38 | 38 mm²: 13+/-1 | 38 mm²: 8 | 11.4 | 4 | 4.9 |
| Han® 70 A module | 6 ... 16 | 6 mm²: 11+1<br>10 mm²: 11+1<br>16 mm²: 11+1 | 6 mm²: 2<br>10 mm²: 3<br>16 mm²: 4 | 8.9 | 2.5 | 7.4 |
| | 14 ... 22 | 14 mm²: 12.5+1<br>16 mm²: 12.5+1<br>22 mm²: 12.5+1 | 14 mm²: 4<br>16 mm²: 4<br>22 mm²: 4 | 10 | 2.5 | 5.9 |
| Han® 40 A module | 2.5 ... 8 | 2.5 mm²: 5+1<br>4 mm²: 5+1<br>6 mm²: 8+1<br>8 mm²: 11+1 | 2.5 mm²: 1.5<br>4 mm²: 1.5<br>6 mm²: 2<br>10 mm²: 2 | 4<br>4<br>6<br>10.5 | 2 | 4.7 |
| | 6 ... 10 | 6 mm²: 8+1<br>10 mm²: 11+1 | 6 mm²: 2<br>10 mm²: 2 | 6<br>10.5 | 2 | 4.7 |

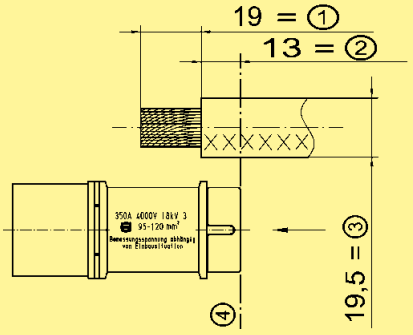
| Insert | Wire gauge | Stripping length | Tightening torque | Max. cable insulation diameter | Size hexagon recess | Insert dimension for cable indication (ISK) |
|---|---|---|---|---|---|---|
| | (mm²) | (mm) | (Nm) | (mm) | (SW) | (mm) |
| Han® C module with axial screw terminal | 2.5 ... 8 | 2.5 mm²: 5+1<br>4 mm²: 5+1<br>6 mm²: 8+1<br>8 mm²: 8+1 | 2.5 mm²: 1.5<br>4 mm²: 1.5<br>6 mm²: 2<br>8 mm²: 2 | 4<br>4<br>6<br>8.2 | 2 | 5.2 |
| | 6 ... 10 | 6 mm²: 8+1<br>10 mm²: 11+1 | 6 mm²: 2<br>10 mm²: 2 | 6<br>8.2 | 2 | 5.2 |
| Han® K3/0 straight | 25 ... 40 | 25 mm²: 22<br>40 mm²: 22 | 25 mm²: 8<br>40 mm²: 8 | 15 | 5 | 8.2 |
| | 35 ... 70 | 35 mm²: 22<br>50 mm²: 22<br>70 mm²: 22 | 35 mm²: 8<br>50 mm²: 9<br>70 mm²: 10 | 15 | 5 | 8.2 |
| Han® K3/0 angled | 25 ... 40 | 25 mm²: 22<br>40 mm²: 22 | 25 mm²: 8<br>40 mm²: 8 | 15 | 5 | 9 |
| | 35 ... 70 | 35 mm²: 22<br>50 mm²: 22<br>70 mm²: 22 | 35 mm²: 8<br>50 mm²: 9<br>70 mm²: 10 | 15 | 5 | 9 |
| Han® K3/2 straight | 35 ... 70<br>PE: 25 ... 40 | 35 mm²: 22<br>50 mm²: 22<br>70 mm²: 22<br>PE: 14 | 35 mm²: 8<br>50 mm²: 9<br>70 mm²: 10 | power: 15<br><br><br>PE: 10 | 5 | power: 8.2<br><br><br>PE: 7.2 |
| Han® K3/2 angled | 25 ... 40 | 25 mm²: 22<br>40 mm²: 22<br>PE: 14 | 25 mm²: 8<br>40 mm²: 8 | power: 15<br><br>PE: 10 | 5 | power: 9.0<br><br>PE: 7.2 |
| | 35 ... 70<br>PE: 25 ... 40 | 35 mm²: 22<br>50 mm²: 22<br>70 mm²: 22 | 35 mm²: 8<br>50 mm²: 9<br>70 mm²: 10 | power: 15<br>PE: 10 | 5 | power: 9.0<br>PE: 7.2 |
| Han® HC Modular 350 | 20 ... 35 | 20 mm²: 19+1<br>35 mm²: 19+1 | 20 mm²: 8<br>35 mm²: 8 | 19.5 | 5 | 13 |
| | 35 ... 70 | 35 mm²: 19+1<br>50 mm²: 19+1<br>70 mm²: 19+1 | 35 mm²: 8<br>50 mm²: 10<br>70 mm²: 12 | 19.5 | 5 | 13 |
| | 95 ... 120 | 95 mm² 19+1<br>120 mm² 19+1 | 95 mm² 14<br>120 mm² 16 | 19.5 | 5 | 13 |
| Ground contact for Han® HC Modular | 35 ... 70 | 35 mm²: 19+1<br>50 mm²: 19+1<br>70 mm²: 19+1 | 35 mm²: 8<br>50 mm²: 10<br>70 mm²: 12 | - | 5 | - |
| Han® HC Modular 650 | 60 ... 70 | 60 mm²: 23+2<br>70 mm²: 23+2 | 60 mm²: 12<br>70 mm²: 12 | 27 | 8 | 28 |
| | 70 ... 120 | 70 mm²: 23+2<br>95 mm²: 23+2<br>120 mm²: 23+2 | 70 mm²: 12<br>95 mm²: 14<br>120 mm²: 16 | 26.5 | 8 | 28 |
| | 150 ... 185 | 150 mm²: 23+2<br>185 mm²: 23+2 | 150 mm²: 17<br>185 mm²: 18 | 26.5 | 8 | 28 |

Overview inserts with axial screw terminal

Insulating base dimension for the cable marking (ISK)

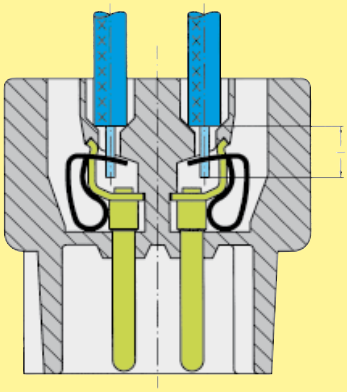
Marking the proper cable position for the axial screw connection contact point:

The user can attach a marker to the cable sheathing in order to specify the proper point for tightening the axial screw on the connecting cable. If the cable in pushed into the insulating base up to the marker (where the marker is flush with the upper edge of the insulating base), then the cable is in the proper position and may be connected. The following figure (on the next page) illustrates this process when using the Han® HC Modular 350 contact. The marker and the upper edge of the insulating base are at the same level (as indicated by the dashed line).




① stripping length
② insulator dimension (ISK dimension)
③ max. cable insulation diameter
④ sink line

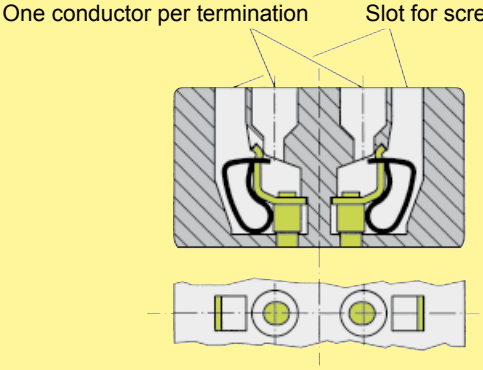
## Cage-clamp terminal

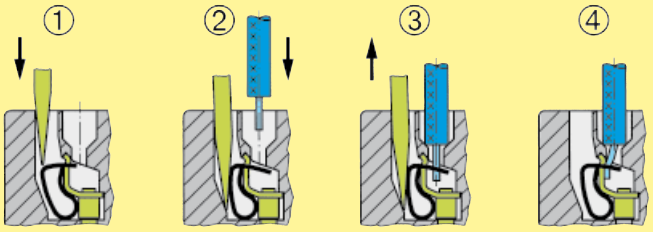


This termination method requires very little preparation of the wire and no special tools, leading to a low installed cost and a high degree of mechanical security.

- For all stranded and solid wires with a cross section 0.14 to 2.5 mm².
- Ease of termination. Conductor and screwdriver are in same plane.
- No special preparation of stripped conductor.
- The larger the conductor the higher the clamping force.
- The termination is vibration-proof.
- Guaranteed constant low resistance connection of the cage-clamp terminal.
- The cage-clamp system is internationally approved.
  VDE, CSA, UL, ÖVE, SEMKO, LCIE (France), Germanischer Lloyd, DET Norske Veritas

One conductor per termination  Slot for screwdriver

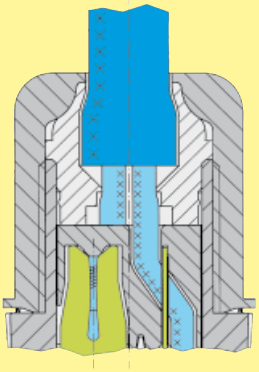





Screwdriver width:3.0 x 0.5 mm

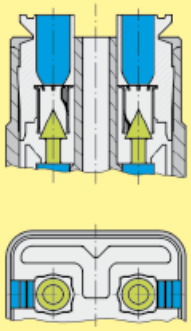
| Inserts | max. wire gauge | | Stripping length |
|---|---|---|---|
| | (mm²) | AWG | l (mm) |
| Han® ES, Han® Hv ES | 0.14 ... 2.5 | 26 ... 14 | 7 ... 9 |
| Han® ESS | 0.14 ... 2.5 | 26 ... 14 | 9 ... 11 |
| Han® K 4/4 | 0.14 ... 2.5 | 26 ... 14 | 7 ... 9 |
| Han® ES Modul | 0.14 ... 2.5 | 26 ... 14 | 7 ... 9 |

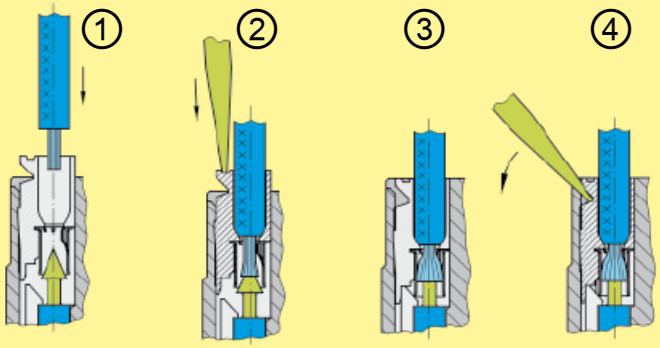
## IDC (Insulation displacement terminal)



| Inserts | max. wire gauge | |
|---|---|---|
| | (mm²) | AWG |
| M8-S/M12-S | 0.14 ... 0.34 | 26 ... 22 |
| Circular connectors M12 angled | 0.25 ... 0.50 | 24 (7/32) ... 22 |
| Circular connectors M12-L | 0.34 ... 0.75 | 22 ... 18 |
| M12-L PROFIBUS | 0.25 ... 0.34 | 24 ... 22 |
| M12-L Ethernet | 0.25 ... 0.34 | 24 ... 22 |
| | 0.34 ... 0.5 | 22 ... 18 |
| Panel feed through Pg 13.5 /M20 | 0.75 ... 1.50 | 18 ... 16 |
| Panel feed through Pg 9 | 0.25 ... 0.50 | 24 (7/32) ... 22 |
| *HARAX*® 3 A | 0.75 ... 1.5 | 18 ... 16 |

## Han-Quick Lock® termination technique






This new termination technique from HARTING combines the reliability and the simple operation of the cage clamp termination with the low space requirements of crimp technology.

Han-Quick Lock® is ideally suited to high contact densities and is considerably superior over other termination techniques. No other technology is so simple, space saving and fast. For this vibration safe termination, no special tools are necessary.

- Fast, simple and robust termination technique
- Field assembly without a special tool
- Compatible also to inserts with other termination technologies
- Combines high contact density similar to crimp termination with the simple connection like a cage clamp terminal

| | |
|---|---|
| Insert connectors: | Han® 3 A<br>Han® 4 A<br>Han® 7 D<br>Han® 8 D<br>Han® Q 4/2<br>Han® Q 5/0<br>Han® Q 8/0<br>Han® Q 12/0<br>Han® EE modules<br>Han® DD modules<br>Han® PushPull Power 4/0 |
| Technical characteristics: | |
| Material | Isolation body - polycarbonate<br>Active termination element - polycarbonate<br>Quick-Lock spring - stainless steel<br>Contact - copper alloy |
| Terminal cross-section | 0.25 ... 2.5 mm² (AWG 23 ... 14) |
| Stripping length | 10 mm |
| Insulating resistance | > $10^{10}$ Ohm |
| Flammability according to | UL 94 V 0 |
| Mechanical working life | ≥ 500 mating cycles |
| Screwdriver | 0.4 x 2.5 mm or 0.5 x 3.0 mm |

## General

The choice of connectors entails more than just considering factors such as functionality, the number of contacts, current and voltage ratings. It is equally important to take account of where the connectors are to be used and the prevailing ambient conditions. This in turn means that, dependent on the conditions under which they are to be installed and pursuant to the relevant standards, different voltage and current ratings may apply for the same connectors.

The most important influencing factors and the corresponding electrical characteristics of the associated connectors are illustrated here in greater detail.

## Overvoltage category

The overvoltage category is dependent on the mains voltage and the location at which the equipment is installed. It describes the maximum overvoltage resistance of a device in the event of a power supply system fault, e. g. in the event of a lightening strike.

The overvoltage category affects the dimensioning of components in that it determines the clearance air gap. Pursuant to the relevant standards, there are 4 overvoltage categories.

**Equipment for industrial use, such as fall HARTING heavy duty Han connector, fall into Overvoltage Category III.**

## Extract from DIN VDE 0110-1 and IEC 60 664-1, Para. 2.2.2.1.1

*Equipment of* **overvoltage category IV** *is for use at the origin of the installation.*

*Note 1: Examples of such equipment are electricity meters and primary overcurrent protection equipment.*

*Equipment of* **overvoltage category III** *is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements.*

*Note 2: Examples of such equipment are switches in the fixed installation and equipment for industrial use with permanent connection to the fixed installation.*

*Equipment of* **overvoltage category II** *is energy-consuming equipment to be supplied from the fixed installation.*

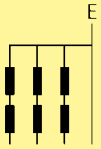
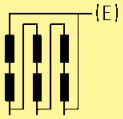
*Note 3: Examples of such equipment are appliances, portable tools and other household equipment with similar loads.*

*If such equipment is subjected to special requirements with regard to reliability and availability, overvoltage category III applies.*

*Equipment of* **overvoltage category I** *is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriately low level.*

*Note: Examples are protected electronic circuits.*

## Rated impulse voltages (Table B2 of DIN EN 60 664-1)

| Voltage line-to-neutral derived from nominal voltages A.C. or D.C. up to and including | Nominal voltages presently used in the world (= Rated insulation voltage of equipment) | | | | Rated impulse voltage for equipment | | | |
|---|---|---|---|---|---|---|---|---|
| | Three-phase 4-wire systems with earthed neutral | Three-phase 3-wire systems earthed or unearthed | Single-phase 2-wire systems A.C. or D.C. | Single-phase 3-wire systems A.C. or D.C. | Overvoltage category | | | |
| |  |  |  |  | I | II | III | IV |
| | | | | | Special protected levels | Level for electrical equipment (household and others) | Level for distribution supply systems | Input level |
| V | V | V | V | V | V | V | V | V |
| 50 | | | 12.5 24<br>25 30<br>42 48 | 30 ... 60 | 330 | 500 | 800 | 1500 |
| 100 | 66/115 | 66 | 60 | | 500 | 800 | 1500 | 2500 |
| 150 | 120/208*<br>127/220 | 115, 120<br>127 | 100**<br>110, 220 | 100 ... 200**<br>110 ... 220<br>120 .. 240 | 800 | 1500 | 2500 | 4000 |
| 300 | 220/380, 230/400<br>240/415, 260/440<br>277/480 | 200**, 220<br>230, 240<br>260, 277 | 220 | 220 ... 440 | 1500 | 2500 | 4000 | 6000 |
| 600 | 347/600, 380/660<br>400/690, 417/720<br>480/830 | 347, 380, 400<br>415, 440, 480<br>500, 577, 600 | 480 | 480 ... 960 | 2500 | 4000 | 6000 | 8000 |
| 1000 | | 660<br>690, 720<br>830, 1000 | 1000 | | 4000 | 6000 | 8000 | 12 000 |

* ... Practice in the U.S.A and in Canada
** ... Practice in Japan

## Pollution degree

The dimensioning of operating equipment is dependent on environmental conditions. Any pollution or contamination may give rise to conductivity that, in combination with moisture, may affect the insulating properties of the surface on which it is deposited. The pollution degree influences the design of components in terms of the creepage distance.

The pollution degree is defined for exposed, unprotected insulation on the basis of environmental conditions.

**HARTING heavy duty Han connectors are designed as standard for Pollution Degree 3.**

**Pollution degree 1**
in air-conditioned or clean, dry rooms, such as computer and measuring instrument rooms, for example.

**Pollution degree 2**
in residential, sales and other business premises, precision engineering workshops, laboratories, testing bays, rooms used for medical purposes. As a result of occasional moisture condensation, it is to be anticipated that pollution/contamination may be temporarily conductive.

**Pollution degree 3**
**in industrial, commercial and agricultural premises, unheated storage premises, workshops or boiler rooms, also for the electrical components of assembly or mounting equipment and machine tools.**

**Pollution degree 4**
in outdoor or exterior areas such as equipment mounted on the roofs of locomotives or tramcars.

## Extract from DIN EN 60 664-1 (VDE 0110-1), Para. 4.6.2

**Pollution degree 1:** *No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.*

**Pollution degree 2:** *Only non-conductive pollution occurs except that occasionally a temporary conductivity caused by condensation is to be excepted.*

**Pollution degree 3:** *Conductive pollution occurs or dry non-conductive pollution occurs which becomes conductive due to condensation which is to be expected.*

**Pollution degree 4:** *Continuous conductivity occurs due to conductive dust, rain or other wet conditions.*

## Special ruling for connectors

**Subject to compliance with certain preconditions, the standard for connectors permits a lower pollution degree than that which applies to the installation as a whole. This means that in a pollution degree 3 environment, connectors may be used which are electrically rated for pollution degree 2.**
**The basis for this is contained in DIN EN 61 984, Para. 6.19.2.3.**

## Extract form DIN EN 61 984, Para. 6.19.2.3

*For a connector with a degree of protection IP 54 or higher according to IEC 60 529 the insulating parts inside the enclosure may be dimensioned for a lower pollution degree.*

*This also applies to mated connectors where enclosure is ensured by the connector housing and which may only be disengaged for test and maintenance purposes.*

## The conditions fulfills,

- a connector which is protected to at least IP 54 as per IEC 60 529,
- a connector which is installed in a housing and which as described in the standard is disconnected for testing and maintenance purposes only,
- a connector which is installed in a housing and which when disconnected is protected by a cap or cover to at least IP 54,
- a connector located inside a switching cabinet to at least IP 54.

These conditions do not extend to connectors which when disconnected remain exposed to the industrial atmosphere for an indefinite period.

It should be noted that pollution can affect a connector from the inside of an installation outwards.

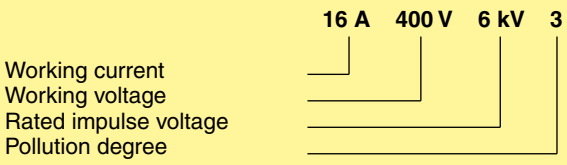
## Typical applications in which to choose pollution degree 2 connectors:

- A connector serving a drive motor which is disconnected only for the purpose of replacing a defective motor, even when the plant or system otherwise calls for pollution degree 3.
- Connectors serving a machine of modular design which are disconnected for transport purposes only and enable rapid erection and reliable commissioning. In transit, protective covers or adequate packing must be provided to ensure that the connectors are not affected by pollution/contamination.
- Connectors located inside a switching cabinet to IP 54. In such cases, it is even possible to dispense with the IP 54 housings of the connectors themselves.

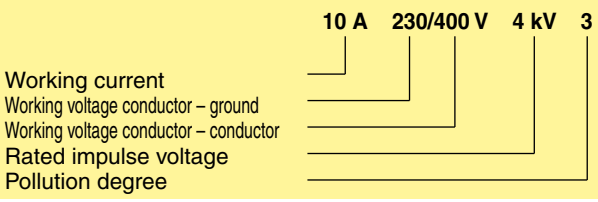
## Specifying electrical data

Electrical data for connectors are specified as per DIN EN 61 984.

This example identifies a connector suitable for use in an unearthed power system or earthed delta circuit (see page 00.22, Table B2 of DIN EN 60 664-1):



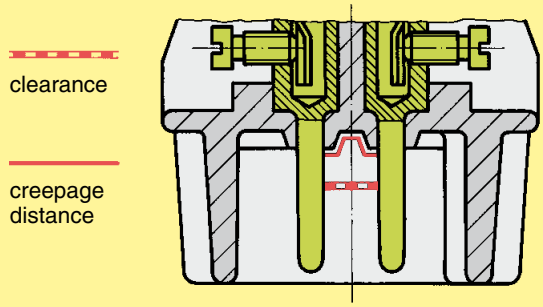

This example identifies a connector suitable exclusively for use in earthed power systems (see page 00.22, Table B2 of DIN EN 60 664-1):



## Other terms explained

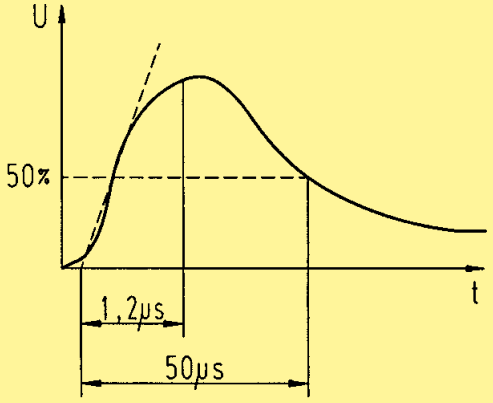
**Clearance air gap**
The shortest distance through the air between two conductive elements (see DIN EN 60664-1 (VDE 0110-1), Para. 3.2). The air gaps are determined by the surge voltage withstand level.

**Creepage distance**
Shortest distance on the surface of an solid insulating material between two conductive elements (see DIN EN 60664-1 (VDE 0110-1), Para. 3.3). The creepage distances are dependent on the rated voltage, the pollution degree and the characteristics of the insulating material.




**Working voltage**
Fixed voltage value on which operating and performance data are based. More than one value for rated voltage or rated voltage range may be specified for the same connector.

**Rated impulse voltage**
The rated impulse voltage is determined on the basis of the overvoltage category and the nominal power supply voltage. This level in turn directly determines the test voltage for testing the overvoltage resistance of the connector *(Waveform voltage in 1.2/50 µs as per IEC 60060-1)*.




**Working current**
Fixed current, preferably at an ambient temperature of 40 °C, which the connector can carry on a permanent basis (without interruption), passing simultaneously through all contacts which are in turn connected to the largest possible conductors, without exceeding the upper temperature limit.
The dependence of the rated current on ambient temperature is illustrated in the respective derating diagrams.

**Transient overvoltages**
Short-term overvoltage lasting a few milliseconds or less, oscillatory or non-oscillatory, generally heavily damped (see DIN EN 60664-1 (VDE 0110-1, Para. 3.7.2). An overvoltage may occur as a result of switching activities, a defect or lightening surge, or may be intentionally created as a necessary function of the equipment or component.

**Power-frequency withstand voltage**
A power-frequency overvoltage (50/60 Hz).
Applied for a duration of one minute when testing dielectric strength. For test voltages in association with surge voltage withstand levels, see extract from Table 8, DIN EN 61984.

**Test voltages** (Extract from Table 8, DIN EN 61984)

| Impulse withstand voltage kV (1.2/50 µs) at an altitude of 2000 m | RMS withstand voltage kV (50/60 Hz) |
|---|---|
| 0.5 | 0.37 |
| 0.8 | 0.50 |
| 1.5 | 0.84 |
| 2.5 | 1.39 |
| 4 | 2.21 |
| 6 | 3.31 |
| 8 | 4.26 |
| 12 | 6.6 |

**CTI (Comparative Tracking Index)**
This figure gives an indication of the conductivity of insulating materials and affects the specified creepage distances. The influence of the CTI value on the creepage distance is as follows: the higher the index value, the shorter the creepage distance. The CTI is used to divide plastics into insulation groups.
Breakdown of insulation groups:

| | |
|---|---|
| I | 600 ≤ CTI |
| II | 400 ≤ CTI < 600 |
| IIIa | 175 ≤ CTI < 400 |
| IIIb | 100 ≤ CTI < 175 |

**Protection levels as per IEC 60529**
The protection level describes the leak-proof character of housing, e. g. for electrical equipment. It ranges from IP 00 to IP 68. HARTING heavy duty Han connectors feature a standard protection level of IP 65 (see page 00.09, Table based on DIN EN 60529, IEC 60529).

**Derating diagram as per DIN EN 60512-5**
These diagrams are used to illustrate the maximum current carrying capacity of components. The illustration follows a curve which shows the current in relation to ambient temperature. Current carrying capacity is limited by the thermal characteristics of contacts and insulating elements which have an upper temperature limit which should not be exceeded.

## Current carrying capacity

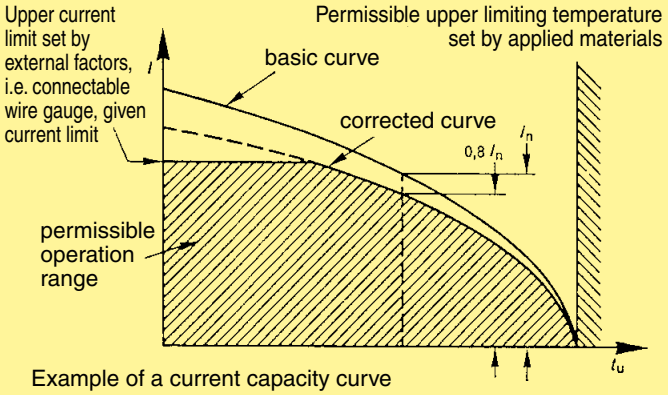
The current carrying capacity is determined in tests which are conducted on the basis of the DIN EN 60 512-5. The current carrying capacity is limited by the thermal properties of materials which are used for inserts as well as by the insulating materials. These components have a limiting temperature which should not be exceeded.

The relationship between the current, the temperature rise (loss at the contact resistance) and the ambient temperature of the connector is represented by a curve. On a linear coordinate system the current lies on the vertical line (ordinate) and the ambient temperature on the horizontal line (abscissa) which ends at the upper limiting temperature.

In another measurement the self-heating (Δt) at different currents is determined.

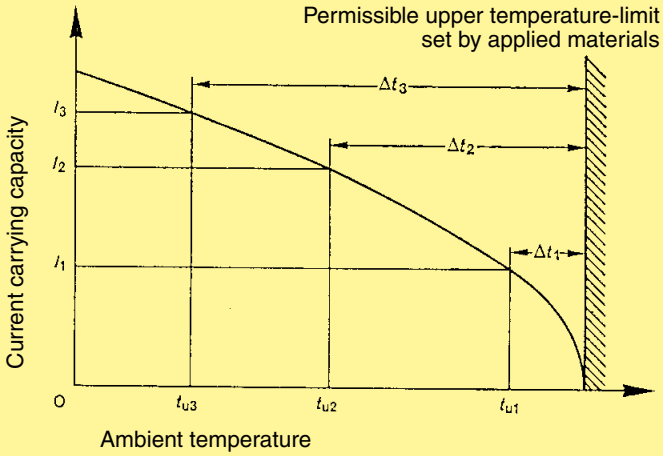
At least 3 points are determined which are connected to a parabolic curve, the basic curve.

The corrected current carrying capacity curve is derived from this basic curve. The reasons for the correction are external factors that bring an additional limitation to the current carrying capacity, i.e. connectable wire gauge or an unequal dispersion of current.




Example of a current capacity curve

Definition: The rated current is the continuous, not interrupted current a connector can take when simultaneous power on all contacts is given, without exceeding the maximum temperature.




Example of a current carrying curve

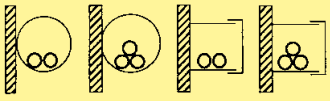
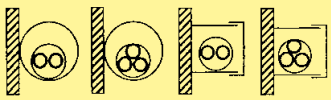
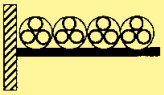
Acc. to DIN EN 61 984 the sum of ambient temperature and the temperature rise of a connector shall not exceed the upper limiting temperature. The limiting temperature is valid for a complete connector, that means insert plus housing.

As a result the insert gives the limit for the temperature of a complete connector and thus housings as well.

In practice it is not usual to load all terminals simultaneously with the maximum current. In such a case one contact can be loaded with a higher current as permitted by the current capacity curve, if less than 20 % of the whole is loaded.

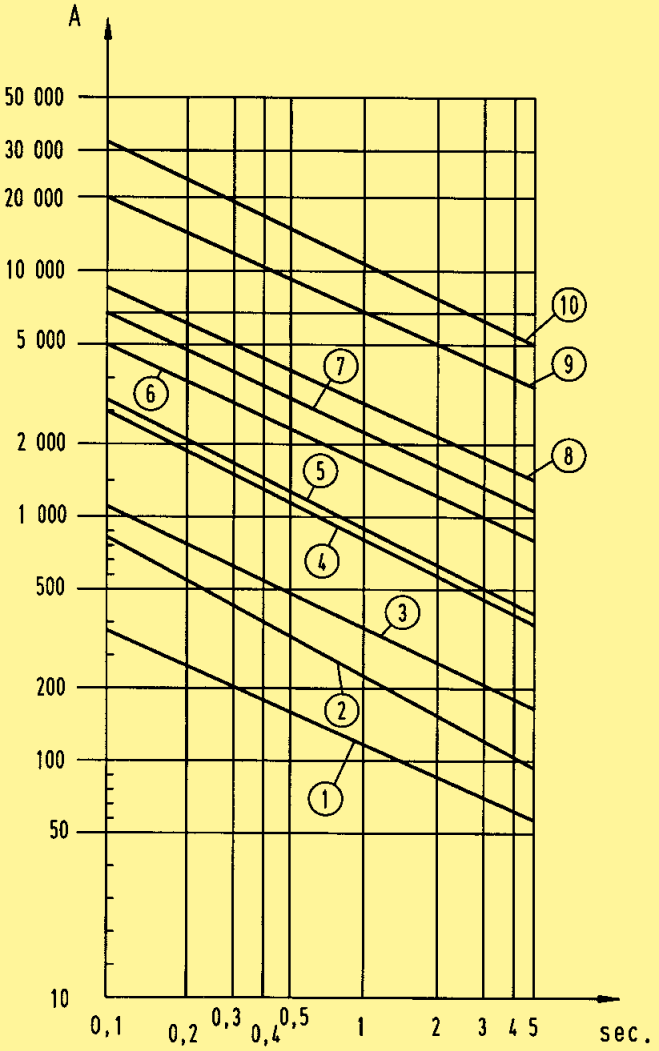
However, for these cases there are no universal rules. The limits have to be determined individually from case to case. It is recommended to proceed in accordance with the relevant rules of the DIN EN 60 512-5.

## Current carrying capacity of copper wires

| | Diameter [mm²] of single wires in a three-phase system | 0.75 | 1 | 1.5 | 2.5 | 4 | 6 | 10 | 16 | 25 | 35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type of installation | | | | | | | | | | |
| B1 |  Conductors/single core cables in conduit and cable trunking systems | 8.6 | 10.3 | 13.5 | 18.3 | 24 | 31 | 44 | 59 | 77 | 96 |
| B2 |  Cables in conduit and cable trunking systems | 8.5 | 10.1 | 13.1 | 17.4 | 23 | 30 | 40 | 54 | 70 | 86 |
| C |  Cables on walls | 9.8 | 11.7 | 15.2 | 21 | 28 | 36 | 50 | 66 | 84 | 104 |
| E |  Cables on open cable trays | 10.4 | 12.4 | 16.1 | 22 | 30 | 37 | 52 | 70 | 88 | 110 |
| | Depiction in accordance with DIN EN 60 204-1 for PVC-insulated copper wires in an ambient temperature of + 40 °C under permanent operating conditions. | | | | | | | | | | |
| | For different conditions and temperatures, installations, insulation materials or conductors the relevant corrections have to be carried out. | | | | | | | | | | |

## Transient current carrying capacity

A transient current in circuits can be generated by switching operations such as the starting of a motor or a short circuit in a faulty installation. This can cause thermal stress at the contact. These short and very high increases cannot be dissipated quickly and therefore a local heating effect at the contact is the result. Contact design is an important feature when transient currents are encountered. HARTING contacts are machined from solid material and are therefore relatively unaffected by short overloads when compared to stamped and formed designs. For guidance please see the table below.



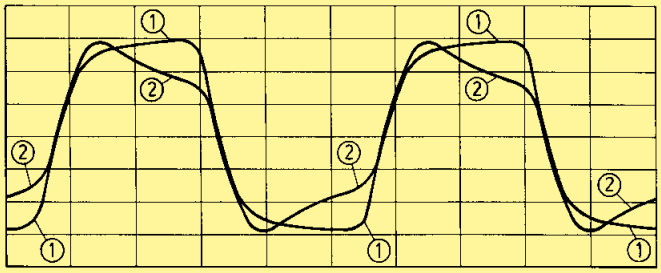

| | | |
|---|---|---|
| ① | Han D® | $I_N$ = 10 A |
| ② | Han® 3 A / 4 A | $I_N$ = 10 A |
| ③ | Han A® / Han E®, Han® ES, EE, Q 5/0 | $I_N$ = 16 A |
| ④ | Han® 6 HsB | $I_N$ = 35 A |
| ⑤ | Han® C/K axial | $I_N$ = 40 A |
| ⑥ | Han® K 4/8 | $I_N$ = 80 A |
| ⑦ | Han® K 6/6 | $I_N$ = 100 A |
| ⑧ | Han® K 3/0 | $I_N$ = 200 A |
| ⑨ | Han® HC-Modular 350 | $I_N$ = 350 A |
| ⑩ | Han® HC-Modular 650 | $I_N$ = 650 A |

Short circuit carrying capacity

## Low currents and voltages

HARTING's standard contacts have a silver plated surface. This precious metal has excellent conductive properties. In the course of a contact's lifetime, the silver surface generates a black oxide layer due to its affinity to sulphur. This layer is smooth and very thin and is partly interrupted when the contacts are mated and unmated, thus guaranteeing very low contact resistances. In the case of very low currents or voltages small changes to the transmitted signal may be encountered. This is illustrated below where an artifically aged contact representing a twenty year life is compared with a new contact.

In systems where such a change to the transmitted signal could lead to faulty functions and also in extremely aggressive environments, HARTING recommend the use of gold plated contacts.

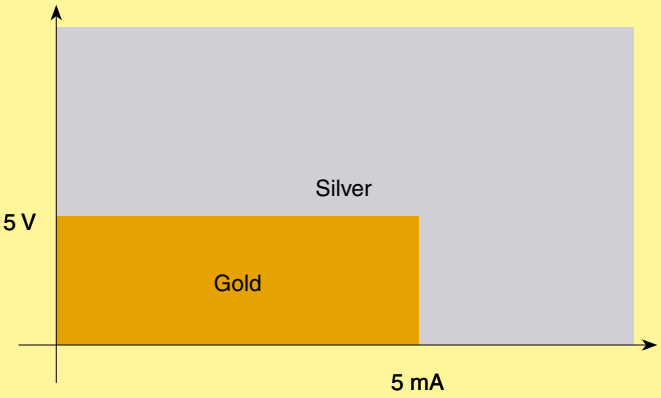



Changes to the transmitted signal after artifical ageing

① new contact

② after ageing

Below is a table derived from actual experiences.




Recommendation

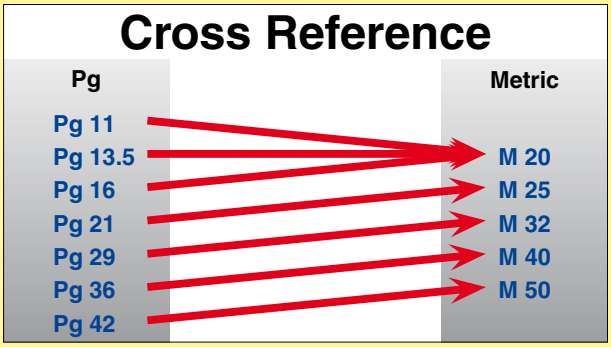
The reason for the new product offerings is the publication of the international DIN EN 50262 metric thread specification. The existing Pg series, Pg 7 to Pg 48 will be, in time, replaced by the metric series M 12 to M 63.

The adoption of metric threads considerably simplifies the understanding and specification of glands as the product type description contains the thread dimension. E.g. M 20 refers to 20 mm thread diameter.

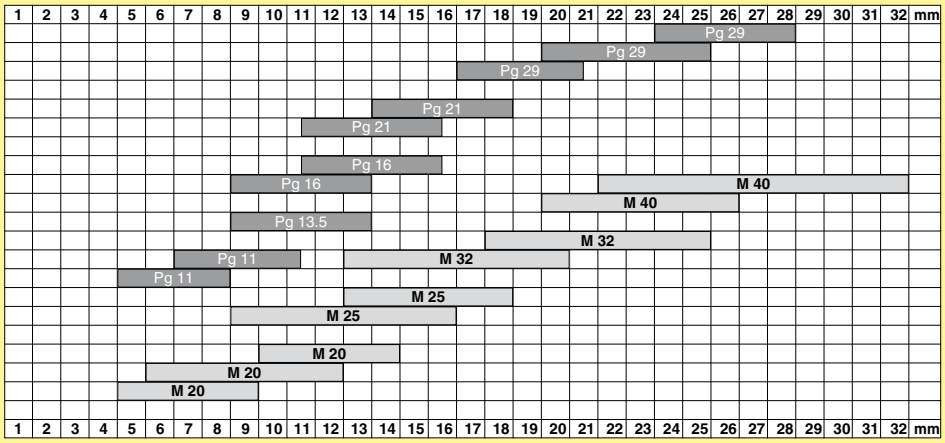
To differentiate the metric threaded hoods and housings from the previous Pg versions metric types will be marked with (M).

The Cross Reference table shows the correlation between the Pg versions and the new metric types.

Please notice that the maximum cable diameter will be reduced by the new metric cable glands.

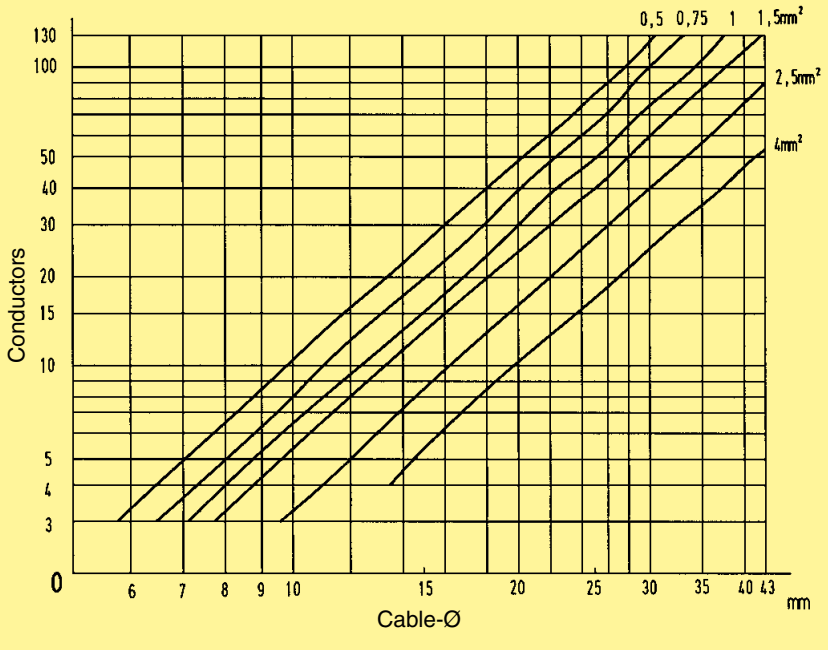



Below is shown the cable range of metric glands:




## Cable

The diagram shows different cable-diameters, being dependent on wire gauges and number of conductors.
All data are averages for commercial cables.



# Declaration of Conformity

*This Declaration of Conformity is suitable to the European Standard EN 45 014, „General criteria for suppliers declaration of conformity". The basis for the criteria has been found in international documentation, particulary in ISO/IEC Guide 22, 1996, „Information on manufacturers declaration of conformity with standards or other technical specifications".*

**HARTING KGaA**
**Marienwerderstr. 3**
**32339 Espelkamp**

**HARTING Electric GmbH & Co. KG**
**Wilhelm-Harting-Str. 1**
**32339 Espelkamp**

declare under our own responsibility that the product series of

**Heavy Duty Han® Connectors**

is in conformity with the following standard(s) or other normative documents:

**Connectors -**
**safety requirements and tests**
**IEC 61 984**

This declaration of conformity refers to the Han®-series

| | | |
|---|---|---|
| **Han A®** | **Han E®** | **Han® M** |
| **Han-Brid®** | **Han E® AV** | **Han-Modular®** |
| **Han-Com®** | **Han® EE** | **Han® Q** |
| **Han D®** | **Han® ES** | **Han® HPR** |
| **Han D® AV** | **Han® ESS** | **Han® B** |
| **Han DD®** | **Han® HsB** | **Han® HC Modular 350** |

Deutscher Akkreditierungs Rat
DAR
DAT-P-041/94

Our testing laboratory is accreditated and monitored by the German Accreditation Body Technology/ (DATech). Reg.-Nr. DAT-P-041/94

QUALITY SYSTEM
DQS
certified by DQS acc. to ISO 9001 - Reg.-Nr. 2204

Our quality system is certified and monitored by DQS in conformity with the standard DIN EN ISO 9001. Cert.-Nr. 2204-02

Espelkamp, 2010-08-09
Place and Date of publication

Dr. Georg Staperfeld
Director of Corporate Technology-Services, HARTING KGaA

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Place and Date of publication

Dipl.-Ing. Hartmut Schwettmann
Director of Marketing and Engineering, HARTING Electric GmbH & Co. KG

# Contents


| | Page |
|---|---|
| Technical characteristics Han A® | **01.02** |
| Technical characteristics Han® 3 A with *HARAX*® Termination | **01.04** |
| Han® 3 A, 3 A with *HARAX*® Termination | **01.05** |
| Han® 4 A | **01.06** |
| Han® 10 A | **01.07** |
| Han® 16 A | **01.08** |
| Han® 32 A | **01.09** |

## Features

- Metal and plastic version available
- Han® 3 A hoods/housings metal and plastic version available
- Han® 3 A / 4 A inserts also with Han-Quick Lock® termination technology available
- Han® 10 A and 16 A inserts available in crimp and screw termination
- For currents up to 10 A ( Han® 3 A / Han® 4 A) and 16 A (Han® 10 A / Han® 16 A )

## Specifications

DIN EN 60 664-1
DIN EN 61 984

Approvals

## Inserts

| | |
|---|---|
| Number of contacts | 3, 4, 10, 16, 32 (2x 16) + PE |
| Electrical data acc. to EN 61 984 | |
| Han® 3 A / Han® 4 A | **10 A 230/400 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage conductor - ground | 230 V |
| Rated voltage conductor - conductor | 400 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| or | 10 A 250 V 4 kV 3 |
| Han® 10 A / Han® 16 A | **16 A 250 V 4 kV 3** |
| Rated current | 16 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 230/400 V 4 kV 2 |
| Rated voltage acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

## Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-gold plated | 2 µm Au over 3 µm Ni |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal - min | 0,14 mm² / AWG 26 |
| Crimp terminal - max | 4 mm² / AWG 12 |
| Screw terminal - min | 1 mm² / AWG 18 |
| Screw terminal - max | 2,5 mm² / AWG 14 |
| Tightening/test torque | 0,25 Nm Han® 3 A / 4 A<br>0,5 Nm Han® 10 A / 16 A |
| Han-Quick Lock® - min | 0,5 mm² / AWG 20 |
| Han-Quick Lock® - max | 2,5 mm² / AWG 14 |

## Hoods/Housings, thermoplastic Han® 3 A / Han® 4 A

| | |
|---|---|
| Material | polycarbonate RAL 7032 |
| Locking element | Polyamide RAL 7032 |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 / IP 67 |

## Hoods/Housings, metal

| | |
|---|---|
| Material Han® 3 A / 4 A | zinc die-cast |
| Material Han® 10 A / 16 A | aluminium die-cast |
| Locking element | |
| Han® 3 A / 4 A | steel, zinc-plated |
| Han® 10 A / 16 A | Han-Easy Lock® |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | |
| Han® 3 A / 4 A | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |
| Han® 10 A / 16 A | IP 65 |

Further selection of hoods/housings see chapter 30 / chapter 31

## Accessories

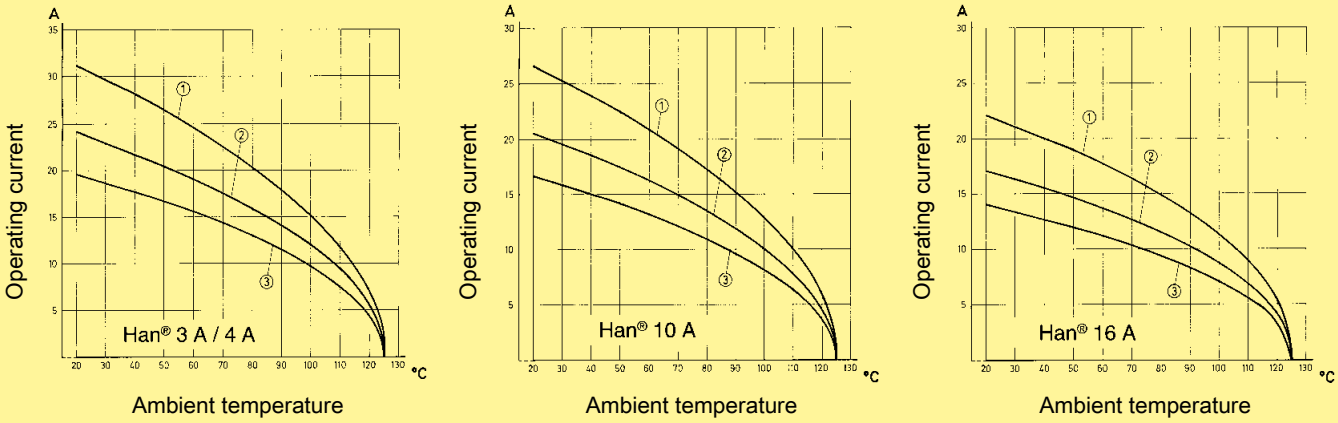
| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Sealing screw | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Assembly plates for test connector | chapter 40 |

## Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5



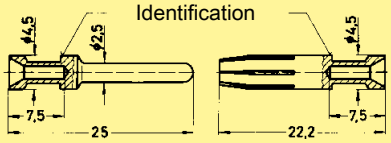



① Wire gauge 2.5 mm²
② Wire gauge 1.5 mm²
③ Wire gauge 1.0 mm²

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact |
|---|---|---|---|
| **Crimp contacts** | | | |
| silver plated | 0,14-0,37 | 09 33 000 6127 | 09 33 000 6227 |
| | 0,5 | **09 33 000 6121** | **09 33 000 6220** |
| | 0,75 | **09 33 000 6114** | **09 33 000 6214** |
| | 1 | **09 33 000 6105** | **09 33 000 6205** |
| | 1,5 | **09 33 000 6104** | **09 33 000 6204** |
| | 2,5 | **09 33 000 6102** | **09 33 000 6202** |
| | 3 | 09 33 000 6106 | 09 33 000 6206 |
| | 4 | **09 33 000 6107** | **09 33 000 6207** |
| gold plated | 0,14-0,37 | **09 33 000 6117** | **09 33 000 6217** |
| | 0,5 | **09 33 000 6122** | **09 33 000 6222** |
| | 0,75 | **09 33 000 6115** | **09 33 000 6215** |
| | 1 | **09 33 000 6118** | **09 33 000 6218** |
| | 1,5 | **09 33 000 6116** | **09 33 000 6216** |
| | 2,5 | **09 33 000 6123** | **09 33 000 6223** |
| | 4 | 09 33 000 6119 | **09 33 000 6221** |

Drawing — Dimensions in mm

Operating contact
Identification




| Identification | Wire gauge | | Stripping length |
|---|---|---|---|
| no groove | 0,14-0,37 mm² | AWG 26-22 | 7,5 mm |
| no groove | 0,5 mm² | AWG 20 | 7,5 mm |
| 1 groove* | 0,75 mm² | AWG 18 | 7,5 mm |
| 1 groove | 1 mm² | AWG 18 | 7,5 mm |
| 2 grooves | 1,5 mm² | AWG 16 | 7,5 mm |
| 3 grooves | 2,5 mm² | AWG 14 | 7,5 mm |
| wide groove | 3 mm² | AWG 12 | 7,5 mm |
| no groove | 4 mm² | AWG 12 | 7,5 mm |

* on the back crimp collar



Stock items in bold type

Features

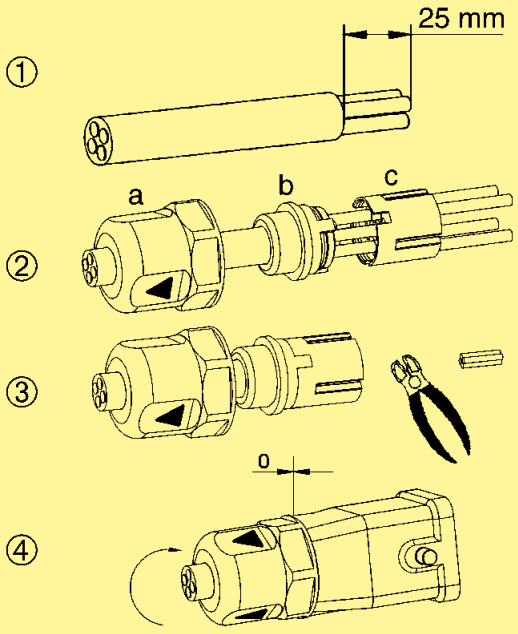
- Time saving rapid termination technique *HARAX*®
- Advantages of *HARAX*® first in an industrial connector
- Reconnection to the same or bigger wire gauge up to 10 times
- No special tools required

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 352-4<br>DIN EN 60 664-1 |
| Approvals | |

Technical characteristics

| | |
|---|---|
| Conductor cross section | 0,75 - 1,5 mm² |
| Cable outside diameter | 6 - 9 mm |
| Wire diameter | ≤ 2,8 mm |
| Wire of ind. strands | ≥ 0,2 mm |
| Insulation material | PVC |
| Degree of protection | IP 65 / IP 67 |
| Rated current | 10 A |
| Rated voltage | 230 / 400 V |
| Tightening torque of screw cap | 8 Nm |
| Limiting temperatures | -40 °C ... +85 °C |

## Assembly instructions




1. Strip off cable mantle
2. Assemble *HARAX*® elements
3. Cut off cable ends
4. The nut must be screwed completely down until the notches engage on the contact carrier nut latch

a = Screw cap

b = Sealing

c = Splice ring

Included in delivery:
Screw cap, sealing, splice ring

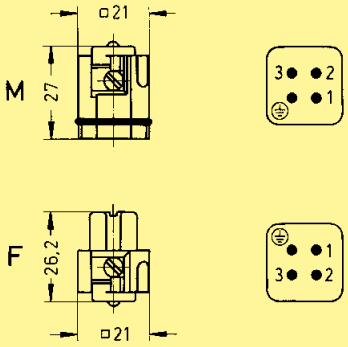
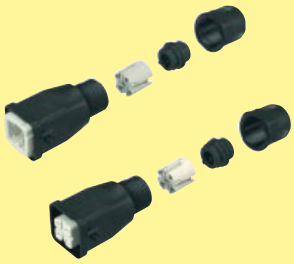
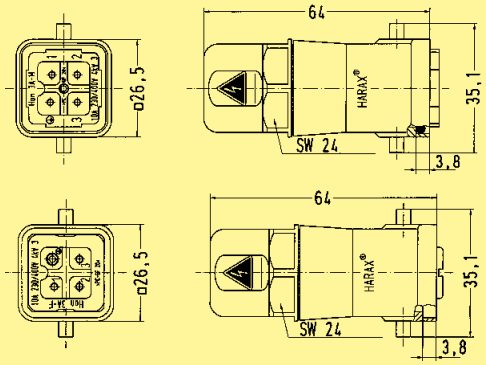
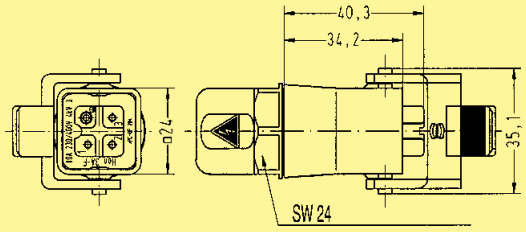
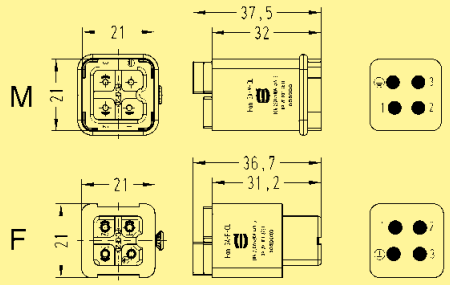
Number of contacts

3 + ⏚





Inserts

| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Screw terminal  | Han A® | **09 20 003 2611** | **09 20 003 2711** | Contact arrangement view from termination side  | |
| *HARAX*® termination  | Han A® | 09 20 003 0440 | 09 20 003 0445 |  | |
| Hood cable to cable with *HARAX*® termination  | Han A® | | 09 20 003 0745 |  | |
| Quick Lock terminal  | Han A® | 09 20 003 2633 | 09 20 003 2733 |  | |



Stock items in bold type

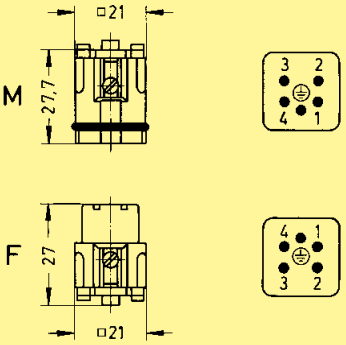
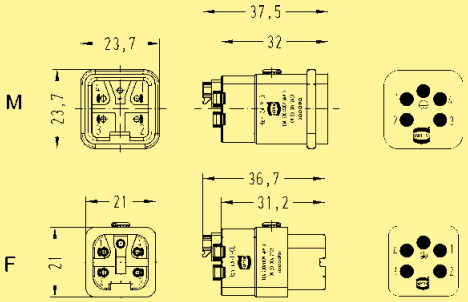


Number of contacts

4 + ⏚



Inserts

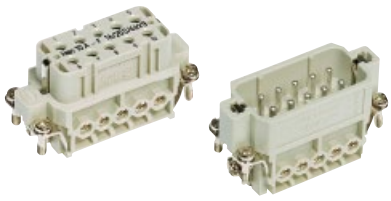
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Screw terminal  | Han A® | **09 20 004 2611** | **09 20 004 2711** | Contact arrangement view from termination side   | |
| Quick Lock termination  | Han A® | **09 20 004 2633** | **09 20 004 2733** | Contact arrangement view from termination side   | |



Stock items in bold type

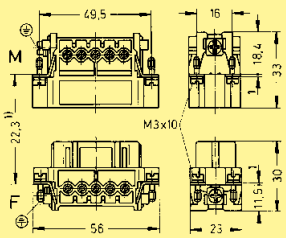
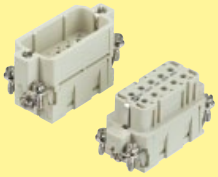
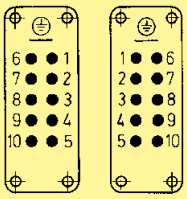
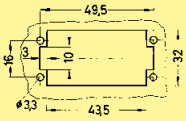
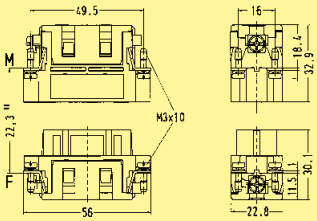
Number of contacts

10 + ⏚





Inserts

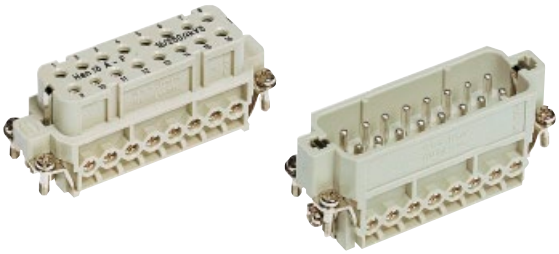
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Screw terminal  | Han A® | **09 20 010 2612** | **09 20 010 2812** | Screw terminal   1) Distance for contact max. 24 mm | |
| Crimp terminal<br>Order crimp contacts separately (see Technical characteristics on page 01.03)  | Han A® | 09 20 010 3001 | **09 20 010 3101** | Contact arrangement<br>view from termination side   Panel cut out for inserts<br>for use without hoods/housings   Crimp terminal   1) Distance for contact max. 24 mm | |



Stock items in bold type

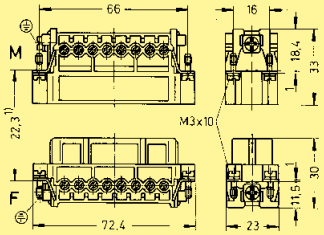
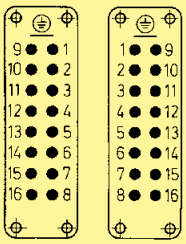
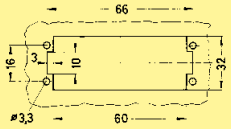
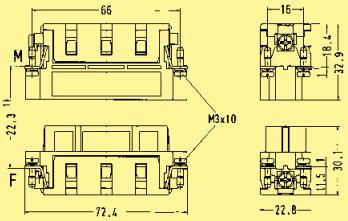
Number of contacts

# 16 + ⏚





## Inserts

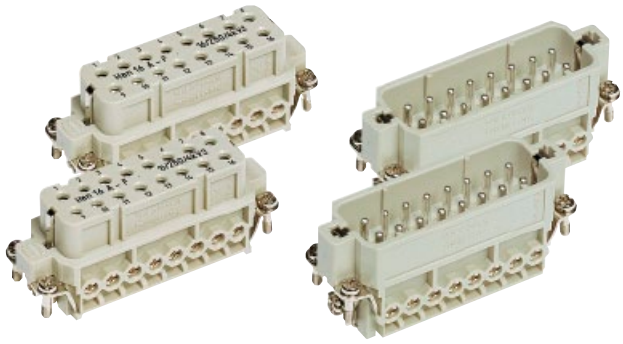
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Screw terminal  | Han A® | **09 20 016 2612** | **09 20 016 2812** | Screw terminal   1) Distance for contact max. 24 mm Contact arrangement view from termination side   Panel cut out for inserts for use without hoods/housings   Crimp terminal   1) Distance for contact max. 24 mm | |
| Crimp terminal<br>Order crimp contacts separately (see Technical characteristics on page 01.03)  | Han A® | **09 20 016 3001** | **09 20 016 3101** | | |



**Stock items in bold type**

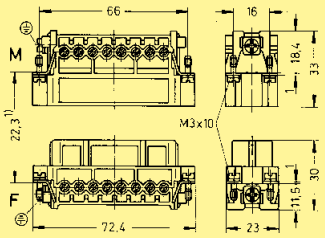
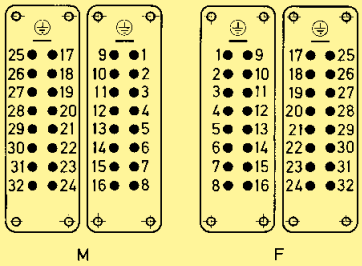
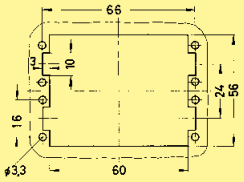
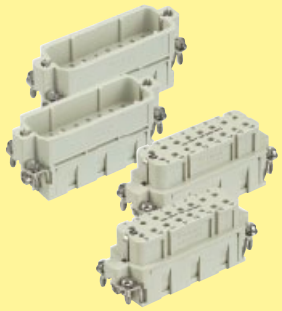
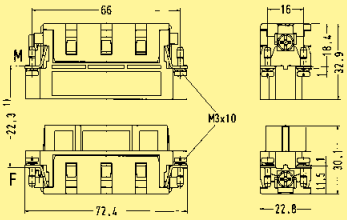
Number of contacts

# 32 + ⏚





Inserts

| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Screw terminal  | Han A® 1 - 16<br>17 - 32 | **09 20 016 2612**<br>**09 20 016 2613** | **09 20 016 2812**<br>**09 20 016 2813** | Screw terminal   1) Distance for contact max. 24 mm<br>Contact arrangement view from termination side   Panel cut out for inserts for use without hoods/housings   | |
| Crimp terminal<br>Order crimp contacts separately (see Technical characteristics on page 01.03)  | Han A® 1 - 16<br>17 - 32 | **09 20 016 3001**<br>09 20 016 3011 | **09 20 016 3101**<br>09 20 016 3111 | Crimp terminal   1) Distance for contact max. 24 mm | |



Stock items in bold type



Wind turbine
ENERCON Electric GmbH, Aurich, Germany

## Contents


| | Page |
|---|---|
| Technical characteristics Han D® | 02.02 |
| Technical characteristics Han DD® | 02.05 |
| Han® 7 D | 02.07 |
| Han® 8 D | 02.08 |
| Han® 15 D | 02.09 |
| Han® 25 D | 02.10 |
| Han® 50 D | 02.11 |
| Han® 24 DD | 02.12 |
| Han® 42 DD | 02.13 |
| Han® 40 D | 02.14 |
| Han® 72 DD | 02.15 |
| Han® 64 D | 02.16 |
| Han® 108 DD | 02.17 |
| Han® 80 D | 02.18 |
| Han® 144 DD | 02.19 |
| Han® 128 D | 02.20 |
| Han® 216 DD | 02.21 |
| Modified contact arrangements | 02.22 |
| Accessories | 02.23 |

## Features

- High density of crimping contacts, up to 128 contacts / connector
- Time saving rapid termination by use of crimping contacts
- For requirements up to 250 V / 10 A
- Gold and silver contacts available
- Suitable for thermo- and 1 mm F.O. contacts

## Specifications

DIN EN 175 301-801
DIN EN 60 664-1
DIN EN 61 984

## Approvals

## Inserts

| | |
|---|---|
| Number of contacts | 7, 15, 25, 40, 50, 64, 80, 128, 50 (2x 25), 80 (2x 40), 128 (2x 64) + PE |
| Electrical data acc. to EN 61 984 | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 10 A 230/400 V 4 kV 2 |
| Rated voltage acc. to UL/CSA | 600 V |
| Rated voltage for wrap terminal acc. to CSA | 2 A 30 V |

Contact arrangement for higher voltage see page 02.22

| | |
|---|---|
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polyamide |
| - Han® 40 D/Han® 64 D | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | HB |
| - Han® 40 D/Han® 64 D | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

## Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-gold plated | 2 µm Au over 3 µm Ni |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal - min | 0.14 mm² / AWG 26 |
| Crimp terminal - max | 2.5 mm² / AWG 14 |
| Wire wrap terminal | 1 x 1 mm - length 22 mm Diagonal 1.34 - 1.45 mm Contact spacing 5.08 mm (40 + 64 poles) Contact spacing 5.3 mm (15 + 25 poles) |
| Han-Quick Lock® - min | 0.25 mm² / AWG 24 |
| Han-Quick Lock® - max | 1.5 mm² / AWG 16 |

## Hoods/Housings

| | |
|---|---|
| Material | aluminium die-cast |
| Surface | powder coated RAL 7037 (grey) |
| Locking element | Han-Easy Lock® |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

Variants for Han® 3 A housings (see page 02.03)

| | |
|---|---|
| Material | polycarbonate RAL 7032 (light grey) |
| Locking element | Polyamide RAL 7032 (light grey) |

## Accessories

| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |
| Assembly plates for test connector | chapter 40 |

ATTENTION!
Guide pins and bushes are prescribed for the following connectors: 15, 25, 40, 50, 64, 80 and 128 poles (see chapter 40).

## Features

- High density of crimping contacts, up to 8 contacts / connector
- Time saving rapid termination by use of crimping contacts
- For requirements up to ~ 50 V / ⎓ 120 V / 10 A
- Gold and silver contacts available
- Suitable for thermo- and 1 mm F.O. contacts

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984<br>DIN EN 175 301-801 |
| Approvals | |

## Inserts

| | |
|---|---|
| Number of contacts | 8 |
| Electrical data acc. to EN 61 984 | **10 A ~50 V / – 120 V 0.8 kV 3** |
| Rated current | 10 A |
| Rated voltage | ~ 50 V |
| Rated voltage DC | – 120 V |
| Rated impulse voltage | 0.8 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 50 V |
| Rated voltage (direct voltage) | 120 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polyamide |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | HB |
| Mechanical working life - mating cycles | ≥ 500 |

## Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-gold plated | 2 µm Au over 3 µm Ni |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal - min | 0.14 mm² / AWG 26 |
| Crimp terminal - max | 2.5 mm² / AWG 14 |
| Han-Quick Lock® - min | 0.25 mm² / AWG 24 |
| Han-Quick Lock® - max | 1.5 mm² / AWG 16 |

## Hoods/Housings Han® 3 A

Thermoplastic

| | |
|---|---|
| Material | polycarbonate |
| Surface | RAL 7032 (light grey)<br>RAL 9005 (black) |
| Locking element | lever, plastic |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 / IP 67 |

Metal

| | |
|---|---|
| Material | zinc die-cast |
| Surface | powder coated<br>RAL 7037 (grey) |
| Locking element | lever, metal |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

## Accessories

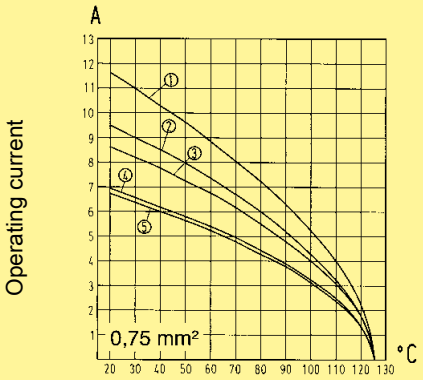
| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |
| Assembly plates for test connector | chapter 40 |

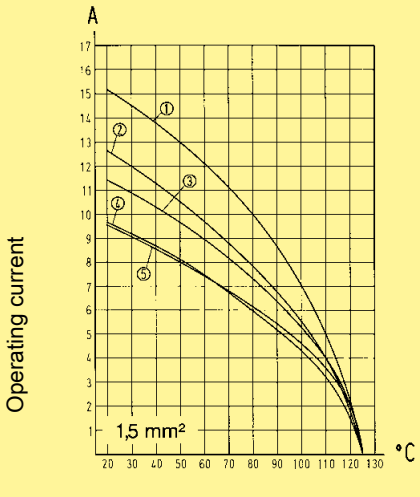
## Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5



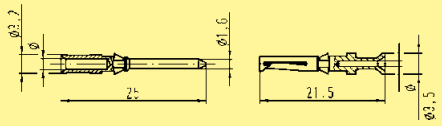



① Han® 7 D
② Han® 15 D
③ Han® 25 D
④ Han® 40 D
⑤ Han® 64 D

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact |
|---|---|---|---|
| **Crimp contacts** | | | |
| silver plated | 0.14-0.37 | **09 15 000 6104** | **09 15 000 6204** |
| | 0.5 | **09 15 000 6103** | **09 15 000 6203** |
| | 0.75 | **09 15 000 6105** | **09 15 000 6205** |
| | 1 | **09 15 000 6102** | **09 15 000 6202** |
| | 1.5 | **09 15 000 6101** | **09 15 000 6201** |
| | 2.5 | **09 15 000 6106** | **09 15 000 6206** |
| gold plated | 0.14-0.37 | **09 15 000 6124** | **09 15 000 6224** |
| | 0.5 | **09 15 000 6123** | **09 15 000 6223** |
| | 0.75 | **09 15 000 6125** | **09 15 000 6225** |
| | 1 | **09 15 000 6122** | **09 15 000 6222** |
| | 1.5 | **09 15 000 6121** | **09 15 000 6221** |
| | 2.5 | **09 15 000 6126** | **09 15 000 6226** |
| **F.O. contacts** | | | |
| for 1 mm plastic fibre | | **20 10 001 3212** | **20 10 001 3222** |
| | | **20 10 001 3213** | **20 10 001 3222** |

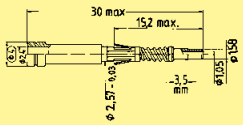
Drawing



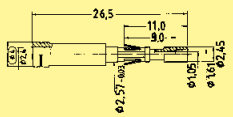
Dimensions in mm

| Wire gauge | | D | Stripping length |
|---|---|---|---|
| 0.14-0.37 mm² | AWG 26-22 | 0.9 mm | 8 mm |
| 0.5 mm² | AWG 20 | 1.1 mm | 8 mm |
| 0.75 mm² | AWG 18 | 1.3 mm | 8 mm |
| 1 mm² | AWG 18 | 1.45 mm | 8 mm |
| 1.5 mm² | AWG 16 | 1.75 mm | 8 mm |
| 2.5 mm² | AWG 14 | 2.25 mm | 6 mm |

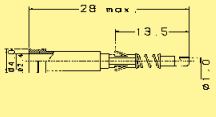
20 10 001 3212



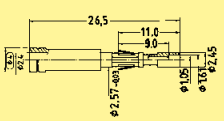
20 10 001 3222



20 10 001 3213



20 10 001 3222



| Part number | Series |
|---|---|
| 20 10 001 3212 | Han® 7 D, Han® 8 D, Han® 40 D, Han® 64 D, Han® 80 D, Han® 128 D |
| 20 10 001 3213 | Han® 15 D, Han® 25 D, Han® 50 D |
| 20 10 001 3222 | Han® 7 D, Han® 8 D, Han® 15 D, Han® 25 D, Han® 50 D, Han® 40 D, Han® 64 D, Han® 80 D, Han® 128 D |



**Stock items in bold type**

## Features

- High density of crimping contacts, up to 216 contacts/connector
- Time saving rapid termination by use of crimping contacts
- For requirements up to 250 V / 10 A
- Gold and silver contacts available
- Suitable for thermo- and 1 mm F.O. contacts

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

## Inserts

| | |
|---|---|
| Number of contacts | 24, 42, 72, 108, 144, 216, 144 (2x 72), 216 (2x 108) + PE |
| Electrical data acc. to EN 61 984 | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 10 A 230/400 V 4 kV 2 |
| Rated voltage acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

## Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-gold plated | 2 µm Au over 3 µm Ni |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal - min | 0.14 mm² / AWG 26 |
| Crimp terminal - max | 2.5 mm² / AWG 14 |

## Hoods/Housings

| | |
|---|---|
| Material | aluminium die-cast |
| Surface | powder coated RAL 7037 (grey) |
| Locking element | Han-Easy Lock® |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C / 125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

## Accessories

| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |
| Assembly plates for test connector | chapter 40 |

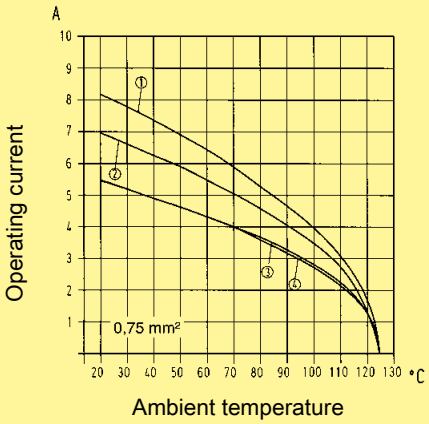
ATTENTION!
Guide pins and bushes are prescribed for the following connectors: 15, 25, 40, 50, 64, 80 and 128 poles (see chapter 40).

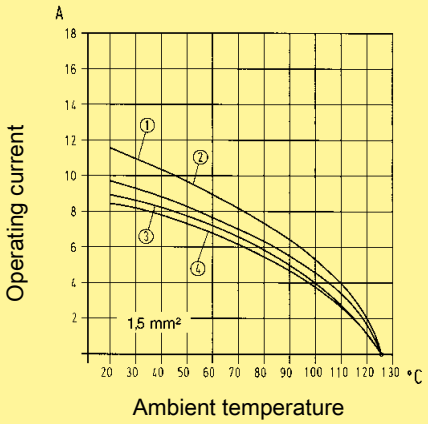
## Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5



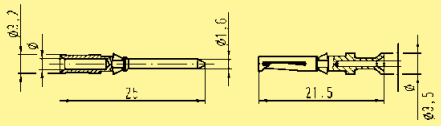



① Han® 24 DD
② Han® 42 DD
③ Han® 72 DD
④ Han® 108 DD

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact |
|---|---|---|---|
| **Crimp contacts** | | | |
| silver plated | 0.14-0.37 | **09 15 000 6104** | **09 15 000 6204** |
| | 0.5 | **09 15 000 6103** | **09 15 000 6203** |
| | 0.75 | **09 15 000 6105** | **09 15 000 6205** |
| | 1 | **09 15 000 6102** | **09 15 000 6202** |
| | 1.5 | **09 15 000 6101** | **09 15 000 6201** |
| | 2.5 | **09 15 000 6106** | **09 15 000 6206** |
| gold plated | 0.14-0.37 | **09 15 000 6124** | **09 15 000 6224** |
| | 0.5 | **09 15 000 6123** | **09 15 000 6223** |
| | 0.75 | **09 15 000 6125** | **09 15 000 6225** |
| | 1 | **09 15 000 6122** | **09 15 000 6222** |
| | 1.5 | **09 15 000 6121** | **09 15 000 6221** |
| | 2.5 | **09 15 000 6126** | **09 15 000 6226** |
| **F.O. contacts** | | | |
| for 1 mm plastic fibre | | **20 10 001 3211** | **20 10 001 3221** |

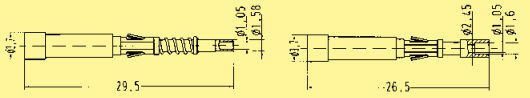
Drawing




Dimensions in mm

| Wire gauge | | D | Stripping length |
|---|---|---|---|
| 0.14-0.37 mm² | AWG 26-22 | 0.9 mm | 8 mm |
| 0.5 mm² | AWG 20 | 1.1 mm | 8 mm |
| 0.75 mm² | AWG 18 | 1.3 mm | 8 mm |
| 1 mm² | AWG 18 | 1.45 mm | 8 mm |
| 1.5 mm² | AWG 16 | 1.75 mm | 8 mm |
| 2.5 mm² | AWG 14 | 2.25 mm | 6 mm |

20 10 001 3211 20 10 001 3221



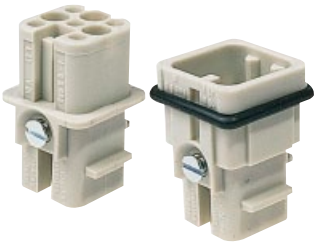

| Part number | Series |
|---|---|
| 20 10 001 3211 | Han® 24 DD, Han® 42 DD, Han® 72 DD, Han® 144 DD, Han® 108 DD, Han® 216 DD |
| 20 10 001 3221 | Han® 24 DD, Han® 42 DD, Han® 72 DD, Han® 144 DD, Han® 108 DD, Han® 216 DD |



**Stock items in bold type**

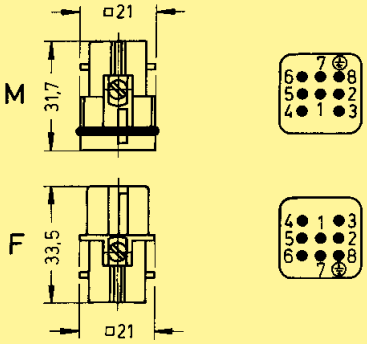
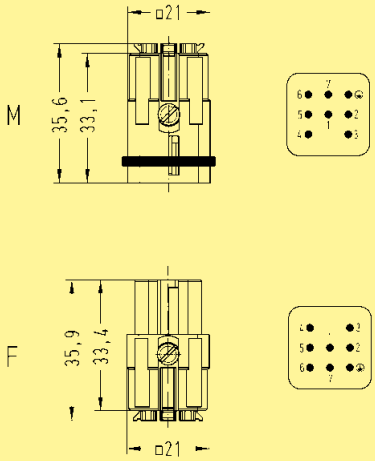
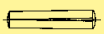
Number of contacts

7 + ⏚





## Inserts

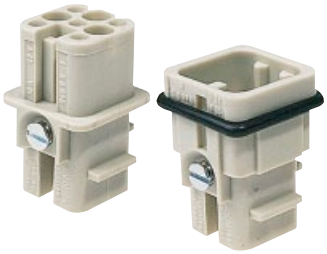
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately (see Technical characteristics on page 02.04)<br><br>Attention<br>Only for thermoplastic hoods/housings | Han D® | **09 21 007 3031** | **09 21 007 3131** | Contact arrangement view from termination side<br> | |
| Han® 7 D Quick Lock<br><br>Attention<br>Only for thermoplastic hoods/housings | Han D® | **09 21 007 2632** | **09 21 007 2732** | Contact arrangement view from termination side<br> | |
| Coding pin<br> | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | |



Stock items in bold type

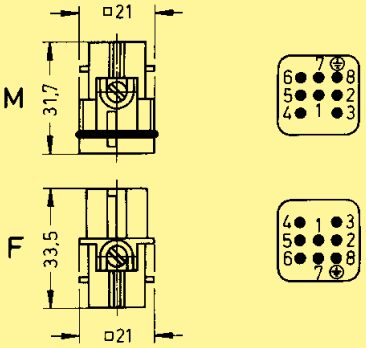
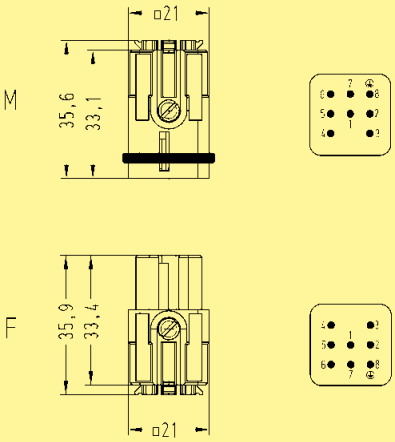
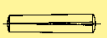
Number of contacts

# 8





## Inserts

| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately (see Technical characteristics on page 02.04)<br><br>For thermoplastics and metal hoods/housings | Han D® | **09 36 008 3001** | **09 36 008 3101** | Contact arrangement view from termination side<br> | |
| Han® 8 D Quick Lock<br><br>For thermoplastics and metal hoods/housings | Han D® | **09 36 008 2632** | **09 36 008 2732** | Contact arrangement view from termination side<br> | |
| Coding pin<br> | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | |



Stock items in bold type

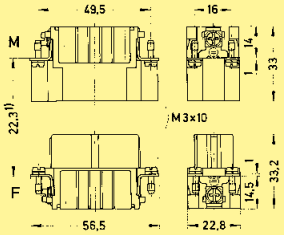
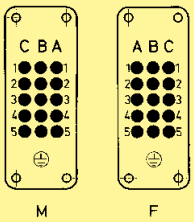
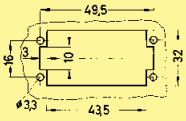
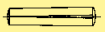
Number of contacts

15 + ⏚



Inserts



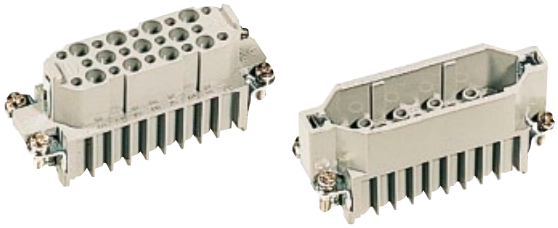
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 02.04)<br> | Han D® | **09 21 015 3001** | **09 21 015 3101** | <br>1) Distance for contact max. 24 mm<br>Contact arrangement<br>view from termination side<br><br>Panel cut out for inserts<br>for use without hoods/housings<br> | |
| **Wrap terminal**<br>1 x 1 mm<br> | | 09 21 015 2601 | 09 21 015 2701 | | |
| **Coding pin**<br> | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | |



Stock items in bold type

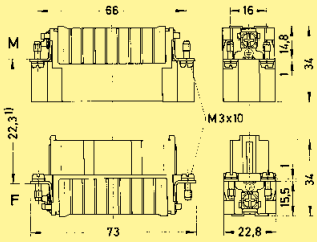
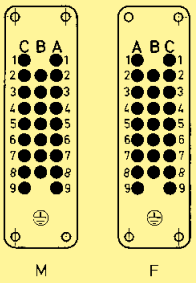
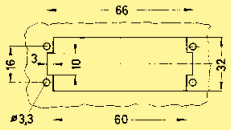
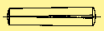
Number of contacts

# 25 + ⏚



Han D / DD

## Inserts

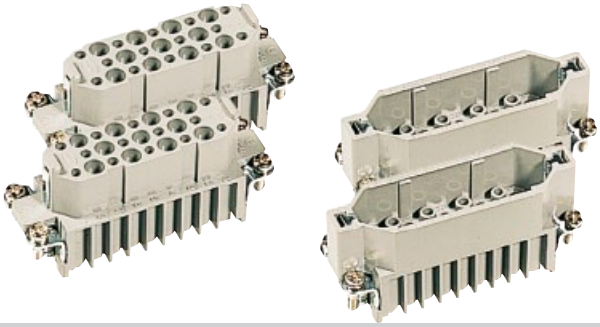
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 02.04) | Han D® | **09 21 025 3001** | **09 21 025 3101** | <br>1) Distance for contact max. 24 mm<br>Contact arrangement<br>view from termination side | |
| **Wrap terminal**<br>1 x 1 mm | | 09 21 025 2601 | 09 21 025 2701 | <br>Panel cut out for inserts<br>for use without hoods/housings<br> | |
| **Coding pin** | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | |



Stock items in bold type

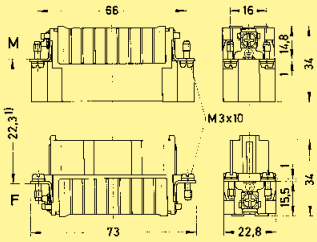
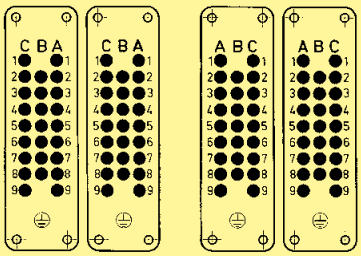
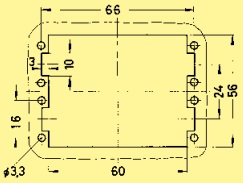
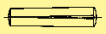
Number of contacts

# 50 + ⏚



Inserts



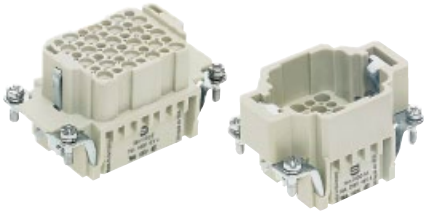
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 02.04) | Han D®<br><br>1 - 25<br>1 - 25 | <br><br>**09 21 025 3001**<br>**09 21 025 3001** | <br><br>**09 21 025 3101**<br>**09 21 025 3101** | <br>1) Distance for contact max. 24 mm<br><br>Contact arrangement<br>view from termination side<br><br>M F<br><br>Panel cut out for inserts<br>for use without hoods/housings<br> | |
| **Wrap terminal**<br>1 x 1 mm | <br><br>1 - 25<br>1 - 25 | <br><br>09 21 025 2601<br>09 21 025 2601 | <br><br>09 21 025 2701<br>09 21 025 2701 | | |
| **Coding pin** | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | |



Stock items in bold type

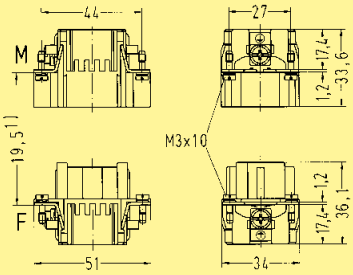
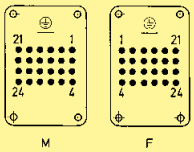
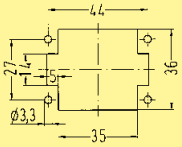
Number of contacts

24 + ⏚





## Inserts

| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing / Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 02.06)<br> | Han DD® | **09 16 024 3001** | **09 16 024 3101** | <br>1) Distance for contact max. 21 mm<br>Contact arrangement<br>view from termination side<br><br>Panel cut out for inserts<br>for use without hoods/housings<br> |
| **Coding pin**<br> | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. |



Stock items in bold type

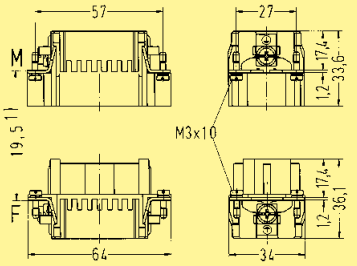
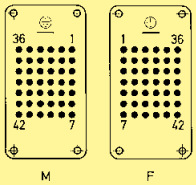
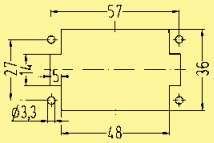
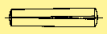
Number of contacts

42 + ⏚





## Inserts

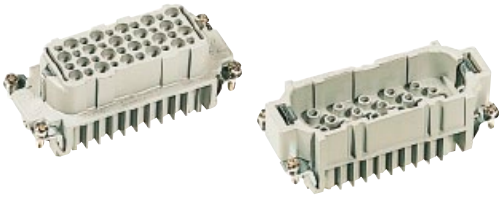
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 02.06)<br> | Han DD® | **09 16 042 3001** | **09 16 042 3101** | <br>1) Distance for contact max. 21 mm<br>Contact arrangement<br>view from termination side<br><br>Panel cut out for inserts<br>for use without hoods/housings<br> | |
| **Coding pin**<br> | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | |



Stock items in bold type

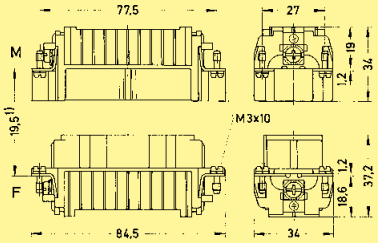
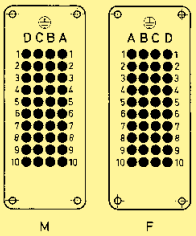
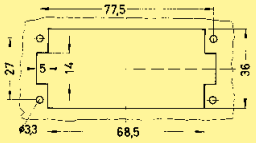
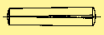
Number of contacts

# 40 + ⏚



Han D / DD

## Inserts

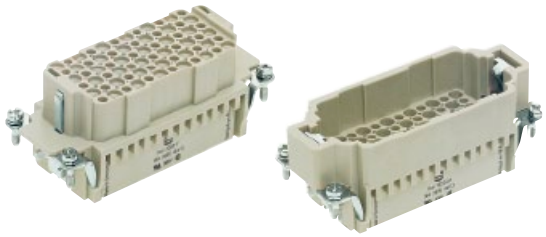
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing / Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 02.04) | Han D® | **09 21 040 3001** | **09 21 040 3101** | <br>1) Distance for contact max. 21 mm<br><br>Contact arrangement<br>view from termination side<br><br>Panel cut out for inserts<br>for use without hoods/housings<br> |
| **Wrap terminal**<br>1 x 1 mm | | 09 21 040 2601 | 09 21 040 2701 | |
| **Coding pin** | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. |



Stock items in bold type

Number of contacts

72 + ⏚

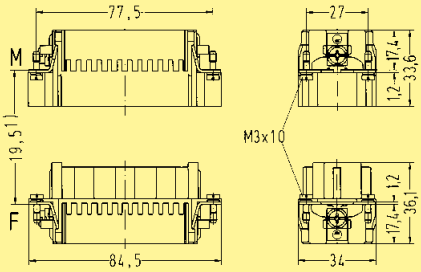


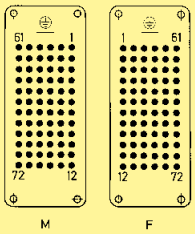
Inserts

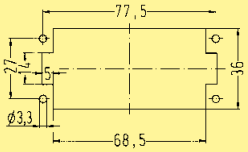


| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing / Dimensions in mm |
|---|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately (see Technical characteristics on page 02.06) | Han DD® | **09 16 072 3001** | **09 16 072 3101** | 1) Distance for contact max. 21 mm<br>Contact arrangement view from termination side<br>Panel cut out for inserts for use without hoods/housings |
| Coding pin | | | 09 33 000 9915 | Coding pin<br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. |





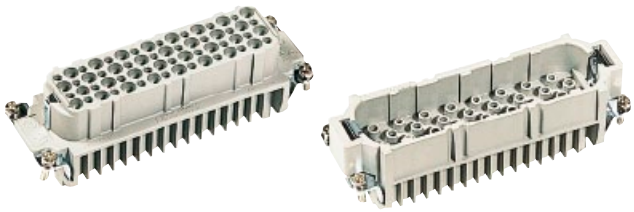





Stock items in bold type

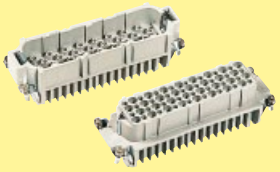
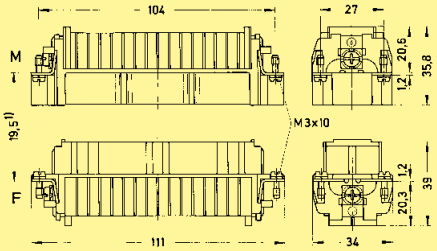
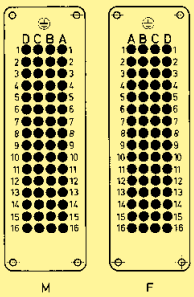
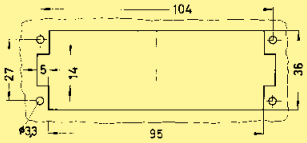
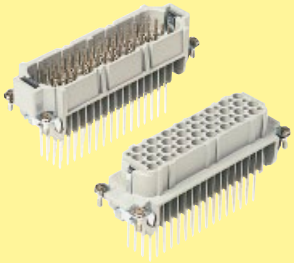
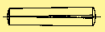
Number of contacts

# 64 + ⏚





## Inserts

| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 02.04)<br> | Han D® | **09 21 064 3001** | **09 21 064 3101** | <br>1) Distance for contact max. 21 mm<br>Contact arrangement<br>view from termination side<br><br>Panel cut out for inserts<br>for use without hoods/housings<br> | |
| **Wrap terminal**<br>1 x 1 mm<br> | | 09 21 064 2601 | 09 21 064 2701 | | |
| **Coding pin**<br> | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | |



Stock items in bold type

Number of contacts

# 108 + ⏚





## Inserts

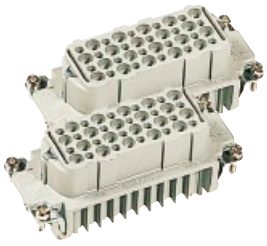
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing / Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 02.06) | Han DD® | **09 16 108 3001** | **09 16 108 3101** | 1) Distance for contact max. 21 mm<br>Contact arrangement view from termination side<br>Panel cut out for inserts for use without hoods/housings |
| **Coding pin** | | | 09 33 000 9915 | Coding pin<br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. |



Stock items in bold type

Number of contacts

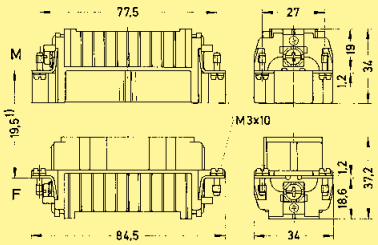
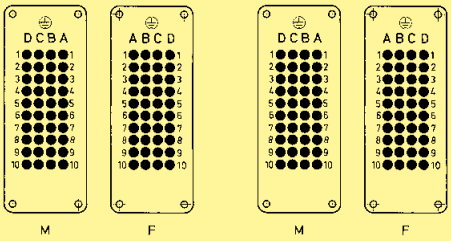
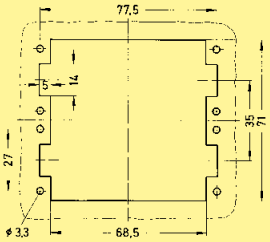
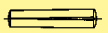
# 80 + ⏚







## Inserts

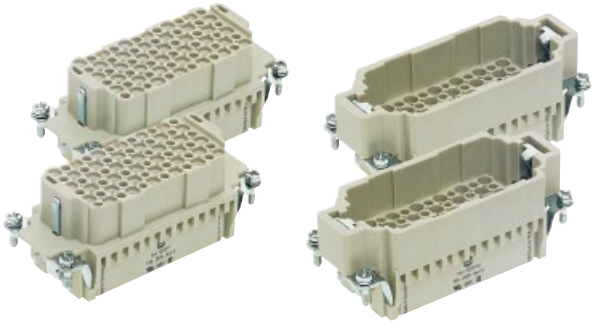
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 02.04) | Han D®<br>1 - 40<br>1 - 40 | **09 21 040 3001**<br>**09 21 040 3001** | **09 21 040 3101**<br>**09 21 040 3101** | <br>1) Distance for contact max. 21 mm<br>Contact arrangement<br>view from termination side<br><br>Panel cut out for inserts<br>for use without hoods/housings<br> | |
| **Wrap terminal**<br>1 x 1 mm<br> | 1 - 40<br>1 - 40 | 09 21 040 2601<br>09 21 040 2601 | 09 21 040 2701<br>09 21 040 2701 | | |
| **Coding pin**<br> | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | |



Stock items in bold type

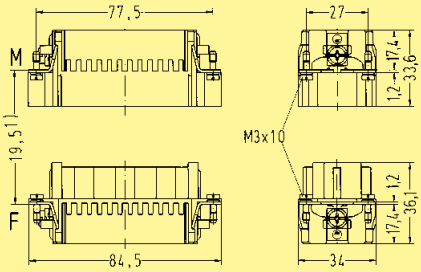
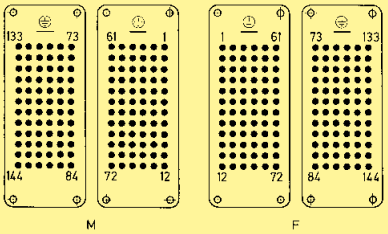
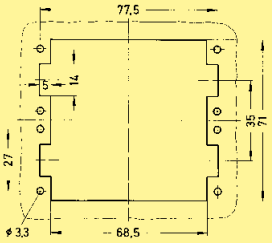
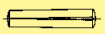
Number of contacts

# 144 + ⏚



Inserts



| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 02.06) | Han DD®<br><br>1 - 72<br>73 - 144 | **09 16 072 3001**<br>09 16 072 3011 | **09 16 072 3101**<br>09 16 072 3111 | <br>1) Distance for contact max. 21 mm<br><br>Contact arrangement<br>view from termination side<br><br>Panel cut out for inserts<br>for use without hoods/housings<br> | |
| **Coding pin** | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | |

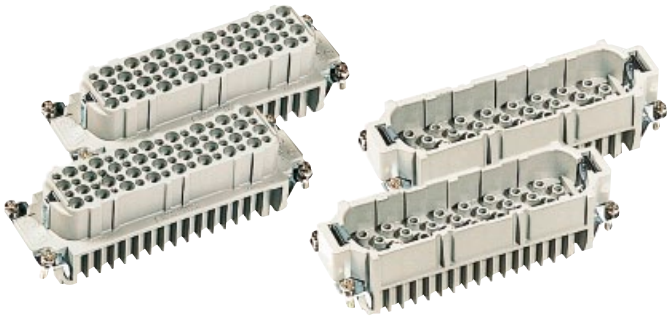




Stock items in bold type

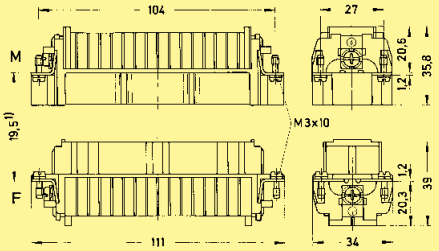
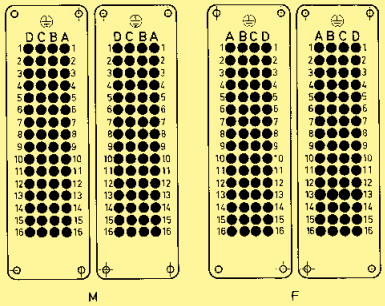
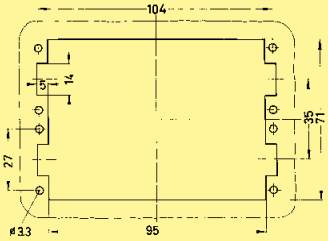
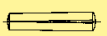
Number of contacts

# 128 + ⏚



Han D / DD

## Inserts

| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 02.04) | Han D®<br>1 - 64<br>1 - 64 | **09 21 064 3001**<br>**09 21 064 3001** | **09 21 064 3101**<br>**09 21 064 3101** | <br>1) Distance for contact max. 21 mm<br>Contact arrangement<br>view from termination side<br><br>Panel cut out for inserts<br>for use without hoods/housings<br> | |
|  | | | | | |
| **Wrap terminal**<br>1 x 1 mm | 1 - 64<br>1 - 64 | 09 21 064 2601<br>09 21 064 2601 | 09 21 064 2701<br>09 21 064 2701 | | |
|  | | | | | |
| **Coding pin** | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | |



Stock items in bold type

Number of contacts

# 216 + ⏚



Inserts



| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 02.06) | Han DD®<br><br>1 - 108<br>109 - 216 | **09 16 108 3001**<br>09 16 108 3011 | **09 16 108 3101**<br>09 16 108 3111 | 1) Distance for contact max. 21 mm<br><br>Contact arrangement<br>view from termination side<br><br>Panel cut out for inserts<br>for use without hoods/housings | |
| **Coding pin** | | | 09 33 000 9915 | Coding pin<br><br>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | |



Stock items in bold type

## Modified contact arrangement

The connector series Han DD® and Han D® equipped with all contacts may be used for voltages up to 250 V, pollution degree 3. A modified contact loading arrangement permits use up to 500 V also in the same pollution degree.

According to DIN EN 61 984 connectors should not be coupled or decoupled under electrical load.

## Series Han DD®

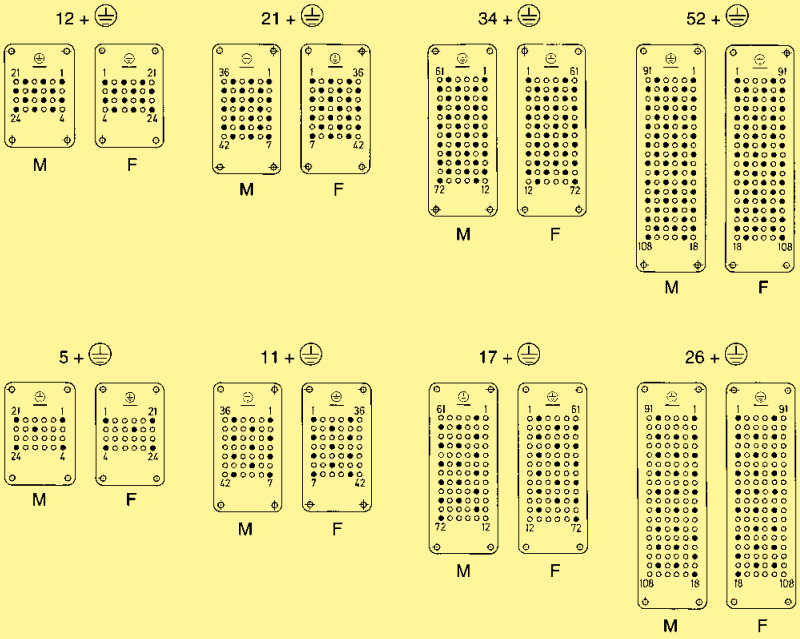
**10 A 400 V 6 kV 3**

| | |
|---|---|
| Rated current | 10 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |

**10 A 500 V 6 kV 3**

| | |
|---|---|
| Rated current | 10 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |

Contact arrangement view from termination side



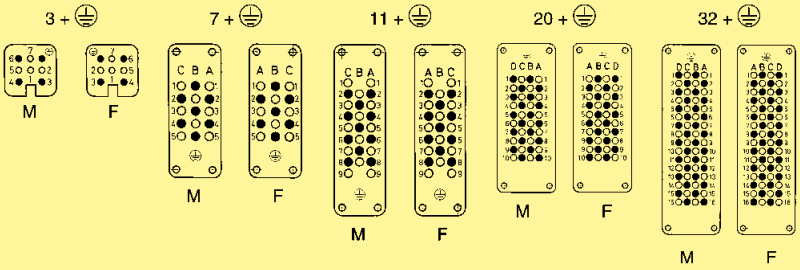

● Working contact ○ Without contact M - Male insert F - Female insert

## Series Han D®

**10 A 500 V 6 kV 3**

| | |
|---|---|
| Rated current | 10 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |

Contact arrangement view from termination side




● Working contact ○ Without contact M - Male insert F - Female insert



## Han® PCB Adapter



| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|

### PCB Adapter

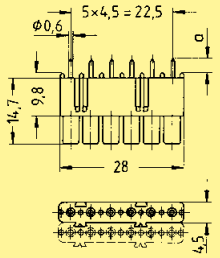
(contacts included)
can be used in combination with all Han DD® inserts

for PCB:

up to 1.6 mm — **09 16 000 9905**

up to 2.4 mm — **09 16 000 9908**

| Part number | a |
|---|---|
| 09 16 000 9905 | 1.6 |
| 09 16 000 9908 | 2.4 |



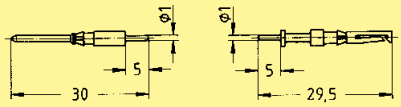

### Han DD®

Male contact — **09 15 000 6191**



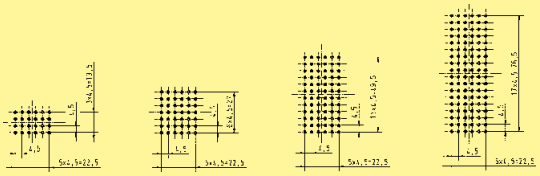
Female contact — **09 15 000 6291**






### Application

The PCB adapter is used to terminate control and data lines via pcb to the above mentioned connector inserts.



① PCB adapter
② Printed circuit board (PCB)
③ Switch board panel
④ Han DD® double contact
⑤ Han DD® insert
⑥ Han® B bulkhead mounted housing

1) for Han® B EMC housings spacing of 12.5 ± 0.2 mm is necessary as no flange seal is used



Stock items in bold type

## Contents


| | Page |
|---|---|
| Technical characteristics Han E® | **03.02** |
| Technical characteristics Han® EE | **03.04** |
| Technical characteristics Han® EEE | **03.06** |
| Technical characteristics Han® ES | **03.08** |
| Technical characteristics Han® ESS | **03.10** |
| Han® 6 E / Han® 6 ES / Han® 6 ESS | **03.12** |
| Han® 10 EE | **03.13** |
| Han® 10 E / Han® 10 ES / Han® 10 ESS | **03.14** |
| Han® 18 EE | **03.15** |
| Han® 16 E / Han® 16 ES / Han® 16 ESS | **03.16** |
| Han® 32 EE | **03.17** |
| Han® 40 EEE | **03.18** |
| Han® 24 E / Han® 24 ES / Han® 24 ESS | **03.19** |
| Han® 46 EE | **03.20** |
| Han® 64 EEE | **03.21** |
| Han® 32 E / Han® 32 ES / Han® 32 ESS | **03.22** |
| Han® 64 EE | **03.23** |
| Han® 48 E / Han® 48 ES / Han® 48 ESS | **03.24** |
| Han® 92 EE | **03.25** |
| Han® EE Modified contact arrangements | **03.26** |

## Features

- Available in different termination techniques
  - Han E® Crimp terminal
  - Han E® Screw terminal
  - Han® ES Cage-clamp terminal
  - Han® ESS Cage-clamp terminal
  - Han® EE Crimp terminal
  - Han® EEE Crimp terminal
- Han E® covers a wide range of cross core sections
- Wire protection for Han E® screw

## Specifications

DIN EN 60 664-1
DIN EN 61 984

## Approvals

## Inserts

| | |
|---|---|
| Number of contacts | 6, 10, 16, 24, 32 (2x 16), 48 (2x 24) + PE |
| Electrical data acc. to EN 61 984 | **16 A 500 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 400/690 V 6 kV 2 |
| Rated voltage acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

## Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-gold plated | 2 µm Au over 3 µm Ni |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal - min | 0.14 mm² / AWG 26 |
| Crimp terminal - max | 4 mm² / AWG 12 |
| Screw terminal - min | 0.14 mm² / AWG 26 |
| Screw terminal - max | 2.5 mm² / AWG 14 |
| Tightening/test torque | 0.5 Nm |
| Stripping length | 7 mm |

## Hoods/Housings

| | |
|---|---|
| Material | aluminium die-cast |
| Surface | powder-coated |
| Locking element | Han-Easy Lock® |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

Further selection of hoods/housings see chapter 30 / chapter 31

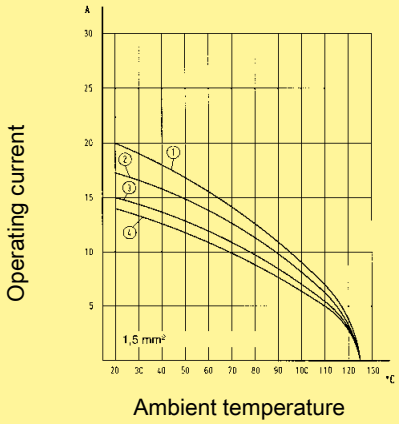
## Accessories

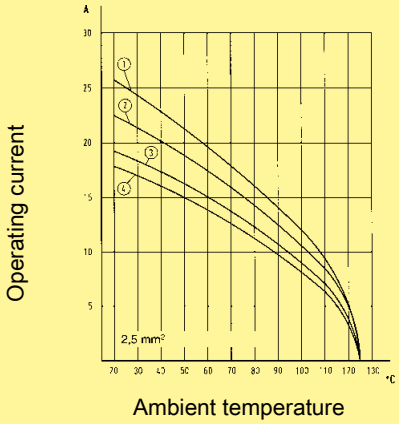
| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |
| Assembly plates for test connector | chapter 40 |
| Special insert fixing screws | chapter 40 |

## Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5



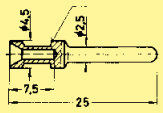



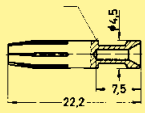

① Han® 6 E
② Han® 10 E
③ Han® 16 E
④ Han® 24 E

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact |
|---|---|---|---|
| **Crimp contacts** | | | |
| Power contacts | | | |
| silver plated | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 |
| | 0.5 | **09 33 000 6121** | **09 33 000 6220** |
| | 0.75 | **09 33 000 6114** | **09 33 000 6214** |
| | 1 | **09 33 000 6105** | **09 33 000 6205** |
| | 1.5 | **09 33 000 6104** | **09 33 000 6204** |
| | 2.5 | **09 33 000 6102** | **09 33 000 6202** |
| | 3 | 09 33 000 6106 | 09 33 000 6206 |
| | 4 | **09 33 000 6107** | **09 33 000 6207** |
| gold plated | 0.14-0.37 | **09 33 000 6117** | **09 33 000 6217** |
| | 0.5 | **09 33 000 6122** | **09 33 000 6222** |
| | 0.75 | **09 33 000 6115** | **09 33 000 6215** |
| | 1 | **09 33 000 6118** | **09 33 000 6218** |
| | 1.5 | **09 33 000 6116** | **09 33 000 6216** |
| | 2.5 | **09 33 000 6123** | **09 33 000 6223** |
| | 4 | 09 33 000 6119 | **09 33 000 6221** |
| Relay contact silver plated | 0.75-1 | 09 33 000 6109 | |
| | 1.5 | 09 33 000 6110 | |
| | 2.5 | 09 33 000 6111 | |
| **F.O. contacts** | | | |
| for 1 mm plastic fibre | | 20 10 001 3311 | 20 10 001 3321 |
| **Coding pin** | | | |
| for crimp inserts only | | | 09 33 000 9954 |

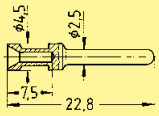
Drawing — Dimensions in mm

Operating contact Identification



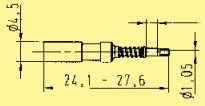



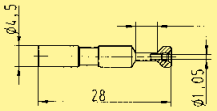

Relay contact

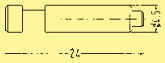



| Identification | Wire gauge | | Stripping length |
|---|---|---|---|
| no groove | 0.14-0.37 mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 mm² | AWG 14 | 7.5 mm |
| wide groove | 3 mm² | AWG 12 | 7.5 mm |
| no groove | 4 mm² | AWG 12 | 7.5 mm |

* on the back crimp collar




Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert.

Crimp contacts 0.14 ... 0.37 mm² only used with BUCHANAN crimping tool 09 99 000 0001

**Stock items in bold type**

## Features

- Han E® contacts with crimp termination
- High density of crimping contacts
- Polarised insert
- Contacts available with either hard silver plated or hard gold plated surface
- Suitable for hoods/housings of series Han® B, Han® M, Han® EMV, Han® HPR

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

## Inserts

| | |
|---|---|
| Number of contacts | 10, 18, 32, 46, 64 (2x 32), 92 (2x 46) + PE |
| Electrical data acc. to EN 61 984 | **16 A 500 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 830 V 8 kV 2 |
| Rated voltage acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

## Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-gold plated | 2 µm Au over 3 µm Ni |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal - min | 0.14 mm² / AWG 26 |
| Crimp terminal - max | 4 mm² / AWG 12 |

## Hoods/Housings

| | |
|---|---|
| Material | aluminium die-cast |
| Surface | powder-coated |
| Locking element | Han-Easy Lock® |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

Further selection of hoods/housings see chapter 30 / chapter 31

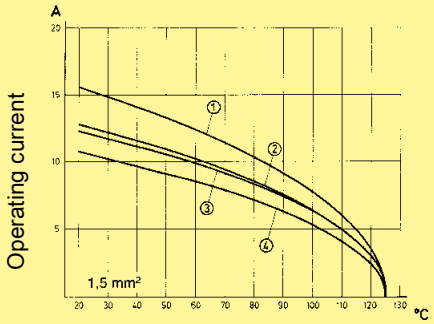
## Accessories

| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |
| Assembly plates for test connector | chapter 40 |
| Special insert fixing screws | chapter 40 |

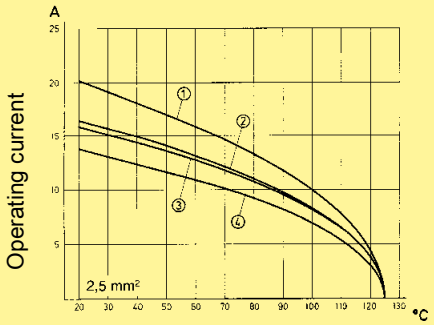
## Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature




Ambient temperature

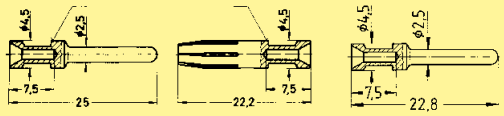
① Han® 10 EE
② Han® 18 EE
③ Han® 32 EE
④ Han® 46 EE



| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts** | | | | | |
| Power contacts | | | | | |
| silver plated | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 | | |
| | 0.5 | **09 33 000 6121** | **09 33 000 6220** | | |
| | 0.75 | **09 33 000 6114** | **09 33 000 6214** | | |
| | 1 | **09 33 000 6105** | **09 33 000 6205** | | |
| | 1.5 | **09 33 000 6104** | **09 33 000 6204** | | |
| | 2.5 | **09 33 000 6102** | **09 33 000 6202** | | |
| | 3 | 09 33 000 6106 | 09 33 000 6206 | | |
| | 4 | **09 33 000 6107** | **09 33 000 6207** | | |
| gold plated | 0.14-0.37 | **09 33 000 6117** | **09 33 000 6217** | | |
| | 0.5 | **09 33 000 6122** | **09 33 000 6222** | | |
| | 0.75 | **09 33 000 6115** | **09 33 000 6215** | | |
| | 1 | **09 33 000 6118** | **09 33 000 6218** | | |
| | 1.5 | **09 33 000 6116** | **09 33 000 6216** | | |
| | 2.5 | **09 33 000 6123** | **09 33 000 6223** | | |
| | 4 | 09 33 000 6119 | **09 33 000 6221** | | |
| Relay contact silver plated | 0.75-1 | 09 33 000 6109 | | | |
| | 1.5 | 09 33 000 6110 | | | |
| | 2.5 | 09 33 000 6111 | | | |
| **F.O. contacts** | | | | | |
| for 1 mm plastic fibre | | 20 10 001 3311 | 20 10 001 3321 | | |
| **Coding pin** | | | | | |
| for crimp inserts only | | | 09 33 000 9954 | | |

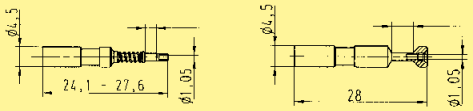
Operating contact Identification

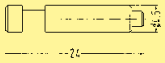
Relay contact




| Identification | Wire gauge | | Stripping length |
|---|---|---|---|
| no groove | 0.14-0.37 mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 mm² | AWG 14 | 7.5 mm |
| wide groove | 3 mm² | AWG 12 | 7.5 mm |
| no groove | 4 mm² | AWG 12 | 7.5 mm |

* on the back crimp collar




Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert.

Crimp contacts 0.14 ... 0.37 mm² only used with BUCHANAN crimping tool 09 99 000 0001

**Stock items in bold type**

## Features

- Han E® contacts with crimp termination
- Polarised insert
- Contacts available with either hard silver plated or hard gold plated surface
- Suitable for hoods/housings of series Han® B, Han® M, Han® EMV, Han® HPR

## Specifications

DIN EN 60 664-1
DIN EN 61 984

## Approvals

## Inserts

| | |
|---|---|
| Number of contacts | 40, 64 + PE |
| Electrical data acc. to EN 61 984 | **16 A 500 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

## Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-gold plated | 2 µm Au over 3 µm Ni |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal - min | 0.14 mm² / AWG 26 |
| Crimp terminal - max | 4 mm² / AWG 12 |

## Hoods/Housings

| | |
|---|---|
| Material | aluminium die-cast |
| Surface | powder-coated |
| Locking element | Han-Easy Lock® |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

Further selection of hoods/housings see chapter 30 / chapter 31

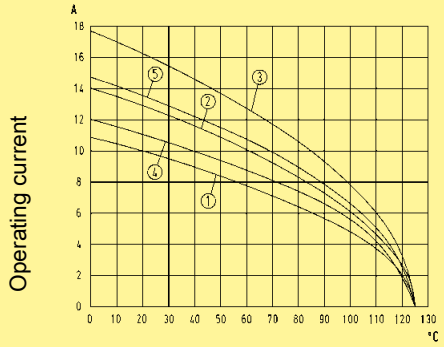
## Accessories

| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |
| Assembly plates for test connector | chapter 40 |
| Special insert fixing screws | chapter 40 |

## Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

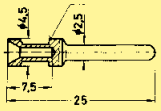
Measuring and testing techniques according to DIN EN 60 512-5

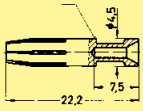



① Han® 64 EEE / 1.5 mm²
② Han® 64 EEE / 2.5 mm²
③ Han® 64 EEE / 4.0 mm²
④ Han® 40 EEE / 1.5 mm²
⑤ Han® 40 EEE / 2.5 mm²

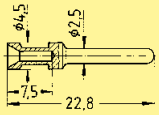
| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact |
|---|---|---|---|
| **Crimp contacts** | | | |
| Power contacts | | | |
| silver plated | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 |
| | 0.5 | **09 33 000 6121** | **09 33 000 6220** |
| | 0.75 | **09 33 000 6114** | **09 33 000 6214** |
| | 1 | **09 33 000 6105** | **09 33 000 6205** |
| | 1.5 | **09 33 000 6104** | **09 33 000 6204** |
| | 2.5 | **09 33 000 6102** | **09 33 000 6202** |
| | 3 | 09 33 000 6106 | 09 33 000 6206 |
| | 4 | **09 33 000 6107** | **09 33 000 6207** |
| gold plated | 0.14-0.37 | **09 33 000 6117** | **09 33 000 6217** |
| | 0.5 | **09 33 000 6122** | **09 33 000 6222** |
| | 0.75 | **09 33 000 6115** | **09 33 000 6215** |
| | 1 | **09 33 000 6118** | **09 33 000 6218** |
| | 1.5 | **09 33 000 6116** | **09 33 000 6216** |
| | 2.5 | **09 33 000 6123** | **09 33 000 6223** |
| | 4 | 09 33 000 6119 | **09 33 000 6221** |
| Relay contact silver plated | 0.75-1 | 09 33 000 6109 | |
| | 1.5 | 09 33 000 6110 | |
| | 2.5 | 09 33 000 6111 | |
| **F.O. contacts** for 1 mm plastic fibre | | 20 10 001 3311 | 20 10 001 3321 |
| **Coding pin** for crimp inserts only | | | 09 33 000 9954 |

Operating contact Identification



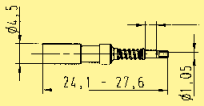



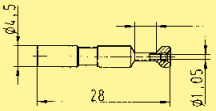

Relay contact

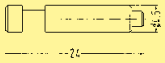



| Identification | Wire gauge | | Stripping length |
|---|---|---|---|
| no groove | 0.14-0.37 mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 mm² | AWG 14 | 7.5 mm |
| wide groove | 3 mm² | AWG 12 | 7.5 mm |
| no groove | 4 mm² | AWG 12 | 7.5 mm |

* on the back crimp collar




Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert.

Crimp contacts 0.14 ... 0.37 mm² only used with BUCHANAN crimping tool 09 99 000 0001

**Stock items in bold type**

## Features

- Reliabel cage clamp termination
- No special tools required
- Vibration prooved

## Specifications

DIN EN 60 664-1
DIN EN 61 984

## Approvals

## Inserts

| | |
|---|---|
| Number of contacts | 6, 10, 16, 24, 32 (2x 16), 48 (2x 24) + PE |
| Electrical data acc. to EN 61 984 | **16 A 500 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 400/690 V 6 kV 2 |
| Rated voltage acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

## Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Cage clamp terminal - min | 0.14 mm² / AWG 26 |
| Cage clamp terminal - max | 2.5 mm² / AWG 14 |

## Hoods/Housings

| | |
|---|---|
| Material | aluminium die-cast |
| Surface | powder-coated |
| Locking element | Han-Easy Lock® |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

Further selection of hoods/housings see chapter 30 / chapter 31

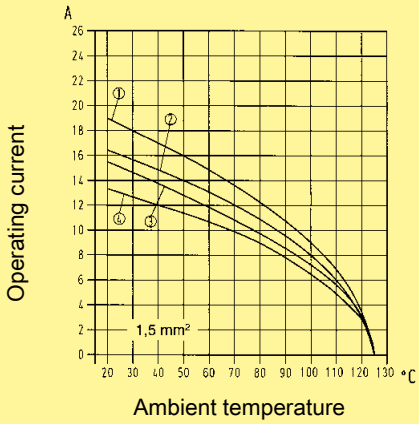
## Accessories

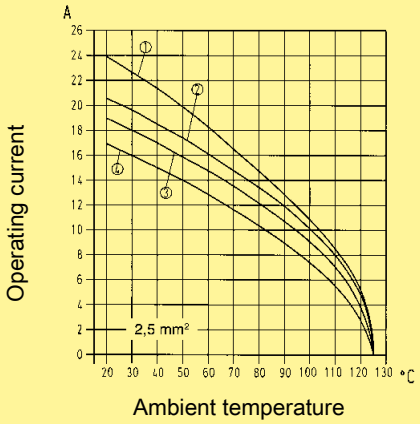
| | |
|---|---|
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |
| Assembly plates for test connector | chapter 40 |
| Special insert fixing screws | chapter 40 |

## Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① Han® 6 ES
② Han® 10 ES
③ Han® 16 ES
④ Han® 24 ES

## Features

- Reliabel cage clamp termination
- No special tools required
- Vibration prooved
- 2 termination points per contact
- Possible for star delta bridges

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

## Inserts

| | |
|---|---|
| Number of contacts | 6, 10, 16, 24, 32 (2x 16),<br>48 (2x 24) + PE |
| Electrical data<br>acc. to EN 61 984 | **16 A 500 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 400/690 V 6 kV 2 |
| Rated voltage<br>acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life<br>- mating cycles | ≥ 500 |

## Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Cage clamp terminal - min | 0.14 mm² / AWG 26 |
| Cage clamp terminal - max | 2.5 mm² / AWG 14 |

## Hoods/Housings

| | |
|---|---|
| Material | aluminium die-cast |
| Surface | powder-coated |
| Locking element | Han-Easy Lock® |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529<br>for coupled connector | IP 65 |

Further selection of hoods/housings see chapter 30 / chapter 31

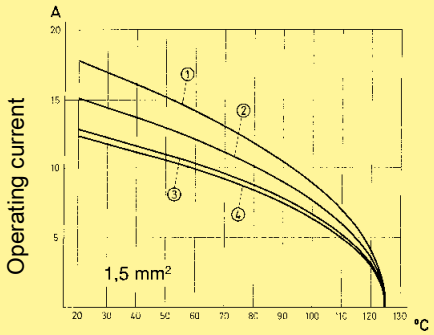
## Accessories

| | |
|---|---|
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |
| Assembly plates for test connector | chapter 40 |
| Special insert fixing screws | chapter 40 |

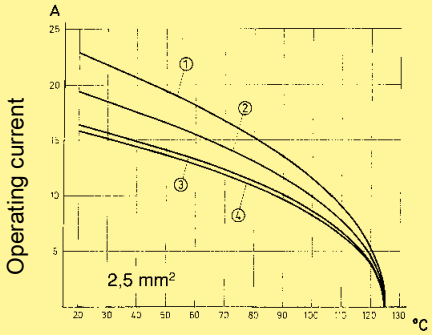
## Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

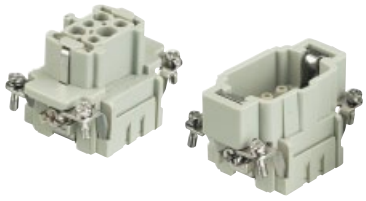



Ambient temperature

① Han® 6 ESS
② Han® 10 ESS
③ Han® 16 ESS
④ Han® 24 ESS

Number of contacts

6 + ⏚

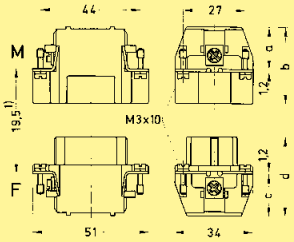


Inserts



| Identification | Series | Part number Male insert (M) | Part number Female insert (F) |
|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 03.03) | Han E® | **09 33 006 2602** | **09 33 006 2702** |
| **Screw terminal**<br>with wire protection | Han E® | **09 33 006 2601** | **09 33 006 2701** |
| **Cage-clamp terminal** | Han® ES | **09 33 006 2616** | **09 33 006 2716** |
| **Cage-clamp terminal**<br>two terminals per contact | Han® ESS | **09 33 006 2672** | **09 33 006 2772** |

Drawing

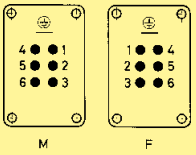



1) Distance for contact max. 21 mm

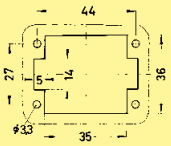
Dimensions in mm

| | a | b | c | d |
|---|---|---|---|---|
| Han E® screw | 18 | 33 | 18 | 35 |
| Han® ES / Han E® crimp | 19 | 34 | 19 | 36 |
| Han® ESS | 34 | 49 | 32 | 49 |

Contact arrangement
view from termination side




Panel cut out

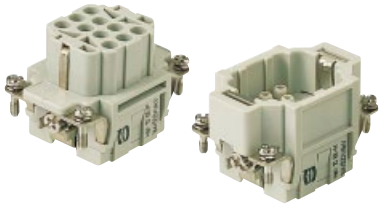





Stock items in bold type

Number of contacts

10 + ⏚

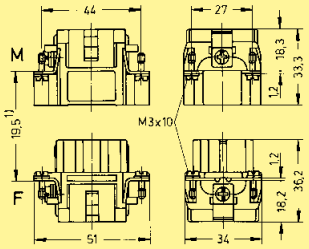


Inserts



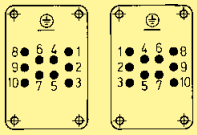
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp termination<br>Order crimp contacts separately (see Technical characteristics on page 03.05) | Han® EE | **09 32 010 3001** | **09 32 010 3101** | | |



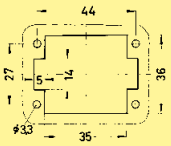



1) Distance for contact max. 21 mm

Contact arrangement
view from termination side




Panel cut out

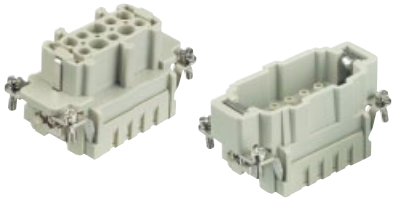





Stock items in bold type

Number of contacts

10 + ⏚

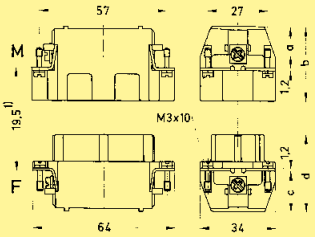


Inserts



| Identification | Series | Part number Male insert (M) | Part number Female insert (F) |
|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 03.03) | Han E® | **09 33 010 2602** | **09 33 010 2702** |
| **Screw terminal**<br>with wire protection | Han E® | **09 33 010 2601** | **09 33 010 2701** |
| **Cage-clamp terminal** | Han® ES | **09 33 010 2616** | **09 33 010 2716** |
| **Cage-clamp terminal**<br>two terminals per contact | Han® ESS | **09 33 010 2672** | **09 33 010 2772** |

Drawing

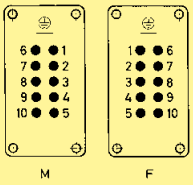



1) Distance for contact max. 21 mm

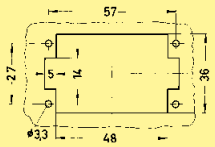
Dimensions in mm

| | a | b | c | d |
|---|---|---|---|---|
| Han E® screw | 18 | 33 | 18 | 35 |
| Han® ES / Han E® crimp | 19 | 34 | 19 | 36 |
| Han® ESS | 34 | 49 | 32 | 49 |

Contact arrangement
view from termination side



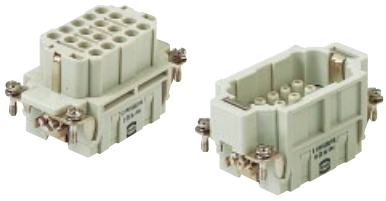

Panel cut out




Stock items in bold type

Number of contacts

18 + ⏚

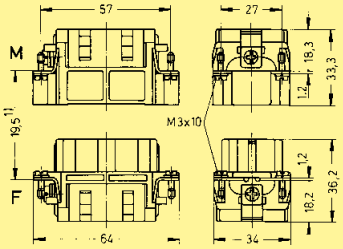


Inserts



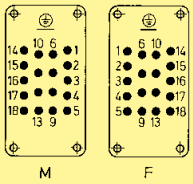
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp termination<br>Order crimp contacts separately (see Technical characteristics on page 03.05) | Han® EE | **09 32 018 3001** | **09 32 018 3101** | | |



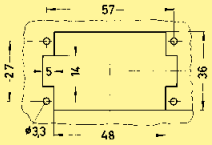



1) Distance for contact max. 21 mm

Contact arrangement
view from termination side




Panel cut out

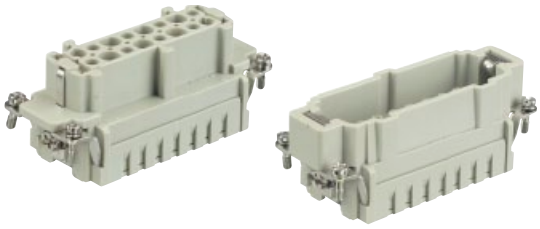





Stock items in bold type

Number of contacts

16 + ⏚

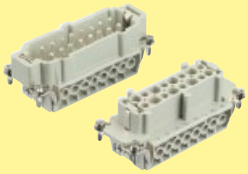


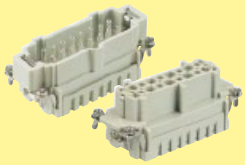
Inserts

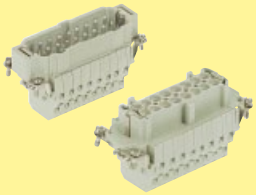


| Identification | Series | Part number Male insert (M) | Part number Female insert (F) |
|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately (see Technical characteristics on page 03.03) | Han E® | **09 33 016 2602** | **09 33 016 2702** |
| Screw terminal<br>with wire protection | Han E® | **09 33 016 2601** | **09 33 016 2701** |
| Cage-clamp terminal | Han® ES | **09 33 016 2616** | **09 33 016 2716** |
| Cage-clamp terminal<br>two terminals per contact | Han® ESS | **09 33 016 2672** | **09 33 016 2772** |

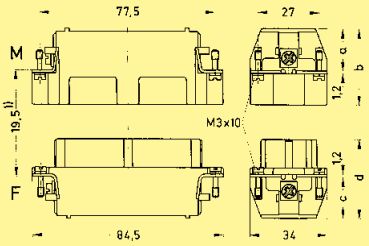








Drawing

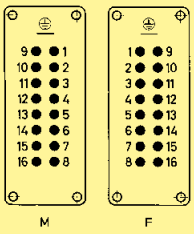



1) Distance for contact max. 21 mm

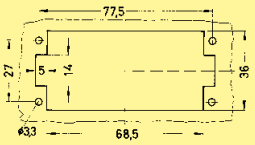
Dimensions in mm

| | a | b | c | d |
|---|---|---|---|---|
| Han E® screw | 18 | 33 | 18 | 35 |
| Han® ES / Han E® crimp | 19 | 34 | 19 | 36 |
| Han® ESS | 34 | 49 | 32 | 49 |

Contact arrangement
view from termination side




Panel cut out

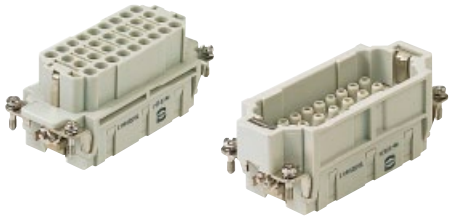





Stock items in bold type

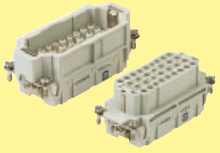
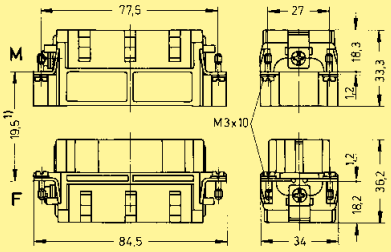
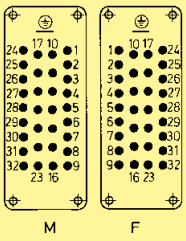
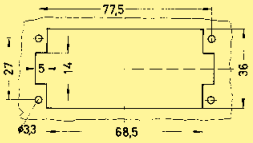
Number of contacts

32 + ⏚



Inserts



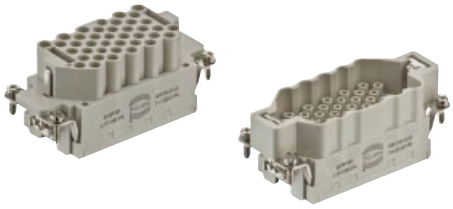
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp termination<br>Order crimp contacts separately (see Technical characteristics on page 03.05)<br> | Han® EE | **09 32 032 3001** | **09 32 032 3101** | <br>1) Distance for contact max. 21 mm<br>Contact arrangement<br>view from termination side<br><br>Panel cut out<br> | |



Stock items in bold type

Number of contacts

# 40 + ⏚

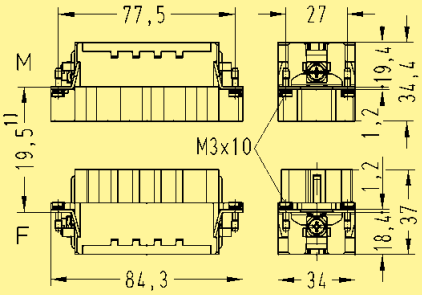


Inserts



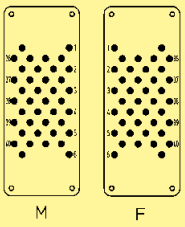
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp termination<br>Order crimp contacts separately (see Technical characteristics on page 03.07) | Han® EEE | **09 32 040 3001** | **09 32 040 3101** | | |



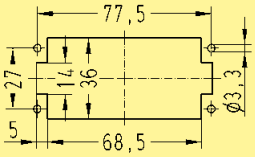



1) Distance for contact max. 21 mm

Contact arrangement
view from termination side




Panel cut out

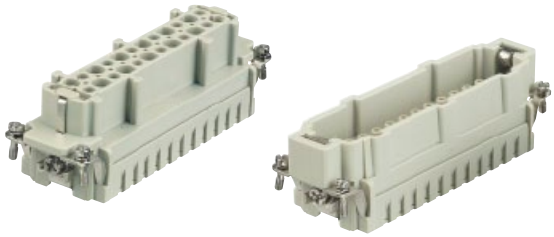





Stock items in bold type

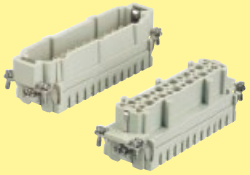
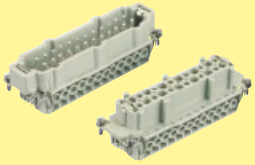
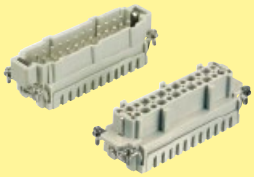
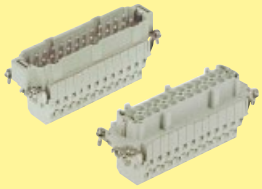
Number of contacts

24 + ⏚

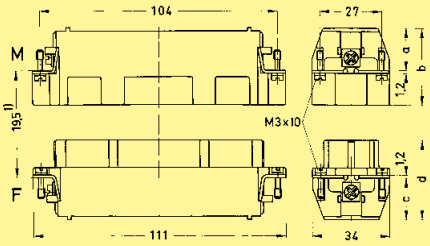


Inserts



| Identification | Series | Part number Male insert (M) | Part number Female insert (F) |
|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 03.03)<br> | Han E® | **09 33 024 2602** | **09 33 024 2702** |
| **Screw terminal**<br>with wire protection<br> | Han E® | **09 33 024 2601** | **09 33 024 2701** |
| **Cage-clamp terminal**<br> | Han® ES | **09 33 024 2616** | **09 33 024 2716** |
| **Cage-clamp terminal**<br>two terminals per contact<br> | Han® ESS | **09 33 024 2672** | **09 33 024 2772** |

Drawing

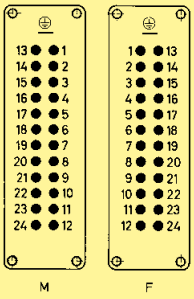



1) Distance for contact max. 21 mm

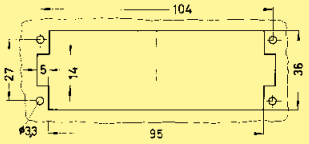
Dimensions in mm

| | a | b | c | d |
|---|---|---|---|---|
| Han E® screw | 18 | 33 | 18 | 35 |
| Han® ES / Han E® crimp | 19 | 34 | 19 | 36 |
| Han® ESS | 34 | 49 | 32 | 49 |

Contact arrangement
view from termination side




Panel cut out

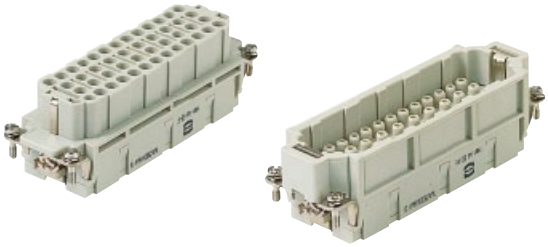





Stock items in bold type

Number of contacts

# 46 + ⏚

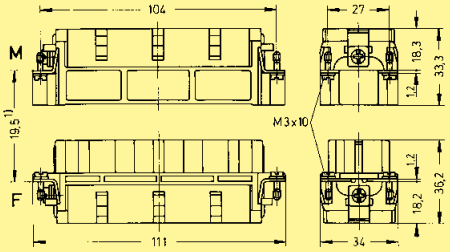


Inserts



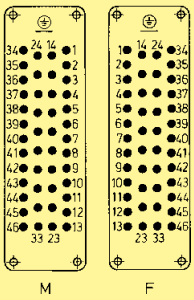
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp termination<br>Order crimp contacts separately (see Technical characteristics on page 03.05) | Han® EE | **09 32 046 3001** | **09 32 046 3101** | | |



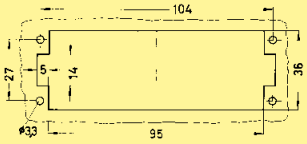



1) Distance for contact max. 21 mm

Contact arrangement
view from termination side




Panel cut out

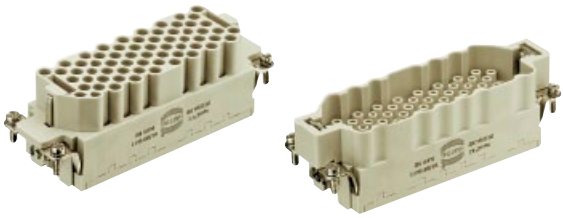





Stock items in bold type

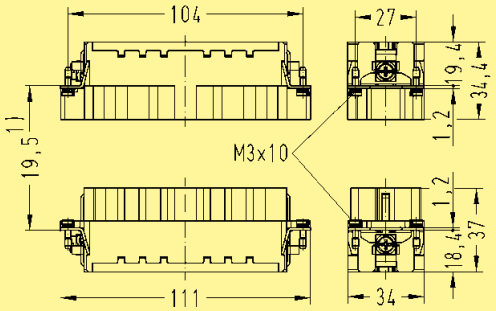
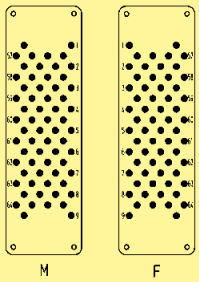
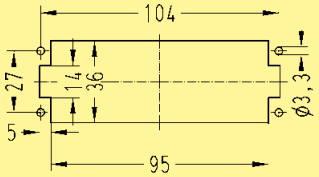
Number of contacts

64 + ⏚



Inserts



| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp termination<br>Order crimp contacts separately (see Technical characteristics on page 03.07)<br> | Han® EEE | **09 32 064 3001** | **09 32 064 3101** | <br>1) Distance for contact max. 21 mm<br>Contact arrangement view from termination side<br><br>Panel cut out<br> | |



Stock items in bold type

Number of contacts

# 32 + ⏚



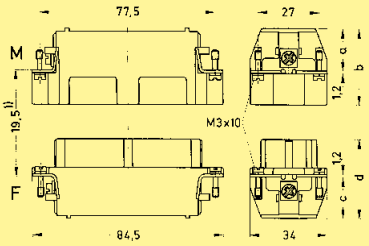


Inserts



| Identification | Series | Part number Male insert (M) | Part number Female insert (F) |
|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 03.03) | Han E® | | |
| | 1 - 16 | **09 33 016 2602** | **09 33 016 2702** |
| | 17 - 32 | 09 33 016 2612 | 09 33 016 2712 |
| **Screw terminal**<br>with wire protection | Han E® | | |
| | 1 - 16 | **09 33 016 2601** | **09 33 016 2701** |
| | 17 - 32 | **09 33 016 2611** | **09 33 016 2711** |
| **Cage-clamp terminal** | Han® ES | | |
| | 1 - 16 | **09 33 016 2616** | **09 33 016 2716** |
| | 17 - 32 | 09 33 016 2626 | 09 33 016 2726 |
| **Cage-clamp terminal**<br>two terminals per contact | Han® ESS | | |
| | 1 - 16 | **09 33 016 2672** | **09 33 016 2772** |
| | 1 - 16 | **09 33 016 2672** | **09 33 016 2772** |

Drawing

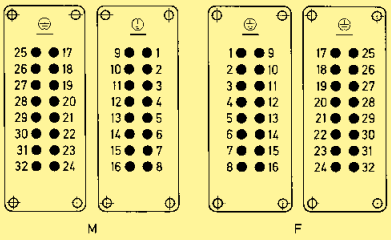



1) Distance for contact max. 21 mm

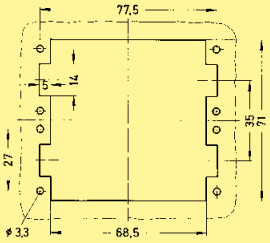
Dimensions in mm

| | a | b | c | d |
|---|---|---|---|---|
| Han E® screw | 18 | 33 | 18 | 35 |
| Han® ES / Han E® crimp | 19 | 34 | 19 | 36 |
| Han® ESS | 34 | 49 | 32 | 49 |

Contact arrangement
view from termination side




Panel cut out

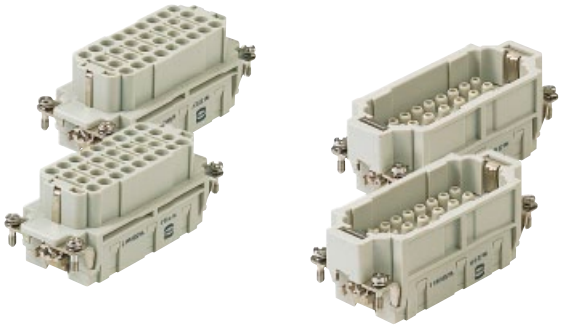





Stock items in bold type

Number of contacts

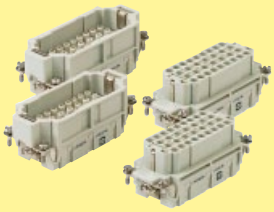
# 64 + ⏚

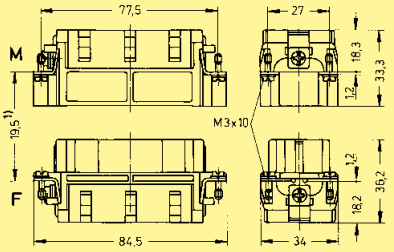


Inserts



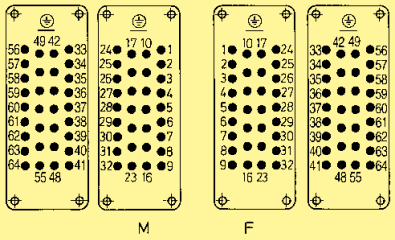
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp termination<br>Order crimp contacts separately (see Technical characteristics on page 03.05) | Han® EE<br>1 - 32<br>33 - 64 | **09 32 032 3001**<br>**09 32 032 3011** | **09 32 032 3101**<br>**09 32 032 3111** | | |



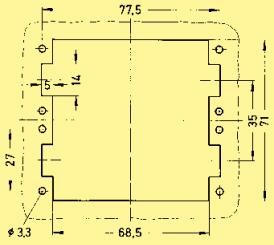



1) Distance for contact max. 21 mm

Contact arrangement
view from termination side




Panel cut out

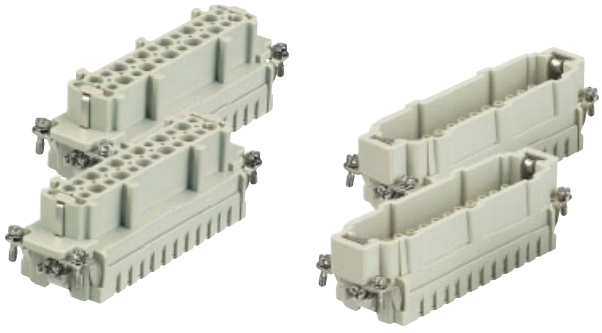





Stock items in bold type

Number of contacts

48 + ⏚

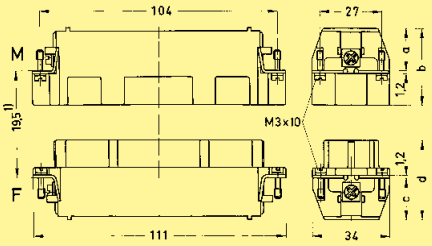


Inserts



| Identification | Series | Part number Male insert (M) | Part number Female insert (F) |
|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately (see Technical characteristics on page 03.03) | Han E®<br>1 - 24<br>25 - 48 | **09 33 024 2602**<br>09 33 024 2612 | **09 33 024 2702**<br>09 33 024 2712 |
| **Screw terminal**<br>with wire protection | Han E®<br>1 - 24<br>25 - 48 | **09 33 024 2601**<br>**09 33 024 2611** | **09 33 024 2701**<br>**09 33 024 2711** |
| **Cage-clamp terminal** | Han® ES<br>1 - 24<br>25 - 48 | **09 33 024 2616**<br>09 33 024 2626 | **09 33 024 2716**<br>09 33 024 2726 |
| **Cage-clamp terminal**<br>two terminals per contact | Han® ESS<br>1 - 24<br>1 - 24 | **09 33 024 2672**<br>**09 33 024 2672** | **09 33 024 2772**<br>**09 33 024 2772** |

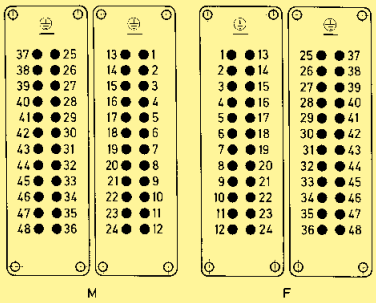
Drawing



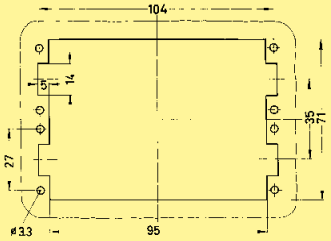

1) Distance for contact max. 21 mm

| | a | b | c | d |
|---|---|---|---|---|
| Han E® screw | 18 | 33 | 18 | 35 |
| Han® ES / Han E® crimp | 19 | 34 | 19 | 36 |
| Han® ESS | 34 | 49 | 32 | 49 |

Contact arrangement
view from termination side




Panel cut out

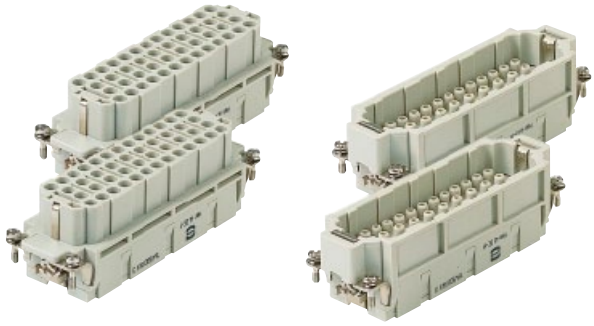





Stock items in bold type

Number of contacts

# 92 + ⏚

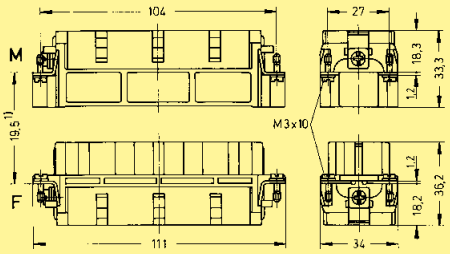


Inserts



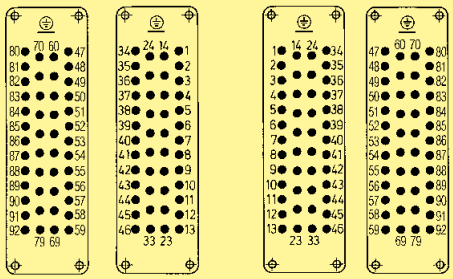
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp termination<br>Order crimp contacts separately (see Technical characteristics on page 03.05) | Han® EE | | | | |
| | 1 - 46 | **09 32 046 3001** | **09 32 046 3101** | | |
| | 47 - 92 | **09 32 046 3011** | **09 32 046 3111** | | |



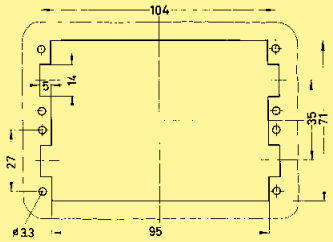



1) Distance for contact max. 21 mm

Contact arrangement
view from termination side




Panel cut out






Stock items in bold type

## Modified contact arrangement up to 1000 V

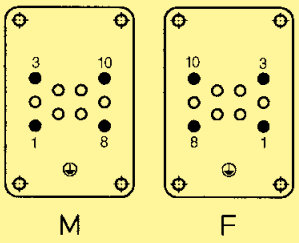
The connector series Han® EE equipped with all contacts may be used for voltages up to 500 V ~ pollution degree 3. A modified contact loading arrangement permits use up to 1000 V ~ pollution degree also in pollution degree C. Fully equipped connectors may also be used up to 1000 V ~ but in a lower pollution degree. See page 00.22. According to DIN EN 61 984 connectors should not be coupled or decoupled under electrical load.



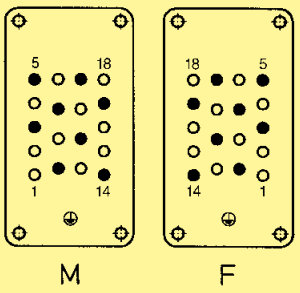
### 690 V Pollution degree 3

Contact arrangement view from termination side

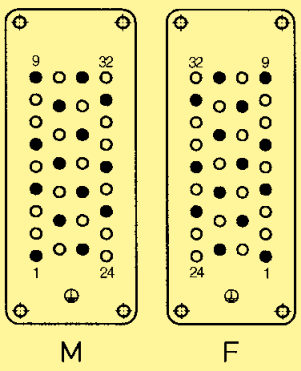
4 + ⏚



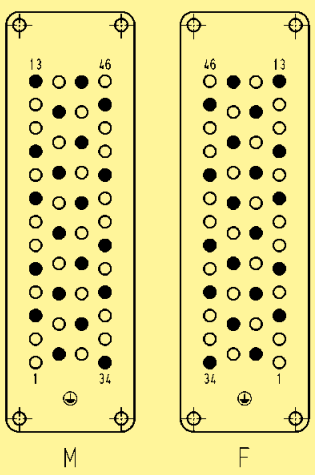

8 + ⏚




14 + ⏚




20 + ⏚

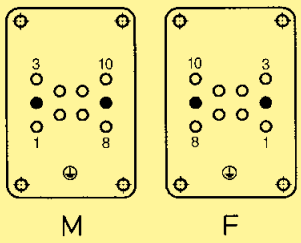



● Working contact ○ Without contact M - Male insert F - Female insert

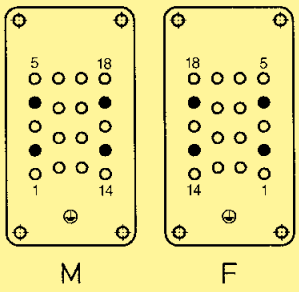
### 1000 V Pollution degree 3

Contact arrangement view from termination side

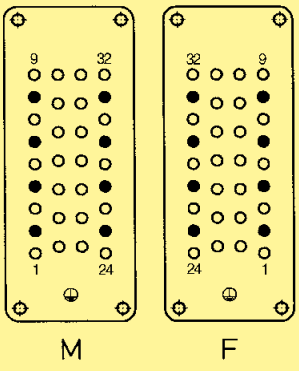
2 + ⏚



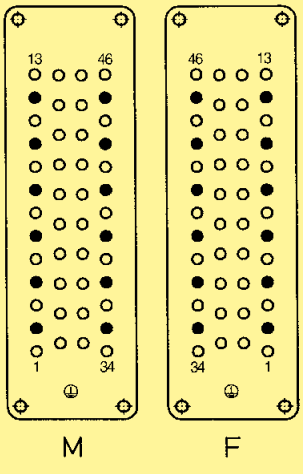

4 + ⏚




8 + ⏚




12 + ⏚




● Working contact ○ Without contact M - Male insert F - Female insert

## Contents


| | Page |
|---|---|
| Technical characteristics Han Hv E® | **04.02** |
| Technical characteristics Han® Hv ES | **04.03** |
| Contacts Han Hv E® | **04.04** |
| Han® 3 Hv E/ES | **04.05** |
| Hoods/Housings Han® 10 Hv E | **04.06** |
| Han® 6 Hv E/ES | **04.07** |
| Hoods/Housings Han® 16 Hv E | **04.08** |
| Han® 10 Hv E/ES | **04.09** |
| Hoods/Housings Han® 24 Hv E | **04.10** |
| Han® 16 Hv E | **04.11** |
| Han® 12 Hv E/ES | **04.12** |
| Han® 20 Hv E/ES | **04.13** |
| Han® 32 Hv E | **04.14** |
| Difference: Han Hv E® to Standard Hoods/Housings | **04.15** |

## Features

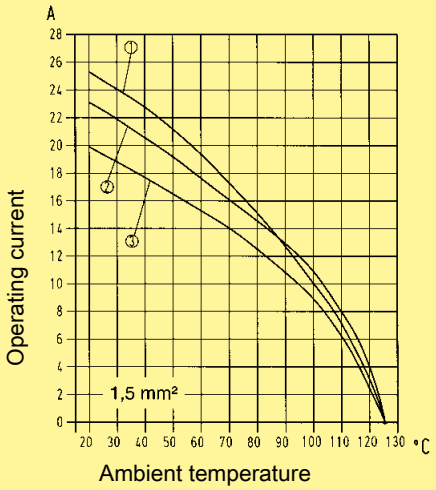
- Designed for application up to 830 V
- Available in several termination techniques
- No special tools required
- Han Hv E® screw requires special Han Hv E® housings

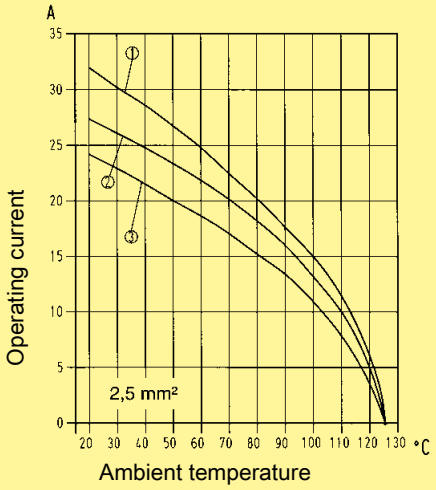


### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① Han® 3 Hv E

② Han® 6 Hv E

③ Han® 10 Hv E / Han® 16 Hv E

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 3, 6, 10, 12 (2x6), 16, 20 (2x10), 32 (2x16) + PE<br>+ 2 additional contacts for safe high voltage connections |

Electrical data acc. to DIN EN 61 984

| | |
|---|---|
| Han Hv E® 3, 6, 10, 12, 20 + PE | **16 A 830 V 8 kV 3** |
| Rated current | 16 A |
| Rated voltage | 830 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 1000 V 8 kV 2 |
| or | 16 A 720/1250 V 8 kV 2 |
| Relay contacts | 16 A 500 V 6 kV 3 |
| Han Hv E® 16, 32 + PE | **16 A 400/690 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| or | 16 A 500 V 6 kV 3 |
| Rated voltage acc. to UL/CSA | 600 V |
| Relay contacts | 250 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - Wire gauge[1)] | 0.5 ... 4 mm² |
| - AWG | 20 ... 12 |
| Screw terminal | |
| - Wire gauge[1)] | 2.5 mm² |
| - AWG | 14 |
| - Tightening/test torque | 0.5 Nm |

### Hoods/Housings

| | |
|---|---|
| Technical characteristics | see page 04.03 |

### Accessories

| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |



[1)] geometric wire gauge

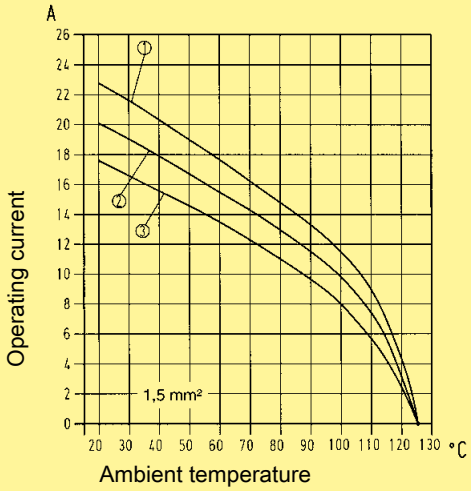
## Features

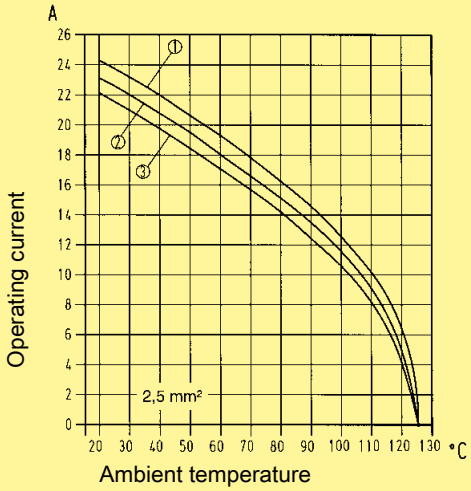
- Designed for application up to 830 V
- Reliable cage clamp termination
- No special tools required
- Vibration prooved
- Not plug compatible to Han Hv E® screw/crimp terminal

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① Han® 3 Hv ES
② Han® 6 Hv ES
③ Han® 10 Hv ES

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |
| Approvals | , |

### Inserts

| | |
|---|---|
| Number of contacts | 3, 6, 10, 12 (2x6), 20 (2x10)<br>+ PE<br>+ 2 additional contacts for safe high voltage connections |
| Electrical data<br>acc. to DIN EN 61 984 | **16 A 830 V 8 kV 3** |
| Rated current | 16 A |
| Rated voltage | 830 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 1000 V 8 kV 2 |
| or | 16 A 720/1250 V 8 kV 2 |
| Relay contacts | 16 A 500 V 6 kV 3 |
| Rated voltage<br>acc. to UL/CSA | 600 V |
| Relay contacts | 250 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life<br>- mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface<br>- hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 3 mΩ |
| Cage clamp terminal<br>- Wire gauge[1)] | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |

### Hoods/Housings

| | |
|---|---|
| Material | aluminium die-cast |
| Surface | powder-coated<br>RAL 7037 |
| Locking element | Han-Easy Lock® |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529<br>for coupled connector | IP 65 |

Further selection of hoods/housings see chapter 30 / chapter 31

### Accessories

| | |
|---|---|
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |



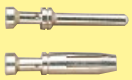


[1)] geometric wire gauge

| Identification | Wire gauge (mm²) | Part number Male contacts | Part number Female contacts | Drawing | Dimensions in mm |
|---|---|---|---|---|---|

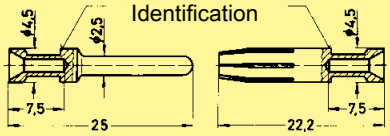
## Crimp contacts

### Operating contacts silver plated



| Wire gauge (mm²) | Male contacts | Female contacts |
|---|---|---|
| 0.5 | **09 33 000 6121** | **09 33 000 6220** |
| 0.75 | **09 33 000 6114** | **09 33 000 6214** |
| 1 | **09 33 000 6105** | **09 33 000 6205** |
| 1.5 | **09 33 000 6104** | **09 33 000 6204** |
| 2.5 | **09 33 000 6102** | **09 33 000 6202** |
| 3 | 09 33 000 6106 | 09 33 000 6206 |
| 4 | **09 33 000 6107** | **09 33 000 6207** |

Operating contact Identification




Crimp contact identification

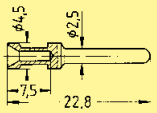
| Identification | Wire gauge | | Stripping length |
|---|---|---|---|
| no groove | 0.5 mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 mm² | AWG 14 | 7.5 mm |
| wide groove | 3 mm² | AWG 12 | 7.5 mm |
| no groove | 4 mm² | AWG 12 | 7.5 mm |

* on the back crimp collar

### Relay contact



| Wire gauge (mm²) | Male contacts | Female contacts |
|---|---|---|
| 0.75-1 | 09 33 000 6109 | |
| 1.5 | 09 33 000 6110 | |
| 2.5 | 09 33 000 6111 | |



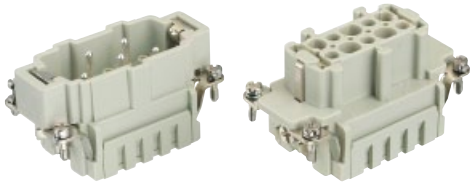

For a fully equipped crimp connector the following contacts are required:

| Type | Contacts total | Operating contacts | Relay contacts |
|---|---|---|---|
| Han® 3 Hv E | 5 | 3 | 2 |
| Han® 6 Hv E | 8 | 6 | 2 |
| Han® 10 Hv E | 12 | 10 | 2 |
| Han® 12 Hv E | 16 | 12 | 4 |
| Han® 20 Hv E | 24 | 20 | 4 |

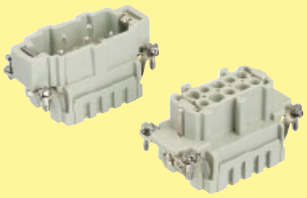
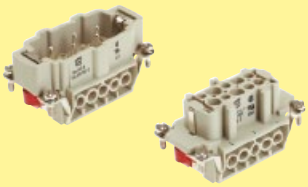
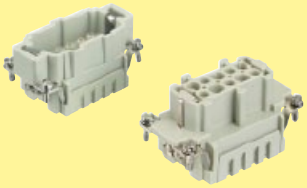
Number of contacts

3 + ⏚

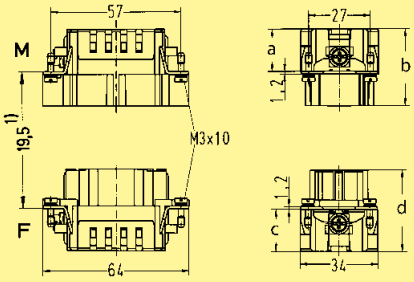
+ 2 additional contacts for safe high voltage connections



Part number

| Identification | Series | Male insert (M) | Female insert (F) |
|---|---|---|---|
| Cage clamp terminal<br><br>not plug compatible to screw/crimp terminal | Han® Hv ES<br>1-3 | 09 34 003 2616 | 09 34 003 2716 |
| Screw terminal<br> | Han Hv E®<br>1-3 | 09 34 003 2601 | 09 34 003 2701 |
| Crimp terminal<br><br>Order crimp contacts separately (see page 04.04) | Han Hv E®<br>1-3 | 09 34 003 2602 | 09 34 003 2702 |

Drawing

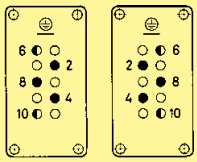



| | a | b | c | d |
|---|---|---|---|---|
| Cage clamp terminal | 18,4 | 33,4 | 18,4 | 35,6 |
| Screw terminal<br>Crimp terminal | 18,5 | 33,5 | 18 | 34,5 |

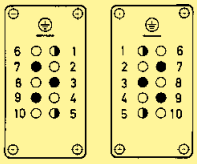
1) Distance for contact max. 21 mm

Contact arrangement (view from termination side)

Han® 3 Hv ES

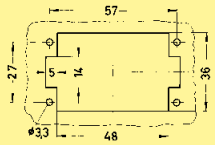



Han® 3 Hv E




- ● Working contact
- ◐ Relay contact
- ○ Without contact

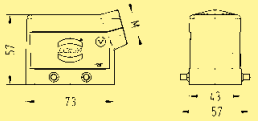
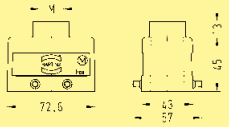
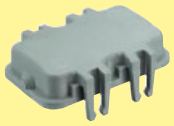
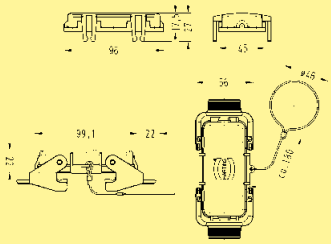
Panel cut out for inserts for use without hoods/ housings

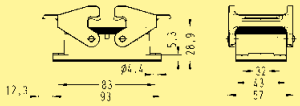
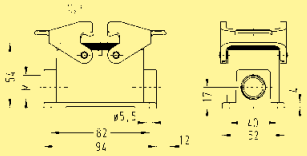
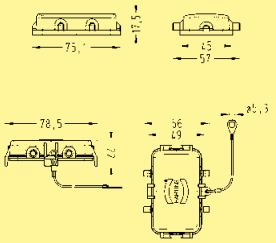
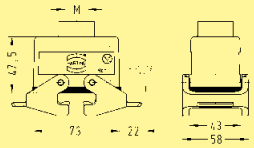
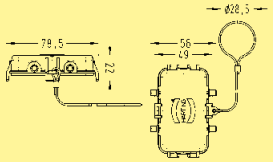



Crimp terminal and cage clamp terminal could also be used with 10 B standard hood/housing

Stock items in bold type

## Hoods/Housings, metal with 2 levers on the housing

| Identification | Part number | M | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Hoods**<br>side entry  | 19 34 003 0520 | 20 |  | |
| **Hoods**<br>top entry  | 19 34 003 0420<br>**19 34 003 0421** | 20<br>25 |  | |
| **Protection covers**<br>plastic/metal   | 09 30 010 5401<br>**09 30 010 5423** | |  | |

| Identification | Part number | M | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Housings**<br>bulkhead mounting  | 09 34 003 0301 | | Panel cut out 60 x 35 mm  | |
| **Housings**<br>surface mounting<br>side entry  | 19 34 003 0270 | 20 |  | |
| **Protection covers for housings**<br>plastic/metal   | **09 30 010 5407**<br>**09 30 010 5425** | |  | |
| **Hoods**<br>cable to cable<br>top entry  | 19 34 003 0730<br>19 34 003 0731 | 20<br>25 |  | |
| **Protection covers for hoods cable to cable**<br>metal  | **09 30 010 5427** | |  | |

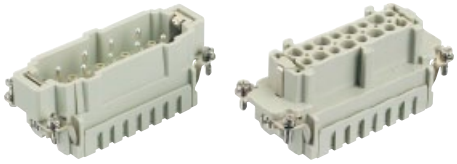


**Stock items in bold type**

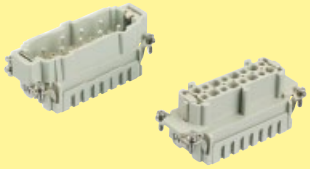
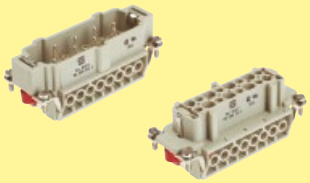
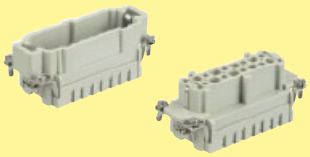
Number of contacts

6 + ⏚

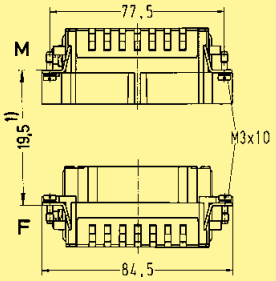
+ 2 additional contacts for safe high voltage connections





| Identification | Series | Part number Male insert (M) | Part number Female insert (F) |
|---|---|---|---|
| Cage-clamp terminal<br><br>not plug compatible to screw/crimp terminal | Han® Hv ES<br>1-6 | 09 34 006 2616 | 09 34 006 2716 |
| Screw terminal<br> | Han Hv E®<br>1-6 | 09 34 006 2601 | 09 34 006 2701 |
| Crimp terminal<br><br>Order crimp contacts separately<br>(see page 04.04) | Han Hv E®<br>1-6 | 09 34 006 2602 | 09 34 006 2702 |

Drawing

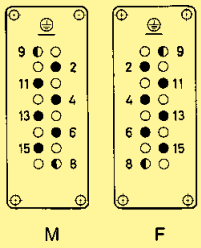



| | a | b | c | d |
|---|---|---|---|---|
| Cage clamp terminal | 18,4 | 33,4 | 18,4 | 35,6 |
| Screw terminal | 18,5 | 32,4 | 18 | 34,6 |
| Crimp terminal | 18,5 | 34,2 | 18 | 37 |

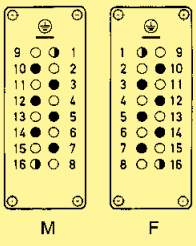
1) Distance for contact max. 21 mm

Contact arrangement (view from termination side)

Han® 6 Hv ES

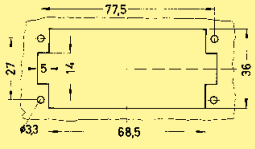



Han® 6 Hv E



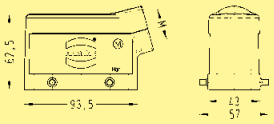
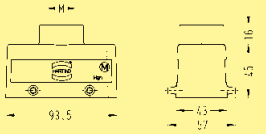
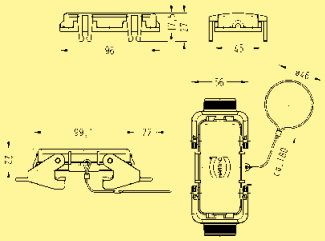

- ● Working contact
- ◐ Relay contact
- ○ Without contact

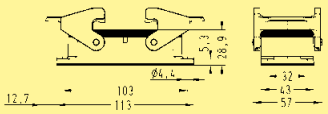
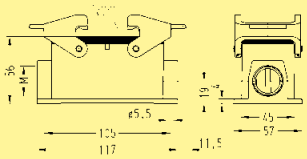
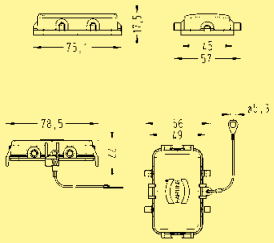
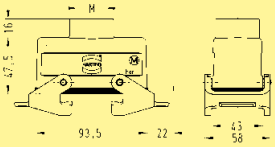
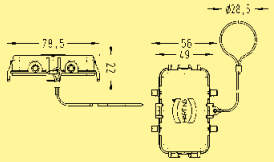
Panel cut out for inserts for use without hoods/ housings




Crimp terminal and cage clamp terminal could also be used with 16 B standard hood/housing

## Hoods/Housings, metal with 2 levers on the housing

| Identification | Part number | M | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Hoods**<br>top entry  | 19 34 006 0521 | 25 |  | |
| **Hoods**<br>side entry  | 19 34 006 0421 | 25 |  | |
| **Protection covers**<br>plastic/metal   | 09 30 016 5401<br>**09 30 016 5422** | |  | |

| Identification | Part number | M | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Housings**<br>bulkhead mounting  | 09 34 006 0301 | | Panel cut out 82 x 35 mm  | |
| **Housings**<br>surface mounting<br>side entry  | 19 34 006 0271 | 25 |  | |
| **Protection covers for housings**<br>plastic/metal   | **09 30 016 5405**<br>**09 30 016 5425** | |  | |
| **Hoods**<br>cable to cable<br>top entry  | **19 34 006 0731**<br>19 34 006 0732 | 25<br>32 |  | |
| **Protection covers**<br>metal  | **09 30 016 5426** | |  | |

Han Hv E

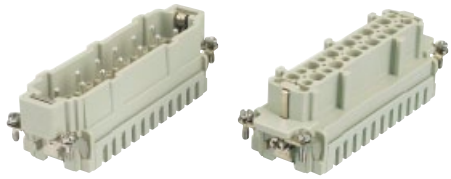


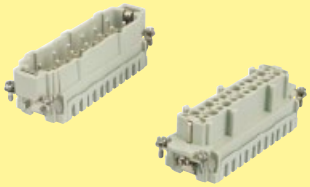
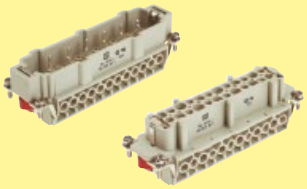
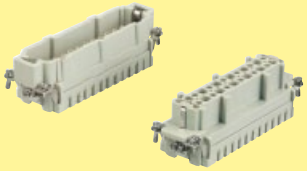
**Stock items in bold type**

Number of contacts

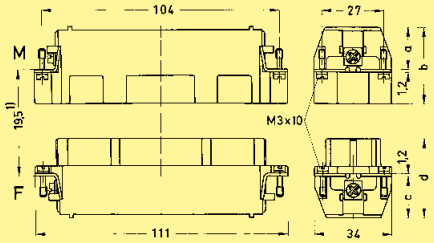
10 + ⏚

+ 2 additional contacts for safe high voltage connections



| Identification | Series | Part number Male insert (M) | Part number Female insert (F) |
|---|---|---|---|
| Cage-clamp terminal  not plug compatible to screw/crimp terminal | Han® Hv ES 1-10 | 09 34 010 2616 | 09 34 010 2716 |
| Screw terminal  | Han Hv E® 1-10 | 09 34 010 2601 | 09 34 010 2701 |
| Crimp terminal  Order crimp contacts separately (see page 04.04) | Han Hv E® 1-10 | 09 34 010 2602 | 09 34 010 2702 |

Drawing

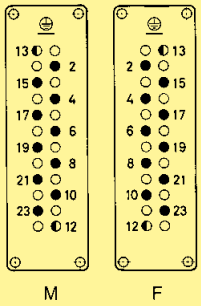



| | a | b | c | d |
|---|---|---|---|---|
| Cage clamp terminal | 18,4 | 33,4 | 18,4 | 35,6 |
| Screw terminal | 18,5 | 35 | 18,5 | 35 |
| Crimp terminal | 18,5 | 35 | 18,5 | 35 |

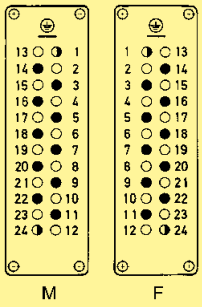
1) Distance for contact max. 21 mm

Contact arrangement (view from termination side)

Han® 10 Hv ES

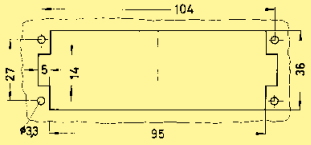



Han® 10 Hv E




- ● Working contact
- ◐ Relay contact
- ○ Without contact

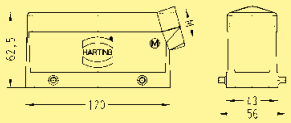
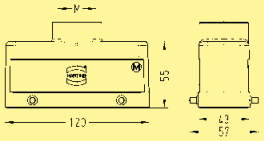
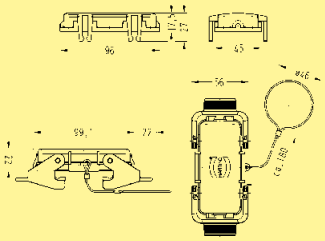
Panel cut out for inserts for use without hoods/ housings

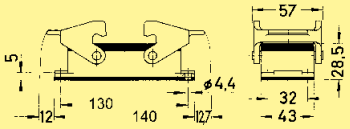
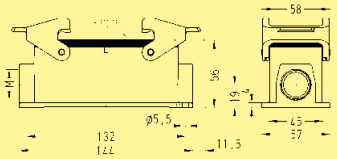
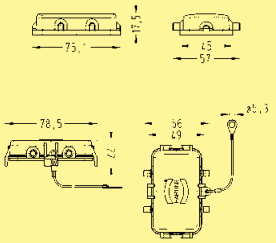
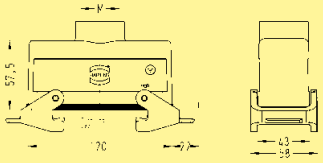
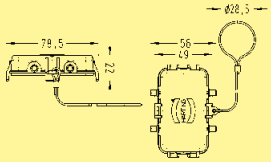



Crimp terminal and cage clamp terminal could also be used with 24 B standard hood/housing

Stock items in bold type

## Hoods/Housings, metal with 2 levers on the housing

| Identification | Part number | M | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Housings**<br>surface mounting<br>side entry  | 19 34 010 0521 | 25 |  | |
| **Hoods**<br>top entry  | 19 34 010 0422 | 32 |  | |
| **Protection covers**<br>plastic/metal   | **09 30 024 5401**<br>**09 30 024 5422** | |  | |

| Identification | Part number | M | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Housings**<br>bulkhead mounting  | **09 34 010 0301** | | Panel cut out 108 x 35 mm<br> | |
| **Housings**<br>surface mounting<br>top entry  | 19 34 010 0271 | 25 |  | |
| **Protection covers for housings**<br>plastic/metal   | **09 30 024 5405**<br>**09 30 024 5425** | |  | |
| **Hoods**<br>cable to cable<br>top entry  | 19 34 010 0732 | 32 |  | |
| **Protection covers**<br>metal  | 09 30 024 5426 | |  | |

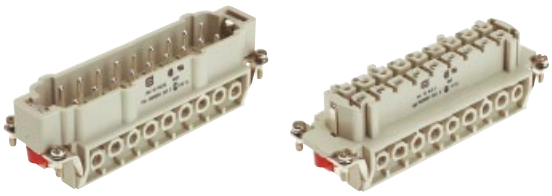


**Stock items in bold type**

Number of contacts

16 + ⏚

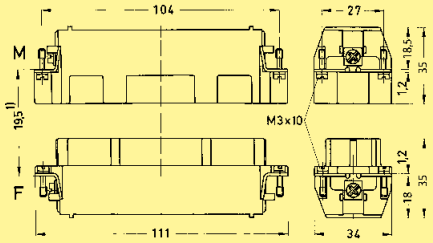
+ 2 additional contacts for safe high voltage connections



Part number

| Identification | Series | Male insert (M) | Female insert (F) |
|---|---|---|---|
| Screw terminal | Han Hv E® | | |
|  | 1-16 | **09 34 016 2601** | **09 34 016 2701** |

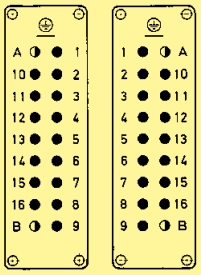
Drawing




1) Distance for contact max. 21 mm

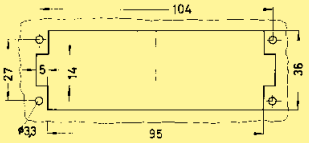
Contact arrangement (view from termination side)

Han® 16 Hv E




- ● Working contact
- ◐ Relay contact
- ○ Without contact

Panel cut out for inserts for use without hoods/ housings





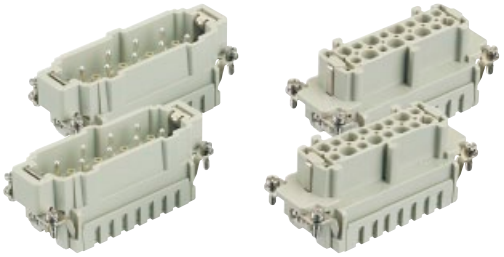



Stock items in bold type

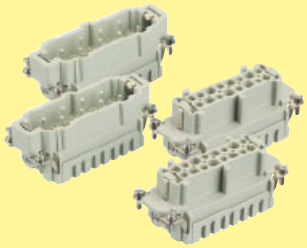
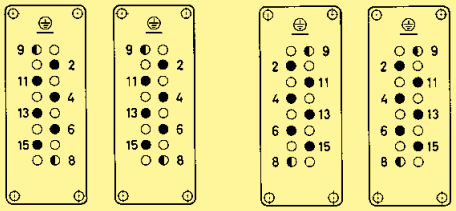
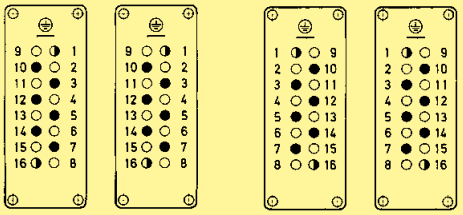
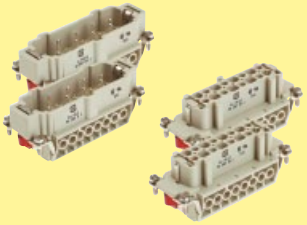
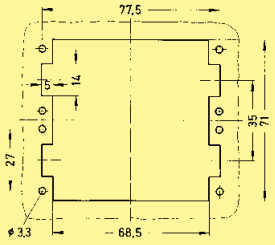
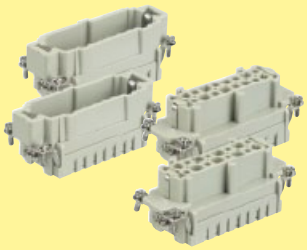
Number of contacts

12 + ⏚

+ 4 additional contacts for safe high voltage connections



Han Hv E

| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Cage-clamp terminal** | Han® Hv ES | | | Dimensions for inserts see page 04.07 | |
|  not plug compatible to screw/crimp terminal | 1-6<br>1-6 | 09 34 006 2616<br>09 34 006 2616 | 09 34 006 2716<br>09 34 006 2716 | Contact arrangement (view from termination side)<br>Han® 12 Hv ES<br><br>M F | |
| **Screw terminal** | Han Hv E® | | | Han® 12 Hv E<br><br>M F<br>● Working contact<br>◐ Relay contact<br>○ Without contact | |
|  | 1-6<br>1-6 | 09 34 006 2601<br>09 34 006 2601 | 09 34 006 2701<br>09 34 006 2701 | | |
| **Crimp terminal** | Han Hv E® | | | Panel cut out for inserts for use without hoods/ housings<br> | |
|  Order crimp contacts separately (see page 04.04) | 1-6<br>1-6 | 09 34 006 2602<br>09 34 006 2602 | 09 34 006 2702<br>09 34 006 2702 | | |

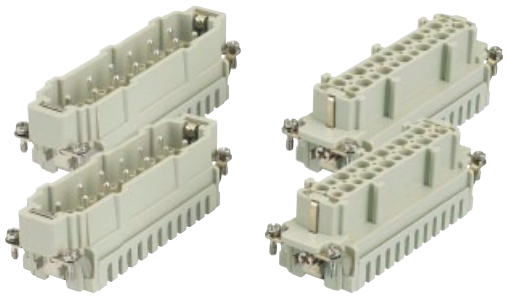


**Stock items in bold type**

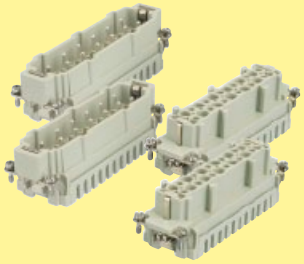
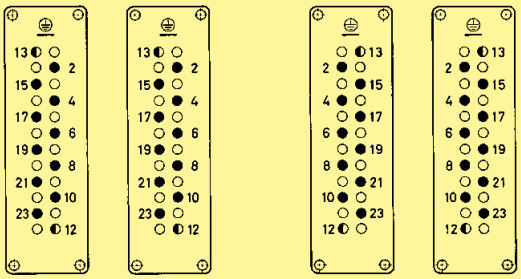
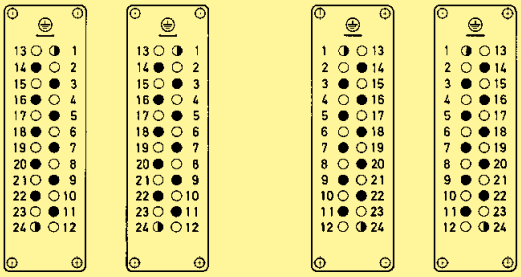
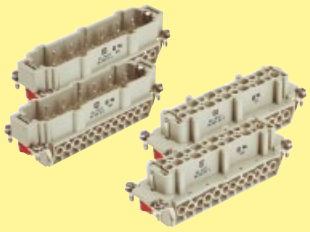
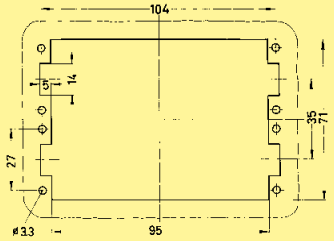
Number of contacts

20 + ⏚

+ 4 additional contacts for safe high voltage connections





| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Cage clamp terminal | Han® Hv ES | | | Dimensions for inserts see page 04.09 | |
|  not plug compatible to screw/crimp terminal | 1-10 | 09 34 010 2616 | 09 34 010 2716 | Contact arrangement (view from termination side) Han® 20 Hv ES  M F | |
| | 1-10 | 09 34 010 2616 | 09 34 010 2716 | | |
| Screw terminal | Han Hv E® | | | Han® 20 Hv E  M F | |
|  | 1-10 | 09 34 010 2601 | 09 34 010 2701 | | |
| | 1-10 | 09 34 010 2601 | 09 34 010 2701 | | |
| Crimp terminal | Han Hv E® | | | ● Working contact ◐ Relay contact ○ Without contact | |
|  Order crimp contacts separately (see page 04.04) | 1-10 | 09 34 010 2602 | 09 34 010 2702 | Panel cut out for inserts for use without hoods/ housings  | |
| | 1-10 | 09 34 010 2602 | 09 34 010 2702 | | |

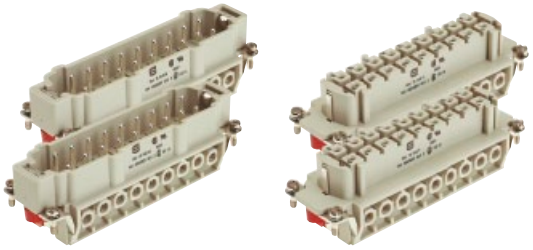


Stock items in bold type

Number of contacts

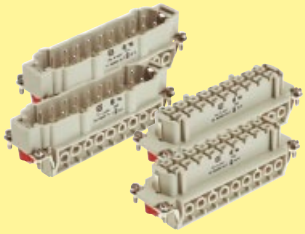
32 + ⏚

+ 4 additional contacts for
safe high voltage connections





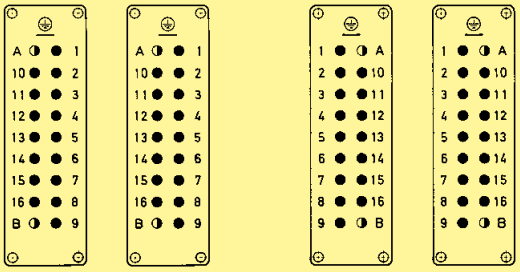
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Screw terminal | Han Hv E® | | | | |
| | 1-16 | **09 34 016 2601** | **09 34 016 2701** | | |
| | 1-16 | **09 34 016 2601** | **09 34 016 2701** | | |



Dimensions for inserts see page 04.11

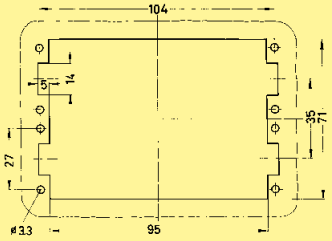
Contact arrangement (view from termination side)

Han® 32 Hv E




- ● Working contact
- ◐ Relay contact
- ○ Without contact

Panel cut out for inserts for use without hoods/ housings

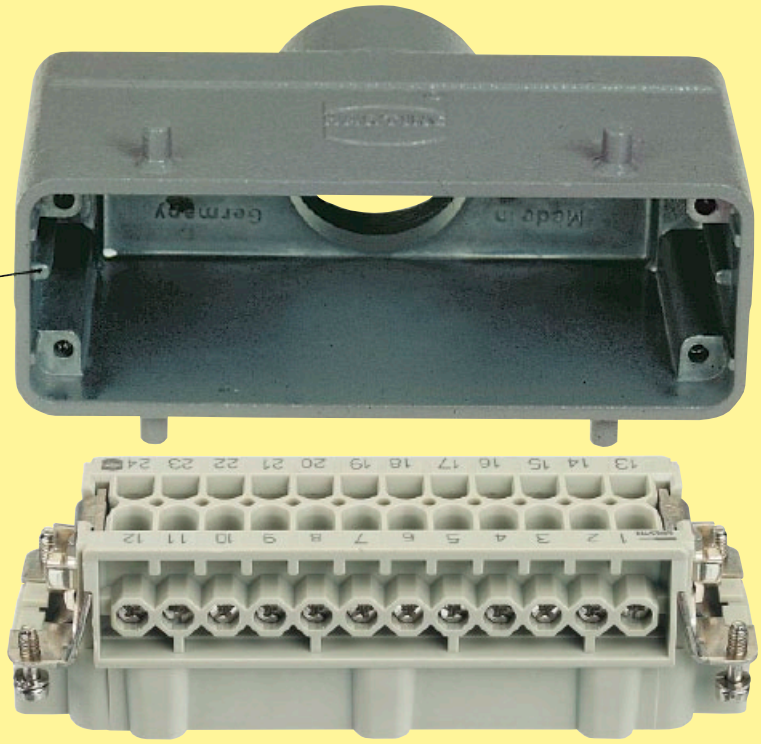





Stock items in bold type

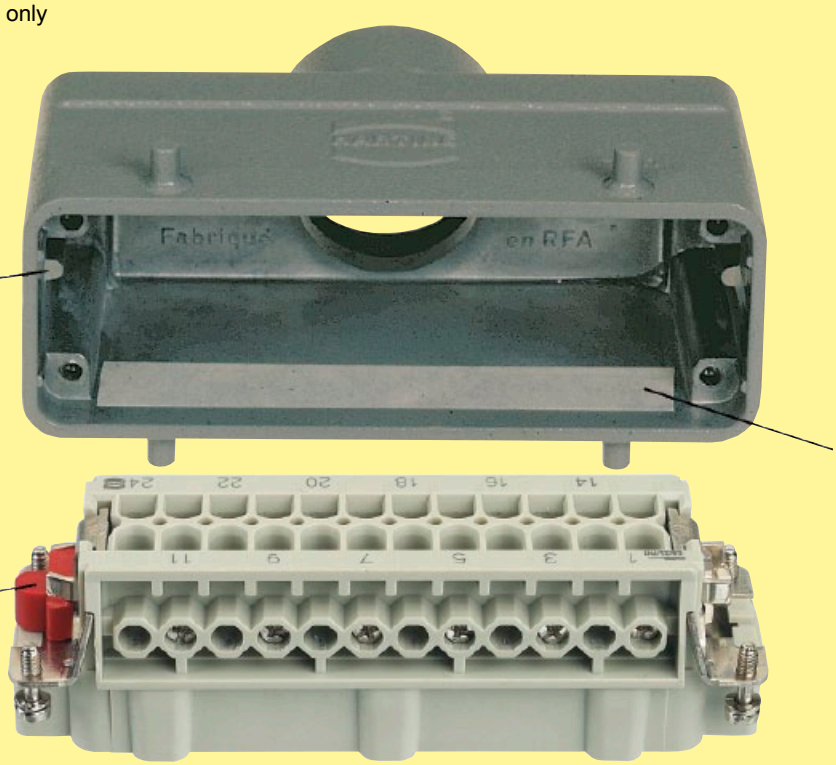
## Standard Hoods/Housings Han® B

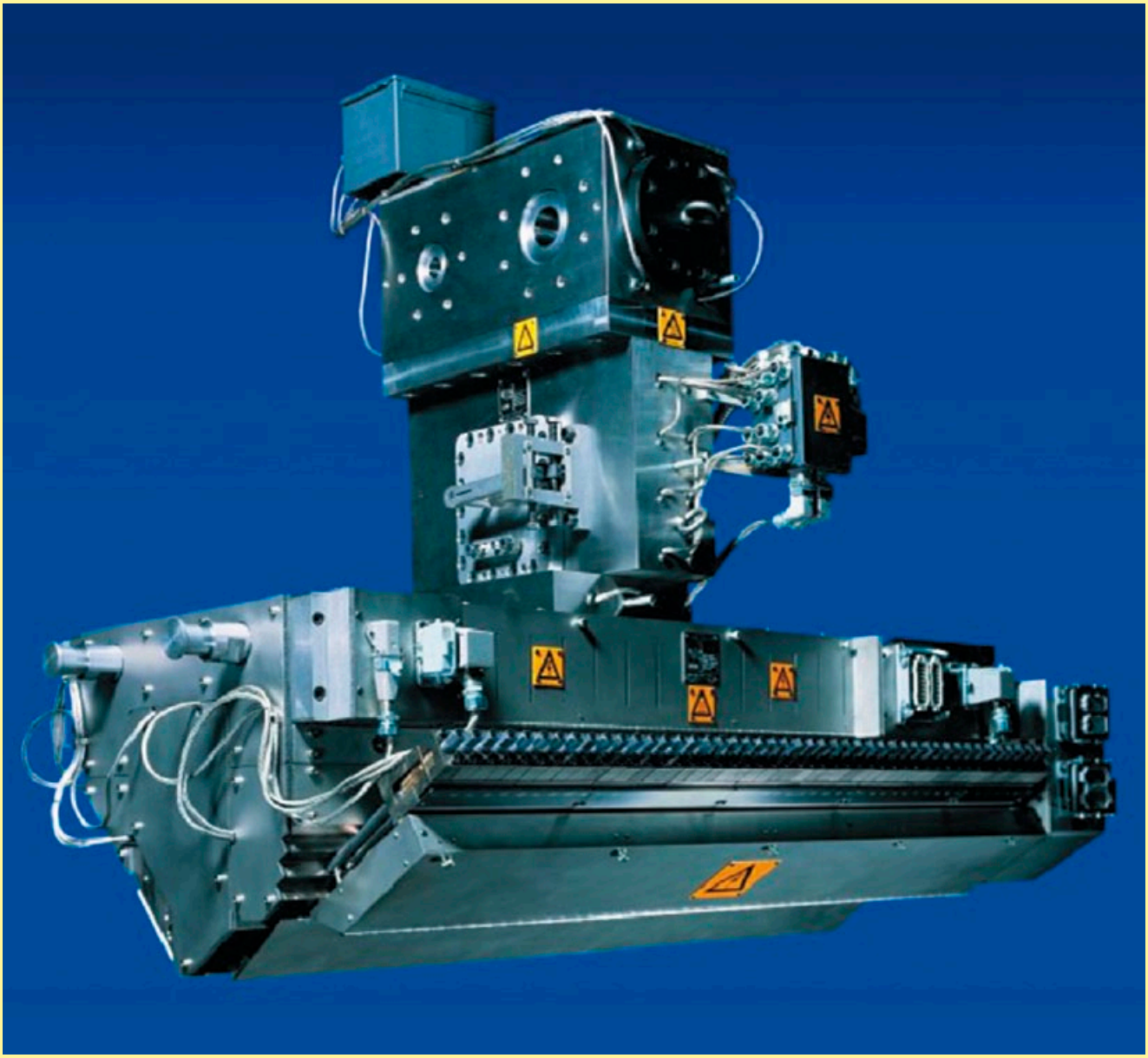
Suitable for inserts
Han® Hv ES cage-clamp terminal
and Han Hv E® crimp terminal




## Special hood/housing Han Hv E®

Han Hv E® inserts may be used
together with the corresponding
Han Hv E® hoods/housings only

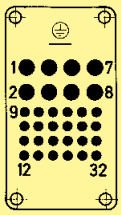
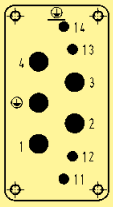
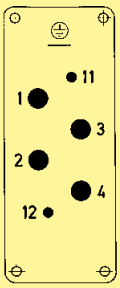
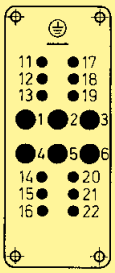
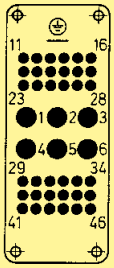
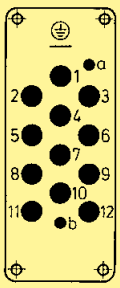
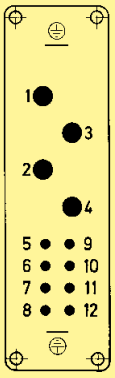
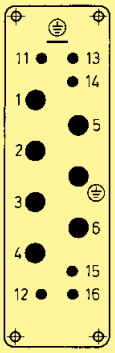
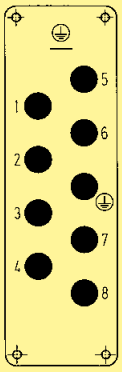




Biaxally oriented film die. Cloeren Inc., Orange (TX), USA

# Contents


| | Page |
|---|---|
| Han-Com® Summary | **05.02** |
| Han® K 8/24 | **05.04** |
| Han® K 4/4 | **05.06** |
| Han® K 4/2 | **05.08** |
| Han® K 6/12 | **05.10** |
| Han® K 6/36 | **05.12** |
| Han® K 12/2 | **05.14** |
| Han® K 4/8 | **05.16** |
| Han® K 6/6 | **05.18** |
| Han® K 8/0 | **05.20** |
| Assembly instructions Han® K 4/4 / Han® K 6/12 / Han® K 6/6 / Han® K 8/0 | **05.22** |

| Size | Description | | | | |
|---|---|---|---|---|---|
| 10 B | |  |  | | |
| | Power area<br>Signal area | Han® K 8/24<br>16 A / 230/400 V<br>10 A / 160 V<br>Page 05.04 | Han® K 4/4<br>63 A / 690 V<br>16 A / 230 V<br>Page 05.06 | | |
| 16 B | |  |  |  |  |
| | Power area<br>Signal area | Han® K 4/0, 4/2<br>80 A / 830 V<br>16 A / 400 V<br>Page 05.08 | Han® K 6/12<br>40 A / 690 V<br>10 A / 230/400 V<br>Page 05.10 | Han® K 6/36<br>40 A / 690 V<br>10 A / 160 V<br>Page 05.12 | Han® K 12/2<br>40 A / 690 V<br>10 A / 250 V<br>Page 05.14 |
| 24 B | |  |  |  | |
| | Power area<br>Signal area | Han® K 4/8<br>80 A / 400 V<br>16 A / 400 V<br>Page 05.16 | Han® K 6/6<br>100 A / 690 V<br>16 A / 400 V<br>Page 05.18 | Han® K 8/0<br>100 A / 690 V<br><br>Page 05.20 | |
| 32 B | suitable for 2 inserts of size 16 B | | | | |
| 48 B | suitable for 2 inserts of size 24 B | | | | |

# Summary

| Type | Technical characteristics | | | | | | | | Suitable Hoods/ Housings |
|---|---|---|---|---|---|---|---|---|---|
| | Power area | | | | Signal area | | | | |
| | Number of contacts | A | V ~ | Termination | Number of contacts | A | V ~ | Termination | Size |
| Han® K 4/0 | 4+PE | 80 | 830 | screw | — | — | — | — | 16 B, 32 B |
| Han® K 4/2 | 4+PE | 80 | 830 | screw | 2 | 16 | 400 | screw | 16 B, 32 B |
| Han® K 4/4 | 4+PE | 63 | 690 | axial screw | 4 | 16 | 250 | cage clamp | 10 B |
| Han® K 4/8 | 4+PE | 80 | 400 | screw | 8 | 16 | 400 | screw | 24 B, 48 B |
| Han® K 6/6 | 6+PE | 100 | 690 | axial screw | 6 | 16 | 400 | screw | 24 B, 48 B |
| Han® K 6/12 | 6+PE | 40 | 690 | axial screw | 12 | 10 | 230/400 | screw | 16 B, 32 B |
| Han® K 6/36 | 6+PE | 40 | 690 | crimp | 36 | 10 | 160 | crimp | 16 B, 32 B |
| Han® K 8/0 | 8+PE | 100 | 690 | axial screw | — | — | — | — | 24 B, 48 B |
| Han® K 8/24 | 8+PE | 16 | 230/400 | crimp | 24 | 10 | 160 | crimp | 10 B |
| Han® K 12/2 | 12+PE | 40 | 690 | crimp | 2 | 10 | 250 | crimp | 16 B, 32 B |

# Type identification

Han® K 6/12

| | |
|---|---|
| Han® | Industrial connectors Han® |
| K | Series Han® K / Han-Com® |
| 6 | Number of power contacts |
| 12 | Number of signal contacts |

# Identification of contact position

| | |
|---|---|
| Han® K connectors<br>from 11 to... (signal area) | from 1 to ... (power area) |
| Exceptions | |
| Han® K 4/8 and Han® K 8/24 | from 1 to ... (consecutively) |
| Han® K 12/2<br>with „a“ and „b“ (signal area) | from 1 to 12 (power area) |

# Comment for users

For the combination of several circuits in one cable and/or e.g. one connector the following standards are valid:
VDE 0100-410/06.2007 § 411.1.3.2 and EN 60 204/06.2007 § 13.1.3

# Accessories

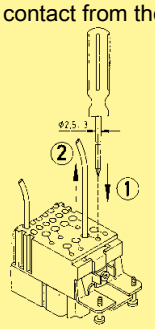
| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |
| PCB adapter | chapter 40 |

## Features

- Combination of power and signal area in one connector
- Crimp termination for power and signal area
- Use of standard Han E® and Han D® contacts

### Removal of power contacts (Han E®)

① Push cross-slotted screw driver ( size 0 acc. to DIN 5260) in the relevant hole of the contact until it reaches the bottom
② Withdraw the crimped contact from the insert



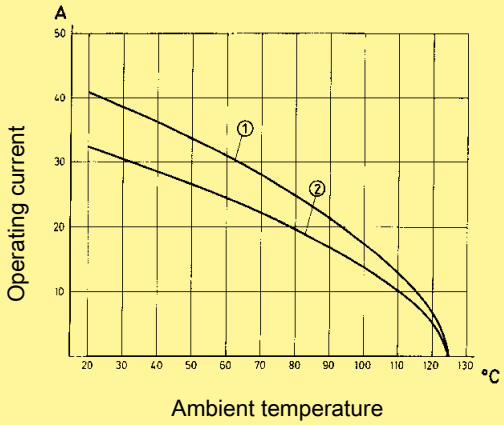

### Removal of signal contacts (Han D®)

Description see removal tool chapter 99

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge: ① 4 mm²
② 2.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

| | |
|---|---|
| Number of contacts | 8 / 24 + PE |
| Electrical data acc. to EN 61 984 | |
| Power area | **16 A 230/400 V 4 kV 3** |
| Rated current | 16 A |
| Rated voltage conductor - ground | 230 V |
| Rated voltage conductor - conductor | 400 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 10 A 250 V 4 kV 2 |
| Signal area | **10 A 160 V 2.5 kV 3** |
| Rated current | 10 A |
| Rated voltage | 160 V |
| Rated impulse voltage | 2.5 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 V / 300 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | Polyamide |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | HB |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

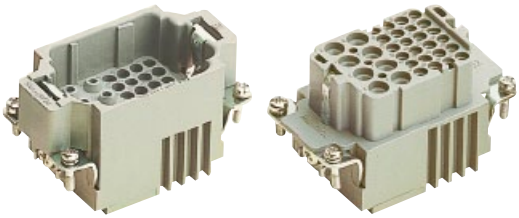
### Contacts

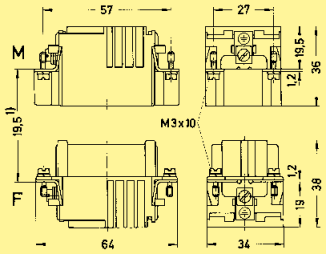
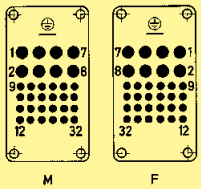
| | |
|---|---|
| Power contacts | |
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 0.5 ... 4 mm² |
| - AWG | 20 ... 12 |
| Signal contacts | |
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 25 ... 14 |

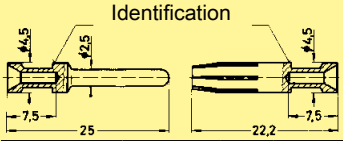
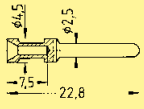
| | |
|---|---|
| Hoods/Housings | see chapter 30 / 31 |

Number of contacts

# 8/24 + ⏚

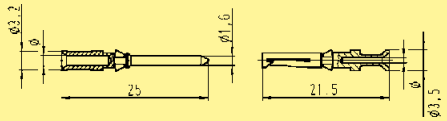


| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 38 032 3001** | **09 38 032 3101** | <br>1) Distance for contact max. 21 mm<br><br>Contact arrangement view from termination side | |

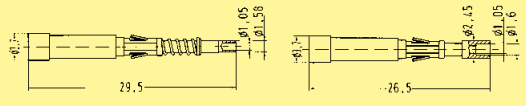
| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts<br>silver plated | 0.5<br>0.75<br>1<br>1.5<br>2.5<br>4 | **09 33 000 6121**<br>**09 33 000 6114**<br>**09 33 000 6105**<br>**09 33 000 6104**<br>**09 33 000 6102**<br>**09 33 000 6107** | **09 33 000 6220**<br>**09 33 000 6214**<br>**09 33 000 6205**<br>**09 33 000 6204**<br>**09 33 000 6202**<br>**09 33 000 6207** | Operating contact Identification<br><br>Relay contact<br> | |
| gold plated | 0.5<br>0.75<br>1<br>1.5<br>2.5<br>4 | **09 33 000 6122**<br>**09 33 000 6115**<br>**09 33 000 6118**<br>**09 33 000 6116**<br>**09 33 000 6123**<br>09 33 000 6119 | **09 33 000 6222**<br>**09 33 000 6215**<br>**09 33 000 6218**<br>**09 33 000 6216**<br>**09 33 000 6223**<br>**09 33 000 6221** | | |
| Relay contacts<br>silver plated | 0.75-1<br>1.5<br>2.5 | 09 33 000 6109<br>09 33 000 6110<br>09 33 000 6111 | | | |

| Identification | Wire gauge | | Stripping length |
|---|---|---|---|
| no groove | 0.5 mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 mm² | AWG 14 | 7.5 mm |
| no groove | 4 mm² | AWG 12 | 7.5 mm |

* on the back crimp collar

| | | | | | |
|---|---|---|---|---|---|
| Signal contacts<br>silver plated | 0.14-0.37<br>0.5<br>0.75<br>1<br>1.5<br>2.5 | **09 15 000 6104**<br>**09 15 000 6103**<br>**09 15 000 6105**<br>**09 15 000 6102**<br>**09 15 000 6101**<br>**09 15 000 6106** | **09 15 000 6204**<br>**09 15 000 6203**<br>**09 15 000 6205**<br>**09 15 000 6202**<br>**09 15 000 6201**<br>**09 15 000 6206** |  | |
| gold plated | 0.14-0.37<br>0.5<br>0.75<br>1<br>1.5<br>2.5 | **09 15 000 6124**<br>**09 15 000 6123**<br>**09 15 000 6125**<br>**09 15 000 6122**<br>**09 15 000 6121**<br>**09 15 000 6126** | **09 15 000 6224**<br>**09 15 000 6223**<br>**09 15 000 6225**<br>**09 15 000 6222**<br>**09 15 000 6221**<br>**09 15 000 6226** | | |

| Wire gauge | | ∅ | Stripping length |
|---|---|---|---|
| 0.14-0.37 mm² | AWG 26-22 | 0.9 | 8 mm |
| 0.5 mm² | AWG 20 | 1.1 | 8 mm |
| 0.75 mm² | AWG 18 | 1.3 | 8 mm |
| 1 mm² | AWG 18 | 1.45 | 8 mm |
| 1.5 mm² | AWG 16 | 1.75 | 8 mm |
| 2.5 mm² | AWG 14 | 2.25 | 6 mm |

| | | | | | |
|---|---|---|---|---|---|
| F.O. contacts<br>for 1 mm | | **20 10 001 3211** | **20 10 001 3221** |  | |

Stock items in bold type

## Features

- Combination of power area and signal area in the same connector
- Axial screw termination for power area
- Cage clamp termination for signal area
- Finger safe
- Same range of wire gauge for PE contact and power contacts

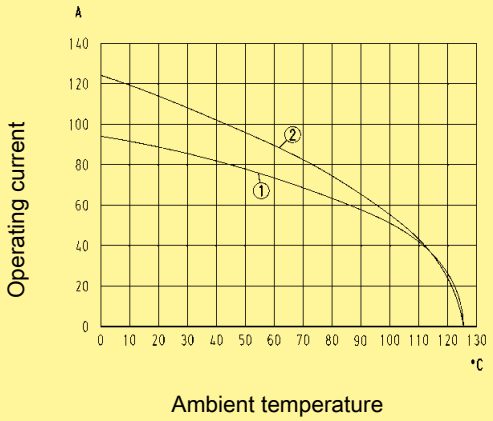
Assembly instructions see page 05.22



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

Wire gauge: ① 16 mm²
② 22 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 4 / 4 + PE |
| Electrical data acc. to EN 61 984 | |
| Power area | **63 A 690 V 8 kV 3** |
| Rated current | 63 A |
| Rated voltage | 690 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Signal area | **16 A 250 V 4 kV 3** |
| Rated current | 16 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL | 600 V / 230 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

### Contacts

Power contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0.5 mΩ |
| Axial screw termination | |
| - geometric wire gauge | 6 ... 22 mm² |
| - AWG | 8 ... 4 |
| Max. insulation diameter | |
| 6 ... 16 mm² | 8.9 mm |
| 22 mm² | 11 mm |

Tightening tourque

| mm² | 6 | 10 | 16 | 22 |
|---|---|---|---|---|
| Nm | 2 | 3 | 4 | 5 |

Stripping length

| mm² | 6 | 10 | 16 | 22 |
|---|---|---|---|---|
| mm | $11^{+1}$ | $11^{+1}$ | $11^{+1}$ | $13^{+1}$ |

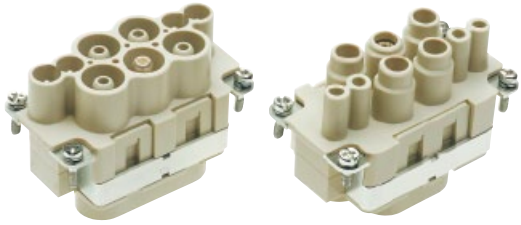
Signal contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 3 mΩ |
| Cage clamp terminal | |
| - geometric wire gauge | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |
| Stripping length | 7 ... 9 mm |

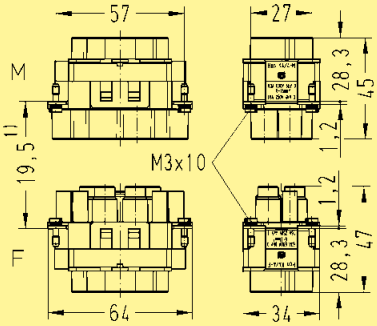
| | |
|---|---|
| Hoods/Housings | see chapter 30 / 31 |

Number of contacts

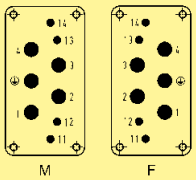
4/4 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han® K 4/4<br>Axial screw terminal /<br>Cage clamp terminal | | | | |
| finger safe<br>6 ... 16 mm² | **09 38 008 2601** | **09 38 008 2701** | | |
| finger safe<br>10 ... 22 mm² | **09 38 008 2602** | **09 38 008 2702** | | |
| not finger safe<br>6 ... 16 mm² | **09 38 008 2611** | | | |
| not finger safe<br>10 ... 22 mm² | **09 38 008 2612** | | | |




1) Distance for contact max. 21 mm




Contact arrangement view from termination side

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hex key SW 2.5<br>for axial setscrew | | | |
| adapter 1/4“ | **09 99 000 0375** | | |







Stock items in bold type

## Features

- Combination of power and signal area in one connector
- Screw termination for power and signal area
- Missing signal contacts for Han® K 4/0

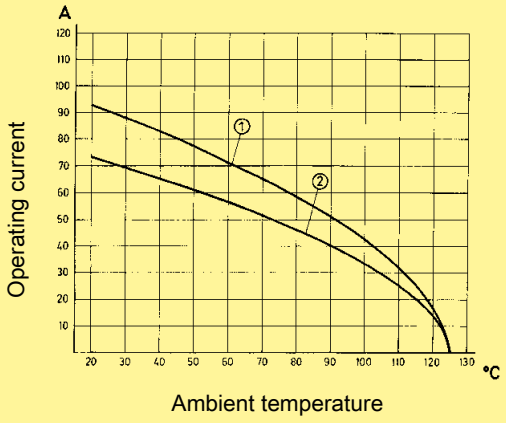
In accordance with the appropriate regulations a wire-end sleeve has to be used at clamps without wire protection (see „Screw terminal“, chapter 00).



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge: ① 16 mm²
② 10 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

| | |
|---|---|
| Number of contacts | 4 / 2 + PE |
| Electrical data acc. to EN 61 984 | |
| Power area | **80 A 830 V 8 kV 3** |
| Rated current | 80 A |
| Rated voltage | 830 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 80 A 1000 V 8 kV 2 |
| Signal area | **16 A 400 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 400/690 V 6 kV 2 |
| Rated voltage acc. to UL/CSA | 600 V / 300 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Power contacts | |
| Material | copper alloy |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0.3 mΩ |
| Screw terminal - geometric wire gauge | 1.5 ... 16 mm² |
| - AWG | 16 ... 6 |

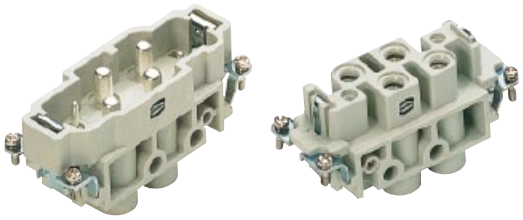
| mm² | 1.5 | 2.5 | 4 | 6 | 10 | 16 |
|---|---|---|---|---|---|---|
| Nm | 1.2 | 2 | 3 | 3 | 3 | 3 |

| | |
|---|---|
| Tightening tourque | |
| Stripping length | 14 mm |
| Signal contacts | |
| Material | copper alloy |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Screw terminal - geometric wire gauge | 0.5 ... 2.5 mm² |
| - AWG | 20 ... 14 |
| Tightening tourque | 0.5 Nm |
| Stripping length | 7.5 mm |

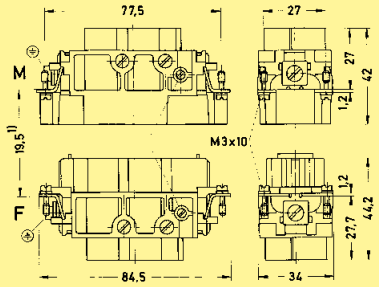
| | |
|---|---|
| Hoods/Housings | see chapter 30 / 31 |

Number of contacts

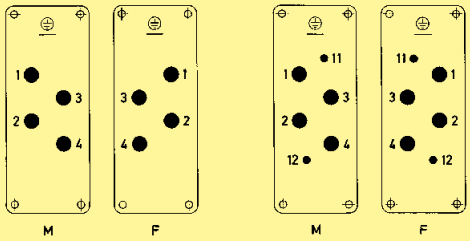
# 4/0, 4/2 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han K 4/0, Han® K 4/2 Screw terminal | | | | |
| Han® K 4/2 | **09 38 006 2601** | **09 38 006 2701** | | |
| Han® K 4/0 | **09 38 006 2611** | **09 38 006 2711** | | |




1) Distance for contact max. 21 mm




Han K 4/0 Han® K 4/2

Contact arrangement view from termination side





Stock items in bold type

## Features

- Combination of power and signal area in one connector
- Axial screw termination for power area
- Screw termination for signal area

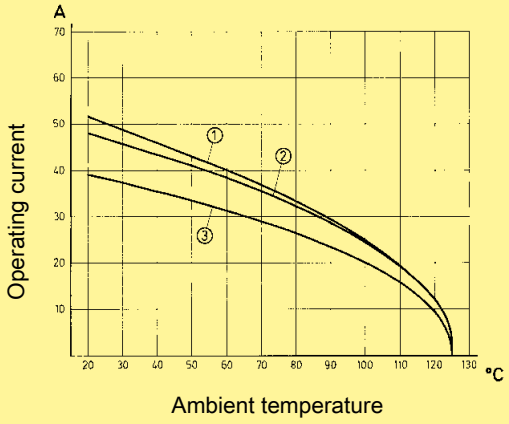
Assembly instructions see page 05.23



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge:
① 10 mm²
② 6 mm²
③ 4 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

| | |
|---|---|
| Number of contacts | 6 / 12 + PE |
| Electrical data acc. to EN 61 984 | |
| Power area | **40 A 690 V 8 kV 3** |
| Rated current | 40 A |
| Rated voltage | 690 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Signal area | **10 A 230/400 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage conductor - ground | 230 V |
| Rated voltage conductor - conductor | 400 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 V / 300 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

### Contacts

Power contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0.5 mΩ |
| Axial screw termination | |
| - geometric wire gauge | 2.5 ... 10 mm² |
| - AWG | 14 ... 8 |
| Max. insulation diameter | 6.1 mm |

Tightening tourque

| mm² | 2.5 | 4 | 6 | 10 |
|---|---|---|---|---|
| Nm | 1.5 | 1.5 | 2 | 2 |

Stripping length

| mm² | 2.5 | 4 | 6 | 10 |
|---|---|---|---|---|
| mm | $5^{+1}$ | $5^{+1}$ | $8^{+1}$ | $8^{+1}$ |

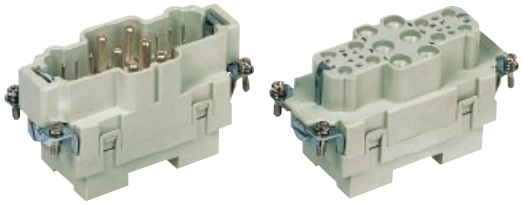
Signal contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 3 mΩ |
| Screw terminal | |
| - geometric wire gauge | 0.2 ... 2.5 mm² |
| - AWG | 24 ... 14 |
| Tightening tourque | 0.8 Nm |
| Stripping length | 7.5 mm |

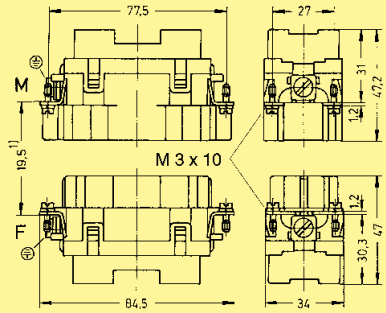
| | |
|---|---|
| Hoods/Housings | see chapter 30 / 31 |

Number of contacts

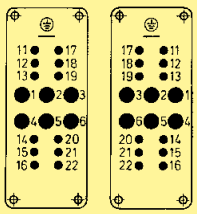
# 6/12 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han® K 6/12<br>Axial screw terminal /<br>Screw terminal | | | | |
| 2.5 ... 8 mm² | **09 38 018 2601** | **09 38 018 2701** | | |
| 6 ... 10 mm² | **09 38 018 2602** | **09 38 018 2702** | | |




1) Distance for contact max. 21 mm




Contact arrangement view from termination side

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hex key SW 2<br>for axial setscrew | | | |
| adapter 1/4“ | **09 99 000 0369** | | |





Stock items in bold type

## Features

- Combination of power and signal area in one connector
- Crimp termination for power and signal area
- Use of standard Han® C and Han D® contacts

### Removal of power contacts (Han® C)

Description see removal tool chapter 99

### Removal of signal contacts (Han D®)

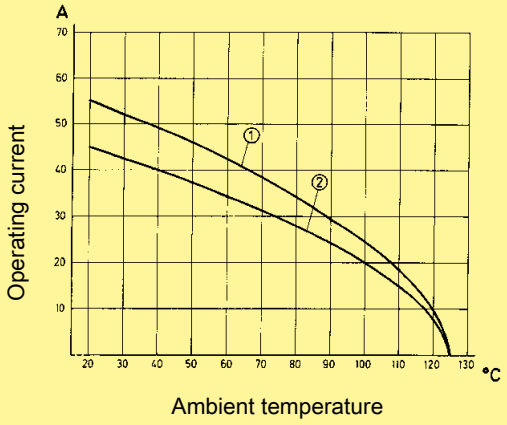
Description see removal tool chapter 99



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge: ① 6 mm²
② 4 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

| | |
|---|---|
| Number of contacts | 6 / 36 + PE |
| Electrical data acc. to EN 61 984 | |
| Power area | **40 A 690 V 8 kV 3** |
| Rated current | 40 A |
| Rated voltage | 690 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Signal area | **10 A 160 V 2.5 kV 3** |
| Rated current | 10 A |
| Rated voltage | 160 V |
| Rated impulse voltage | 2.5 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 10 A 250 V 4 kV 2 |
| Rated voltage acc. to UL/CSA | 600 V / 300 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

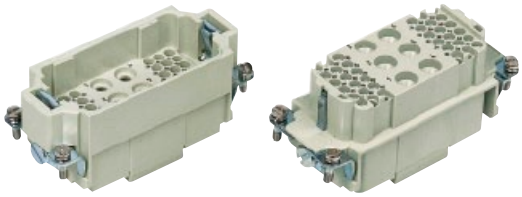
### Contacts

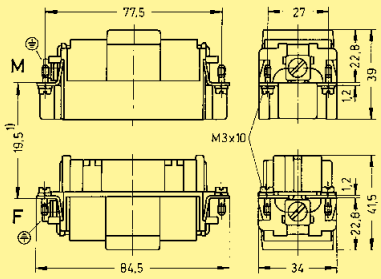
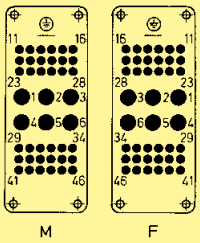
| | |
|---|---|
| Power contacts | |
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 1.5 ... 6 mm² |
| - AWG | 16 ... 10 |
| Max. insulation diameter | 5 mm |
| Signal contacts | |
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |

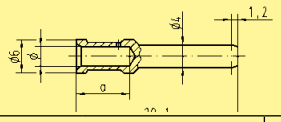
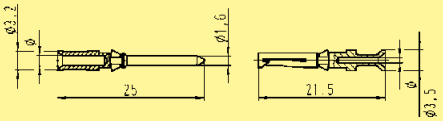
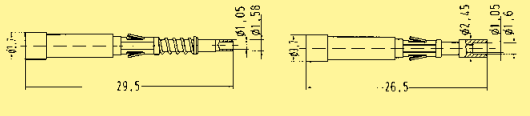
| | |
|---|---|
| Hoods/Housings | see chapter 30 / 31 |

Number of contacts

# 6/36 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately | **09 38 042 3001** | **09 38 042 3101** | <br>1) Distance for contact max. 21 mm<br><br>Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp contacts<br>Power contacts<br>silver plated<br> | 1.5<br>2.5<br>4<br>6 | **09 32 000 6104**<br>**09 32 000 6105**<br>**09 32 000 6107**<br>**09 32 000 6108** | **09 32 000 6204**<br>**09 32 000 6205**<br>**09 32 000 6207**<br>**09 32 000 6208** |  | |
| Signal contacts<br>silver plated<br> | 0.14-0.37<br>0.5<br>0.75<br>1<br>1.5<br>2.5 | **09 15 000 6104**<br>**09 15 000 6103**<br>**09 15 000 6105**<br>**09 15 000 6102**<br>**09 15 000 6101**<br>**09 15 000 6106** | **09 15 000 6204**<br>**09 15 000 6203**<br>**09 15 000 6205**<br>**09 15 000 6202**<br>**09 15 000 6201**<br>**09 15 000 6206** |  | |
| gold plated<br> | 0.14-0.37<br>0.5<br>0.75<br>1<br>1.5<br>2.5 | **09 15 000 6124**<br>**09 15 000 6123**<br>**09 15 000 6125**<br>**09 15 000 6122**<br>**09 15 000 6121**<br>**09 15 000 6126** | **09 15 000 6224**<br>**09 15 000 6223**<br>**09 15 000 6225**<br>**09 15 000 6222**<br>**09 15 000 6221**<br>**09 15 000 6226** | | |
| F.O. contacts<br>for 1 mm<br> | | **20 10 001 3211** | **20 10 001 3221** |  | |

| Wire gauge | | Ø | Stripping length |
|---|---|---|---|
| 1.5 mm² | AWG 16 | 1.75 | 9 mm |
| 2.5 mm² | AWG 14 | 2.25 | 9 mm |
| 4 mm² | AWG 12 | 2.85 | 9.6 mm |
| 6 mm² | AWG 10 | 3.5 | 9.6 mm |

| Wire gauge | | Ø | Stripping length |
|---|---|---|---|
| 0.14-0.37 mm² | AWG 26-22 | 0.9 | 8 mm |
| 0.5 mm² | AWG 20 | 1.1 | 8 mm |
| 0.75 mm² | AWG 18 | 1.3 | 8 mm |
| 1 mm² | AWG 18 | 1.45 | 8 mm |
| 1.5 mm² | AWG 16 | 1.75 | 8 mm |
| 2.5 mm² | AWG 14 | 2.25 | 6 mm |



Stock items in bold type

## Features

- Combination of power and signal area in one connector
- Crimp termination for power and signal area
- Use of standard Han® C and Han D® contacts

### Removal of power contacts (Han® C)

Description see removal tool chapter 99

### Removal of signal contacts (Han D®)

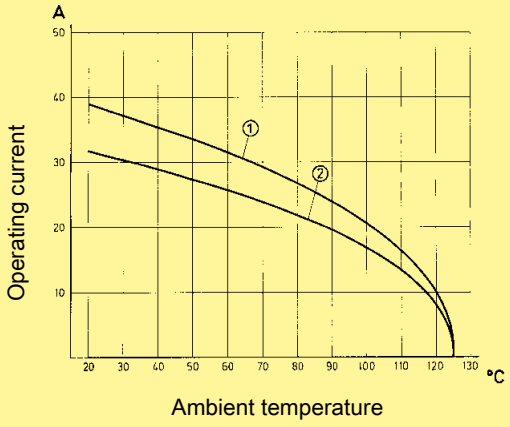
Description see removal tool chapter 99



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

Wire gauge: ① 6 mm²
② 4 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

| | |
|---|---|
| Number of contacts | 12 / 2 + PE |
| Electrical data acc. to EN 61 984 | |
| Power area | **40 A 690 V 8 kV 3** |
| Rated current | 40 A |
| Rated voltage | 690 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Signal area | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 V / 300 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

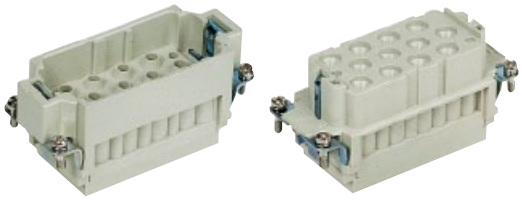
### Contacts

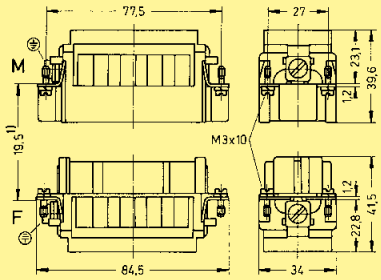
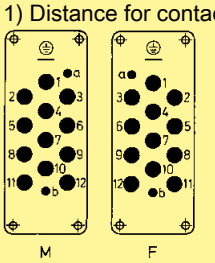
| | |
|---|---|
| Power contacts | |
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 1.5 ... 6 mm² |
| - AWG | 16 ... 10 |
| Signal contacts | |
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |

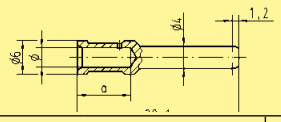
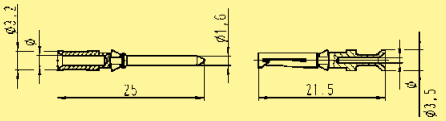
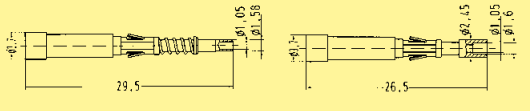
| | |
|---|---|
| Hoods/Housings | see chapter 30 / 31 |

Number of contacts

# 12/2 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately | **09 32 012 3001** | **09 32 012 3101** | <br>1) Distance for contact max. 21 mm<br><br>Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp contacts<br>Power contacts<br>silver plated | 1.5<br>2.5<br>4<br>6 | **09 32 000 6104**<br>**09 32 000 6105**<br>**09 32 000 6107**<br>**09 32 000 6108** | **09 32 000 6204**<br>**09 32 000 6205**<br>**09 32 000 6207**<br>**09 32 000 6208** |  | |
| Signal contacts<br>silver plated | 0.14-0.37<br>0.5<br>0.75<br>1<br>1.5<br>2.5 | **09 15 000 6104**<br>**09 15 000 6103**<br>**09 15 000 6105**<br>**09 15 000 6102**<br>**09 15 000 6101**<br>**09 15 000 6106** | **09 15 000 6204**<br>**09 15 000 6203**<br>**09 15 000 6205**<br>**09 15 000 6202**<br>**09 15 000 6201**<br>**09 15 000 6206** |  | |
| gold plated | 0.14-0.37<br>0.5<br>0.75<br>1<br>1.5<br>2.5 | **09 15 000 6124**<br>**09 15 000 6123**<br>**09 15 000 6125**<br>**09 15 000 6122**<br>**09 15 000 6121**<br>**09 15 000 6126** | **09 15 000 6224**<br>**09 15 000 6223**<br>**09 15 000 6225**<br>**09 15 000 6222**<br>**09 15 000 6221**<br>**09 15 000 6226** | | |
| F.O. contacts<br>for 1 mm | | **20 10 001 3211** | **20 10 001 3221** |  | |

| Wire gauge | | Ø | Stripping length |
|---|---|---|---|
| 1.5 mm² | AWG 16 | 1.75 | 9 mm |
| 2.5 mm² | AWG 14 | 2.25 | 9 mm |
| 4 mm² | AWG 12 | 2.85 | 9.6 mm |
| 6 mm² | AWG 10 | 3.5 | 9.6 mm |

| Wire gauge | | Ø | Stripping length |
|---|---|---|---|
| 0.14-0.37 mm² | AWG 26-22 | 0.9 | 8 mm |
| 0.5 mm² | AWG 20 | 1.1 | 8 mm |
| 0.75 mm² | AWG 18 | 1.3 | 8 mm |
| 1 mm² | AWG 18 | 1.45 | 8 mm |
| 1.5 mm² | AWG 16 | 1.75 | 8 mm |
| 2.5 mm² | AWG 14 | 2.25 | 6 mm |





Stock items in bold type

## Features

- Combination of power and signal area in one connector
- Screw termination for power and signal area

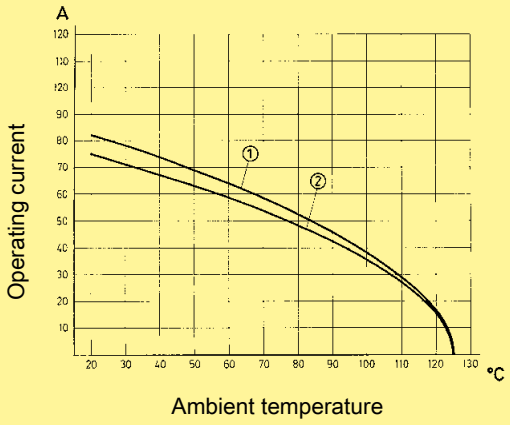
In accordance with the appropriate regulations a wire-end sleeve has to be used at clamps without wire protection (see „Screw terminal“, chapter 00).



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge: ① 16 mm²
② 10 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

| | |
|---|---|
| Number of contacts | 4 / 8 + PE |
| Electrical data acc. to EN 61 984 | |
| Power area | **80 A 400 V 6 kV 3** |
| Rated current | 80 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 80 A 400/690 V 6 kV 2 |
| Signal area | **16 A 400 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 V / 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | Polyamide |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | HB |
| Mechanical working life - mating cycles | ≥ 500 |

### Contacts

Power contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0.3 mΩ |
| Screw terminal - geometric wire gauge | 1.5 ... 16 mm² |
| - AWG | 16 ... 6 |

Tightening tourque

| mm² | 1.5 | 2.5 | 4 | 6 | 10 | 16 |
|---|---|---|---|---|---|---|
| Nm | 1.2 | 2 | 3 | 3 | 3 | 3 |

| | |
|---|---|
| Stripping length | 14 mm |

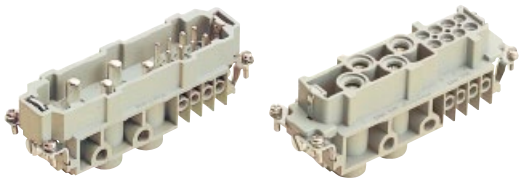
Signal contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Screw terminal - geometric wire gauge | 0.5 ... 2.5 mm² |
| - AWG | 20 ... 14 |
| Tightening tourque | 0.5 Nm |
| Stripping length | 7.5 mm |

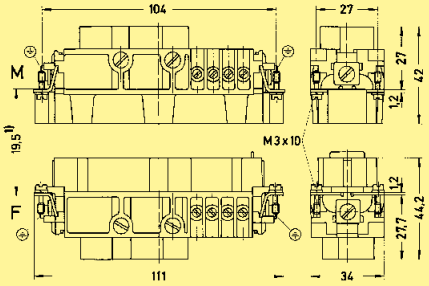
| | |
|---|---|
| Hoods/Housings | see chapter 30 / 31 |

Number of contacts

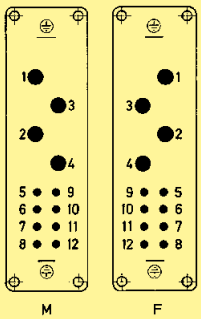
# 4/8 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han® K 4/8<br>Screw terminal | | | | |
| 1.5 ... 16 mm² | **09 38 012 2601** | **09 38 012 2701** | | |




1) Distance for contact max. 21 mm




Contact arrangement view from termination side





Stock items in bold type

## Features

- Combination of power and signal area in one connector
- Axial screw termination for power area
- Screw termination for signal area

Assembly instructions see page 05.24

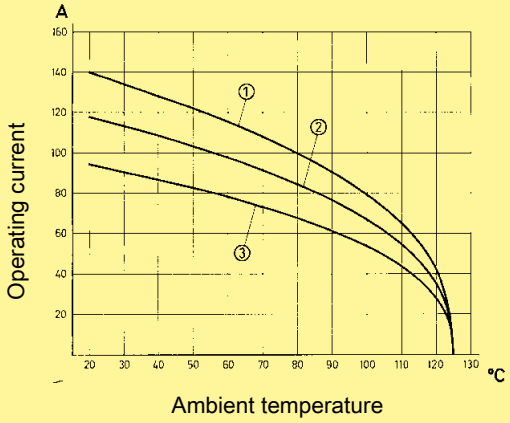
Hoods/Housings see chapter 30 / 31



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge:
① 35 mm²
② 25 mm²
③ 16 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

| | |
|---|---|
| Number of contacts | 6 / 6 + PE |
| Electrical data acc. to EN 61 984 | |
| Power area | **100 A 690 V 8 kV 3** |
| Rated current | 100 A |
| Rated voltage | 690 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 100 A 1000 V 8 kV 2 |
| Signal area | **16 A 400 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL | 600 V / 300 V |
| Rated voltage acc. to CSA | 600 V / 600 V |
| Rated current acc. to CSA | 100 A / 15 A |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

Power contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0.5 mΩ |
| Axial screw termination | |
| - geometric wire gauge | 16 ... 35 mm² |
| - AWG | 5 ... 2 |
| Max. insulation diameter | 11.4 mm |
| Tightening tourque | |

| mm² | 16 | 25 | 35 |
|---|---|---|---|
| Nm | 6 | 7 | 8 |

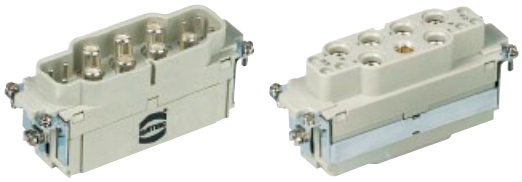
| | |
|---|---|
| Stripping length | $13^{\pm 1}$ mm |

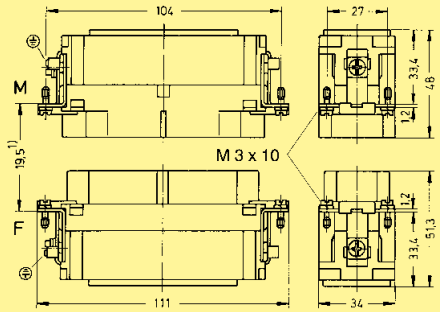
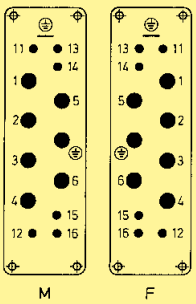
Signal contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 3 mΩ |
| Screw terminal | |
| - geometric wire gauge | 0.2 ... 2.5 mm² |
| - AWG | 24 ... 13 |
| Tightening tourque | 0.8 Nm |
| Stripping length | 7.5 mm |

Number of contacts

# 6/6 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han® K 6/6<br>Axial screw terminal /<br>Screw terminal<br><br>16 ... 35 mm² | **09 38 012 2651** | **09 38 012 2751** | <br>1) Distance for contact max. 21 mm<br><br><br>Contact arrangement view from termination side | |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hex key SW 4<br>for axial setscrew | | | |
| with grip  | **09 99 000 0363** | | |
| adapter 3/8“  | **09 99 000 0370** | | |





Stock items in bold type

## Features

- Axial screw termination for power area
- No signal contacts

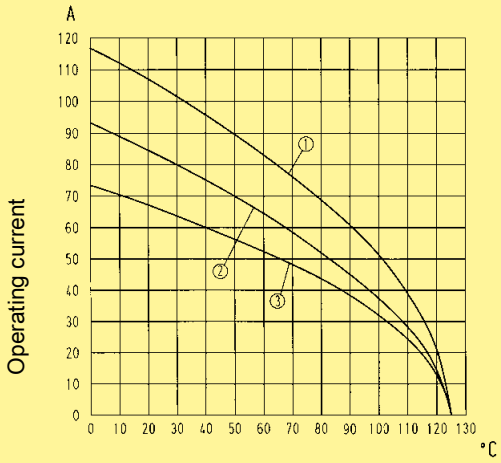
Assembly instructions see page 05.25



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

Wire gauge:
① 25 mm²
② 16 mm²
③ 10 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 8 + PE |
| Electrical data acc. to EN 61 984 | |
| Power area | **100 A 690 V 8 kV 3** |
| Rated current | 100 A |
| Rated voltage | 690 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 100 A 1000 V 8 kV 2 |
| Rated voltage acc. to UL | 600 V |
| Rated current acc. to UL | 82 A |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0.5 mΩ |
| Axial screw termination - geometric wire gauge | 10 ... 25 mm² |
| - AWG | 7 ... 3 |
| Max. insulation diameter | 11.4 mm |
| Tightening tourque | |

| mm² | 10 | 16 | 25 |
|---|---|---|---|
| Nm | 6 | 6 | 7 |

| | |
|---|---|
| Stripping length | 13±1 mm |

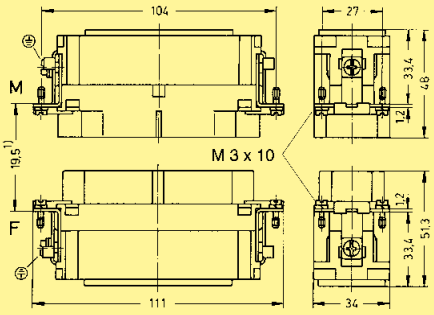
| | |
|---|---|
| Hoods/Housings | see chapter 30 / 31 |

Number of contacts

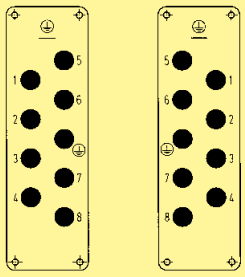
# 8/0 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han® K 8/0<br>Axial screw terminal | | | | |
| 10 ... 25 mm² | 09 38 008 2653 | 09 38 008 2753 | | |




1) Distance for contact max. 21 mm




Contact arrangement view from termination side

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hex key SW 4<br>for axial setscrew | | | |
| with grip | **09 99 000 0363** | | |
| adapter 3/8“ | **09 99 000 0370** | | |







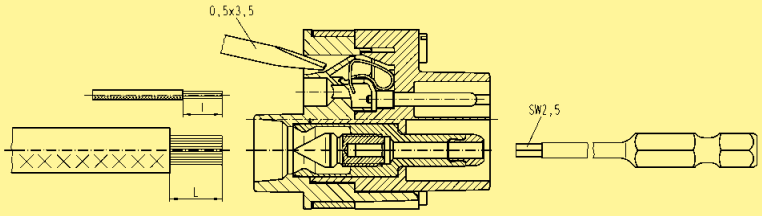


Stock items in bold type

| Description | Depiction | Dimensions in mm |
|---|---|---|

### Step 1:
Signal contacts:
Push screwdriver (0.5 x 3.5) into rectangular chamber. Strip insulation from the wire with a length given on page 05.06 and insert the wire into the round contact chamber.

Power contacts:
Strip insulation from the wire with a length given on page 05.06 and insert the wire into the contact chamber until insulation is flush with contact.
Do not twist the strands of the wire.



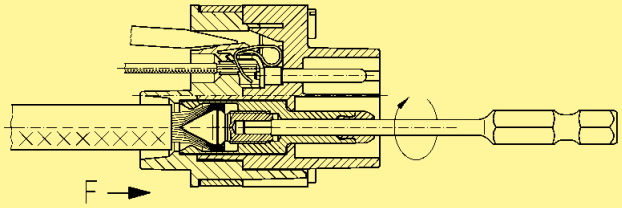

l: Stripping length for signal contacts

L: Stripping length for power contacts

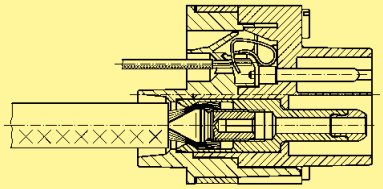


### Step 2:
Signal contacts:
Push screwdriver (0.5 x 3.5) out of rectangular chamber.

Power contacts:
Hold the wire in position and tighten by a hexagonal driver (SW 2.5) from the mating side with a tightening torque given on page 05.06.




### Step 3:
Complete connection





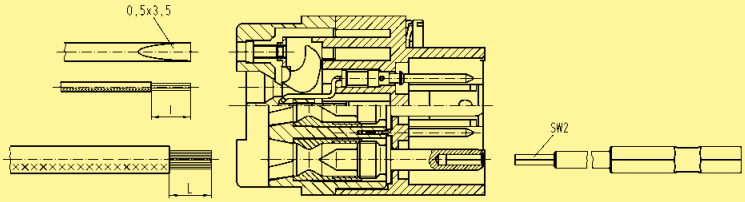
The male insert is shown. The same method is applicable for female inserts.

| Description | Depiction | Dimensions in mm |
|---|---|---|

### Step 1:

Signal contacts:
Strip insulation from the wire with a length given on page 05.10 and insert the wire into the rectangular contact chamber.

Power contacts:
Strip insulation from the wire with a length given on page 05.10 and insert the wire into the contact chamber until insulation is flush with contact.
Do not twist the strands of the wire.



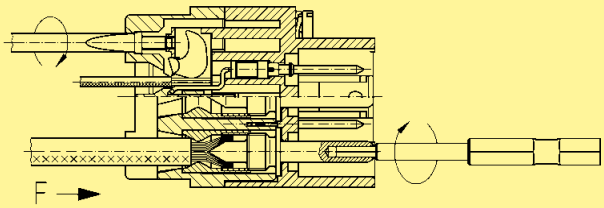

I: Stripping length for signal contacts

L: Stripping length for power contacts

### Step 2:

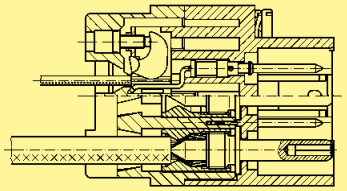
Signal contacts:
Tighten screw termination with screwdriver (0.5 x 3.5) with a tightening torque given on page 05.10.

Power contacts:
Hold the wire in position and tighten by a hexagonal driver (SW 2) from the mating side with a tightening torque given on page 05.10.




### Step 3:

Complete connection



Han Com



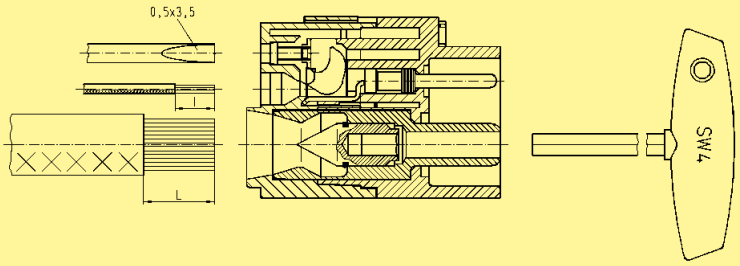
The male insert is shown. The same method is applicable for female inserts.

| Description | Depiction | Dimensions in mm |
|---|---|---|

### Step 1:
Signal contacts:
Strip insulation from the wire with a length given on page 05.18 and insert the wire into the rectangular contact chamber.

Power contacts:
Strip insulation from the wire with a length given on page 05.18 and insert the wire into the contact chamber until insulation is flush with contact.
Do not twist the strands of the wire.



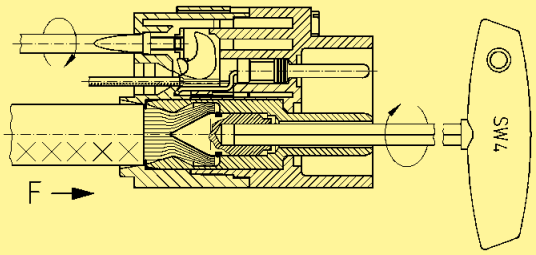



I: Stripping length for signal contacts

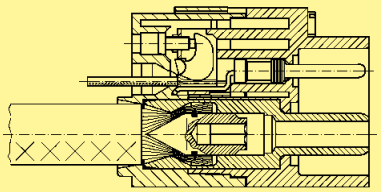
L: Stripping length for power contacts

### Step 2:
Signal contacts:
Tighten screw termination with screwdriver (0.5 x 3.5) with a tightening torque given on page 05.18.

Power contacts:
Hold the wire in position and tighten by a hexagonal driver (SW 4) from the mating side with a tightening torque given on page 05.18.




### Step 3:
Complete connection

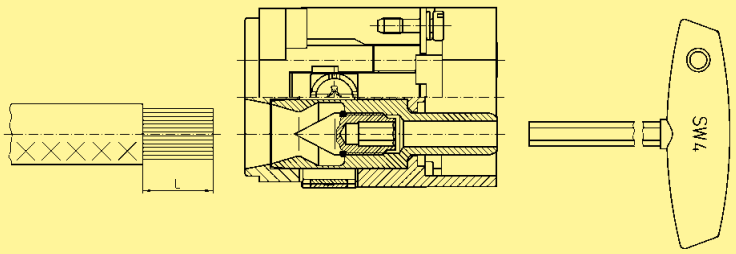




The male insert is shown. The same method is applicable for female inserts.

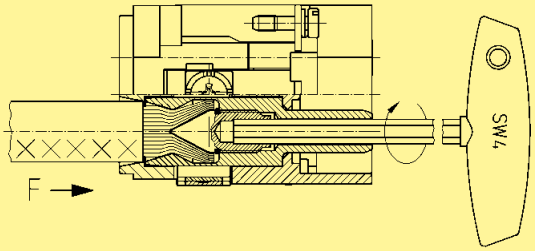
| Description | Depiction | Dimensions in mm |
|---|---|---|

### Step 1:
Strip insulation from the wire with a length given on page 05.20 and insert the wire into the contact chamber until insulation is flush with contact.
Do not twist the strands of the wire.

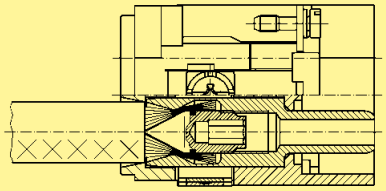



L: Stripping length for power contacts

### Step 2:
Hold the wire in position and tighten by a hexagonal driver (SW 4) from the mating side with a tightening torque given on page 05.20.



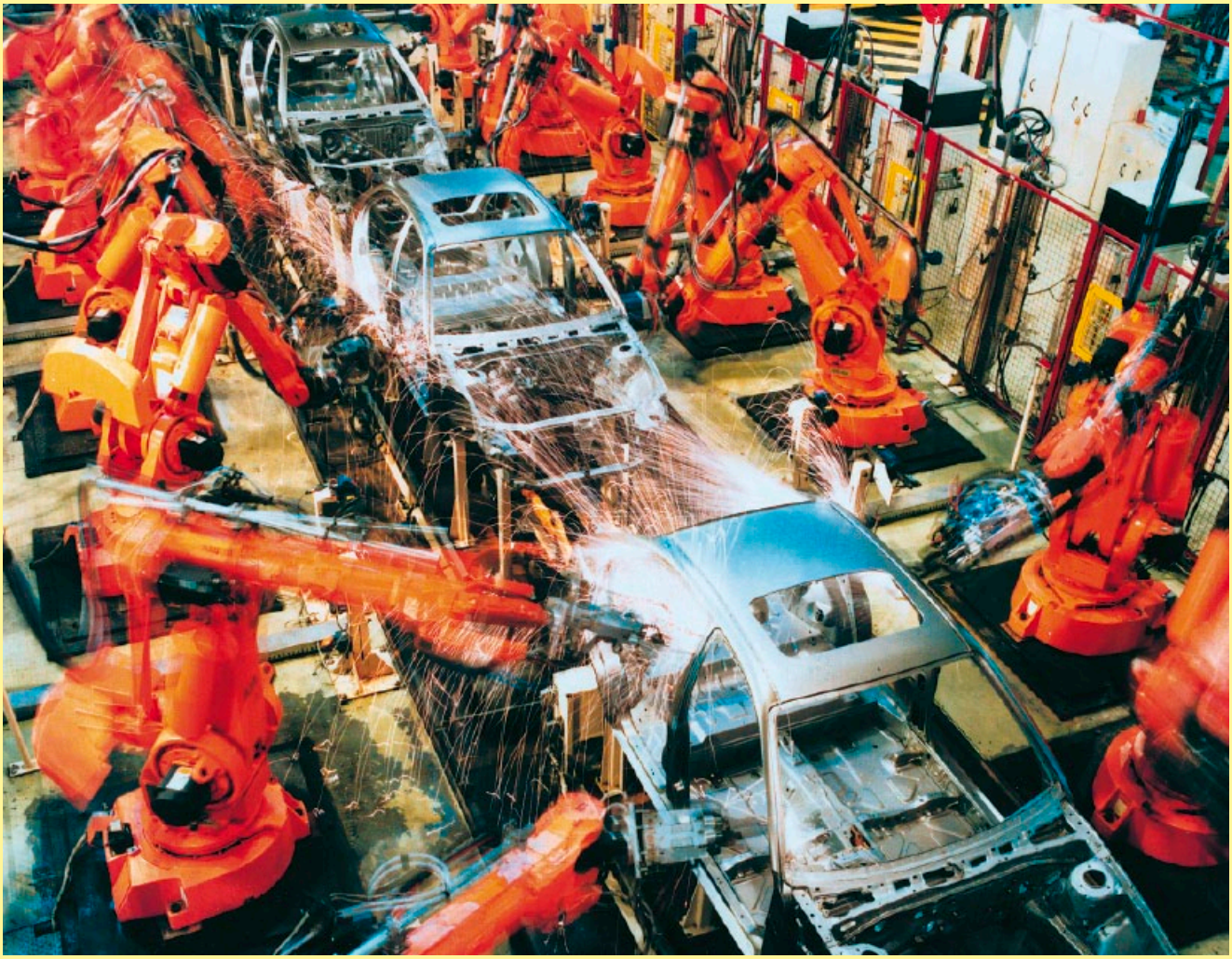

### Step 3:
Complete connection







The male insert is shown. The same method is applicable for female inserts.



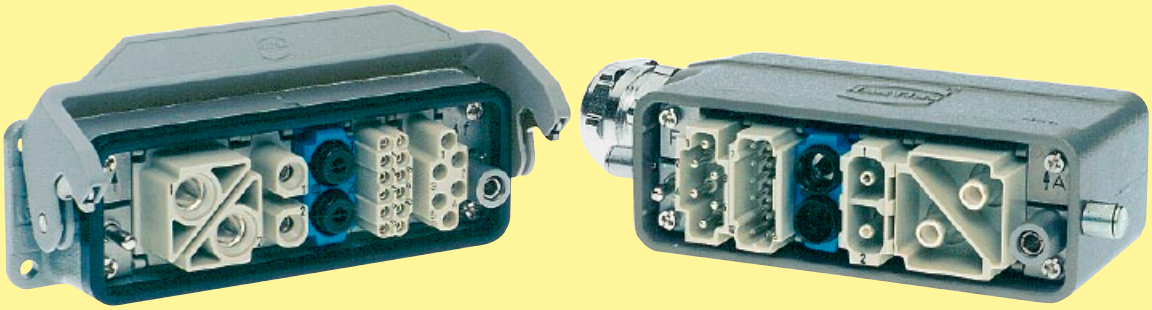
Welding robots in automotive production
ABB Robotics AB, Västeras, Sweden

# Contents


| | Page |
|---|---|
| Description of the Han-Modular® system | 06.03 |
| Summary Han-Modular® | 06.04 |
| Han-Modular® Compact | 06.08 |
| Han-Modular® Twin | 06.10 |
| Han-Modular® Hinged frames | 06.12 |
| Han-Modular® Docking frames | 06.14 |
| Han-Modular® ECO | 06.16 |
| Han® 200 A Axial module | 06. 20 |
| Han® 200 A Crimp module | 06. 22 |
| Han® 100 A Axial module | 06. 24 |
| Han® 100 A Crimp module | 06. 26 |
| Han® 70 A Axial module | 06. 28 |
| Han® 40 A Axial module | 06. 30 |
| Han® 40 A Crimp module | 06. 32 |
| Han® C Axial module | 06. 34 |
| Han® C module | 06. 36 |
| Han® CC Protected module | 06. 38 |
| Han® CD module | 06. 40 |
| Han E® module | 06. 42 |
| Han® EE module | 06. 44 |
| Han® EE Quick Lock module | 06. 46 |
| Han E® Protected module | 06. 48 |
| Han® EEE module | 06. 50 |
| Han® ES module | 06. 52 |
| Han® HV module | 06. 54 |
| Han DD® module | 06. 58 |
| Han DD® Quick Lock module | 06. 60 |
| Han® DDD module | 06. 62 |
| Han® High Density module | 06. 64 |
| Han® D-Sub module | 06. 66 |
| Han® USB module | 06. 68 |
| Han® FireWire module | 06. 70 |
| Han® RJ45 module | 06. 72 |
| Han® GigaBit module | 06. 78 |
| Han-Quintax® module | 06. 82 |
| Han® Coax module | 06. 84 |
| Han® Multi Contact module according to DIN 41 626 | 06. 86 |
| Han® Multi Contact module according to D-Sub | 06. 88 |
| Han® Pneumatic module | 06. 90 |
| Han® SC module | 06. 94 |

Han-Elisa® . . . . . 06. 96
Han-Elisa® Pt100 Modul . . . . . 06. 98
Han-Elisa® Output module . . . . . 06.100
Han-Elisa® ID module . . . . . 06.102
Han-Modular® Accessories . . . . . 06.104

# Description of the Han-Modular® system



The Han-Modular® series is a new system of inserts designed to meet the specific requirements of individual customers. In close cooperation with potential users a range of modular inserts have been developed allowing the simple assembly of custom designed complete connectors which meet the diverse requirements encountered by designers today.

Han-Modular® is a logical development of the Han-Com® series which already offers the combination of power and signal circuits in one connector.

The individual modules of this series now allow the integration of electrical, optical and gaseous signal and power connections in one connector assembly.

The pneumatic contacts are also suitable for the connection of liquid media. However it must be stated that a combination of electrical and liquid connections in one connector is not allowed according to VDE regulations.

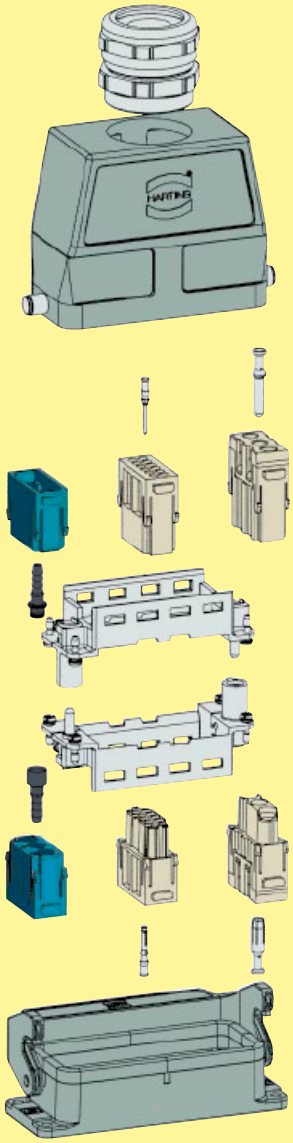
The individual contacts used in this system are all from existing well proven ranges and it is possible to use combinations of 1 to 12 modules depending on the size of the hoods and housings chosen.

The basic modules snap into a mounting frame and can be exchanged separately at any time.

Advantages:

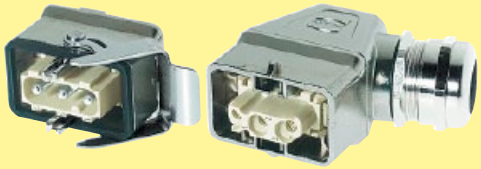
- ❑ Custom designs can be simply assembled
- ❑ Optimum solutions can be reached
- ❑ Stock can be minimized

Assembly details



# Summary Han-Modular®


Han-Modular® Compact



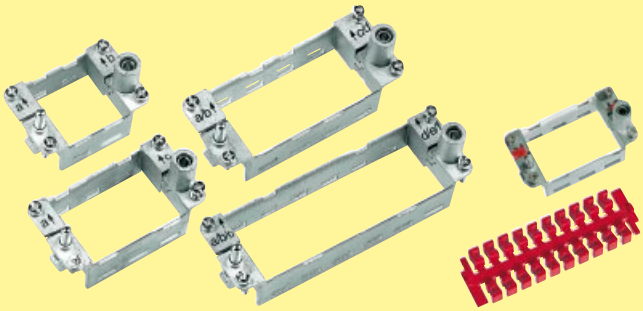
Page 06.08

Han-Modular® Twin



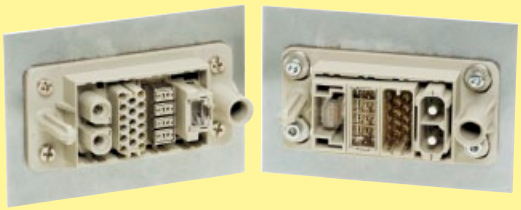
Page 06.10

Han-Modular® Hinged frames in Han® B hoods and housings



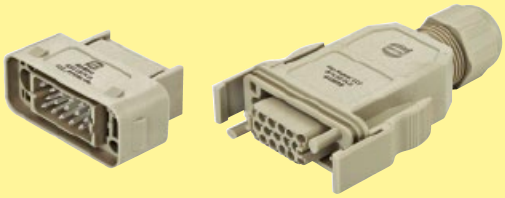
Page 06.12

Han-Modular® Docking frame



Page 06.14

Han-Modular® ECO



Page 06.16

# Summary Han-Modular®

| Series | Han® 200 A Axial module | Han® 200 A Crimp module | Han® 100 A Axial module | Han® 100 A Crimp module |
|---|---|---|---|---|
| Number of contacts | 1 | 1 | 2 | 2 |
| Modules | Axial screw terminal | Crimp terminal | Axial screw terminal | Crimp terminal |
| |  |  |  |  |
| Rated current | 200 A | 200 A | 100 A | 100 A |
| Rated voltage | 1000 V | 1000 / 1000 V | 1000 V | 1000 V |
| Wire gauge | 25 ... 70 mm² | 25 ... 70 mm² | 10 ... 38 mm² | 10 ... 35 mm² |
| Page | 06.20 | 06.22 | 06.24 | 06.26 |

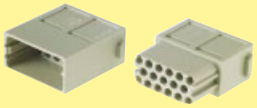
| Series | Han® 70 A Axial module | Han® 40 A Axial module | Han® 40 A Crimp module | Han® C Axial module |
|---|---|---|---|---|
| Number of contacts | 2 | 2 | 2 | 3 |
| Modules | Axial screw terminal | Axial screw terminal | Crimp terminal | Axial screw terminal |
| |  |  |  |  |
| Rated current | 70 A | 40 A | 40 A | 40 A |
| Rated voltage | 1000 V | 1000 V | 1000 V | 690 V |
| Wire gauge | 6 ... 22 mm² | 2.5 ... 10 mm² | 1.5 ... 10 mm² | 2.5 ... 10 mm² |
| Page | 06.28 | 06.30 | 06.32 | 06.34 |

| Series | Han® C module | Han® CC Protected module | Han® CD module | Han E® module |
|---|---|---|---|---|
| Number of contacts | 3 | 4 | 3 / 4 | 6 |
| Modules | Crimp terminal | Crimp terminal | Crimp terminal | Crimp terminal |
| |  |  |  |  |
| Rated current | 40 A | 40 A | 40 A / 10 A | 16 A |
| Rated voltage | 400 / 690 V | 830 V | 830 V / 830 V | 500 V |
| Wire gauge | 1.5 ... 10 mm² | 1.5 ... 6 mm² | 1.5 ... 6 mm² / 0.14 ... 2.5 mm² | 0.14 ... 4 mm² |
| Page | 06.36 | 06.38 | 06.40 | 06.42 |

| Series | Han® EE module | Han® EE Quick Lock module | Han E® Protected module | Han® EEE module |
|---|---|---|---|---|
| Number of contacts | 8 | 8 | 6 | 20 |
| Modules | Crimp terminal | Quick Lock terminal | Crimp terminal | Crimp terminal |
| |  |  |  |  |
| Rated current | 16 A | 16 A | 16 A | 16 A |
| Rated voltage | 400 V | 400 V | 830 V | 500 V |
| Wire gauge | 0.14 ... 4 mm² | 0.5 ... 2.5 mm² | 0.14 ... 4 mm² | 0.14 ... 4 mm² |
| Page | 06.44 | 06.46 | 06.48 | 06.50 |

# Summary Han-Modular®

| Series | Han® ES module | Han® HV module | Han® HV module | Han DD® module |
|---|---|---|---|---|
| Number of contacts | 5 | 2 | 2 | 12 |
| Modules | Cage-clamp terminal | Crimp terminal | Crimp terminal | Crimp terminal |
| |  |  |  |  |
| Rated current | 16 A | 16 A | 40 A | 10 A |
| Rated voltage | 400 V | 2900 / 5000 V | 2900 / 5000 V | 250 V |
| Wire gauge | 0.14 ... 2.5 mm² | 0.5 ... 4 mm² | 1.5 ... 10 mm² | 0.14 ... 2.5 mm² |
| Page | 06.52 | 06.54 | 06.56 | 06.58 |

| Series | Han DD® Quick Lock module | Han® DDD module | Han® High Density module | Han® D-Sub module |
|---|---|---|---|---|
| Number of contacts | 12 | 17 | 25 | 9 |
| Modules | Quick Lock terminal | Crimp terminal | Crimp terminal | Crimp terminal |
| |  |  |  |  |
| Rated current | 10 A | 10 A | 4 A | 5 A |
| Rated voltage | 250 V | 160 V | 50 V | 50 V |
| Wire gauge | 0.25 ... 1.5 mm² | 0.14 ... 2.5 mm² | 0.08 ... 0.52 mm² | 0.08 ... 0.52 mm² |
| Page | 06.60 | 06.62 | 06.64 | 06.66 |

| Series | Han® USB module | Han® FireWire module | Han® RJ45 module | Han® GigaBit module |
|---|---|---|---|---|
| Number of contacts | 4 | 6 | 8 | 8 |
| Modules | USB 2.0 | IEEE 1394 | Ethernet Cat. 5e | Ethernet Cat. 6 |
| |  |  |  |  |
| Page | 06.68 | 06.70 | 06.72 | 06.78 |

| Series | Han-Quintax® module | | | | Han® Multi Contact module | |
|---|---|---|---|---|---|---|
| Number of contacts | 2 | | | | 4 | |
| Modules |  | | | |  | |
| Page | 06.82 | | 06.84 | | 06.86 | 06.88 |
| Contacts | Quintax contact 4 + shielding | High Density Quintax contact 8 + shielding | Han D® D Coax contact 1 + shielding | Han E® E Coax contact 1 + shielding | FOC contacts | Coaxial contact |
| |  |  |  |  |  |  |
| | 75 Ω | 50 Ω | Multimode F.O. HCS®*/PCF F.O. 1 mm POF | 50 Ω RG 174<br>75 Ω RG 179<br>50 Ω RG 58 | | |

* HCS®=Hard Clad Silica (is registered trade mark of the SpecTran Corporation)

# Summary Han-Modular®

| Series | Han® Pneumatic module | | Han® SC module | Han-Elisa® | Dummy module |
|---|---|---|---|---|---|
| Number of contacts | 2 | 3 | 4 | | |
| Modules |  |  |  |  |  |
| Page | 06.90 | 06.92 | 06.94 | 06.96 | 06.104 |
| Contacts |  ∅ 6.0 mm |  ∅ 1.6 mm<br>∅ 3.0 mm<br>∅ 4.0 mm | SC contact  | Temperature<br>I/O modules<br>ID module | |

## Features

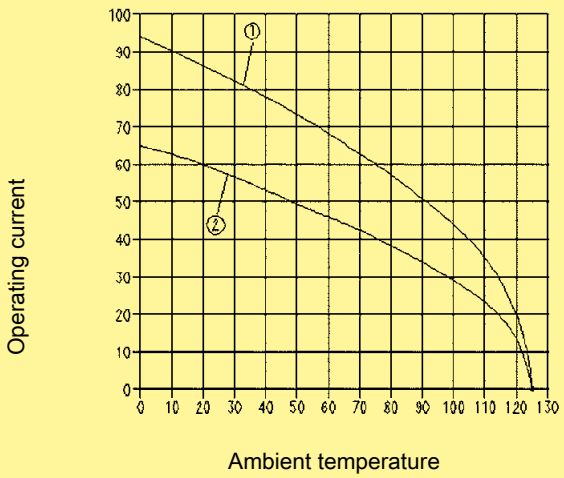
- Compact design saves space
- Modular structure increases flexibility
- Simple and quick assembly
- Robust design
- Two part grommet housing



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① Han® Axial screw module, Wire gauge: 10 mm²

② Han® C module, Wire gauge: 6 mm²

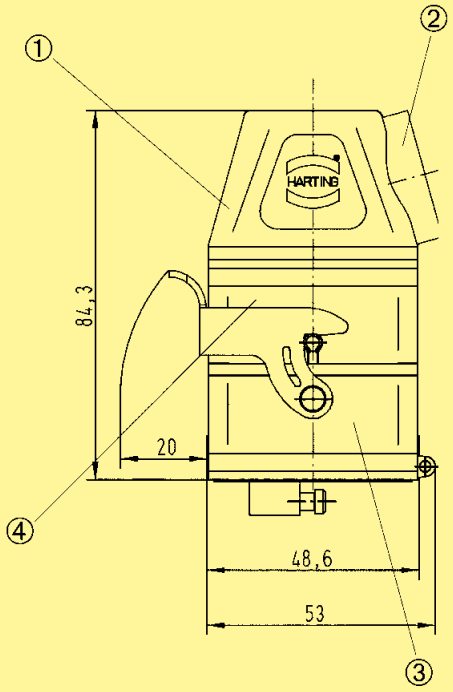
## Technical characteristics

### Hoods/Housings

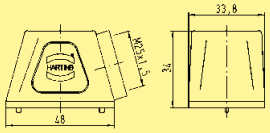
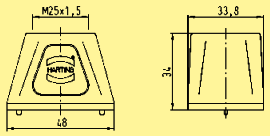
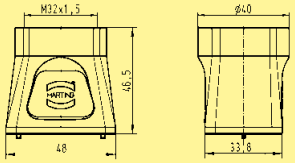
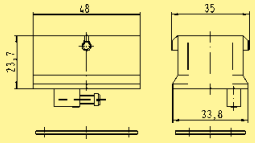
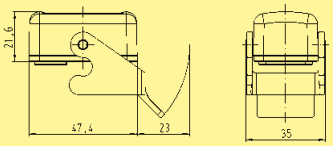
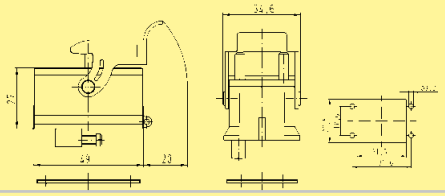
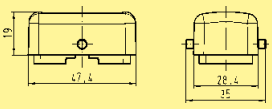
| | |
|---|---|
| Material | zinc die-cast |
| Surface | nickel plated |
| Locking element | stainless steel |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 65 |
| Mechanical working life | |
| - mating cycles | 500 |
| PE contact | |
| wire gauge | 10 mm² / AWG 8 |
| Stripping length | 10 mm |
| Tightening tourque | 1 Nm |

### Protection covers for housings, bulkhead mounting

| | |
|---|---|
| Material | polycarbonate |
| Locking element | Polyamide |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 65 |
| Flammability acc. to UL 94 | V 0 |




① Hood with side entry
② Thread M25
③ Bulkhead mounted housing with locking lever
④ Carrier hood

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hoods<br>side entry<br>M25  | **19 14 001 0501** | 4 screws are included in the delivery range  | |
| Hoods<br>top entry<br>M25  | **19 14 001 0401** | 4 screws are included in the delivery range  | |
| Hoods<br>top entry<br>M32  | **19 14 001 0402** | 4 screws are included in the delivery range  | |
| Carrier hood  | **09 14 001 0311** |  | |
| Protection covers  | 09 14 001 5402 |  | |
| Housings, bulkhead mounting  | **09 14 001 0301** | Panel cut out  | |
| Protection covers for housings, bulkhead mounting  | 09 14 001 5401 |  | |





Stock items in bold type

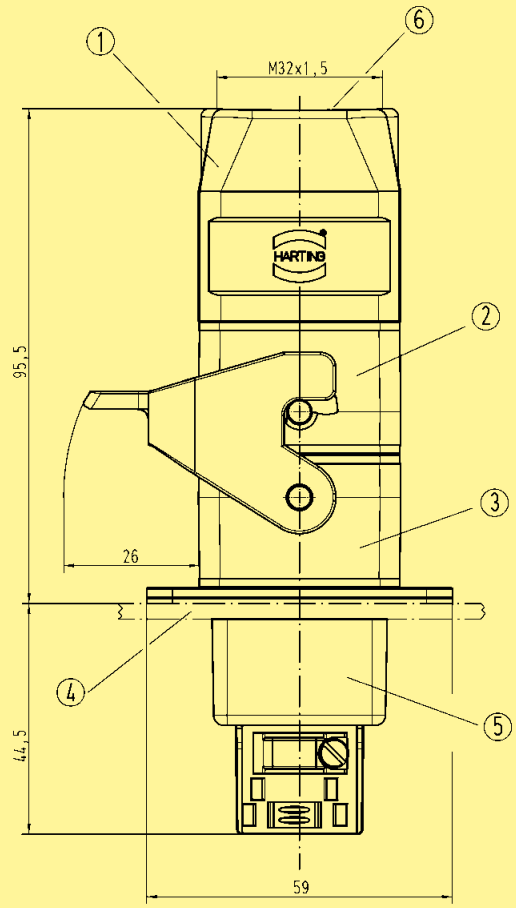
## Features

- Compact and space saving
- High degree of flexibility due to modular assembly
- Easy and quick assembly
- Robust design
- Hood consists of two parts

## Technical characteristics

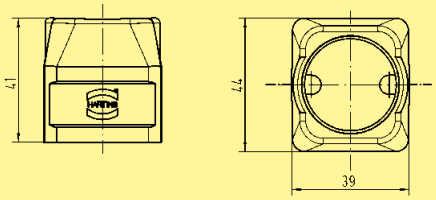
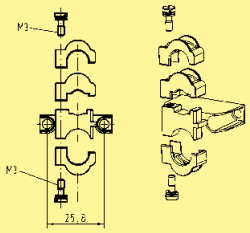
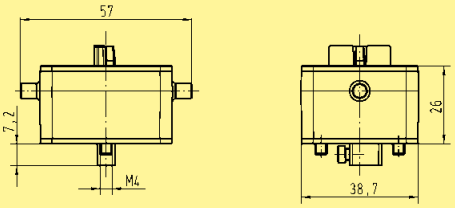
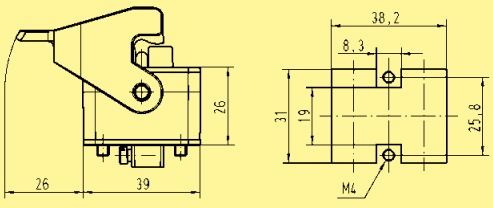
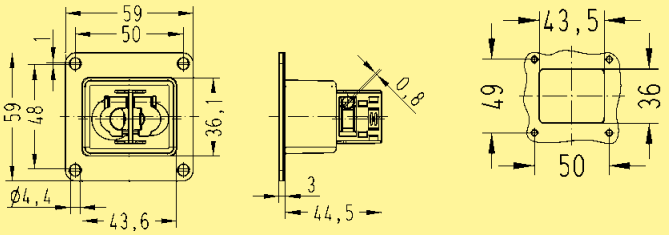
### Hoods/Housings

| | |
|---|---|
| Material | aluminium die-cast |
| Surface | powder-coated |
| Locking element | Han-Easy Lock® |
| Material | |
| Panel feed through housing / | |
| Shielding frame | zinc die-cast |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 65 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |
| PE contact | |
| wire gauge | 10 mm² / AWG 8 |
| Stripping length | 10 mm |
| Tightening torque | 1 Nm |




① Hood with top entry
② Carrier hood
③ Bulkhead mounted housing with locking lever
④ Switch board panel
⑤ Split Hood
⑥ Thread M32



| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hoods<br>top entry<br>M32  | **19 14 002 0402** |  | |
| Shielding frame  | **09 14 000 9924** |  | |
| Carrier hood  | **09 14 002 0311** |  | |
| Housings, bulkhead mounting  | **09 14 002 0301** | Panel cut out  | |
| Panel feed through housings  | **09 14 000 9928** | Panel cut out  | |

Han Modular



Stock items in bold type

## Features

- Pre-leading grounding system according VDE
- Modules can only be assembled polarized to guarantee a correct orientation
- Alphabetical marking of module position
- High mechanical reliability of modules in case of vibration and impact stress
- No tools necessary to remove modules

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Hinged frames

| | |
|---|---|
| Number of modules | 2, 3, 4, 6 |
| PE contact | |
| Wire gauge | |
| - Power side * | 4 ... 10 mm²<br>AWG 12 ... 8 |
| - Signal side | 1 ... 2.5 mm²<br>AWG 18 ... 14 |
| Material | zinc die-cast |
| Limiting temperatures | -40 °C ... +125 °C |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Hoods/Housings

| | |
|---|---|
| Selection of hoods/housings | see chapter 30 / chapter 31 |
| Material | aluminium die-cast |
| Surface | powder-coated<br>RAL 7037 |
| Locking element | Han-Easy Lock® |
| Hoods/Hosuings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 65 |

### Accessories

| | |
|---|---|
| Coding of hoods/housings | chapter 40 |

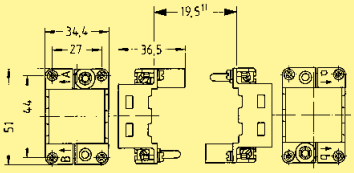
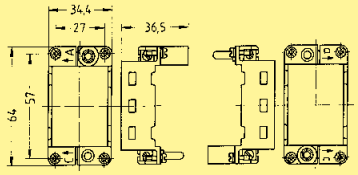
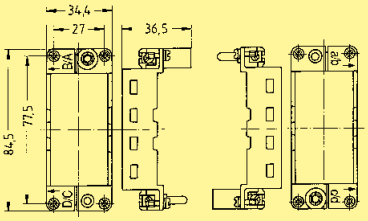
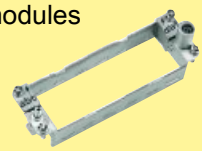
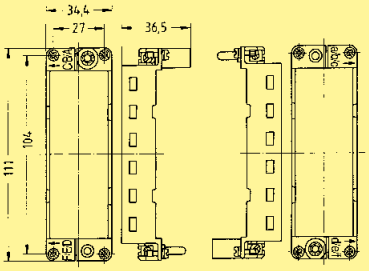
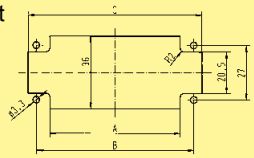
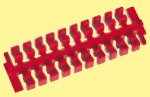
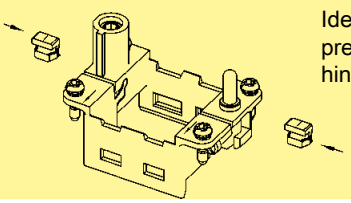




* 10 mm² / AWG 8 only with ferrule crimp tool 09 99 000 0374

# Han-Modular® Hinged frames



| Identification | Size | Part number for Hood/Housing 2)<br>Marking A ... F | Marking a ... f | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hinged frame for 2 modules  | 6 B | **09 14 006 0303** | **09 14 006 0313** | Hoods  Housings | |
| Hinged frame for 3 modules  | 10 B | **09 14 010 0303** | **09 14 010 0313** |  | |
| Hinged frame for 4 modules  | 16 B | **09 14 016 0303** | **09 14 016 0313** |  | |
| Hinged frame for 6 modules  | 24 B | **09 14 024 0303** | **09 14 024 0313** |  Panel cut out  | |
| Locking element for hinged frames (20 pieces per bloc)  | | **09 14 000 9960** | **09 14 000 9960** |  Ideal to pre-assemble the hinged frames | |

| Size | A | B | C |
|---|---|---|---|
| 6 B | 35 | 44 | 52 |
| 10 B | 49 | 57 | 66 |
| 16 B | 64 | 77.5 | 85.5 |
| 24 B | 94 | 104 | 112 |

1) Distance max. 20.5 mm
2) Hinged frames can be used either in hood or housing
Both different markings must be used for one connector!

**Stock items in bold type**

# Han-Modular® Docking frame

## Features

- Blind mating connector system for drawer systems
- Direct panel mounting without housing
- Very robust design
- Solid pre-leading guid pins and float bushes
- Can be fixed with standard M4 screws

Notice:
Due the plastic material used in the docking frame without PE, the panel will need to be grounded separately

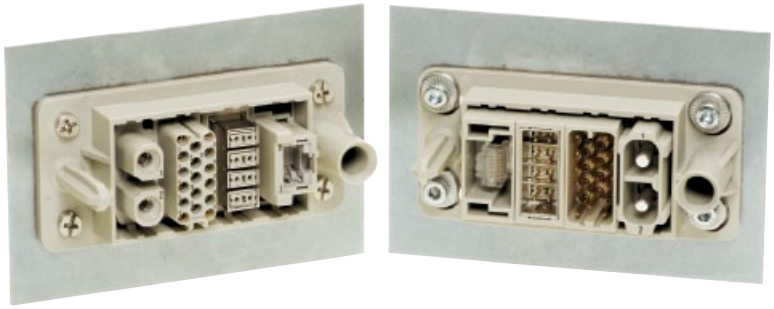
## Technical characteristics

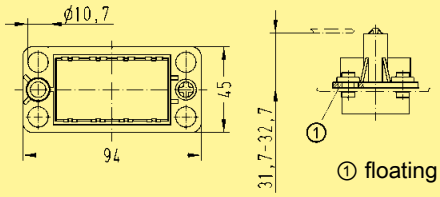
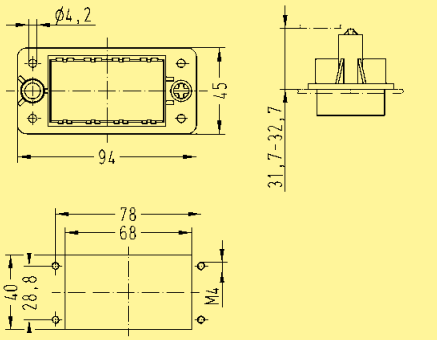
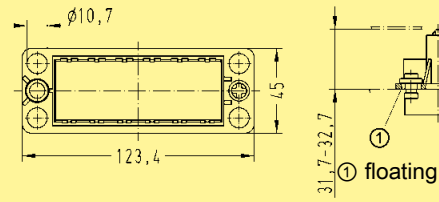
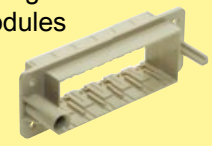
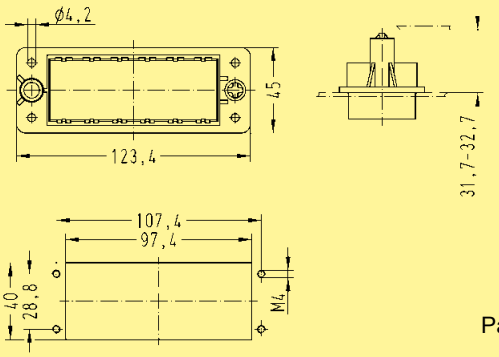
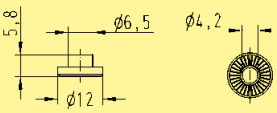
| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Docking frames

| | |
|---|---|
| Number of modules | 4, 6 |
| Material | |
| - Docking frames | polycarbonate |
| - Float washer | zinc die-cast |
| Floating tolerance | ± 2 mm |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

# Han-Modular® Docking frame



| Identification | Part number Marking A ... F [1] | Part number Marking a ... f [2] | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Docking frame for 4 modules  | **09 14 016 1701** | |   | |
| Docking frame for 4 modules  | | **09 14 016 1711** |   | |
| Docking frame for 6 modules  | **09 14 024 1701** | |   | |
| Docking frame for 6 modules  | | **09 14 024 1711** |   | |
| Float washer to enable the frame to be float mounted using standard M4 fixing screws  | **09 14 000 9936** | |   | |

1) Float mount
2) Fixed

**Stock items in bold type**

## Features

- Suitable for all Han-Modular® single modules
- The variant with PE connection uses pin 1 of the module as PE
- Slim, space saving design
- Low cost plastic hoods and housings

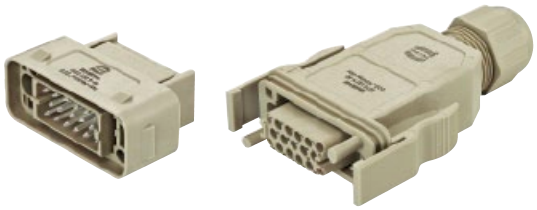
## Technical characteristics

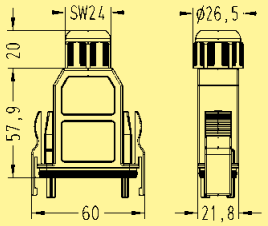
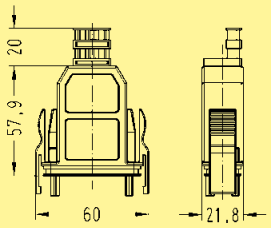
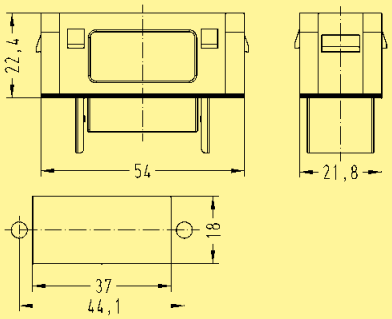
| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Hoods/Housings

| | |
|---|---|
| Material | |
| - Hoods/Housings | polycarbonate |
| - Seal | NBR |
| - Cable seal | Polyamide |
| Limiting temperatures | -40 °C ... +85 °C |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 20 / IP 65 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

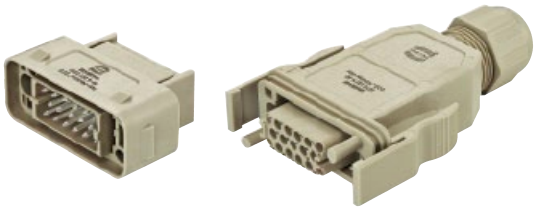
Plastic hoods/housings
with PE marking

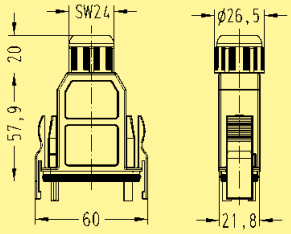
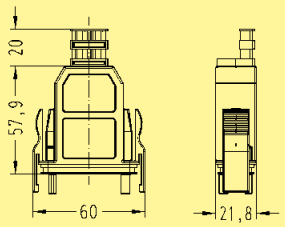
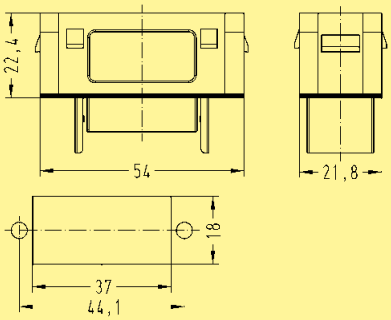


| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hoods<br>with PE marking<br>(pin 1 = PE)<br>IP 65<br>top entry  | **09 14 001 0421** |  | |
| Hoods<br>with PE marking<br>(pin 1 = PE)<br>IP 20<br>top entry  | **09 14 001 0423** |  | |
| Hoods<br>with PE marking<br>(pin 1 = PE)<br>IP 20 / IP 65<br>top entry  | **09 14 001 0321** |  | Panel cut out |
| Coding pin  | **09 14 000 9929** |  | Range of delivery:<br>8 pieces per frame |

Plastic hoods/housings

without PE



| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hoods<br>without PE<br>IP 65<br>top entry  | **09 14 001 0420** |  | |
| Hoods<br>without PE<br>IP 20<br>top entry  | **09 14 001 0422** |  | |
| Hoods<br>without PE<br>IP 20 / IP 65<br>top entry  | **09 14 001 0320** |  | Panel cut out |
| Coding pin  | **09 14 000 9929** |  | Range of delivery:<br>8 pieces per frame |





**Stock items in bold type**

# Notes

## Features

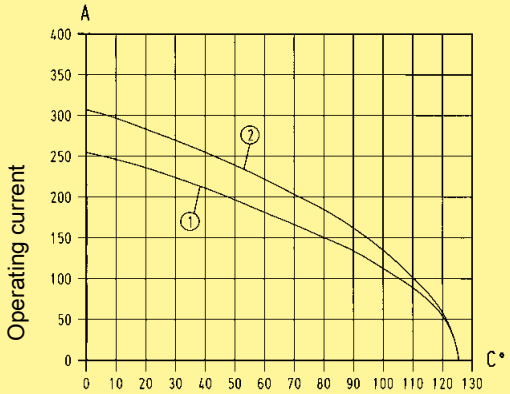
- Axial-screw termination
- No special tools required
- Power module for big wire gauge up to 70 mm²
- Suitable as a 3 + PE connector in a Han® 32 B housing
- Compatible to the Han® 200 A module with crimp terminal



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① 24 B hoods/housings with 3 modules; wire gauge: 50 mm²

② 24 B hoods/housings with 3 modules; wire gauge: 70 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 1 |
| Electrical data | |
| acc. to EN 61 984 | **200 A 1000 V 8 kV 3** |
| Rated current | 200 A |
| Rated voltage | 1000 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Rated voltage | |
| acc. to UL | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | 0.2 mΩ |
| Screw terminal | |
| - Wire gauge [1)] | 25 ... 70 mm² |
| - AWG | 2 ... 00 |
| - Hexagonal driver | SW 5 |
| - Stripping length | 16 mm |
| - Tightening tourque | |

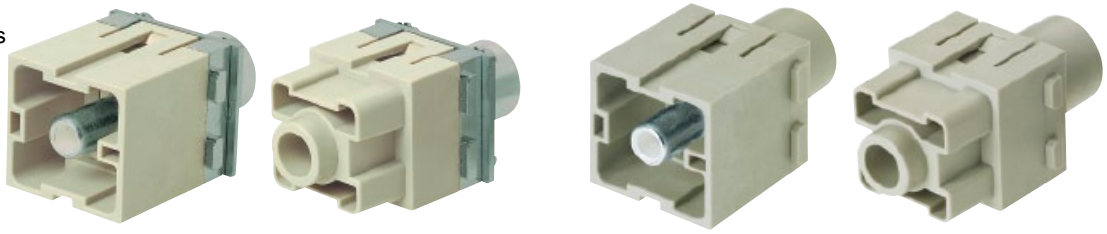
| mm² | 25 | 35 | 50 | 70 |
|---|---|---|---|---|
| Nm | 8 | 8 | 9 | 10 |

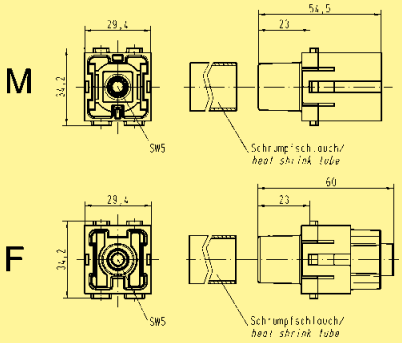
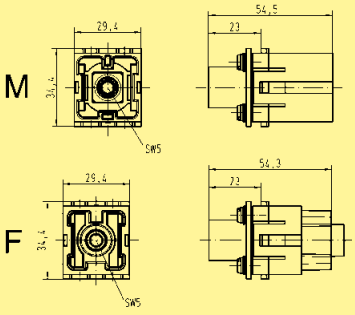


1) geometric wire gauge

Number of contacts

1



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Axial screw terminal** 200 A | | |  | |
| 25 ... 40 mm² | **09 14 001 2663** | **09 14 001 2763** | | |
| 40 ... 70 mm² | **09 14 001 2662** | **09 14 001 2762** | | |
| **Axial screw terminal** 200 A PE (Ground) | | |  | |
| 25 ... 40 mm² | **09 14 001 2668** | **09 14 001 2768** | | |
| 40 ... 70 mm² | **09 14 001 2667** | **09 14 001 2767** | | |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **Hex key SW 5** for axial setscrew | | | |
| with grip  | **09 99 000 0364** | | |
| adapter 3/8“  | **09 99 000 0371** | | |





Stock items in bold type

## Features

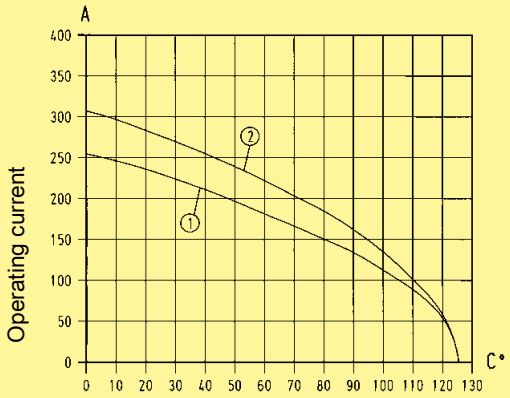
- Crimp termination
- Contacts can be unlocked from the mating side
- Compatible with Han® 200 A modules with axial screw terminal



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① 24 B hoods/housings with 3 modules; wire gauge: 50 mm²
② 24 B hoods/housings with 3 modules; wire gauge: 70 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | EN 50 124-1<br>DIN EN 60 664-1<br>DIN EN 61 984 |

### Inserts

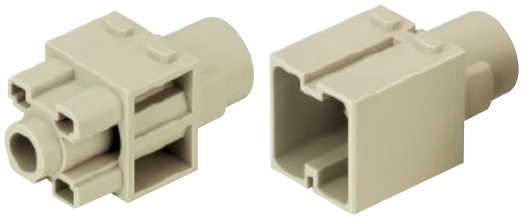
| | |
|---|---|
| Number of contacts | 1 |
| Electrical data | |
| acc. to EN 61 984 | **200 A 1000 V 8 kV 3** |
| Rated current | 200 A |
| Rated voltage | 1000 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

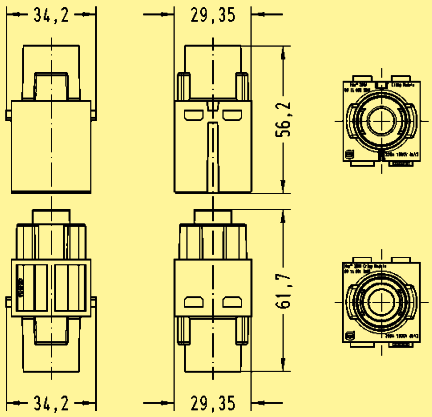
### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 25 ... 70 mm² |
| Stripping length | 22.5 mm |
| Max. insulation diameter | 18 mm |

Number of contacts

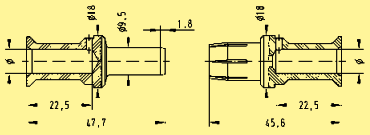
1



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Crimp terminal<br>Modul | **09 14 001 3001** | **09 14 001 3101** |  | |





| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp contacts<br>silver plated | 25 | **09 11 000 6120** | **09 11 000 6220** |  | |
| | 35 | **09 11 000 6121** | **09 11 000 6221** | | |
| | 50 | **09 11 000 6122** | **09 11 000 6222** | | |
| | 70 | **09 11 000 6123** | **09 11 000 6223** | | |



| Wire gauge | ∅ | Stripping length |
|---|---|---|
| 25 mm² | 7 | 22.5 mm |
| 35 mm² | 8.2 | 22.5 mm |
| 50 mm² | 10 | 22.5 mm |
| 70 mm² | 11.5 | 22.5 mm |
| for stranded wire according to IEC 60 228 Class 5 | | |



Stock items in bold type

## Features

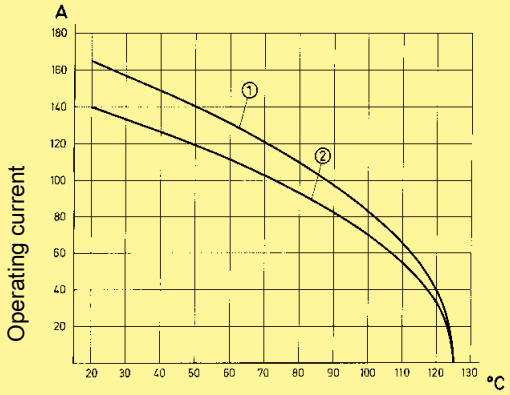
- Axial-screw termination
- No special tools required
- Connect PE contact with special cable shoe
- Compatible to the Han® 100 A module with crimp terminal



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① 24 B hoods/housings with 3 modules; wire gauge: 35 mm²

② 24 B hoods/housings with 3 modules; wire gauge: 25 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 2 |
| Electrical data | |
| acc. to EN 61 984 | **100 A 1000 V 8 kV 3** |
| Rated current | 100 A |
| Rated voltage | 1000 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Rated voltage | |
| acc. to UL | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | 0.3 mΩ |
| Screw terminal | |
| - Wire gauge [1)] | 10 ... 38 mm² |
| - AWG | 6 ... 2 |
| - Hexagonal driver | SW 4 |
| - Stripping length | 13 mm |
| - Tightening tourque | |

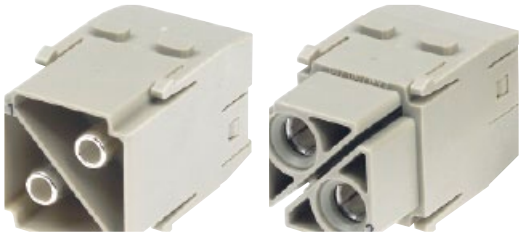
| mm² | 10 | 16 | 25 | 35 |
|---|---|---|---|---|
| Nm | 6 | 6 | 7 | 8 |

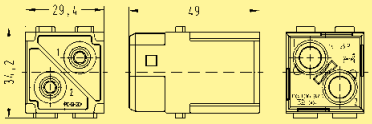
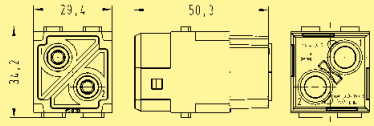


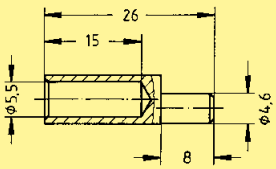
1) geometric wire gauge

Number of contacts

2



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Axial screw terminal** 100 A | | | M  | |
| 10 ... 25 mm² | **09 14 002 2653** | **09 14 002 2753** | F  | |
| 16 ... 35 mm² | **09 14 002 2651** | **09 14 002 2751** | | |
| 38 mm² | 09 14 002 2650 | 09 14 002 2750 | | |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **Hex key SW 4** for axial setscrew | | | |
| with grip  | **09 99 000 0363** | | |
| adapter 3/8“  | **09 99 000 0370** | | |
| **Cable shoe 16 mm²** for PE extension  Comment for hoods/ housings high construction only | **09 14 000 9912** |  | Please use pressing tools for non-insulated cable shoes following DIN 46 230 with 16 mm² range (eg. K25, co. Klauke) |

Han Modular



Stock items in bold type

## Features

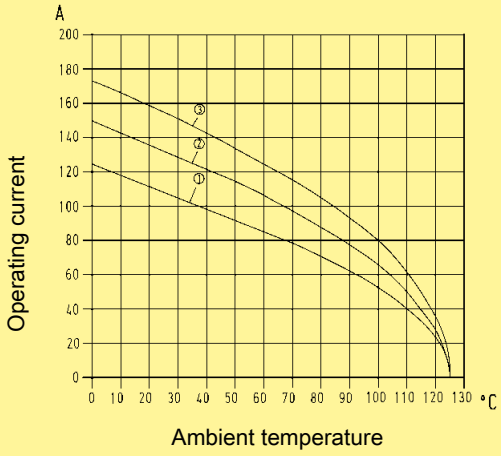
- Crimp termination
- Unlock of contacts from mating side
- Connect PE contact with special cable shoe
- Compatible to Han® 100 A module with axial screw terminal



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① 24 B hoods/housings with 3 modules; wire gauge: 16 mm²

② 24 B hoods/housings with 3 modules; wire gauge: 25 mm²

③ 24 B hoods/housings with 3 modules; wire gauge: 35 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

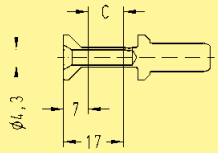
### Inserts

| | |
|---|---|
| Number of contacts | 2 |
| Electrical data | |
| acc. to EN 61 984 | **100 A 1000 V 8 kV 3** |
| Rated current | 100 A |
| Rated voltage | 1000 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

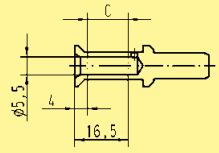
### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 10 ... 35 mm² |
| Max. cable diameter | 14 mm |

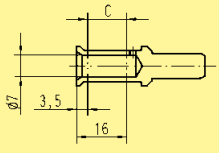
Crimp zone (C)



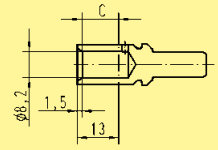

09 11 000 6114




09 11 000 6116



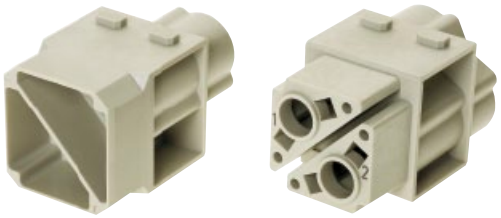

09 11 000 6125

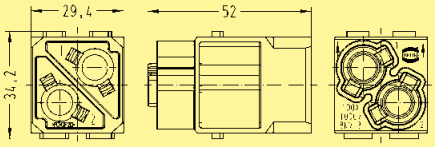
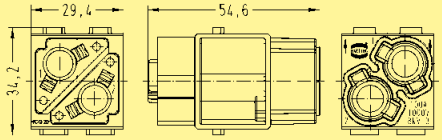


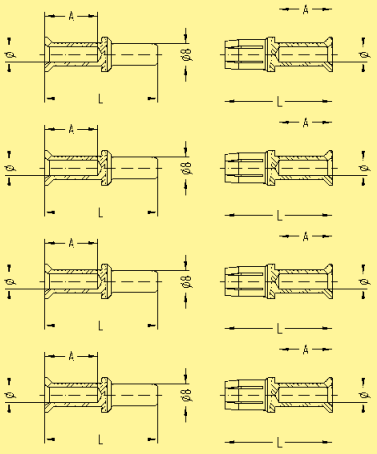

09 11 000 6135

Number of contacts

# 2



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Crimp terminal<br>Modul | **09 14 002 3051** | **09 14 002 3151** | M<br><br>F<br> | |
| Removal tool<br>for TC contacts | 09 99 000 0383 | 09 99 000 0383 |  | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp contacts<br>silver plated | | | |  | |
|  | 10 | **09 11 000 6114** | **09 11 000 6214** | | |
|  | 16 | **09 11 000 6116** | **09 11 000 6216** | | |
|  | 25 | **09 11 000 6125** | **09 11 000 6225** | | |
|  | 35 | **09 11 000 6135** | **09 11 000 6235** | | |

| Wire gauge | ∅ | Stripping length |
|---|---|---|
| 10 mm² | 4.3 | 19 mm |
| 16 mm² | 5.5 | 19 mm |
| 25 mm² | 7 | 19 mm |
| 35 mm² | 8.2 | 16 mm |
| for stranded wire according to IEC 60 228 Class 5 | | |





Stock items in bold type

## Features

- Axial-screw termination
- 2 contacts (70 A) for power circuits
- Male inserts with protection collar
- Polarisation of module
- Male and female contacts are finger safe

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 2 |
| Electrical data | |
| acc. to EN 61 984 | **70 A 1000 V 8 kV 3** |
| Rated current | 70 A |
| Rated voltage | 1000 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| | |
| Rated voltage | |
| acc. to UL | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | 0.5 mΩ |
| Screw terminal | |
| - Wire gauge [1)] | 6 ... 22 mm² |
| - AWG | 8 ... 4 |
| - Hexagonal driver | SW 2.5 |

- Stripping length

| mm² | 6 | 10 | 16 | 22 |
|---|---|---|---|---|
| mm | $11^{+1}$ | $11^{+1}$ | $11^{+1}$ | $12.5^{+1}$ |

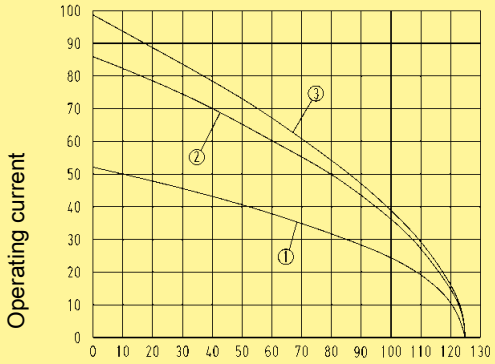
- Tightening tourque

| mm² | 6 | 10 | 16 | 22 |
|---|---|---|---|---|
| Nm | 2 | 3 | 4 | 5 |

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① 24 B hoods/housings with 6 modules; wire gauge: 6 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 16 mm²

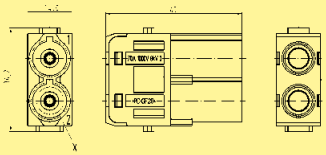
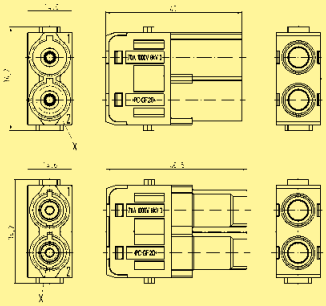
③ 24 B hoods/housings with 6 modules; wire gauge: 22 mm²

1) geometric wire gauge

Number of contacts

2



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Axial screw terminal**<br>70 A | | |  | |
| 6 ... 16 mm² | **09 14 002 2646** | **09 14 002 2741** | | |
| 14 ... 22 mm² | **09 14 002 2647** | **09 14 002 2742** | | |
| **Axial screw terminal**<br>70 A<br>with finger protected male contacts | | |  | |
| 6 ... 16 mm² | **09 14 002 2641** | | | |
| 14 ... 22 mm² | **09 14 002 2642** | | | |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **Hex key SW 2.5**<br>for axial setscrew | | | |
| Bit 1/4“  | **09 99 000 0375** | | |





Stock items in bold type

## Features

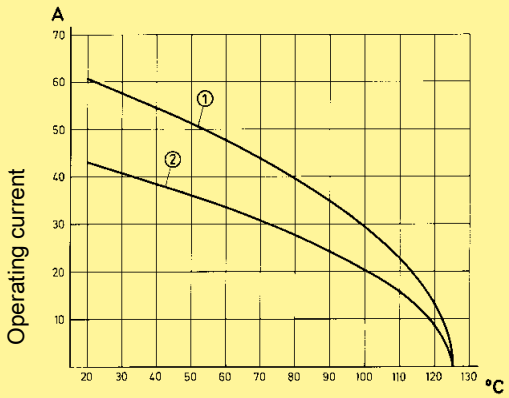
- Axial-screw termination
- No special tools required
- Compatible to Han® 40 A module with crimp terminal



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① 24 B hoods/housings with 6 modules; wire gauge: 10 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 6 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 2 |
| Electrical data | |
| acc. to EN 61 984 | **40 A 1000 V 8 kV 3** |
| Rated current | 40 A |
| Rated voltage | 1000 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| | |
| Rated voltage | |
| acc. to UL | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | 0.5 mΩ |
| Screw terminal | |
| - Wire gauge [1] | 2.5 ... 10 mm² |
| - AWG | 14 ... 8 |
| - Hexagonal driver | SW 2 |

- Stripping length

| mm² | 2.5 | 4 | 6 | 10 |
|---|---|---|---|---|
| mm | $5^{+1}$ | $5^{+1}$ | $8^{+1}$ | $11^{+1}$ |

- Tightening tourque

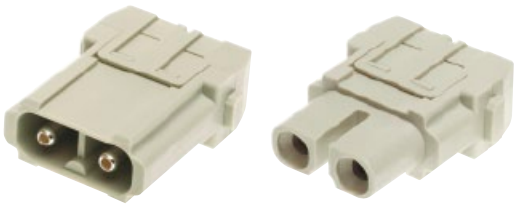
| mm² | 2.5 | 4 | 6 | 10 |
|---|---|---|---|---|
| Nm | 1.5 | 1.5 | 2 | 2 |

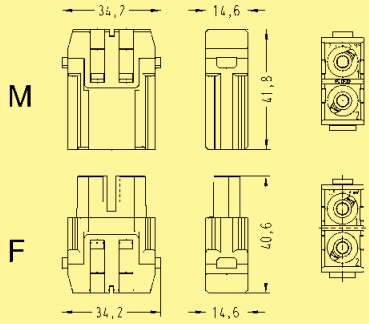


1) geometric wire gauge

Number of contacts

2



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Axial screw terminal** 40 A | | |   Contact arrangement view from termination side | |
| 2.5 ... 8 mm² | **09 14 002 2601** | **09 14 002 2701** | | |
| 6 ... 10 mm² | **09 14 002 2602** | **09 14 002 2702** | | |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **Hex key SW 2** for axial setscrew | | | |
| with grip  | **09 99 000 0313** | | |
| Bit 1/4“  | **09 99 000 0369** | | |





Stock items in bold type

## Features

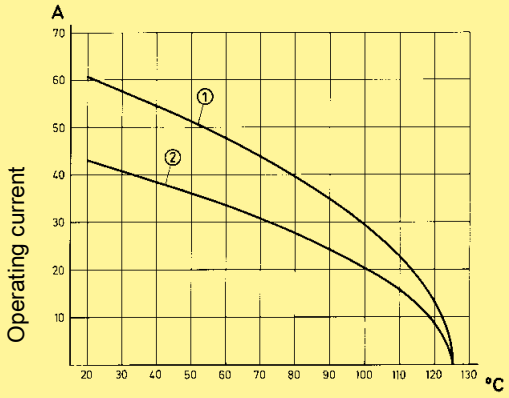
- Crimp termination
- Compatible with Han® 40 A module with axial screw terminal



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① 24 B hoods/housings with 6 modules; wire gauge: 10 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 6 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Inserts

| | |
|---|---|
| Number of contacts | 2 |
| Electrical data | |
| acc. to EN 61 984 | **40 A 1000 V 8 kV 3** |
| Rated current | 40 A |
| Rated voltage | 1000 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | |

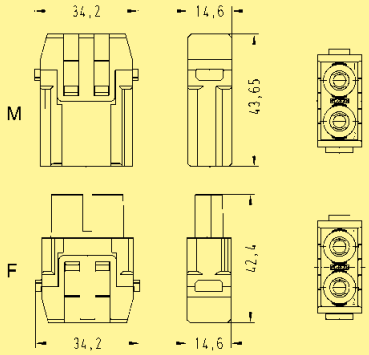
### Contacts

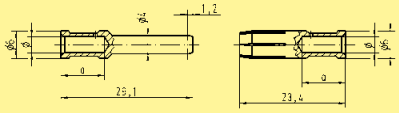
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 1.5 ... 10 mm² |
| - AWG | 16 ... 8 |

Number of contacts

# 2



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 14 002 3002** | **09 14 002 3102** |  Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts<br><br>silver plated | 1.5 | 09 32 000 6104 | 09 32 000 6204 |  | |
|  | 2.5 | **09 32 000 6105** | **09 32 000 6205** | | |
| | 4 | **09 32 000 6107** | **09 32 000 6207** | | |
| | 6 | **09 32 000 6108** | **09 32 000 6208** | | |
| | 10 | 09 32 000 6109 | 09 32 000 6209 | | |

| Wire gauge | | | ∅ | Stripping length |
|---|---|---|---|---|
| 1.5 | mm² | AWG 16 | 1.75 | 9 mm |
| 2.5 | mm² | AWG 14 | 2.25 | 9 mm |
| 4 | mm² | AWG 12 | 2.85 | 9.6 mm |
| 6 | mm² | AWG 10 | 3.5 | 9.6 mm |
| 10 | mm² | AWG 8 | 4.3 | 15 mm |

Stripping length a = 15 mm for cables ≥ 5 mm
Stripping length a = 18 mm for cables ≥ 6.4 mm





Stock items in bold type

## Features

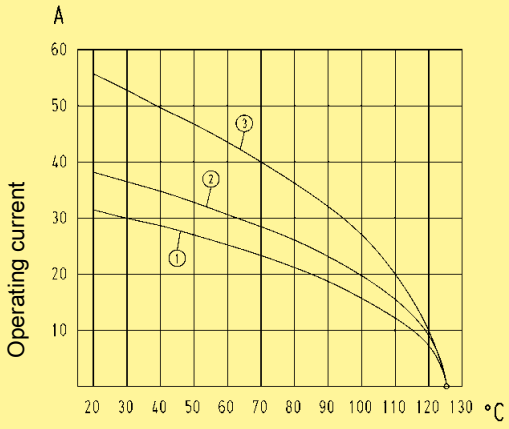
- Axial screw terminal
- No special tools required for assembly
- Compatible to Han® C module with crimp terminal



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① 24 B hoods/housings with 6 modules; wire gauge: 4 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 6 mm²

③ 24 B hoods/housings with 6 modules; wire gauge: 10 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 3 |
| Electrical data | |
| acc. to EN 61 984 | **40 A 690 V 8 kV 3** |
| Rated current | 40 A |
| Rated voltage | 690 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Rated voltage | |
| acc. to UL | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | 0.3 mΩ |
| Screw terminal | |
| - Wire gauge [1)] | 2.5 ... 10 mm² |
| - AWG | 14 ... 8 |
| - Hexagonal driver | SW 2 |

- Stripping length

| mm² | 2.5 | 4 | 6 | 10 |
|---|---|---|---|---|
| mm | $5^{+1}$ | $5^{+1}$ | $8^{+1}$ | $11^{+1}$ |

- Tightening tourque

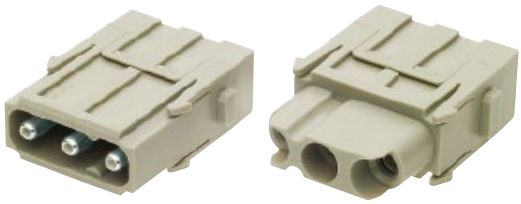
| mm² | 2.5 | 4 | 6 | 10 |
|---|---|---|---|---|
| Nm | 1.5 | 1.5 | 2 | 2 |

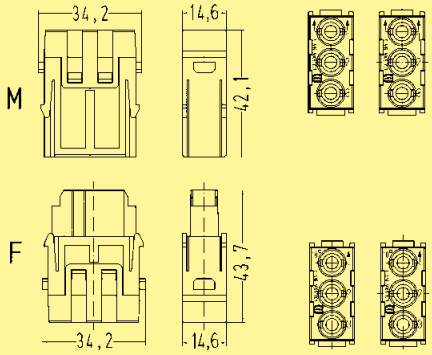


1) geometric wire gauge

Number of contacts

# 3



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Axial screw terminal** 40 A | | |  | |
| 2.5 ... 8 mm² | **09 14 003 2601** | **09 14 003 2701** | | |
| 6 ... 10 mm² | **09 14 003 2602** | **09 14 003 2702** | | |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **Hex key SW 2** for axial setscrew | | | |
| with grip  | **09 99 000 0313** | | |
| Bit 1/4“  | **09 99 000 0369** | | |





Stock items in bold type

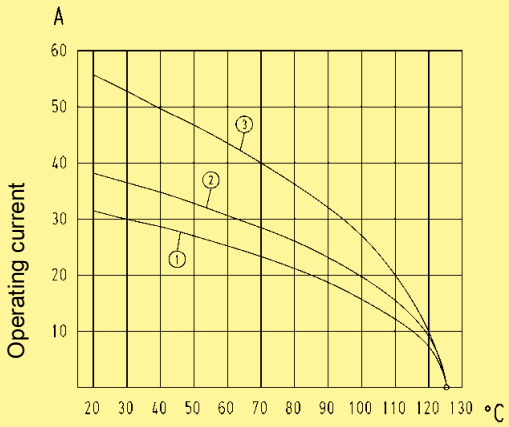
## Features

- Suitable for Han® C crimp contacts
- Standard module for power up to 40 A
- Compatible to Han® C module with axial screw terminal

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① 24 B hoods/housings with 6 modules; wire gauge: 4 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 6 mm²

③ 24 B hoods/housings with 6 modules; wire gauge: 10 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

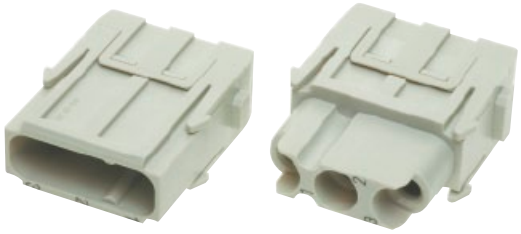
| | |
|---|---|
| Number of contacts | 3 |
| Electrical data acc. to EN 61 984 | |
| Cable diameter up to 5 mm | **40 A 400/690 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Cable diameter up to 7.5 mm | **40 A 500 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 V |
| Rated current acc. to UL/CSA | 32 A |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

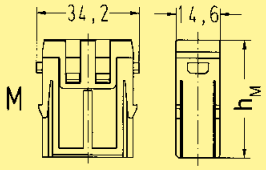
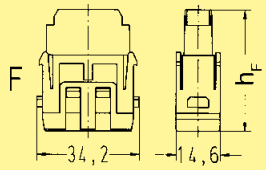
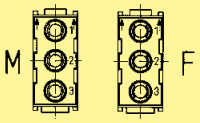
### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 1.5 ... 10 mm² |
| - AWG | 16 ... 8 |

Number of contacts

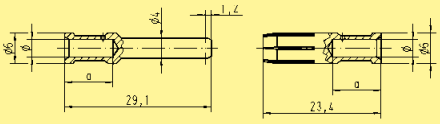
# 3



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | | |  | |
| Cable diameter up to 5 mm | **09 14 003 3001** | **09 14 003 3101** |  | |
| Cable diameter up to 7.5 mm | **09 14 003 3002** | **09 14 003 3102** | <br>Contact arrangement view from termination side | |

| | $h_M$ |
|---|---|
| 09 14 003 3001 | 39.1 mm |
| 09 14 003 3002 | 43.1 mm |

| | $h_F$ |
|---|---|
| 09 14 003 3101 | 40.7 mm |
| 09 14 003 3102 | 44.7 mm |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts | | | |  | |
| silver plated | 1.5 | **09 32 000 6104** | **09 32 000 6204** | | |
|  | 2.5 | **09 32 000 6105** | **09 32 000 6205** | | |
| | 4 | **09 32 000 6107** | **09 32 000 6207** | | |
| | 6 | **09 32 000 6108** | **09 32 000 6208** | | |
| | 10* | **09 32 000 6109** | **09 32 000 6209** | | |

| Wire gauge | | ∅ | Stripping length |
|---|---|---|---|
| 1.5 mm² | AWG 16 | 1.75 | 9 mm |
| 2.5 mm² | AWG 14 | 2.25 | 9 mm |
| 4 mm² | AWG 12 | 2.85 | 9.6 mm |
| 6 mm² | AWG 10 | 3.5 | 9.6 mm |
| 10 mm² | AWG 8 | 4.3 | 15 mm |
| Stripping length a = 15 mm for cables ≥ 5 mm<br>Stripping length a = 18 mm for cables ≥ 6.4 mm | | | |

* for modules 09 14 003 3002 and 09 14 003 3102 only

**Stock items in bold type**

## Features

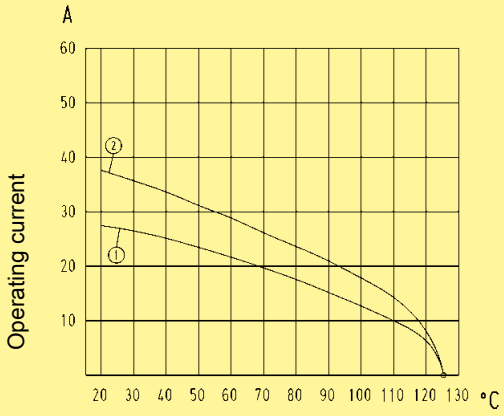
- Suitable for Han® C crimp contacts
- Designed for a high working voltage up to 830 V
- Finger safe male and female contacts
- High contact density



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① 24 B hoods/housings with 6 modules; wire gauge: 4 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 6 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

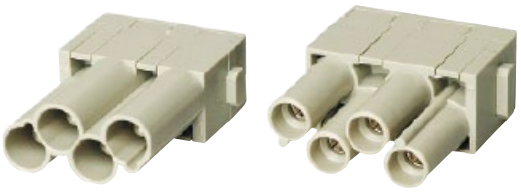
| | |
|---|---|
| Number of contacts | 4 |
| Electrical data | |
| acc. to EN 61 984 | **40 A 830 V 8 kV 3** |
| Rated current | 40 A |
| Rated voltage | 830 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| | |
| Rated voltage | |
| acc. to UL | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

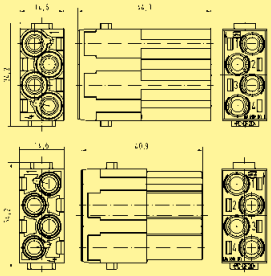
### Contacts

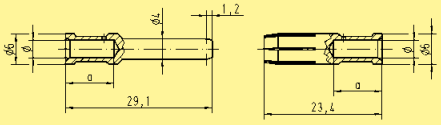
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 1.5 ... 6 mm² |
| - AWG | 16 ... 10 |

Number of contacts

# 4



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately | **09 14 004 3041** | **09 14 004 3141** | <br>Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp contacts<br>Power contacts<br>silver plated | 1.5 | **09 32 000 6104** | **09 32 000 6204** |  | |
|  | 2.5 | **09 32 000 6105** | **09 32 000 6205** | | |
| | 4 | **09 32 000 6107** | **09 32 000 6207** | | |
| | 6 | **09 32 000 6108** | **09 32 000 6208** | | |

| Wire gauge | | ∅ | Stripping length |
|---|---|---|---|
| 1.5 mm² | AWG 16 | 1.75 | 9 mm |
| 2.5 mm² | AWG 14 | 2.25 | 9 mm |
| 4 mm² | AWG 12 | 2.85 | 9.6 mm |
| 6 mm² | AWG 10 | 3.5 | 9.6 mm |





Stock items in bold type

## Features

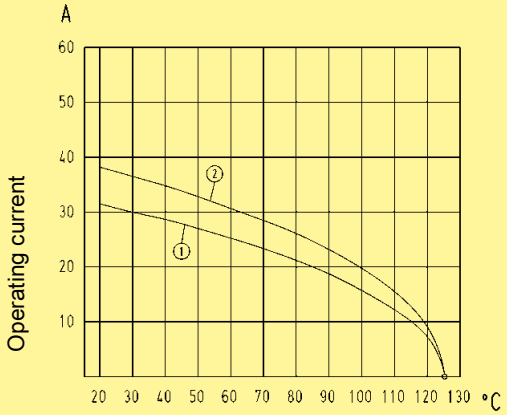
- 3 contacts (40 A) for power circuits and 4 contacts (10 A) for signal circuits
- Ideal as motor drive connector
- Male and female contacts are finger safe



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① 24 B hoods/housings with 6 modules; wire gauge: 4 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 6 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

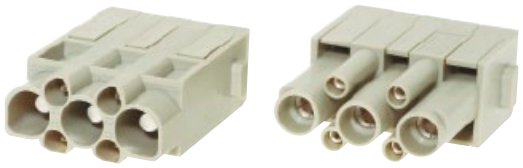
| | |
|---|---|
| Number of contacts | 3 / 4 |
| Electrical data acc. to EN 61 984 | |
| Power contacts | **40 A 830 V 8 kV 3** |
| Rated current | 40 A |
| Rated voltage | 830 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Signal contacts | **10 A 830 V 8 kV 3** |
| Rated current | 10 A |
| Rated voltage | 830 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

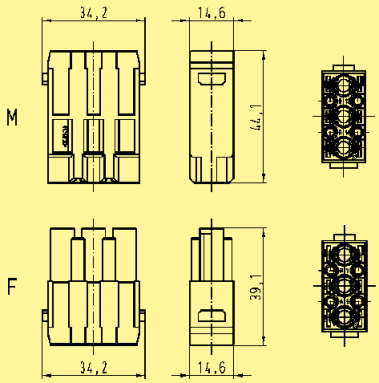
### Contacts

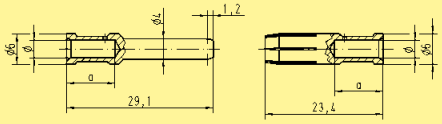
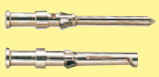
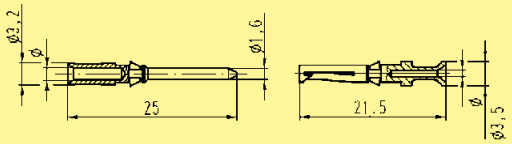
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | |
| Power contacts | ≤ 0.3 mΩ |
| Signal contacts | ≤ 3 mΩ |
| Crimp terminal | |
| - mm² | |
| Power contacts | 1.5 ... 6 mm² |
| Signal contacts | 0.14 ... 2.5 mm² |
| - AWG | |
| Power contacts | 16 ... 10 |
| Signal contacts | 26 ... 14 |
| Max. insulation diameter | |
| - Power contacts | 5 mm |

Number of contacts

# 3 / 4



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 14 007 3001** | **09 14 007 3101** |  Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts | | | | | |
| silver plated  | 1.5 | **09 32 000 6104** | **09 32 000 6204** |  | |
| | 2.5 | **09 32 000 6105** | **09 32 000 6205** | | |
| | 4 | **09 32 000 6107** | **09 32 000 6207** | | |
| | 6 | **09 32 000 6108** | **09 32 000 6208** | | |
| Signal contacts silver plated  | 0.14-0.37 | **09 15 000 6104** | **09 15 000 6204** |  | |
| | 0.5 | **09 15 000 6103** | **09 15 000 6203** | | |
| | 0.75 | **09 15 000 6105** | **09 15 000 6205** | | |
| | 1 | **09 15 000 6102** | **09 15 000 6202** | | |
| | 1.5 | **09 15 000 6101** | **09 15 000 6201** | | |
| | 2.5 | **09 15 000 6106** | **09 15 000 6206** | | |
| gold plated  | 0.14-0.37 | **09 15 000 6124** | **09 15 000 6224** | | |
| | 0.5 | **09 15 000 6123** | **09 15 000 6223** | | |
| | 0.75 | **09 15 000 6125** | **09 15 000 6225** | | |
| | 1 | **09 15 000 6122** | **09 15 000 6222** | | |
| | 1.5 | **09 15 000 6121** | **09 15 000 6221** | | |
| | 2.5 | **09 15 000 6126** | **09 15 000 6226** | | |

| Wire gauge | | ∅ | Stripping length |
|---|---|---|---|
| 1.5 mm² | AWG 16 | 1.75 | 9 mm |
| 2.5 mm² | AWG 14 | 2.25 | 9 mm |
| 4 mm² | AWG 12 | 2.85 | 9.6 mm |
| 6 mm² | AWG 10 | 3.5 | 9.6 mm |

| Wire gauge | | ∅ | Stripping length |
|---|---|---|---|
| 0.14-0.37 mm² | AWG 26-22 | 0.9 | 8 mm |
| 0.5 mm² | AWG 20 | 1.1 | 8 mm |
| 0.75 mm² | AWG 18 | 1.3 | 8 mm |
| 1 mm² | AWG 18 | 1.45 | 8 mm |
| 1.5 mm² | AWG 16 | 1.75 | 8 mm |
| 2.5 mm² | AWG 14 | 2.25 | 6 mm |





Stock items in bold type

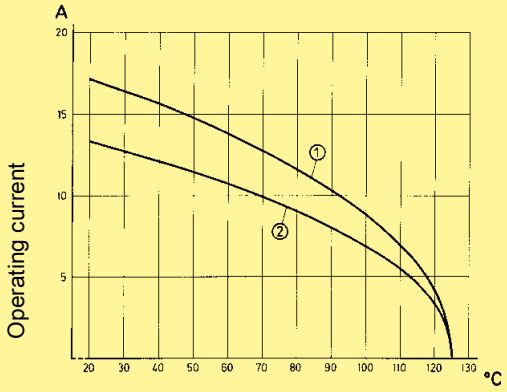
## Features

- Suitable for Han E® crimp contacts
- Standard module for power up to 40 A

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① 24 B hoods/housings with 6 modules; wire gauge: 2.5 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 1.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

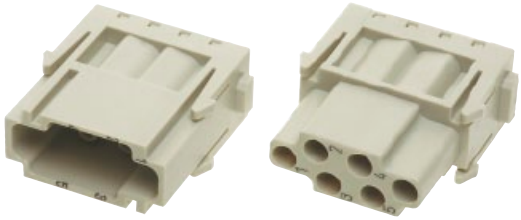
| | |
|---|---|
| Number of contacts | 6 |
| Electrical data | |
| acc. to EN 61 984 | **16 A 500 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| | |
| Rated voltage | |
| acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

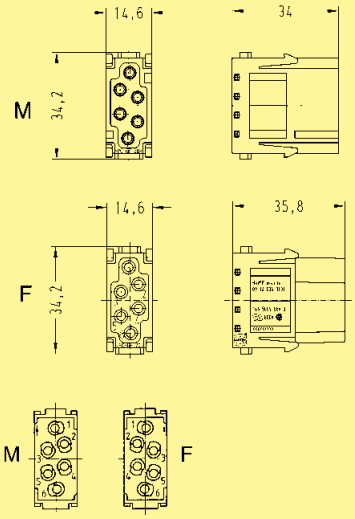
### Contacts

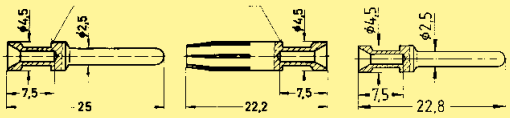
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 4 mm² |
| - AWG | 26 ... 12 |

Number of contacts

# 6



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 14 006 3001** | **09 14 006 3101** |  Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts | | | | Operating contact Identification / Relay contact | |
| silver plated | 0,14-0,37 | 09 33 000 6127 | 09 33 000 6227 |  | |
| | 0,5 | **09 33 000 6121** | **09 33 000 6220** | | |
| | 0,75 | **09 33 000 6114** | **09 33 000 6214** | | |
| | 1 | **09 33 000 6105** | **09 33 000 6205** | | |
| | 1,5 | **09 33 000 6104** | **09 33 000 6204** | | |
| | 2,5 | **09 33 000 6102** | **09 33 000 6202** | | |
| | 3 | 09 33 000 6106 | 09 33 000 6206 | | |
| | 4 | **09 33 000 6107** | **09 33 000 6207** | | |
| gold plated | 0,14-0,37 | 09 33 000 6117 | 09 33 000 6217 | | |
| | 0,5 | **09 33 000 6122** | **09 33 000 6222** | | |
| | 0,75 | **09 33 000 6115** | **09 33 000 6215** | | |
| | 1 | **09 33 000 6118** | **09 33 000 6218** | | |
| | 1,5 | **09 33 000 6116** | **09 33 000 6216** | | |
| | 2,5 | **09 33 000 6123** | **09 33 000 6223** | | |
| | 4 | 09 33 000 6119 | 09 33 000 6221 | | |
| Relay contact silver plated | 0,75-1 | 09 33 000 6109 | | | |
| | 1,5 | 09 33 000 6110 | | | |
| | 2,5 | 09 33 000 6111 | | | |

| Identification | Wire gauge | | Stripping length |
|---|---|---|---|
| no groove | 0.14-0.37 mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 mm² | AWG 14 | 7.5 mm |
| wide groove | 3 mm² | AWG 12 | 7.5 mm |
| no groove | 4 mm² | AWG 12 | 7.5 mm |

* on the back crimp collar

Crimp contacts 0.14 ... 0.37 mm² only used with BUCHANAN crimping tool 09 99 000 0001

**Stock items in bold type**

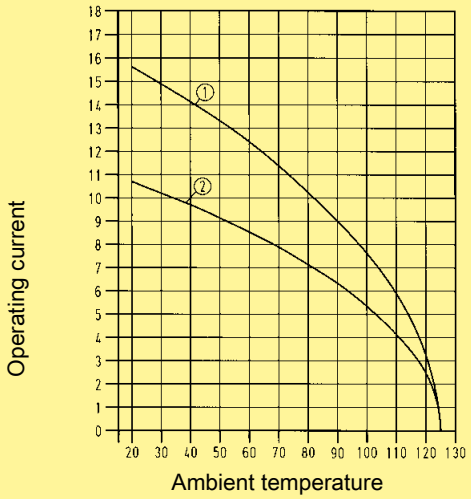
## Features

- Suitable for Han E® crimp contacts
- High contact density
- Compatible to the Han® EE module with Quick Lock terminal

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① 24 B hoods/housings with 6 modules; wire gauge: 2.5 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 1.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

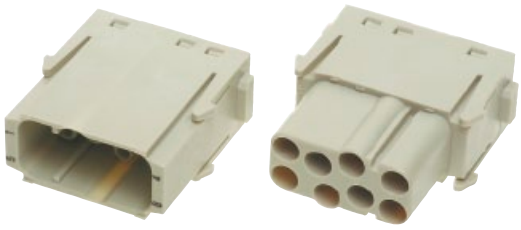
| | |
|---|---|
| Number of contacts | 8 |
| Electrical data | |
| acc. to EN 61 984 | **16 A 400 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Rated voltage | |
| acc. to UL | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

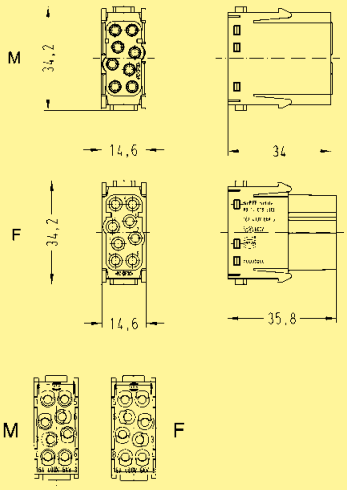
### Contacts

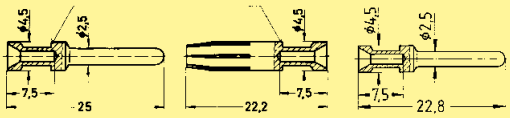
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 4 mm² |
| - AWG | 26 ... 12 |

Number of contacts

# 8



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 14 008 3001** | **09 14 008 3101** |  Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts | | | | Operating contact Identification / Relay contact | |
| silver plated | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 |  | |
| | 0.5 | **09 33 000 6121** | **09 33 000 6220** | | |
| | 0.75 | **09 33 000 6114** | **09 33 000 6214** | | |
| | 1 | **09 33 000 6105** | **09 33 000 6205** | | |
| | 1.5 | **09 33 000 6104** | **09 33 000 6204** | | |
| | 2.5 | **09 33 000 6102** | **09 33 000 6202** | | |
| | 3 | 09 33 000 6106 | 09 33 000 6206 | | |
| | 4 | **09 33 000 6107** | **09 33 000 6207** | | |
| gold plated | 0.14-0.37 | 09 33 000 6117 | 09 33 000 6217 | | |
| | 0.5 | **09 33 000 6122** | **09 33 000 6222** | | |
| | 0.75 | **09 33 000 6115** | **09 33 000 6215** | | |
| | 1 | **09 33 000 6118** | **09 33 000 6218** | | |
| | 1.5 | **09 33 000 6116** | **09 33 000 6216** | | |
| | 2.5 | **09 33 000 6123** | **09 33 000 6223** | | |
| | 4 | 09 33 000 6119 | 09 33 000 6221 | | |
| Relay contact silver plated | 0.75-1 | 09 33 000 6109 | | | |
| | 1.5 | 09 33 000 6110 | | | |
| | 2.5 | 09 33 000 6111 | | | |

| Identification | Wire gauge | | Stripping length |
|---|---|---|---|
| no groove | 0.14-0.37 mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 mm² | AWG 14 | 7.5 mm |
| wide groove | 3 mm² | AWG 12 | 7.5 mm |
| no groove | 4 mm² | AWG 12 | 7.5 mm |

* on the back crimp collar

Crimp contacts 0.14 ... 0.37 mm² only used with BUCHANAN crimping tool 09 99 000 0001

**Stock items in bold type**

## Features

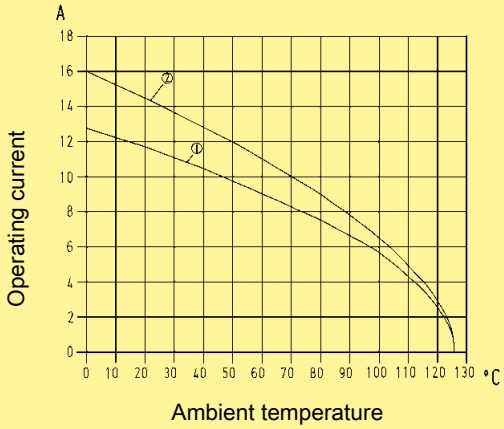
- Innivative Han-Quick Lock® termination technology
- Field assembly without special tools
- Compatible to Han® EE module with crimp terminal
- Reduced wiring times



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① 24 B hoods/housings with 6 modules; wire gauge: 1.5 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 2.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Inserts

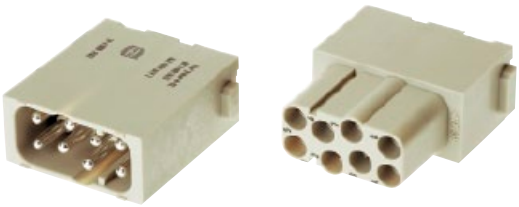
| | |
|---|---|
| Number of contacts | 8 |
| Electrical data | |
| acc. to EN 61 984 | **16 A 400 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

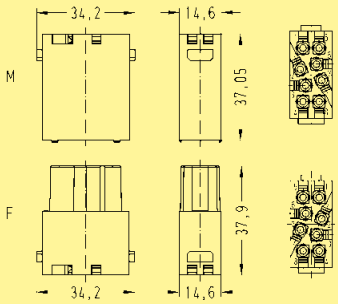
### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Quick Lock termination | |
| - mm² | 0.5 ... 2.5 mm² |
| - AWG | 20 ... 14 |

Number of contacts

# 8



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Quick Lock termination  | **09 14 008 2633** | **09 14 008 2733** |   Contact arrangement view from termination side | |





Stock items in bold type

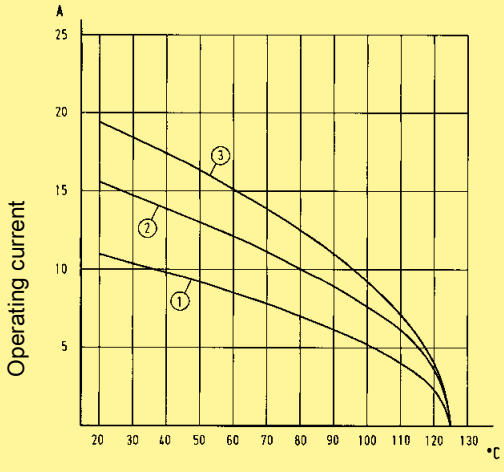
## Features

- Suitable for Han E® crimp contacts
- designed for a high working voltage up to 830 V
- finger safe male and female contacts

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① 24 B hoods/housings with 6 modules; wire gauge: 1.5 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 2.5 mm²

③ 24 B hoods/housings with 6 modules; wire gauge: 4 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 6 |
| Electrical data | |
| acc. to EN 61 984 | **16 A 830 V 8 kV 3** |
| Rated current | 16 A |
| Rated voltage | 830 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| | |
| Rated voltage | |
| acc. to UL | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

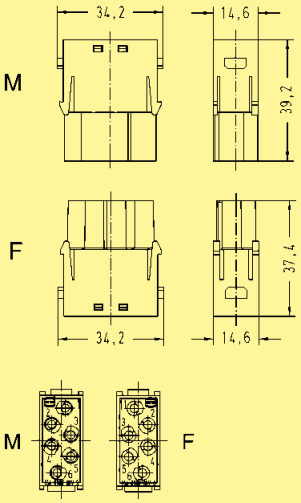
### Contacts

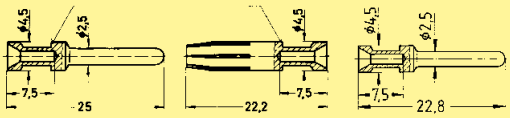
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 4 mm² |
| - AWG | 26 ... 12 |

Number of contacts

# 6



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 14 006 3041** | **09 14 006 3141** |  Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts | | | | Operating contact Identification / Relay contact | |
| silver plated | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 |  | |
| | 0.5 | **09 33 000 6121** | **09 33 000 6220** | | |
| | 0.75 | **09 33 000 6114** | **09 33 000 6214** | | |
| | 1 | **09 33 000 6105** | **09 33 000 6205** | | |
| | 1.5 | **09 33 000 6104** | **09 33 000 6204** | | |
| | 2.5 | **09 33 000 6102** | **09 33 000 6202** | | |
| | 3 | 09 33 000 6106 | 09 33 000 6206 | | |
| | 4 | **09 33 000 6107** | **09 33 000 6207** | | |
| gold plated | 0.14-0.37 | 09 33 000 6117 | 09 33 000 6217 | | |
| | 0.5 | **09 33 000 6122** | **09 33 000 6222** | | |
| | 0.75 | **09 33 000 6115** | **09 33 000 6215** | | |
| | 1 | **09 33 000 6118** | **09 33 000 6218** | | |
| | 1.5 | **09 33 000 6116** | **09 33 000 6216** | | |
| | 2.5 | **09 33 000 6123** | **09 33 000 6223** | | |
| | 4 | 09 33 000 6119 | 09 33 000 6221 | | |
| Relay contact silver plated | 0.75-1 | 09 33 000 6109 | | | |
| | 1.5 | 09 33 000 6110 | | | |
| | 2.5 | 09 33 000 6111 | | | |

| Identification | Wire gauge | | Stripping length |
|---|---|---|---|
| no groove | 0.14-0.37 mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 mm² | AWG 14 | 7.5 mm |
| wide groove | 3 mm² | AWG 12 | 7.5 mm |
| no groove | 4 mm² | AWG 12 | 7.5 mm |

* on the back crimp collar

Crimp contacts 0.14 ... 0.37 mm² only used with BUCHANAN crimping tool 09 99 000 0001

**Stock items in bold type**

## Features

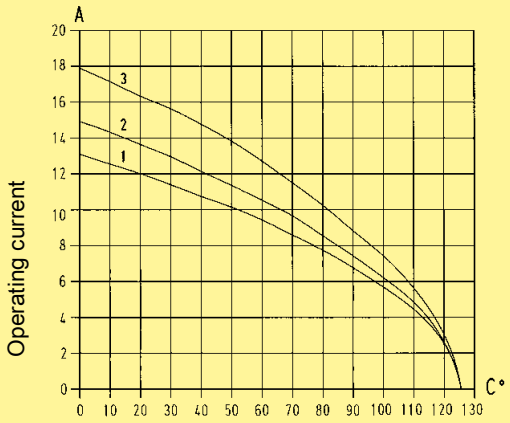
- Suitable for Han E® crimp contacts
- High contact density
- Up to 16 A per contact
- Also suitable as a reliable signal connector



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① 24 B hoods/housings with 3 modules; wire gauge: 1.5 mm²

② 24 B hoods/housings with 3 modules; wire gauge: 2.5 mm²

③ 24 B hoods/housings with 3 modules; wire gauge: 4 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

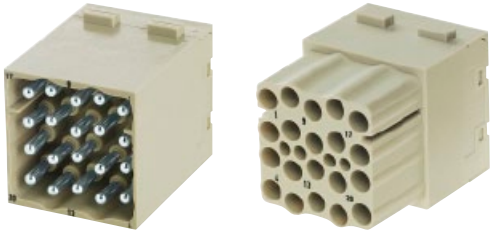
| | |
|---|---|
| Number of contacts | 20 |
| Electrical data | |
| acc. to EN 61 984 | **16 A 500 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| | |
| Rated voltage | |
| acc. to UL | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

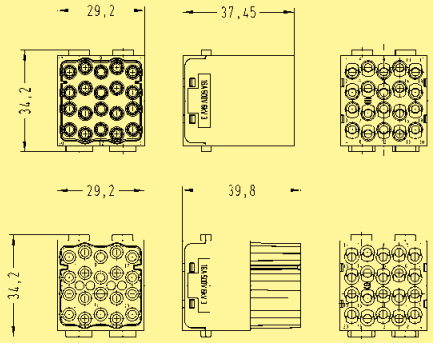
### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 4 mm² |
| - AWG | 26 ... 12 |

Number of contacts

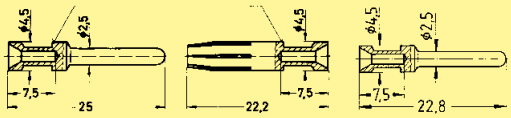
# 20



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 14 020 3001** | **09 14 020 3101** |  Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts | | | | | |
| silver plated | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 | | |
| | 0.5 | **09 33 000 6121** | **09 33 000 6220** | | |
| | 0.75 | **09 33 000 6114** | **09 33 000 6214** | | |
| | 1 | **09 33 000 6105** | **09 33 000 6205** | | |
| | 1.5 | **09 33 000 6104** | **09 33 000 6204** | | |
| | 2.5 | **09 33 000 6102** | **09 33 000 6202** | | |
| | 3 | 09 33 000 6106 | 09 33 000 6206 | | |
| | 4 | **09 33 000 6107** | **09 33 000 6207** | | |
| gold plated | 0.14-0.37 | 09 33 000 6117 | 09 33 000 6217 | | |
| | 0.5 | **09 33 000 6122** | **09 33 000 6222** | | |
| | 0.75 | **09 33 000 6115** | **09 33 000 6215** | | |
| | 1 | **09 33 000 6118** | **09 33 000 6218** | | |
| | 1.5 | **09 33 000 6116** | **09 33 000 6216** | | |
| | 2.5 | **09 33 000 6123** | **09 33 000 6223** | | |
| | 4 | 09 33 000 6119 | 09 33 000 6221 | | |
| Relay contact silver plated | 0.75-1 | 09 33 000 6109 | | | |
| | 1.5 | 09 33 000 6110 | | | |
| | 2.5 | 09 33 000 6111 | | | |

Operating contact Identification — Relay contact




| Identification | Wire gauge | | Stripping length |
|---|---|---|---|
| no groove | 0.14-0.37 mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 mm² | AWG 14 | 7.5 mm |
| wide groove | 3 mm² | AWG 12 | 7.5 mm |
| no groove | 4 mm² | AWG 12 | 7.5 mm |

* on the back crimp collar

Crimp contacts 0.14 ... 0.37 mm² only used with BUCHANAN crimping tool 09 99 000 0001

**Stock items in bold type**

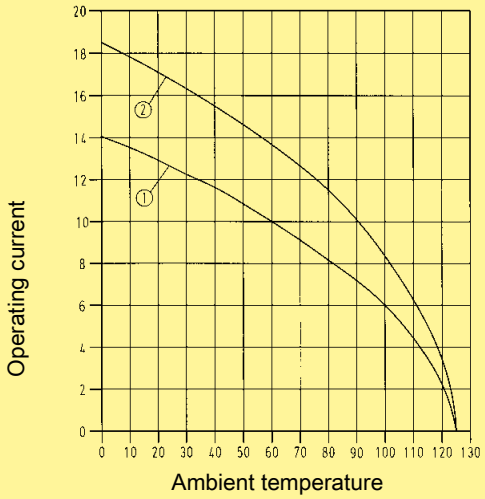
## Features

- Cage-clamp terminal
- No special tools required

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① 24 B hoods/housings with 6 modules; wire gauge: 2.5 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 1.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

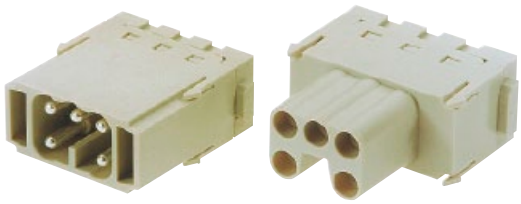
| | |
|---|---|
| Number of contacts | 5 |
| Electrical data | |
| acc. to EN 61 984 | **16 A 400 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| | |
| Rated voltage | |
| acc. to UL | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

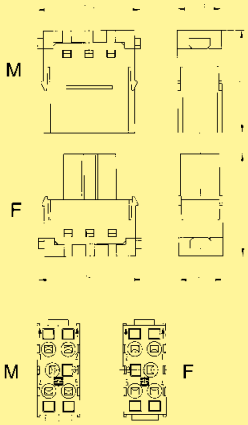
### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 3 mΩ |
| Cage clamp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |

Number of contacts

# 5



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Cage-clamp terminal | **09 14 005 2616** | **09 14 005 2716** |   Contact arrangement view from termination side | |





Stock items in bold type

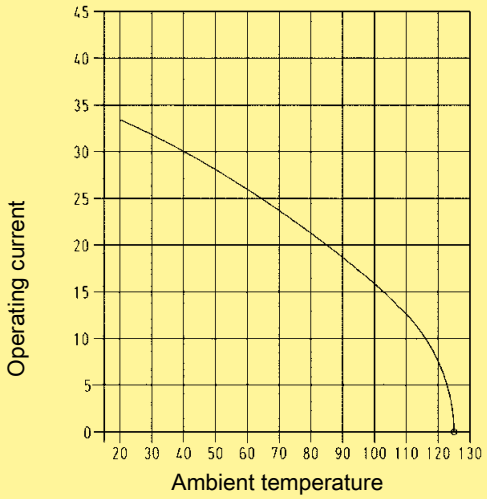
## Features

- Suitable for Han E® crimp contacts
- 2 contacts up to 5000 V
- Insulator out of a voltage resistant teflon material
- Combination of all other modules (pneumatic, signal etc.)

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① Housing Han® 16 B with 1 Han® HV module, wire gauge: 2.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN VDE 0115<br>DIN EN 60 664-1 |
| Approvals | |

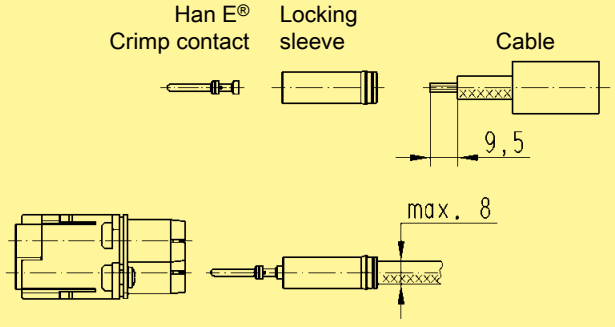
### Inserts

| | |
|---|---|
| Number of contacts | 2 |
| Electrical data | |
| acc. to EN 61 984 | **16 A 2900/5000 V 15 kV 3** |
| Rated current | 16 A |
| Rated voltage conductor - ground | 2900 V |
| Rated voltage conductor - conductor | 5000 V |
| Rated impulse voltage | 15 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate/Teflon (PTFE) |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

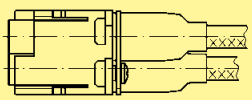
### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 0.5 ... 4 mm² |
| - AWG | 20 ... 12 |

## Assembly instructions




Crimp with BUCHANAN crimping tool 09 99 000 0001
Snap crimped cable in the insert



shrink the heat shrink tube over the rear of contact

Number of contacts

# 2



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | | | M | |
| Range of delivery:<br>- 1 module<br>- 2 locking sleeves<br>- 2 heat shrink tubes | **09 14 002 3021** | **09 14 002 3121** | F | |
| **Removal tool**<br>for locking sleeve | **09 99 000 0327** | **09 99 000 0327** | | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts** | | | | Operating contact Identification | |
| silver plated | 0.5 | **09 33 000 6121** | **09 33 000 6220** | | |
| | 0.75 | **09 33 000 6114** | **09 33 000 6214** | | |
| | 1 | **09 33 000 6105** | **09 33 000 6205** | | |
| | 1.5 | **09 33 000 6104** | **09 33 000 6204** | | |
| | 2.5 | **09 33 000 6102** | **09 33 000 6202** | | |
| | 3 | 09 33 000 6106 | 09 33 000 6206 | | |
| | 4 | **09 33 000 6107** | **09 33 000 6207** | | |

| Identification | Wire gauge | | Stripping length |
|---|---|---|---|
| no groove | 0.5 mm² | AWG 20 | 9.5 mm |
| 1 groove* | 0.75 mm² | AWG 18 | 9.5 mm |
| 1 groove | 1 mm² | AWG 18 | 9.5 mm |
| 2 grooves | 1.5 mm² | AWG 16 | 9.5 mm |
| 3 grooves | 2.5 mm² | AWG 14 | 9.5 mm |
| wide groove | 3 mm² | AWG 12 | 9.5 mm |
| no groove | 4 mm² | AWG 12 | 9.5 mm |

* on the back crimp collar





Stock items in bold type

## Features

- Suitable for Han® C crimp contacts
- 2 contacts up to 5000 V
- Insulator out of a voltage resistant teflon material
- Combination of all other modules (pneumatic, signal etc.)

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN VDE 0115<br>DIN EN 60 664-1 |

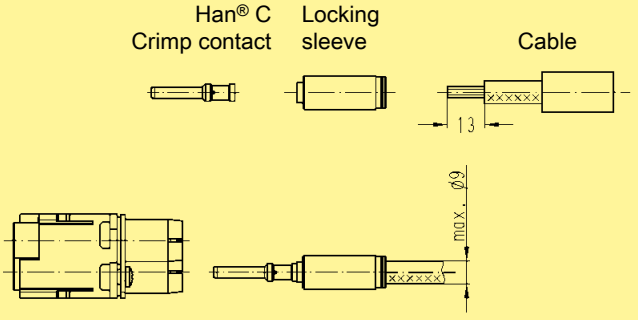
### Inserts

| | |
|---|---|
| Number of contacts | 2 |
| Electrical data | |
| acc. to EN 61 984 | **40 A 2900/5000 V 15 kV 3** |
| Rated current | 40 A |
| Rated voltage conductor - ground | 2900 V |
| Rated voltage conductor - conductor | 5000 V |
| Rated impulse voltage | 15 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate/Teflon (PTFE) |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Max. cable diameter | 9 mm |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

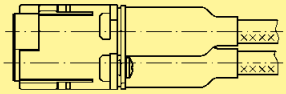
### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 1.5 ... 10 mm² |
| - AWG | 16 ... 8 |

## Assembly instructions



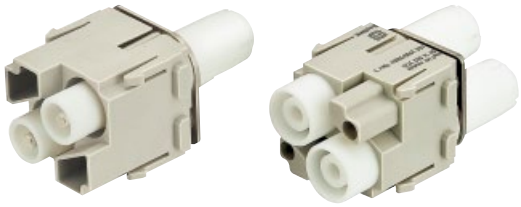

Crimp with tool 0999 000 0001,
0999 000 0110 or 0999 000 0377
Snap crimped cable in the insert



shrink the heat shrink tube over the rear of contact

Number of contacts

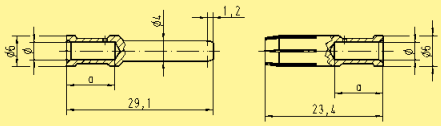
# 2



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | | | M | |
| Range of delivery:<br>- 1 module<br>- 2 locking sleeves<br>- 2 heat shrink tubes | **09 14 002 3023** | **09 14 002 3123** | F | |
| **Removal tool**<br>for locking sleeve | **09 99 000 0327** | **09 99 000 0327** | | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts | | | | | |
| silver plated | 1.5 | **09 32 000 6104** | **09 32 000 6204** | | |
| | 2.5 | **09 32 000 6105** | **09 32 000 6205** | | |
| | 4 | **09 32 000 6107** | **09 32 000 6207** | | |
| | 6 | **09 32 000 6108** | **09 32 000 6208** | | |
| | 10 | **09 32 000 6109** | **09 32 000 6209** | | |





| Wire gauge | | | ∅ | Stripping length |
|---|---|---|---|---|
| 1.5 | mm² | AWG 16 | 1.75 | 13 mm |
| 2.5 | mm² | AWG 14 | 2.25 | 13 mm |
| 4 | mm² | AWG 12 | 2.85 | 13 mm |
| 6 | mm² | AWG 10 | 3.5 | 13 mm |
| 10 | mm² | AWG 8 | 4.3 | 13 mm |





Stock items in bold type

## Features

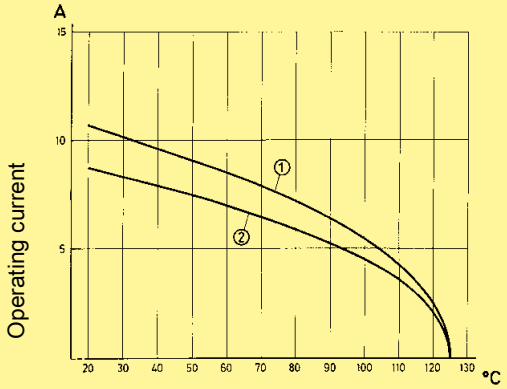
- Suitable for Han D® crimp contacts
- Standard module for power up to 10 A



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① 24 B hoods/housings with 6 modules; wire gauge: 1.5 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 1.0 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

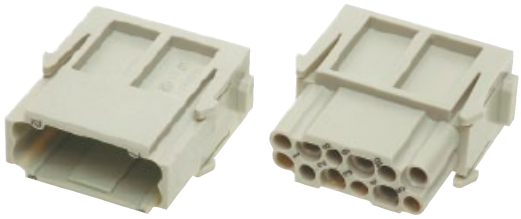
| | |
|---|---|
| Number of contacts | 12 |
| Electrical data | |
| acc. to EN 61 984 | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| | |
| Rated voltage | |
| acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

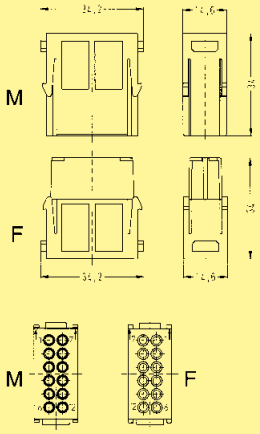
### Contacts

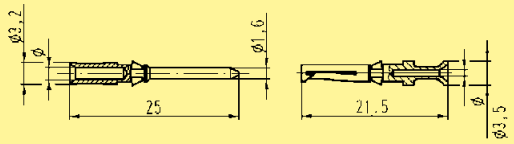
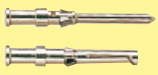
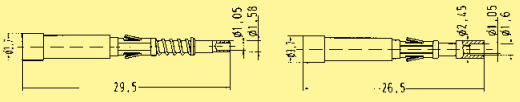
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |

Number of contacts

# 12



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 14 012 3001** | **09 14 012 3101** | <br>Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts | | | |  | |
| silver plated | 0.14-0.37 | **09 15 000 6104** | **09 15 000 6204** | | |
|  | 0.5 | **09 15 000 6103** | **09 15 000 6203** | | |
| | 0.75 | **09 15 000 6105** | **09 15 000 6205** | | |
| | 1 | **09 15 000 6102** | **09 15 000 6202** | | |
| | 1.5 | **09 15 000 6101** | **09 15 000 6201** | | |
| | 2.5 | **09 15 000 6106** | **09 15 000 6206** | | |
| gold plated | 0.14-0.37 | **09 15 000 6124** | **09 15 000 6224** | | |
|  | 0.5 | **09 15 000 6123** | **09 15 000 6223** | | |
| | 0.75 | **09 15 000 6125** | **09 15 000 6225** | | |
| | 1 | **09 15 000 6122** | **09 15 000 6222** | | |
| | 1.5 | **09 15 000 6121** | **09 15 000 6221** | | |
| | 2.5 | **09 15 000 6126** | **09 15 000 6226** | | |
| **F.O. contacts**<br>for 1 mm plastic fibre | | 20 10 001 3211 | 20 10 001 3221 |  | |

| Wire gauge | | ∅ | Stripping length |
|---|---|---|---|
| 0.14-0.37 mm² | AWG 26-22 | 0.9 | 8 mm |
| 0.5 mm² | AWG 20 | 1.1 | 8 mm |
| 0.75 mm² | AWG 18 | 1.3 | 8 mm |
| 1 mm² | AWG 18 | 1.45 | 8 mm |
| 1.5 mm² | AWG 16 | 1.75 | 8 mm |
| 2.5 mm² | AWG 14 | 2.25 | 6 mm |





Stock items in bold type

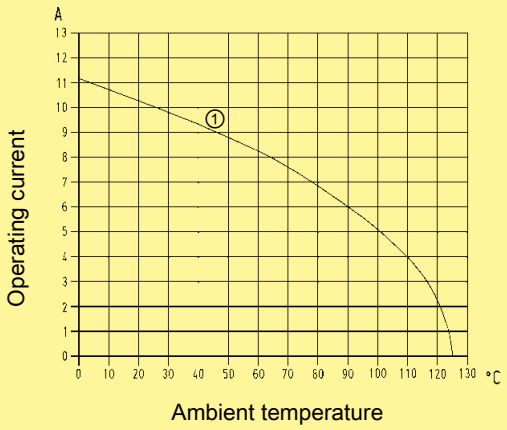
## Features

- Innovative Han-Quick Lock® termination technology
- Field assembly without special tools
- Mating compatible with standard Han® DD module with crimp terminal
- Reduced wiring times

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① 24 B hoods/housings with 6 modules; wire gauge: 1.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Inserts

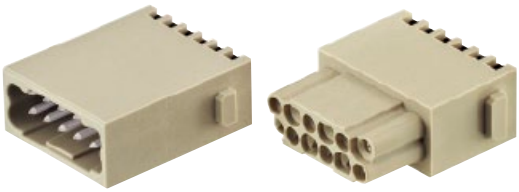
| | |
|---|---|
| Number of contacts | 12 |
| Electrical data | |
| acc. to EN 61 984 | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | |

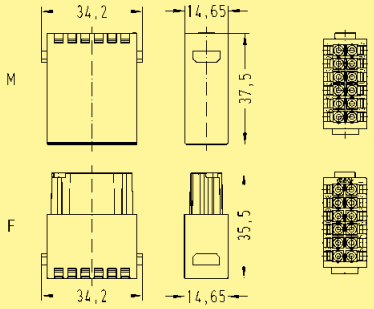
### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 3 mΩ |
| Quick Lock termination | |
| - mm² | 0.25 ... 1.5 mm² |
| - AWG | 22 ... 16 |

Number of contacts

# 12



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Quick Lock termination  | **09 14 012 2632** | **09 14 012 2732** |   Contact arrangement view from termination side | |





Stock items in bold type

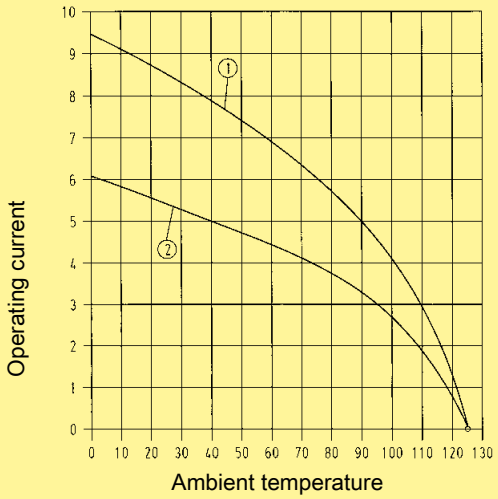
## Features

- Suitable for Han D® crimp contacts
- High contact density

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① 24 B hoods/housings with 6 modules; wire gauge: 1.5 mm²

② 24 B hoods/housings with 6 modules; wire gauge: 1.0 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

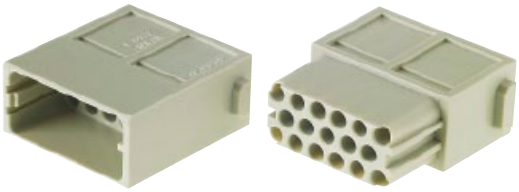
| | |
|---|---|
| Number of contacts | 17 |
| Electrical data | |
| acc. to EN 61 984 | **10 A 160 V 2.5 kV 3** |
| Rated current | 10 A |
| Rated voltage | 160 V |
| Rated impulse voltage | 2.5 kV |
| Pollution degree | 3 |
| | |
| Rated voltage | |
| acc. to UL | 250 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

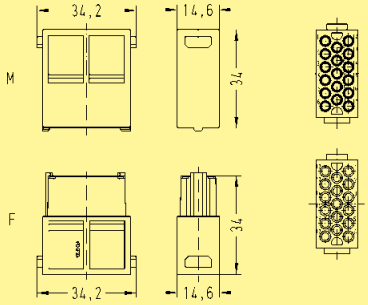
### Contacts

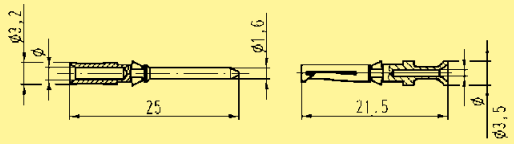
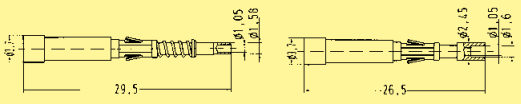
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |

Number of contacts

# 17



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 14 017 3001** | **09 14 017 3101** |  Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts | | | | | |
| silver plated | 0.14-0.37 | **09 15 000 6104** | **09 15 000 6204** |  | |
| | 0.5 | **09 15 000 6103** | **09 15 000 6203** | | |
| | 0.75 | **09 15 000 6105** | **09 15 000 6205** | | |
| | 1 | **09 15 000 6102** | **09 15 000 6202** | | |
| | 1.5 | **09 15 000 6101** | **09 15 000 6201** | | |
| | 2.5 | **09 15 000 6106** | **09 15 000 6206** | | |
| gold plated | 0.14-0.37 | **09 15 000 6124** | **09 15 000 6224** | | |
| | 0.5 | **09 15 000 6123** | **09 15 000 6223** | | |
| | 0.75 | **09 15 000 6125** | **09 15 000 6225** | | |
| | 1 | **09 15 000 6122** | **09 15 000 6222** | | |
| | 1.5 | **09 15 000 6121** | **09 15 000 6221** | | |
| | 2.5 | **09 15 000 6126** | **09 15 000 6226** | | |
| **F.O. contacts**<br>for 1 mm plastic fibre | | 20 10 001 3211 | 20 10 001 3221 |  | |

| Wire gauge | | ∅ | Stripping length |
|---|---|---|---|
| 0.14-0.37 mm² | AWG 26-22 | 0.9 | 8 mm |
| 0.5 mm² | AWG 20 | 1.1 | 8 mm |
| 0.75 mm² | AWG 18 | 1.3 | 8 mm |
| 1 mm² | AWG 18 | 1.45 | 8 mm |
| 1.5 mm² | AWG 16 | 1.75 | 8 mm |
| 2.5 mm² | AWG 14 | 2.25 | 6 mm |





Stock items in bold type

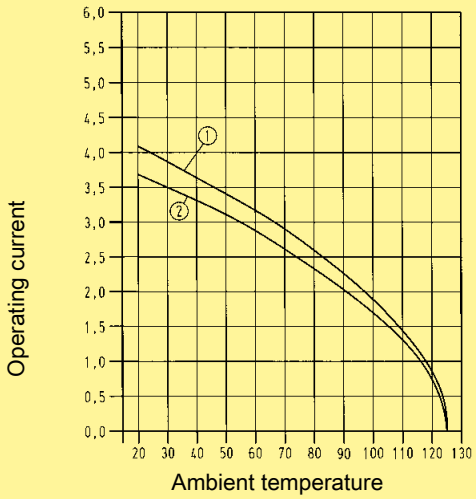
## Features

- Suitable for D-Sub crimp contacts
- High contact density
- Using of guiding pins (male and female) is recommended (see chapter 40).

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① 24 B hoods/housings with 6 modules; wire gauge: 0.5 mm² turned contacts

② 24 B hoods/housings with 6 modules; wire gauge: 0.5 mm² stamped contacts

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Inserts

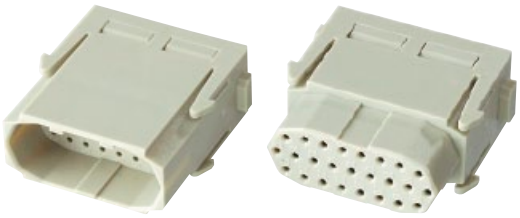
| | |
|---|---|
| Number of contacts | 25 |
| Electrical data | |
| acc. to EN 61 984 | **4 A 50 V 0.8 kV 3** |
| Rated current | 4 A |
| Rated voltage | 50 V |
| Rated impulse voltage | 0.8 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

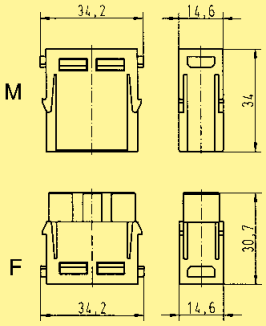
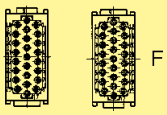
### Contacts

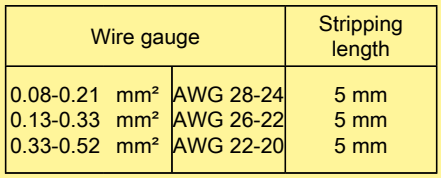
| | |
|---|---|
| Crimp terminal | |
| - mm² | 0.08 ... 0.52 mm² |
| - AWG | 28 ... 20 |
| turned contacts | Performance level 1<br>as per CECC 75 301-802,<br>500 mating cycles,<br>10 days 4 mixed gas test -<br>IEC 60 512 |

Number of contacts

# 25



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately | **09 14 025 3001** | **09 14 025 3101** | <br><br>Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| D-Sub crimp contacts<br> | 0,08-0,21<br>0,13-0,33<br>0,33-0,52 | 61 03 000 0078<br>**61 03 000 0094**<br>**61 03 000 0073** | 61 03 000 0080<br>**61 03 000 0096**<br>**61 03 000 0074** |  | |
| Insertion / Removal tool<br>for D-Sub crimp contacts<br> | | 09 99 000 0368 | 09 99 000 0368 | | |





Stock items in bold type

## Features

- 9-pin D-Sub connector of the Han-Modular® system
- Ideal for the transmission of sensetive signals
- Compatible to crimp, solder or IDC termination
- Using of guiding pins (male and female) is recommended (see chapter 40).

## Technical characteristics

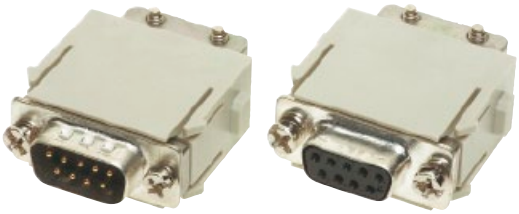
| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

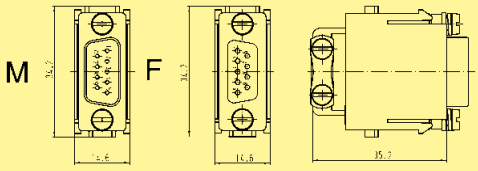
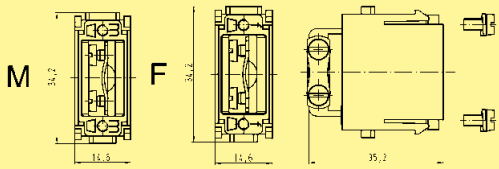
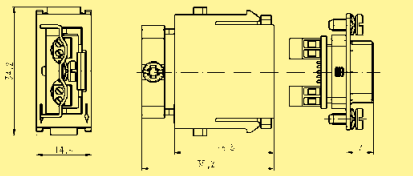
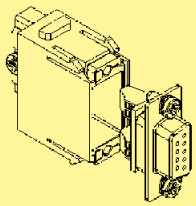
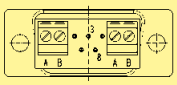
### Inserts

| | |
|---|---|
| Number of contacts | 9 |
| Electrical data | |
| acc. to EN 61 984 | **5 A 50 V 0.8 kV 3** |
| Rated current | 5 A |
| Rated voltage | 50 V |
| Rated impulse voltage | 0.8 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

Number of contacts

# 9



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately<br>(see page 06.65)<br> | **09 14 009 3001** | **09 14 009 3101** |  | |
| Adapter module without D-Sub insert<br>for one cable<br> | **09 14 000 9930** | **09 14 000 9931** |  | |
| for two cables | **09 14 000 9932** | **09 14 000 9933** | | |
| Screw terminal<br>for RS 485-based bus systems<br>with T-functionality<br> | | **09 14 009 3151** | <br><br><br>Contact arrangement view from termination side | |

| Signal | Contact no. |
|---|---|
| A | 8 |
| B | 3 |





Stock items in bold type

# Han® USB module

## Features

- According to USB 2.0 specification
- Simple and cost effective termination by plug in patch cable
- Cable tie strain relief

## Technical characteristics

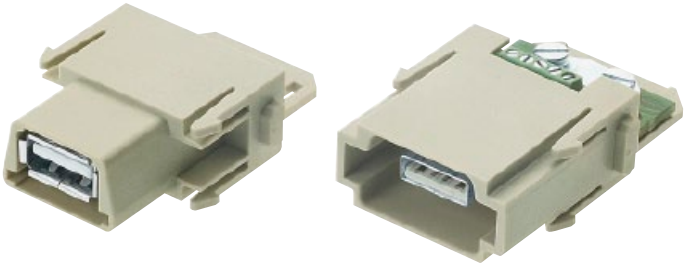
| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

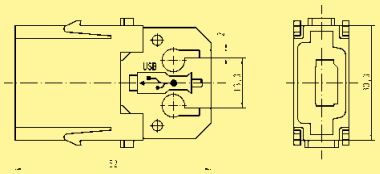
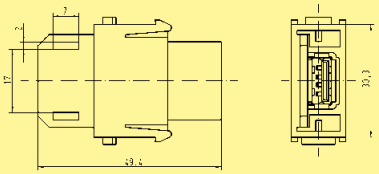
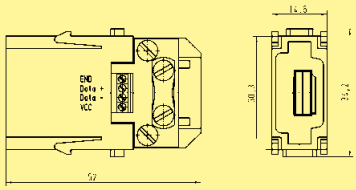
### Inserts

| | |
|---|---|
| Number of contacts | 4 |
| Electrical data | |
| acc. to EN 61 984 | **1 A 50 V 0.8 kV 3** |
| Rated current | 1 A |
| Rated voltage | 50 V |
| Rated impulse voltage | 0.8 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +85 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

Number of contacts

4



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Module for patch cable<br>Male insert<br> | 09 14 001 4601 | |  | |
| Module for patch cable<br>Female insert<br> | | **09 14 001 4701** |  | |
| Module for screw termination<br>Male insert<br> | 09 14 001 4651 | |  | |
| Patch cable USB<br>male / male<br>Style A<br> | 2 m<br>**39 50 903 0050**<br><br>5 m<br>**39 50 903 0051** | 2 m<br>**39 50 903 0050**<br><br>5 m<br>**39 50 903 0051** | | |





Stock items in bold type

# Han® FireWire module

## Features

- Compatibel to IEEE 1394
- Simple and cost effective termination by plug in patch cable
- Cable tie strain relief

## Technical characteristics

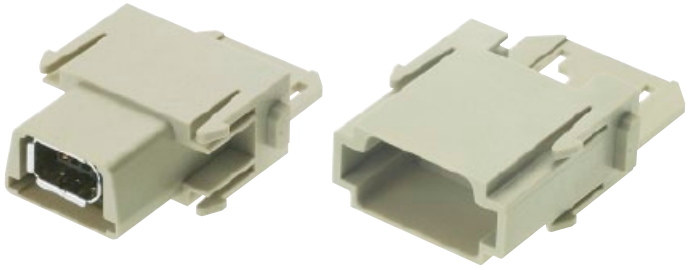
| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

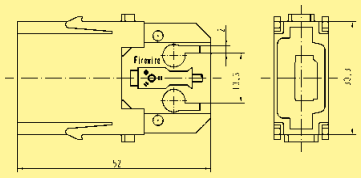
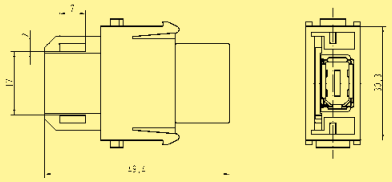
### Inserts

| | |
|---|---|
| Number of contacts | 6 |
| Electrical data | |
| acc. to EN 61 984 | **1 A 50 V 0.8 kV 3** |
| Rated current | 1 A |
| Rated voltage | 50 V |
| Rated impulse voltage | 0.8 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +85 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

Number of contacts

6



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Module for patch cable<br>Male insert<br> | 09 14 001 4611 | |  | |
| Module for patch cable<br>Female insert<br> | | **09 14 001 4711** |  | |





Stock items in bold type

## Features

- Single module with standard shielded RJ45 plug and jack
- Cat 5e for all data pairs (all 8 pins)
- Conforming to the RoHS directive
- The RJ45 inserts are protected by a reliable plastic insulator
- Patch cables are assembled/removed without tools

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Inserts

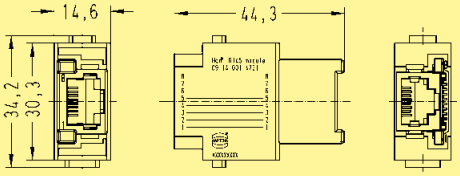
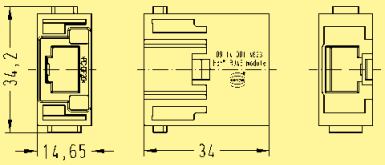
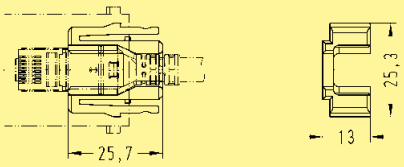
| | |
|---|---|
| Number of contacts | 8 |
| Electrical data | |
| acc. to EN 61 984 | **1 A 50 V 0.8 kV 3** |
| Rated current | 1 A |
| Rated voltage | 50 V |
| Rated impulse voltage | 0.8 kV |
| Pollution degree | 3 |
| Transmission features | Category 5 /<br>Class D up to 100 MHz;<br>acc. to ISO/IEC 11 801:2002<br>and EN 50 173-1 |
| Transmission rate | 10/100 Mbit/s |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +85 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

Number of contacts

8





| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Gender Changer<br>for patch cable<br> | | **09 14 001 4721** |  | |
| Male insert<br>for patch cable<br> | **09 14 001 4623** | |  | |
| Adapter<br>for HARTING patch cable<br> | **09 14 000 9966** | |  | |





Stock items in bold type

## Features

- Locking lever protection for RJ45 connector latch
- Very short plug design in combination with robust bend protection
- RoHS compliant
- Fully EMC screened (aluminium-clad foil and braid)

## Technical characteristics

| | |
|---|---|
| Specifications | ISO/IEC 24 702<br>ISO/IEC 11 801<br>ISO/IEC 61 935-2 |

### Cat. 5 e RJ45 patch cable

| | |
|---|---|
| Transmission features | Category 5 /<br>Class D up to 100 MHz;<br>acc. to ISO/IEC 24 702<br>or ISO/IEC 11 801 |
| Transmission rate | 10/100/1000 Mbit/s |
| Cable type | 1:1 EIA/TIA 568 B, 8 poles |
| Material cables | SF/UTP, PUR, yellow |
| Limiting temperatures | |
| - mobile | 0 °C ... +60 °C |
| - stationary | -40 °C ... +80 °C |
| Flammability | flame retardant, halogen-free |
| Degree of protection | IP 20 |

### Cat. 6 RJ45 patch cable

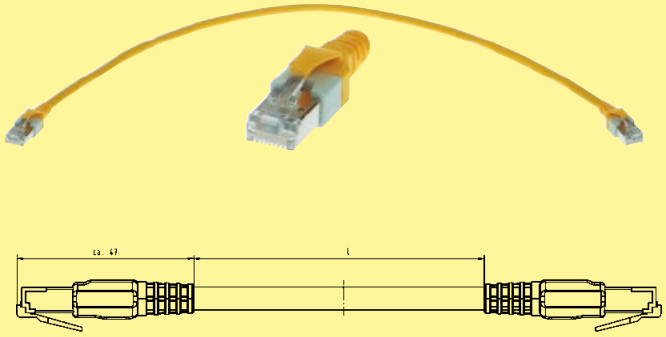
| | |
|---|---|
| Transmission features | Category 6 /<br>Class E up to 250 MHz;<br>acc. to ISO/IEC 24 702<br>or ISO/IEC 11 801 |
| Transmission rate | 10/100/1000 Mbit/s |
| Cable type | 1:1 EIA/TIA 568 B, 8 poles |
| Material cables | SF/UTP, PUR, yellow |
| Limiting temperatures | |
| - mobile | 0 °C ... +60 °C |
| - stationary | -20 °C ... +80 °C |
| Flammability | flame retardant, halogen-free |
| Degree of protection | IP 20 |

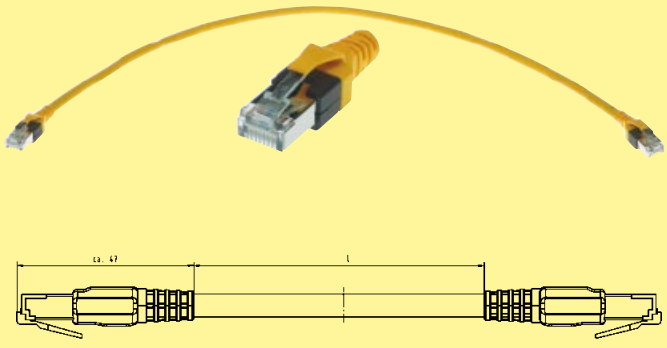
Number of contacts

8



| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Cat. 5e RJ45 patch cable** | | | | |
| Length | 0.2 m | 09 47 474 7001 | | |
| | 0.3 m | 09 47 474 7002 | | |
| | 0.4 m | 09 47 474 7003 | | |
| | 0.5 m | 09 47 474 7004 | | |
| | 0.6 m | 09 47 474 7005 | | |
| | 0.7 m | 09 47 474 7006 | | |
| | 0.8 m | 09 47 474 7007 | | |
| | 0.9 m | 09 47 474 7008 | | |
| | 1.0 m | 09 47 474 7009 | | |
| | 1.5 m | **09 47 474 7010** | | |
| | 2.0 m | **09 47 474 7011** | | |
| | 2.5 m | 09 47 474 7012 | | |
| | 3.0 m | **09 47 474 7013** | | |
| | 4.0 m | **09 47 474 7014** | | |
| | 5.0 m | **09 47 474 7015** | | |
| | 6.0 m | 09 47 474 7016 | | |
| | 7.0 m | 09 47 474 7017 | | |
| | 7.5 m | 09 47 474 7018 | | |
| | 8.0 m | 09 47 474 7019 | | |
| | 9.0 m | **09 47 474 7020** | | |
| | 10 m | **09 47 474 7021** | | |
| | 15 m | 09 47 474 7022 | | |
| | 20 m | 09 47 474 7023 | | |
| **Cat. 6 RJ45 patch cable** | | | | |
| Length | 0.2 m | **09 47 474 7101** | | |
| | 0.3 m | **09 47 474 7102** | | |
| | 0.4 m | **09 47 474 7103** | | |
| | 0.5 m | **09 47 474 7104** | | |
| | 0.6 m | **09 47 474 7105** | | |
| | 0.7 m | **09 47 474 7106** | | |
| | 0.8 m | **09 47 474 7107** | | |
| | 0.9 m | **09 47 474 7108** | | |
| | 1.0 m | **09 47 474 7109** | | |
| | 1.5 m | **09 47 474 7110** | | |
| | 2.0 m | **09 47 474 7111** | | |
| | 2.5 m | **09 47 474 7112** | | |
| | 3.0 m | **09 47 474 7113** | | |
| | 4.0 m | **09 47 474 7114** | | |
| | 5.0 m | **09 47 474 7115** | | |
| | 6.0 m | **09 47 474 7116** | | |
| | 7.0 m | **09 47 474 7117** | | |
| | 7.5 m | **09 47 474 7118** | | |
| | 8.0 m | **09 47 474 7119** | | |
| | 9.0 m | **09 47 474 7120** | | |
| | 10 m | **09 47 474 7121** | | |
| | 15 m | **09 47 474 7122** | | |
| | 20 m | **09 47 474 7123** | | |









Stock items in bold type

## Features

Han-Modular® RJ Industrial RJ45 connector set

- Conforming to the RoHS directive
- 360° shielded contact
- Field assembly without tools possible by means of HARAX® rapid termination in IDC technology
- Suitable for termination of massive and flexible wires

Han-Modular® RJ Industrial Gigalink RJ45 connector set

- Conforming to the RoHS directive
- 360° shielded contact
- Field assembly by means of piercing contacts
- Suitable for termination of flexible wires



## Technical characteristics

| | |
|---|---|
| Specifications | IEC 60 603-7<br>DIN EN 60 664-1<br>DIN EN 61 984 |

### HARTING RJ Industrial®, 4 pins

| | |
|---|---|
| Number of contacts | 4 |
| Transmission features | Category 5 /<br>Class D up to 100 MHz;<br>acc. to ISO/IEC 11 801:2002<br>and EN 50 173-1 |
| Transmission rate | 10/100 Mbit/s |
| Wire termination | IDC contacts; without tools |
| Terminated cable | |
| - Conductor cross section | |
| flexible | AWG 24/7 ... AWG 22/7 |
| solid | AWG 23/1 ... AWG 22/1 |
| - Cable outside diameter | ≤ 1.6 mm |
| Material insert | polyamide |
| Limiting temperatures | -40 °C ... +70 °C |

### HARTING RJ Industrial® Gigalink, 8 pins

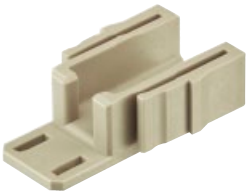
| | |
|---|---|
| Number of contacts | 8 |
| Transmission features | Category 6 /<br>Class E up to 250 MHz;<br>acc. to ISO/IEC 11 801:2002<br>and EN 50 173-1 |
| Transmission rate | 10/100/1000 Mbit/s |
| Wire termination | Piercing contacts |
| Terminated cable | |
| - Conductor cross section | |
| flexible | AWG 28/7 ... AWG 24/7 |
| - Cable outside diameter | ≤ 1.05 mm |
| Material insert | polyamide |
| Limiting temperatures | -40 °C ... +70 °C |

### HARTING RJ Industrial® 10G, 8 pins

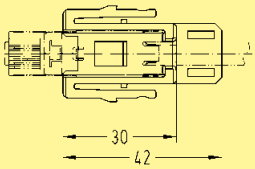
| | |
|---|---|
| Number of contacts | 8 |
| Transmission features | Category 6 /<br>Class E up to 250 MHz;<br>acc. to ISO/IEC 11 801:2002<br>and EN 50 173-1 |
| Transmission rate | 10/100/1000 Mbit/s |
| Wire termination | IDC contacts; without tools |
| Terminated cable | |
| - Conductor cross section | |
| flexible | AWG 27/7 ... AWG 22/7 |
| solid | AWG 27/1 ... AWG 22/1 |
| - Cable outside diameter | ≤ 1.5 mm |
| Material insert | polyamide |
| Limiting temperatures | -40 °C ... +70 °C |

Number of contacts

# 4 / 8





| Identification | Part number Male insert (M) | Drawing | Dimensions in mm |
|---|---|---|---|
| **Han-Modular® RJ Industrial RJ45 connector set**  | |   | |
| Cat. 5 | | | |
| 4 pins for AWG 24 ... 22 | 09 45 400 1100 | | |
| 4 pins for AWG 26 | 09 45 400 1109 | | |
| Cat. 6 | | | |
| Gigalink, 8 pins | 09 45 400 1500 | | |
| Gigalink, 8 pins | 09 45 400 1510 | | |
| Cat. 6 | | | |
| 10G, 8 pins | 09 45 400 1560 | | |
| | | Set consists of the relevant RJ45 insert and the suitable adapter for Han® RJ45 module, male, part number 09 14 001 4623 | |
| **HARTING RJ Industrial® Gigalink Assembly tool** | **09 45 800 0500** |  | |



* usuable with male insert 09 14 001 4623 (see page 06.73)



**Stock items in bold type**

## Features

- Shielding bus separate from housing potential
- Ideal for the transmission of sensetive signals (e.g. bus signals)
- Usuable for Gigabit Ethernet Cat. 6

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Inserts

| | |
|---|---|
| Number of contacts | 8 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### GigaBit contacts

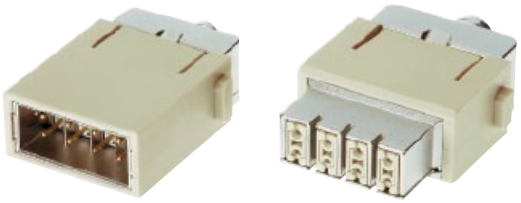
| | |
|---|---|
| Number of contacts | 8 + shielding |
| Electrical data | |
| acc. to EN 61 984 | **5 A 50 V 0.8 kV 3** |
| Rated current | 5 A |
| Rated voltage | 50 V |
| Rated impulse voltage | 0.8 kV |
| Pollution degree | 3 |
| Material | |
| - Insulator | polycarbonate |
| - Outer conductor | zinc alloy |
| Contact resistance | ≤ 4 mΩ |
| Limiting temperatures | -40 °C ... +85 °C |
| Flammability acc. to UL 94 | V 0 |
| Outer surface finish | nickel |
| Cable diameter | 5 ... 12 mm |

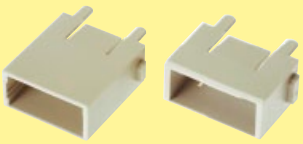
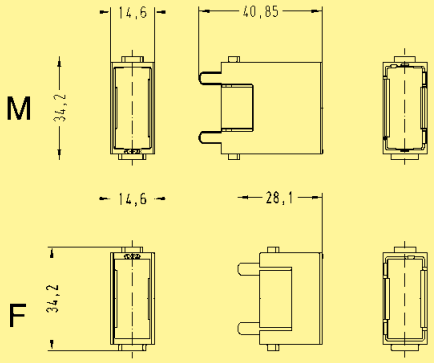
### D-Sub crimp contacts

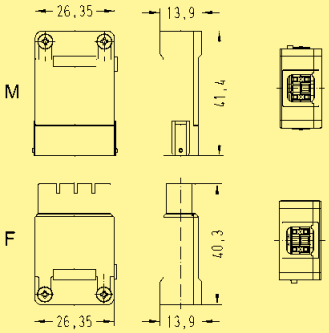
| | |
|---|---|
| Crimp terminal | |
| - mm² | 0.08 ... 0.52 mm² |
| - AWG | 28 ... 20 |
| turned contacts | Performance level 1 |

Number of contacts

# 8



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han® GigaBit module  | **09 14 001 3011** | **09 14 001 3111** |   | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| GigaBit contacts<br>8 + shielding<br>Order crimp contacts separately  | | **09 14 008 3011** | **09 14 008 3111** |   | |
| D-Sub crimp contacts  | 0,08-0,21 | 61 03 000 0078 | 61 03 000 0080 | | |
| | 0,13-0,33 | **61 03 000 0094** | **61 03 000 0096** | | |
| | 0,33-0,52 | **61 03 000 0073** | **61 03 000 0074** | | |

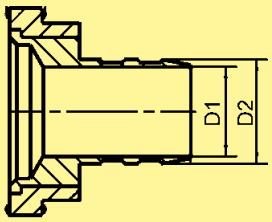
| Wire gauge | | Stripping length |
|---|---|---|
| 0,08-0,21 mm² | AWG 28-24 | 5 mm |
| 0,13-0,33 mm² | AWG 26-22 | 5 mm |
| 0,33-0,52 mm² | AWG 22-20 | 5 mm |

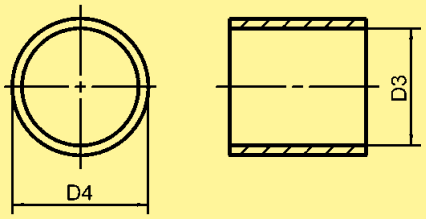


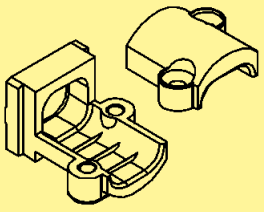


Stock items in bold type

| Identification | | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp flange** | | | | | |
| | D1 | D2 | | | |
| | 3.0 | 4.0 | 61 03 000 0062 | | |
| | 3.5 | 4.5 | **61 03 000 0063** | | |
| | 4.0 | 5.0 | **61 03 000 0064** | | |
| | 4.5 | 5.5 | 61 03 000 0065 | | |
| | 5.0 | 6.0 | 61 03 000 0066 | | |
| | 5.5 | 6.5 | 61 03 000 0166 | | |
| | 6.0 | 7.0 | **61 03 000 0067** | | |
| | 6.5 | 7.5 | **61 03 000 0068** | | |
| | 7.0 | 8.0 | **61 03 000 0069** | | |
| | 7.5 | 8.5 | 61 03 000 0070 | | |
| | 8.0 | 9.0 | 61 03 000 0071 | | |
| | 8.5 | 9.5 | 61 03 000 0165 | | |
| | 9.0 | 10.0 | 61 03 000 0072 | | |
| **Crimp ferrule** | | | | | |
| | D3 | D4 | | | |
| | 5.0 | 6.0 | 61 03 000 0045 | | |
| | 5.5 | 6.5 | 61 03 000 0046 | | |
| | 6.0 | 7.0 | **61 03 000 0047** | | |
| | 6.5 | 7.5 | 61 03 000 0048 | | |
| | 7.0 | 8.0 | **61 03 000 0049** | | |
| | 7.5 | 8.5 | **61 03 000 0050** | | |
| | 8.0 | 9.0 | 61 03 000 0051 | | |
| | 8.5 | 9.5 | **61 03 000 0052** | | |
| | 9.0 | 10.0 | 61 03 000 0053 | | |
| | 9.5 | 10.5 | **61 03 000 0054** | | |
| | 10.0 | 11.0 | **61 03 000 0055** | | |
| | 10.5 | 11.5 | 61 03 000 0056 | | |
| | 11.0 | 12.0 | **61 03 000 0057** | | |
| | 11.5 | 12.5 | **61 03 000 0058** | | |
| | 12.0 | 13.0 | 61 03 000 0142 | | |
| | 12.5 | 13.5 | 61 03 000 0059 | | |
| | 13.0 | 14.0 | 61 03 000 0127 | | |
| **Cable clamp** | | | | | |
| cable diameter approx. 5 ... 7 mm | | | **61 03 000 0141** | | |
| cable diameter approx. 7 ... 10 mm | | | **61 03 000 0044** | | |
| cable diameter approx. 10 ... 12 mm | | | **61 03 000 0143** | | |







**Stock items in bold type**

## Features

- Shielding bus separate from housing potential
- Perfect for transmission of sensitive signals (eg. bus signals)
- The four pole Han® Quintax contact is suitable for Ethernet Cat. 5e and PROFIBUS when diagonally wiring of the data pairs.

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 2 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Quintax contacts

| | |
|---|---|
| Number of contacts | |
| - Quintax | 4 + shielding |
| - High Density Quintax | 8 + shielding |
| Electrical data acc. to EN 61 984 | |
| - Quintax | **10 A 50 V 0.8 kV 3** |
| - High Density Quintax | **5 A 50 V 0.8 kV 3** |
| Rated current | 10 A / 5 A |
| Rated voltage | 50 V |
| Rated impulse voltage | 0.8 kV |
| Pollution degree | 3 |
| Material | |
| - Insulator | polycarbonate |
| - Outer conductor | zinc alloy |
| Contact resistance | ≤ 4 mΩ |
| Limiting temperatures | -40 °C ... +85 °C |
| Flammability acc. to UL 94 | V 0 |
| Outer surface finish | nickel |
| Cable diameter | 3 ... 9.5 mm |

### Han D® contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |

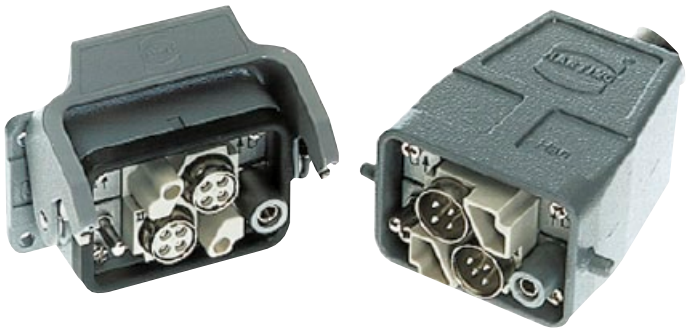
### D-Sub crimp contacts

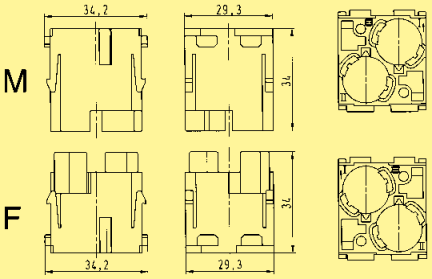
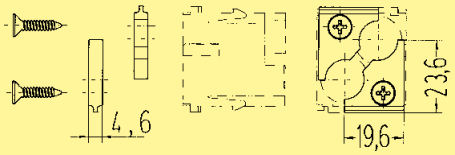
| | |
|---|---|
| Crimp terminal | |
| - mm² | 0.08 ... 0.52 mm² |
| - AWG | 28 ... 20 |
| turned contacts | Performance level 1 |

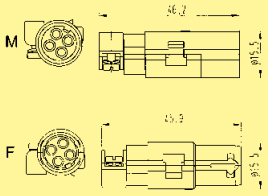
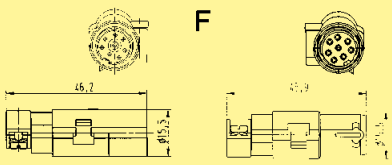
# Han-Quintax® module

Number of contacts

2



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Crimp terminal  | **09 14 002 3001** | **09 14 002 3101** | M F  Contact arrangement view from termination side | |
| Quintax metal adapter option  | **09 14 000 9915** | **09 14 000 9915** |  | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Quintax contact 4 + shielding Han D® crimp contacts  | | **09 15 004 3013** | **09 15 004 3113** | M F  | |
| Han D® Crimp contact gold plated  | 0.14-0.37 | **09 15 000 6124** | **09 15 000 6224** | | |
| | 0.5 | **09 15 000 6123** | **09 15 000 6223** | | |
| | 0.75 | **09 15 000 6125** | **09 15 000 6225** | | |
| | 1 | **09 15 000 6122** | **09 15 000 6222** | | |
| | 1.5 | **09 15 000 6121** | **09 15 000 6221** | | |
| | 2.5 | **09 15 000 6126** | **09 15 000 6226** | | |
| High Density Quintax contact 8 + shielding Han® D-Sub contacts  | | **09 15 008 3013** | **09 15 008 3113** | M F  | |
| D-Sub crimp contact  | 0.08-0.21 | 61 03 000 0078 | 61 03 000 0080 | | |
| | 0.13-0.33 | **61 03 000 0094** | **61 03 000 0096** | | |
| | 0.33-0.52 | **61 03 000 0073** | **61 03 000 0074** | | |

Order crimp contacts separately

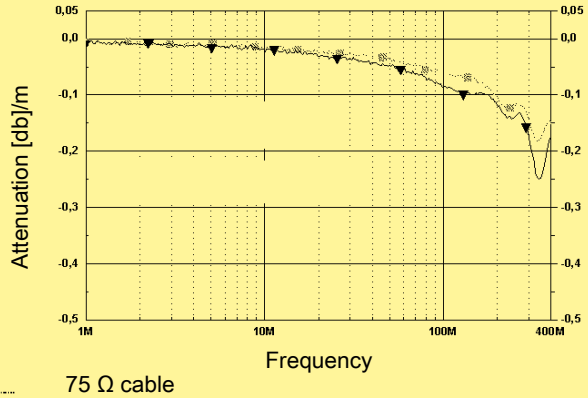
Stock items in bold type

## Features

- Well known Quintax concept
- Suitable for contacts with large diameters
- Han E® coax is applicable to the ETCS Eurobalise cable

## RF transmission characteristics

Impedance 75 Ω




75 Ω cable
75 Ω cable with Han D® Coax

75 Ω coax cable
diameter shielding: 7.3 mm

Impedance 50 Ω

| Han E® Coax with ETCS S21 Eurobalise cable (4 mm²) | **27 MHz** |
|---|---|
| Return loss [db] | 35.4 |
| Attenuation [db] | 0.017 |

| Han E® Coax with RG 213 cable (2.5 mm²) | **200 MHz** | **500 MHz** | **1.0 GHz** | **1.2 GHz** | **1.5 GHz** | **2.0 GHz** | **2.5 GHz** |
|---|---|---|---|---|---|---|---|
| Return loss [db] | 23.8 | 21.1 | >18.7 | >17.7 | >16.4 | >14.1 | >12.0 |
| Attenuation [db] | 0.07 | 0.11 | 0.17 | 0.2 | <0.23 | <0.53 | <2.0 |

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 2 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Coax contacts

| | |
|---|---|
| Number of contacts | 1 + shielding |
| Electrical data acc. to EN 61 984 | |
| - Han D® Coax | **10 A 50 V 0.8 kV 3** |
| - Han E® Coax | **16 A 50 V 0.8 kV 3** |
| Rated current | 10 A / 16 A |
| Rated voltage | 50 V |
| Rated impulse voltage | 0.8 kV |
| Pollution degree | 3 |
| Impedance | |
| - Han D® Coax | 75 Ω |
| - Han E® Coax | 50 Ω |
| Material | |
| - Insulator | polycarbonate |
| - Outer conductor | zinc alloy |
| Contact resistance | ≤ 4 mΩ |
| Limiting temperatures | -40 °C ... +85 °C |
| Flammability acc. to UL 94 | V 0 |
| Outer surface finish | nickel |
| Cable diameter | 3 ... 9.5 mm |

### Han D® contacts

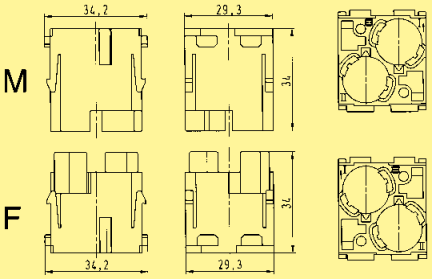
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |

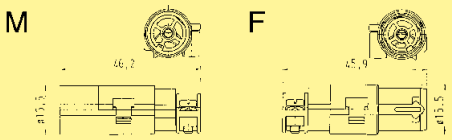
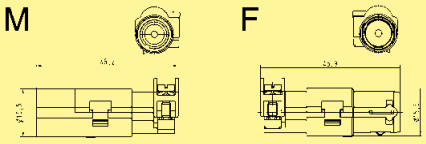
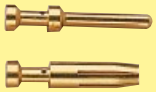
### Han E® contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤1 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 5.5 mm² |
| - AWG | 26 ... 10 |

Number of contacts

# 2

| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Crimp terminal  | **09 14 002 3001** | **09 14 002 3101** |  Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Han® D Coax contact<br>1 + shielding, 75 Ω<br>Han D® crimp contacts  | | **09 15 001 3013** | **09 15 001 3113** |  | |
| Han D® Crimp contact<br>gold plated  | 0.14-0.37 | **09 15 000 6124** | **09 15 000 6224** | | |
| | 0.5 | **09 15 000 6123** | **09 15 000 6223** | | |
| | 0.75 | **09 15 000 6125** | **09 15 000 6225** | | |
| | 1 | **09 15 000 6122** | **09 15 000 6222** | | |
| | 1.5 | **09 15 000 6121** | **09 15 000 6221** | | |
| | 2.5 | **09 15 000 6126** | **09 15 000 6226** | | |
| Han® E Coax contact<br>1 + shielding, 50 Ω<br>Han E® crimp contacts  | | **09 15 001 3023** | **09 15 001 3123** |  | |
| Han E® contacts<br>gold plated  | 0.14-0.37 | 09 33 000 6117 | 09 33 000 6217 | | |
| | 0.5 | **09 33 000 6122** | **09 33 000 6222** | | |
| | 0.75 | **09 33 000 6115** | **09 33 000 6215** | | |
| | 1 | **09 33 000 6118** | **09 33 000 6218** | | |
| | 1.5 | **09 33 000 6116** | **09 33 000 6216** | | |
| | 2.5 | **09 33 000 6123** | **09 33 000 6223** | | |
| | 4 | 09 33 000 6119 | 09 33 000 6221 | | |
| | 5.5 | **09 33 000 6139** | **09 33 000 6239** | | |

Order crimp contacts separately

Stock items in bold type

## Features

- Suitable for FOC and coaxial contacts acc. to DIN 41 626
- Using of guiding pins (male and female) is imperative (see chapter 40).



### Contact arrangement

according to following matrix

| Contacts | Male insert (M)<br>09 14 004 4501 | Female insert (F)<br>09 14 004 4512 |
|---|---|---|
| Coaxial contacts | 09 14 000 62xx | 09 14 000 61xx |
| F.O. contacts | 20 10 xxx 421x | 20 10 xxx 422x |

### Coaxial cables (group 2)

| Wires | Shell ∅ | Internal wire ∅ | Attenuation db/100 m at | | |
|---|---|---|---|---|---|
| | mm | mm | 100 MHz | 200 MHz | 800 MHz |
| **50 Ω** | | | | | |
| RG 174 / U | 2.5 | 0.48 | | | 84 |
| RG 188 A / U | 2.6 | 0.54 | 29 | 40 | |
| RG 316 / U | 2.5 | 0.54 | | 40 | |
| **75 Ω** | | | | | |
| RG 179 B / U | 2.55 | 0.3 | | 41 | |
| RG 187 A / U | 2.7 | 0.3 | | 41 | |

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 4 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

Coaxial contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-gold plated | demand level 2 |
| Impedance | 50 Ω / 75 Ω |
| Contact resistance | |
| - Internal wire | ≤ 10 mΩ |
| - Outer conductor | ≤ 3 mΩ |
| Rated current | 1.5 A |
| Rated voltage | 50 V |

F.O. contacts

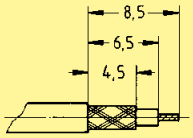
| | |
|---|---|
| Fibre type | Glas fibre (GI) |
| Attenuation | < 1.5 dB |

F.O. contacts

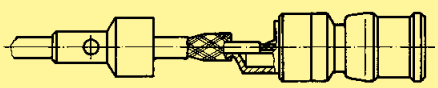
| | |
|---|---|
| Fibre type | Polymer Optical Fibre (POF) |
| Attenuation | < 2.5 dB |

## Assembly instructions

Stripping de-scription




Assembly details for coaxial contacts



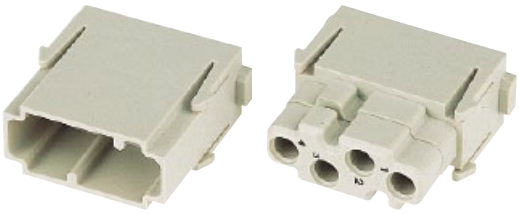
Crimp barrel solder

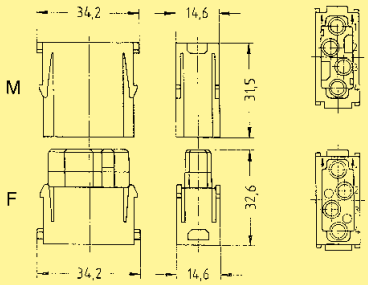
| | |
|---|---|
| Solder temperature | approx. 300 °C |
| Solder duration | approx. 2 s |

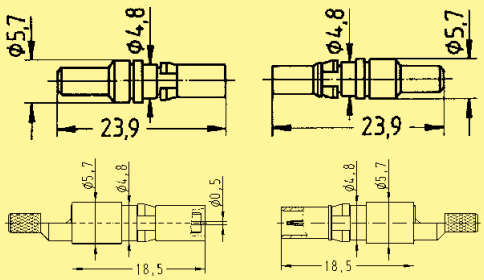
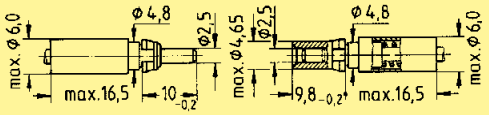
Due to the closed entry design of female insert the upper part has to be removed by screw driver (7 mm) before extracting the contacts. In this case the module will be destroyed.

Number of contacts

# 4



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Multicontact module acc. to DIN 41 626<br>Order contacts separately | **09 14 004 4501** | **09 14 004 4512** |  Contact arrangement view from termination side | |

| Identification | Impedance | Part number | | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Coaxial contacts acc. to DIN 41 626*<br>Solder / crimp contact | 50 Ω<br>75 Ω | 09 14 000 6211<br>09 14 000 6221 | 09 14 000 6111<br>09 14 000 6121 |  For cable group 2 flexible wires | |
| F.O. contacts acc. to DIN 41 626<br>for SI fibre (HCS®) 200/230 µm | | 20 10 230 4211 | 20 10 230 4221 |  | |
| for GI fibre 50/125 µm or 62.5/125 µm ceramic ferrule | | 20 10 125 4212 | 20 10 125 4222 | | |
| for 1 mm plastic fibre | | 20 10 001 4211 | 20 10 001 4221 | | |

* Using of guiding pins is imperative (see chapter 40).

Stock items in bold type

## Features

- Suitable for coaxial contacts acc. to D-Sub (DIN 41 652)
- Using of guiding pins (male and female) is recommended (see chapter 40).



### Contact arrangement

according to following matrix

| Contacts | Male insert (M)<br>09 14 004 4501 | Female insert (F)<br>09 14 004 4513 |
|---|---|---|
| Coaxial contacts | 09 14 000 62xx | 09 14 000 61xx |
| Coaxial contacts | 09 69 28x 5xxx | 09 69 18x 5xxx |

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

| | |
|---|---|
| Number of contacts | 4 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

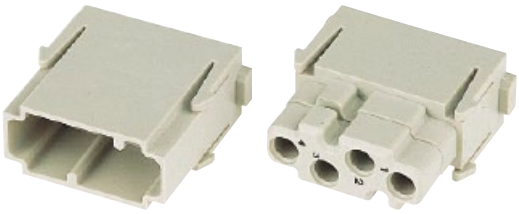
### Contacts

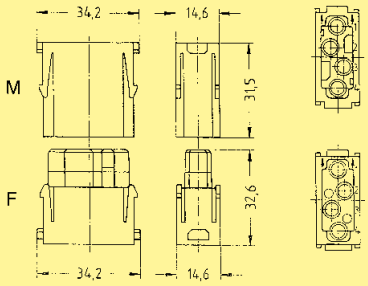
Coaxial contacts

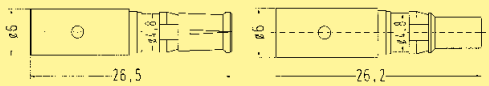
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-gold plated | demand level 2, S4 |
| Impedance | 50 Ω / 75 Ω |
| Contact resistance | |
| - Internal wire | ≤ 10 mΩ |
| - Outer conductor | ≤ 3 mΩ |
| Rated current | 1.5 A |
| Rated voltage | 50 V |

Number of contacts

# 4



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Multicontact module acc. to D-Sub<br>Order contacts separately | **09 14 004 4501** | **09 14 004 4513*** | <br>Contact arrangement view from termination side | |

| Identification | Impedance | Part number | | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Coaxial contacts acc. to D-Sub<br>Performance level 2<br>Solder / solder contact | 50 Ω | 09 14 000 6215 | 09 14 000 6115 | <br>RG 58 | |
| Solder / crimp contact<br>Performance level S4 | 50 Ω<br>50 Ω<br>50 Ω<br>75 Ω | 09 69 281 5140<br>09 69 281 5141<br>09 69 281 5143<br>09 69 281 5230 | 09 69 181 5140<br>09 69 181 5141<br>09 69 181 5143<br>09 69 181 5230 | RG 174 U, 188 AU, 316 U<br>RG 178 BU, 196 AU, 404 U<br>RG 58 CU, 141 AU<br>RG 179 BU, 187 AU | |
| Crimp / crimp terminal<br>Performance level S4 | 50 Ω<br>75 Ω | 09 69 282 5140<br>09 69 282 5230 | 09 69 182 5140<br>09 69 182 5230 | RG 174 U, 188 AU, 316 U<br>RG 179 BU, 187 AU | |

* Due to the closed entry design of female insert the upper part has to be removed by screw driver (7 mm) before extracting the contacts. In this case the module will be destroyed.

**Stock items in bold type**

# Han® Pneumatic module

## Features

- For the transmission of clean and dry compressed
- Female contacts with / without shut off
- Removal of tubes from pre-assembled pneumatic contacts is possible

Shut off principle:

In the disconnected position the spring integrated in the female contact is active, thus the O-ring of the valve seals the opening of the air-way. During the mating process, when the defined depth of insertion is reached the male contact presses on the valve head and moves it backwards against the spring tension, so that the air-way opens.

Using of guiding pins in connection with pneumatic modules is imperative.
In addition to this guiding pins guarantee a coding, if pneumatic modules are used exclusively.

## Technical characteristics

| | |
|---|---|
| Approvals | |

### Inserts *

| | |
|---|---|
| Number of contacts | 2 |
| Colour | blue |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +80 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | delrin acetal |
| Colour | black |
| Tube termination | |
| - Internal diameter (ID) | 6.0 mm / 1/4“ |
| Working pressure | up to 8 bar / 116 psi |

### Sealing

| | |
|---|---|
| Material | Buna-N |

### Shut off valve

| | |
|---|---|
| Material | Polypropylen |

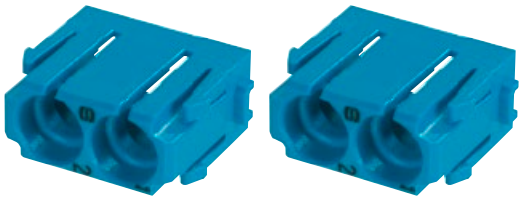




* Assemble contacts before module is fixed into the frame

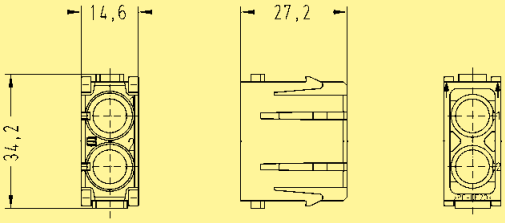
Number of contacts

# 2



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| for 6 mm<br>Order contacts separately | **09 14 002 4501*** | **09 14 002 4501*** | Contact arrangement view from termination side | |



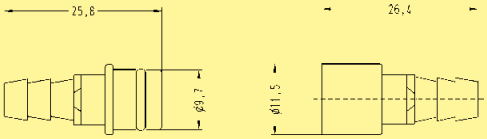


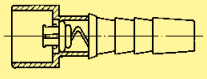

| Identification | ID (mm) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Pneumatic contacts without shut off<br>for tube internal diameter (ID) | 6.0 | **09 14 000 6174** | **09 14 000 6274** | Male contact / Female contact | |
| Pneumatic contacts with shut off<br>for tube internal diameter (ID) | 6.0 | | **09 14 000 6279** | female contact with shut off in closed position | |











* Using of guiding pins is imperative (see chapter 40).

Stock items in bold type

## Features

- For the transmission of clean and dry compressed
- Female contacts with / without shut off
- Removal of tubes from pre-assembled pneumatic contacts is possible

Shut off principle:

In the disconnected position the spring integrated in the female contact is active, thus the O-ring of the valve seals the opening of the air-way. During the mating process, when the defined depth of insertion is reached the male contact presses on the valve head and moves it backwards against the spring tension, so that the air-way opens.

Using of guiding pins in connection with pneumatic modules is imperative.
In addition to this guiding pins guarantee a coding, if pneumatic modules are used exclusively.

## Technical characteristics

| | |
|---|---|
| Approvals | , |

### Inserts *

| | |
|---|---|
| Number of contacts | 3 |
| Colour | blue |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +80 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | delrin acetal |
| Colour | black |
| Tube termination | |
| - Internal diameter (ID) | 1.6 mm / 1/16“<br>3.0 mm<br>4.0 mm / 1/8“ |
| Working pressure | up to 8 bar / 116 psi |

### Sealing

| | |
|---|---|
| Material | Buna-N |

### Shut off valve

| | |
|---|---|
| Material | Polypropylen |

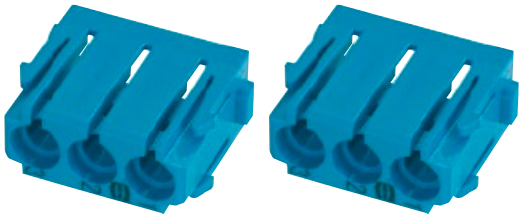


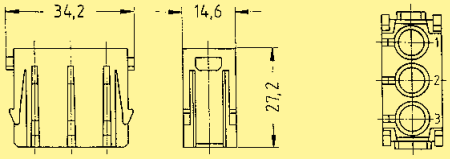


* Assemble contacts before module is fixed into the frame

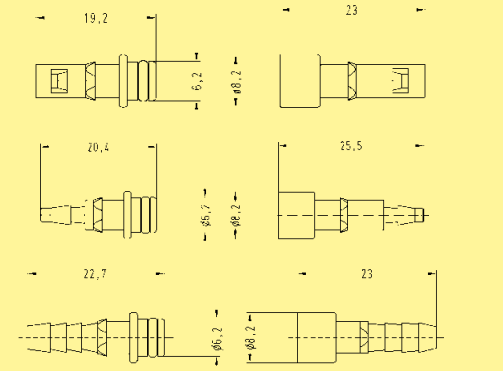
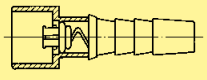
Number of contacts

# 3



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| for 1.6; 3; 4 mm<br>Order contacts separately | **09 14 003 4501*** | **09 14 003 4501*** | <br>Contact arrangement view from termination side | |



| Identification | ID (mm) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Pneumatic contacts without shut off**<br>for tube internal diameter (ID) | 1.6 | 09 14 000 6151 | 09 14 000 6251 | Male contact / Female contact<br> | |
| | 3.0 | **09 14 000 6152** | **09 14 000 6252** | | |
| | 4.0 | **09 14 000 6153** | **09 14 000 6253** | | |
| **Pneumatic contacts with shut off**<br>for tube internal diameter (ID) | 1.6<br>3.0<br>4.0 | | 09 14 000 6256<br>**09 14 000 6257**<br>**09 14 000 6258** | <br>female contact with shut off in closed position | |





* Using of guiding pins is imperative (see chapter 40).

Stock items in bold type

## Features

- Suitable for HARTING SC contacts
- For GI-Fibre 50 - 62.5 / 125µm
- Using of guiding pins (male and female) is recommended (see chapter 40).

## Technical characteristics

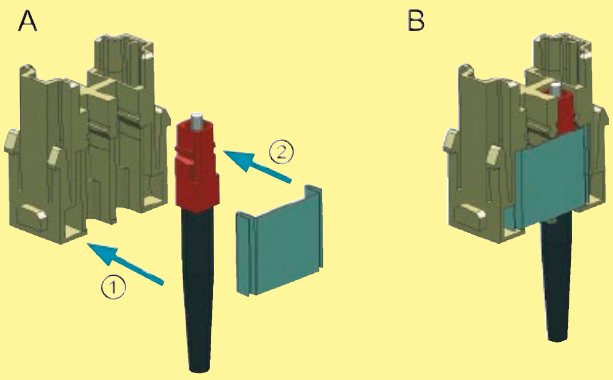
Inserts

| | |
|---|---|
| Number of contacts | 4 |
| Insertion loss | < 0.5 dB |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +85 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |



## Assembly instructions

Male insert (09 14 004 4701)

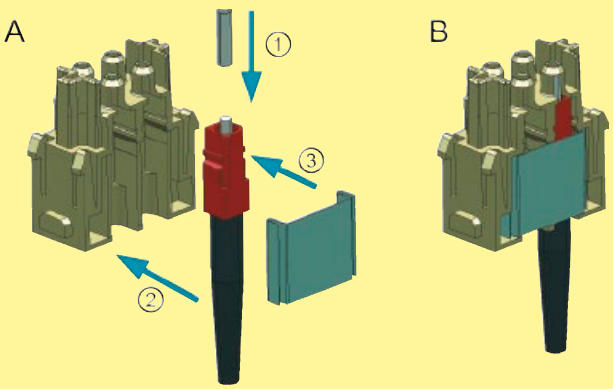



A Assemble the SC contact

Push the SC contact from the side into the relevant insert (1)
Push the fixing plate from the side over the contacts (2)

B SC contact fixed in the module

Female insert (09 14 004 4711)



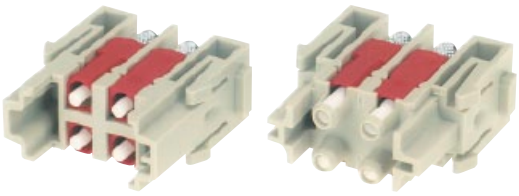

A Assemble the SC contact

Push the centering ferrule (included in delivery) on the SC contact (1)
Push the SC contact from the side into the relevant insert (2)
Push the fixing plate from the side over the contacts (3)

B SC contact fixed in the module

Number of contacts

# 4



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **SC module**<br>Order contacts separately | **09 14 004 4701** | **09 14 004 4711*** | M<br>F<br>Contact arrangement view from termination side | |
| **Fixing plate** | 09 14 000 9965 | 09 14 000 9965 | | |

| Identification | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **SC contact** | | | | |
| for GI fibre 50/125 µm or 62.5/125 µm ceramic ferrule | **20 10 125 5211** | **20 10 125 5211** | | |
| for SI fibre (HCS®) 200/230 µm | 20 10 230 5211 | 20 10 230 5211 | | |
| with quick assembly technique for 1 mm POF | **20 10 001 5217** | **20 10 001 5217** | | |
| with crimp technique for 1 mm POF | **20 10 001 5211** | **20 10 001 5211** | | |

* The female inserts are equipped with centering ferrules.
4 ferrules are included in delivery range.

**Stock items in bold type**

## Features

- Signal pre-processing and conversion do fit into the connector
- Individual combination of input and output modules for optimal signal pre-processing
- Minimum size for integration in Han® industrial connectors (Han-Modular® and Han-Snap®)
- Economy of space by reduction the number of terminal blocks and interface modules in the switch cabinet



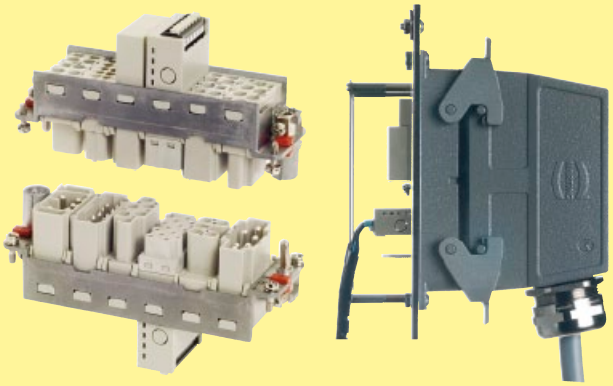
## General description

The Han-Elisa® modules are a flexible I/O system - directly in the connector.

The input and output modules are developed for 1 or 2 channels and can be combined variously and flexible for optimal signal pre-processing. Within the product family modules are available for current/voltage converison, temperature, relay and timer.

Due to the minimized size thes modules can be integrated into the Han-Modular® and Han-Snap® system.

Signal pre-processing and conversion do fit into the connector and this will reduce installation space for terminal blocks and the number of interface modules. So the switch cabinets can be made smaller.



## Technical characteristics

Power supply
(combination input and output module)

| | |
|---|---|
| Supply voltage | 24 V (-10 % ... +25 %) |
| Current consumption | < 0.08 A |
| Power consumption | < 2 W |
| Total transmission error | < 0.2 % |

# Product matrix and possible combinations

| input module (male) / output module (female) | Relay<br>Different versions | Optocoupler<br>Different versions | Output current 4 ... 20 mA<br>galvanically isolated | Output voltage 0 ... 10 V<br>galvanically isolated |
|---|---|---|---|---|
| Timing | ○ | ○ | | |
| Connecting 1:1 | ○ | ○ | | |
| Temperature Pt100 Different temperature ranges | | | ● | ● |
| Temperature thermo element type J, K Different temperature ranges | | | ○ | ○ |
| Input current 4 ... 20 mA | | | ○ | ○ |
| Input voltage 0 ... 10 V | | | ○ | ○ |

○ = on request
● = available

# Han-Elisa® Pt100 module

## Features

- Minimum size for integration in Han® industrial connectors (Han-Modular® and Han-Snap®)
- Economy of space by reduction the number of terminal blocks and interface modules in the switch cabinet
- Male module for signal input

## Technical characteristics

### Inserts

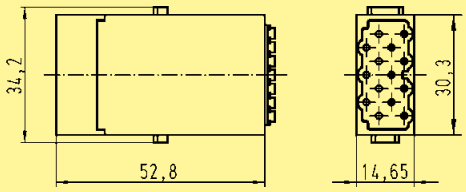
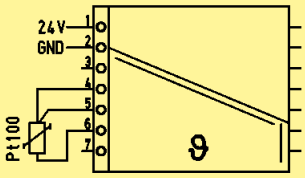
| | |
|---|---|
| Sensor | Pt100 acc. to IEC 751 |
| Termination technology | 2-, 3-, 4 wire technology |
| Sensor input current | 0.8 mA, constant |
| Conductor resistance, max. permissible | 10 Ω per conductor |
| Min. measuring range | 100 °C |
| Open circuit detection | integrated |
| Material | polycarbonate / LCP |
| Termination | Cage-clamp terminal |
| - mm² | 0.14 ... 1.5 mm² |
| - AWG | 26 ... 16 |
| Power diagnostic | LED (green) |

### Temperature range

| | |
|---|---|
| Working temperature | -20 °C ... +65 °C |
| Stock temperature | -40 °C ... +85 °C |



Pt100 Input module

| Identification | | Part number Male insert (M) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Temperature module Pt100 | | |   | |
| Measuring range | 0 ... 100 °C | **20 75 108 1101** | | |
| | 0 ... 200 °C | **20 75 108 1103** | Input   | |
| Additional measuring ranges on request | | | | |





Stock items in bold type

# Han-Elisa® Output module

## Features

- Minimum size for integration in Han® industrial connectors (Han-Modular® and Han-Snap®)
- Economy of space by reduction the number of terminal blocks and interface modules in the switch cabinet
- Female module for signal output

## Technical characteristics

### Inserts

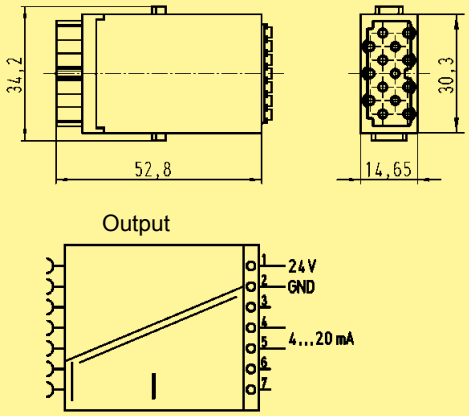
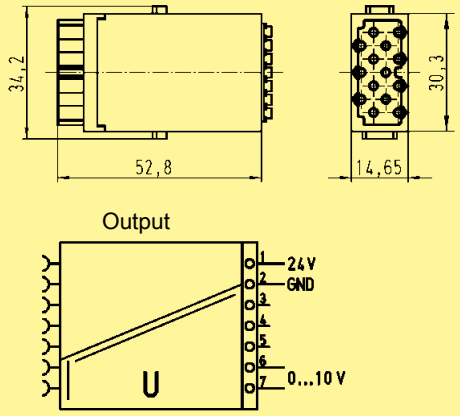
| | |
|---|---|
| Supply voltage | 24 V (-10 % ... +25 %) |
| Load $I_{out}$ | < 500 Ω |
| Load $U_{out}$ | ≥ 10 kΩ |
| Residual ripple | < 20 mV (500 Ω) |
| Step response (0 ... 99 %) | < 30 ms |
| Material | polycarbonate / LCP |
| Termination | Cage-clamp terminal |
| - mm² | 0.14 ... 1.5 mm² |
| - AWG | 26 ... 16 |
| Power diagnostic | LED (green) |

### Temperature range

| | |
|---|---|
| Working temperature | -20 °C ... +65 °C |
| Stock temperature | -40 °C ... +125 °C |



Output module

| Identification | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|
| Output module, current<br>3-ways-isolating amplifier; galvanically isolated<br><br>Output signal 4 ... 20 mA<br><br>Additional output signal ranges on request | **20 75 104 2201** |  | |
| Output module, voltage<br>3-ways-isolating amplifier; galvanically isolated<br><br>Output signal 0 ... 10 V<br><br>Additional output signal ranges on request | **20 75 105 2201** |  | |





Stock items in bold type

# Han-Elisa® ID module

## Features

- Coding of tools possible (e.g. press tools) by means of an alphanumeric identification
- I²C bus EEPROM as memory medium
- Communication with PLC via conventional digital I/Os
- Physical connection of PLC by means of well-proven Han® contacts
- Assembly of the ID module to the device by means of a Han® industrial connector

## Technical characteristics

### Inserts

| | |
|---|---|
| Supply voltage | 24 V<br>via digital I/O device |
| Electrical connector, 24 V | Han E® module<br>(see page 06.42) |
| Memory capacity | max. 128 Byte |
| Material | polycarbonate |
| Working temperature | 0 °C ... +70 °C |
| Stock temperature | 0 °C ... +85 °C |
| Max. length recommended between I/O device and ID module | 100 m * |

## General description

The HARTING connector identification module (ID module) is suitable for storing of data and for coding of connectors. It is integrated in a Han-Modular® standard E module.

The module can be connected to a 24 V digital I/O device of a PLC. Two digital inputs are used for detecting the module connection and the data input. Two digital outputs are used for the data output and the system clock. Furthermore the ID module must be connected with 24 V and GND. Communication is carried out with voltage levels of 24 V according to the I²C bus standard. The total memory capacity is 128 Byte, e.g. for storing part numbers to identify the module. It is also possible to store the start parameters or operating data for machine components.

A typical data structure is displayed in the following table:

Byte no.

| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Check sum | | Operating hours of tool | | | | | Start parameter of the unit | | | | | Part number of the unit | | | |

Applications for the ID module can be found in modular machines and product lines. A great advantage of the ID module is the non volatile decentralized storing of e.g. operating data. When changing the location stored data can protect the machines from damages. In service cases of the equipment data can be analyzed to minimize service time.

Han Modular



* The use of shielded cables is recommended for longer distances or EMC loaded environments.

# Han-Elisa® ID module

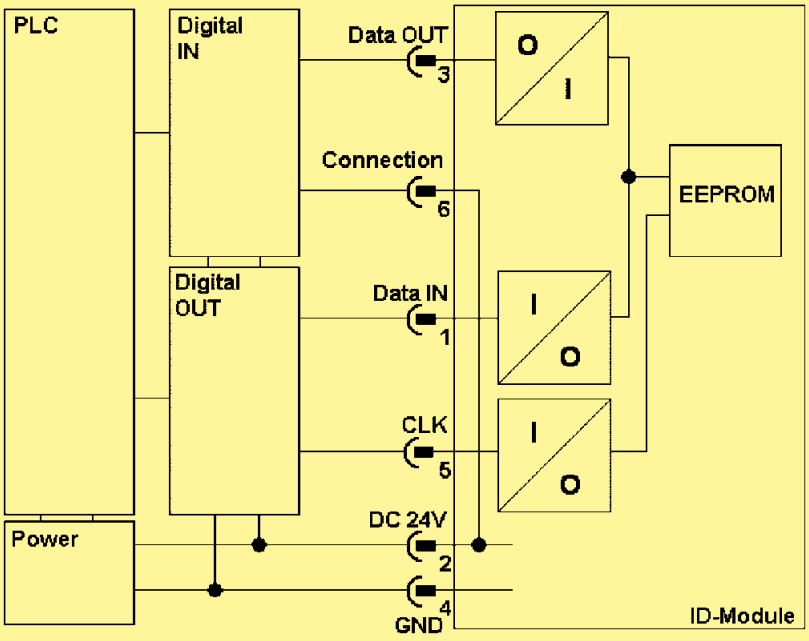


Input module

| Identification | Part number Male insert (M) | Drawing | Dimensions in mm |
|---|---|---|---|
| Electronic identification module | **20 70 001 1001** | | |

Han Modular

## Block diagram / Wiring plan

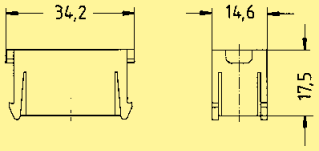
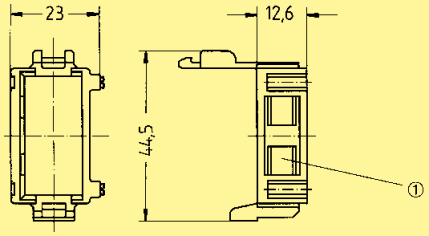
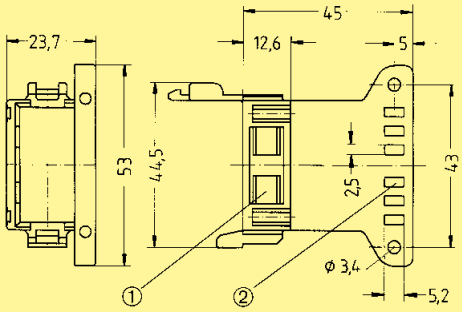
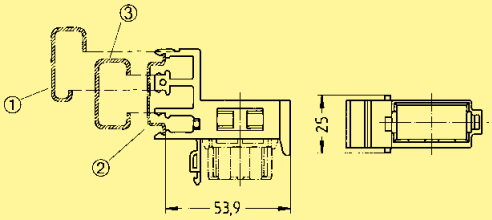
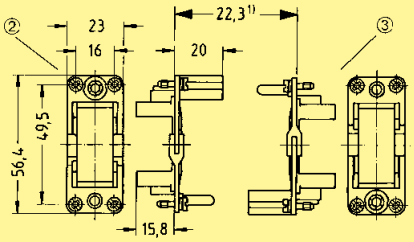



Meaning of the connections

| Pin no. | Name | Meaning/Function |
|---|---|---|
| 1 | Data IN | Input for data and control signals from PLC |
| 2 | DC 24 V | Power connection of the ID module |
| 3 | Data OUT | Output for data signals from ID module to PLC |
| 4 | GND | Ground |
| 5 | CLK | System clock for synchronisation |
| 6 | Connection | Output of the ID module for connection detection |



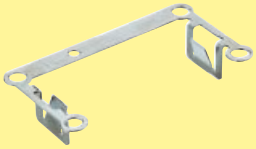
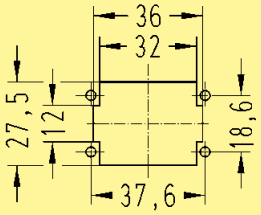
Stock items in bold type

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Han-Modular® Dummy module<br>to fill up module spaces not in use in the frame<br> | **09 14 000 9950** |  | |
| Module clamp without strain relief *<br><br>Delivery comprises one module clamp. | **09 14 000 0311** | <br>1 Slot for identification strip | |
| Module clamp with strain relief *<br><br>Delivery comprises one module clamp. | **09 14 000 0312** | <br>1 Slot for identification strip<br>2 For cable ties with max. 5 mm width | |
| Module clamp for rail *<br><br>Delivery comprises one module clamp. | **09 14 000 0313** | <br>1 G-rail DIN EN 60 715-G32<br>2 rail DIN EN 60 715-35 x 7.5 with 1 mm thickness or -35 x 15 with 1.5 mm thickness<br>3 C-rail DIN EN 60 715-C30 | |
| Frame for 1 module<br><br>in housing Han® 10 A | **09 14 000 0304** | <br>1 Distance max. 23.5 mm<br>2 Hoods<br>3 Housings | |



* Suitable for the single modules Han® C Crimp, Han® C Axial, Han E® Crimp, Han EE®, Han E® Protected, Han DD® Crimp, Han® High Density, Han® USB, Han® Firewire, Han® Multi Contact and Han® SC

**Stock items in bold type**

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Fixing bracket for Han-Modular® Compact  | **09 14 000 9947** |   1 Panel cut out | |

# Contents


| | Page |
|---|---|
| Technical characteristics Han® HsB | **07.02** |
| Han® 6 HsB | **07.03** |
| Han® 12 HsB | **07.04** |

## Features

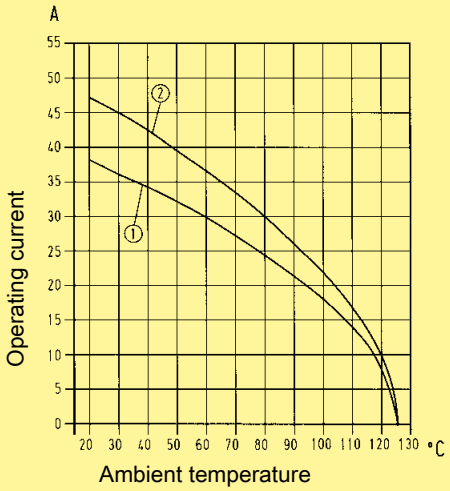
- screw termination
- wire-protection included
- ideal for power supply applications
- termination with standard screw driver



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① wire gauge: 4 mm²

② wire gauge: 6 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

| | |
|---|---|
| Number of contacts | 6, 12 (2 x 6), + PE |
| Electrical data acc. to EN 61 984 | **35 A 400/690 V 6 kV 3** |
| Rated current | 35 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| or | 35 A 500 V 6 kV 3 |
| Rated voltage acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Screw terminal - Wire gauge[1)] | 6 mm² |
| - AWG | 10 |
| - Tightening torque | 1.2 Nm |

### Hoods/Housings

| | |
|---|---|
| Material | aluminium die-cast |
| Surface | powder-coated RAL 7037 |
| Locking element | Han-Easy Lock® |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

Further selection of hoods/housings see chapter 30 / chapter 31

### Accessories

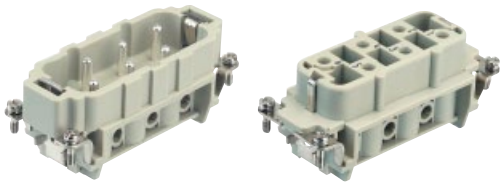
| | |
|---|---|
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |



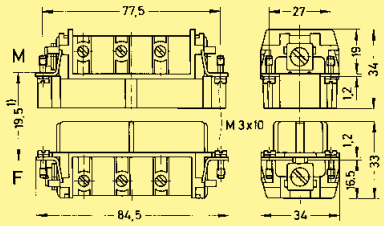
[1)] geometric wire gauge

Number of contacts

6 + ⏚

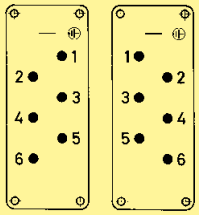


| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Screw terminal | Han® HsB | | | | |
| | 1-6 | **09 31 006 2601** | **09 31 006 2701** | | |

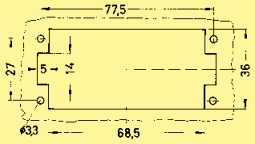



1) Distance for contact max. 21 mm

Contact arrangement (view from termination side)




Panel cut out for inserts
for use without hoods/housings



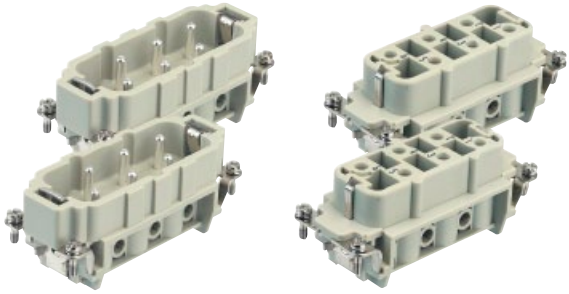




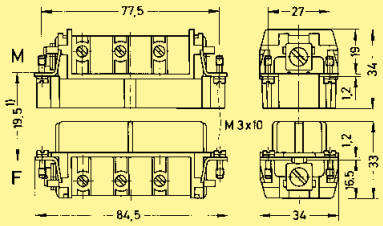

Stock items in bold type

Number of contacts

12 + ⏚

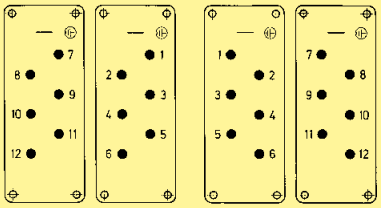


| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Screw terminal | Han® HsB | | | | |
| | 1-6 | **09 31 006 2601** | **09 31 006 2701** | | |
| | 7-12 | **09 31 006 2611** | **09 31 006 2711** | | |



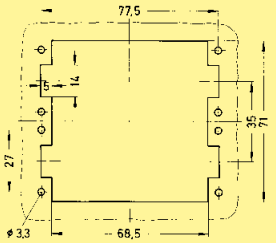

1) Distance for contact max. 21 mm

Contact arrangement (view from termination side)




M F

Panel cut out for inserts
for use without hoods/housings




Han HsB



Stock items in bold type

## Contents


| | Page |
|---|---|
| Details of the Han® Terminal block connector | **08.02** |
| Technical characteristics Han D® AV | **08.04** |
| Han D® AV | **08.05** |
| Technical characteristics Han D® AV Distributor | **08.06** |
| Han D® AV Distributor | **08.07** |
| Technical characteristics Han E® AV / Han® ES AV | **08.08** |
| Han E® AV | **08.09** |
| Han® ES AV | **08.10** |
| Han® Terminal block connectors accessories | **08.11** |

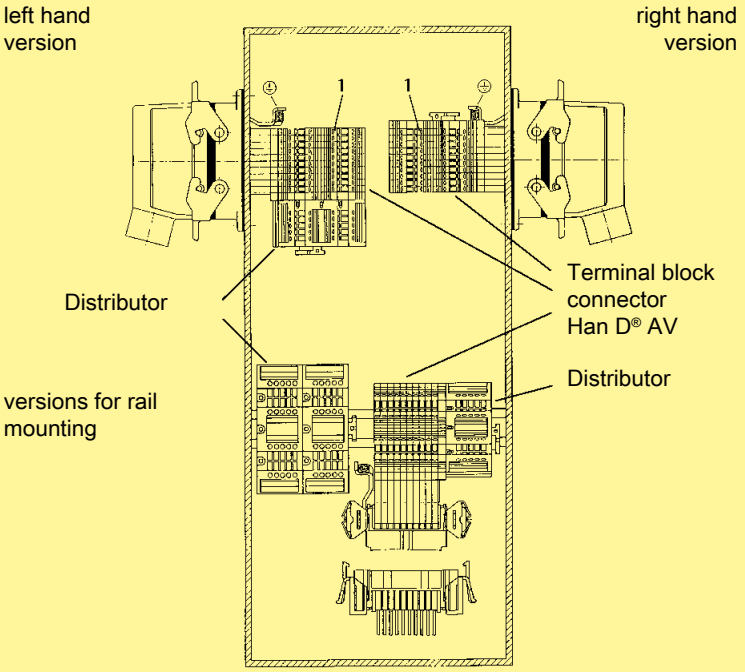
## Possibilities in switch cabinet

Left or right hand mounting in the switch cabinet, therefore allows use of the same pre-prepared interface cable

Internal use on standard rails in the switch cabinet in conjunction with Han-Snap®

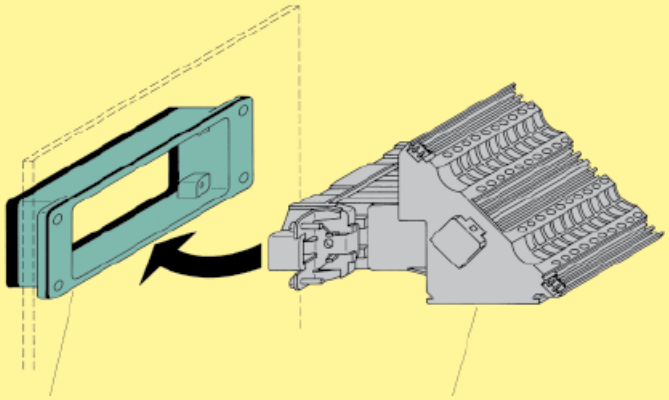
Distributor lockable on standard rails or mountable at terminal block connector Han D® AV

The terminal block connectors can be supplied for left hand or right hand applications. Hence the ground and connecting terminal for contact no. 1 will always be accessible from above in both types of installation.




## Assembly of terminal block connectors

Terminal block connectors can be mounted from the inside of the switch cabinet into standard bulkhead housings. Therefore pre-assembly is possible.




## Identification

The individual terminals have the same identification as on the mating face. In addition each circuit may be separately labelled with identification strips fitted in the adjacent slots.

## Counterparts

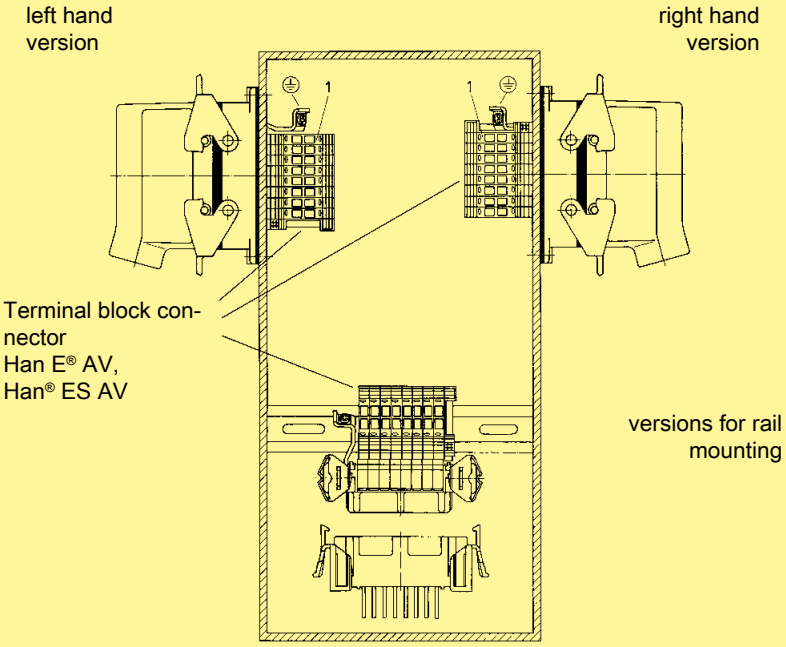
For suitable mating inserts of serie Han D® with crimp terminal please refer to the chapter 02.

## Possibilities in switch cabinet

Left or right hand mounting in the switch cabinet, therefore allows use of the same pre-prepared interface cable

Internal use on standard rails in the switch cabinet in conjunction with Han-Snap®

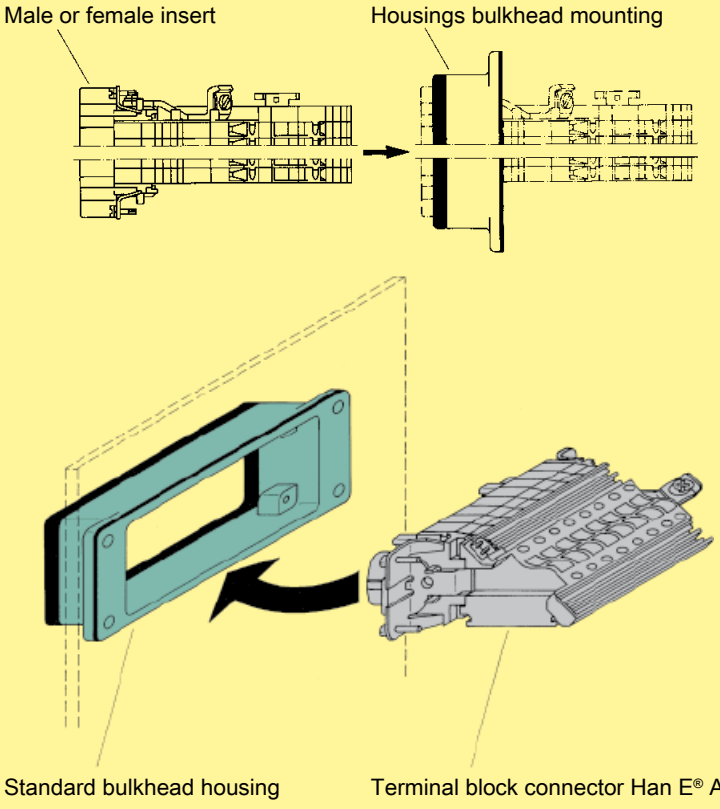
The terminal block connectors can be supplied for left hand or right hand applications. Hence the ground and connecting terminal for contact no. 1 will always be accessible from above in both types of installation.




## Assembly of terminal block connectors

The terminal block connector is fixed in the standard bulkhead housing in the normal way.

Han E® AV and Han® ES AV with 16 and 24 pins can be mounted from the inside of the switch cabinet into standard bulkhead housings. Therefore pre-assembly is possible.




## Identification

The individual terminals have the same identification as on the mating face. In addition each circuit may be separately labelled with identification strips fitted in the adjacent slots.

## Counterparts

For suitable mating inserts of series Han E® and Han® ES with screw, cage-clamp or crimp terminals please refer to the chapter 03.

## Features

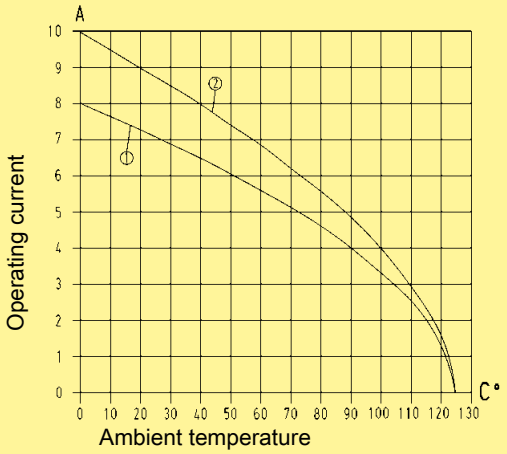
- For left hand or right hand applications available
- PE and connecting terminal for contact no.1 are at the top in both types of installation
- Mountable in standard bulkhead housing and on standard rails by using of fixing elements
- Screw terminal with integrated wire protection

### Current carrying capacity

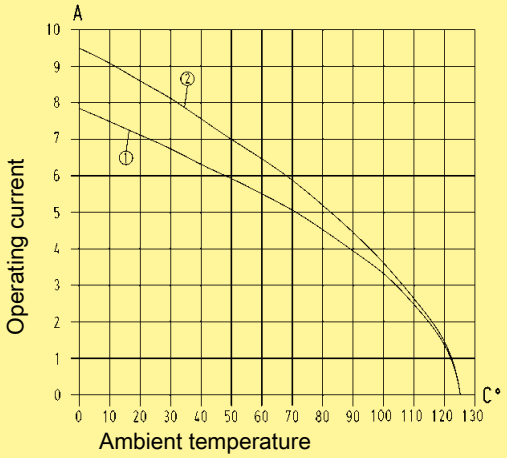
The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5

Han® 40 D AV




Han® 64 D AV




① wire gauge: 0.75 mm²

② wire gauge: 1.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

| | |
|---|---|
| Number of contacts | 40, 64 + PE |
| Electrical data acc. to EN 61 984 | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 10 A 230/400 V 4 kV 2 |
| Rated voltage acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - mating side | 3 µm Ag |
| - termination side | tin plated |
| Contact resistance | ≤ 4 mΩ |
| Screw terminal | |
| - Wire gauge[1)] | 0.2 ... 2.5 mm² |
| - AWG | 24 ... 14 |
| - Tightening/test torque | 0.5 Nm |

| | |
|---|---|
| Hoods/Housings | see chapter 30 / 31 |

### Identification strips

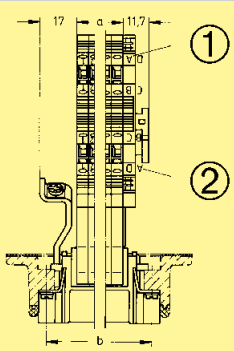
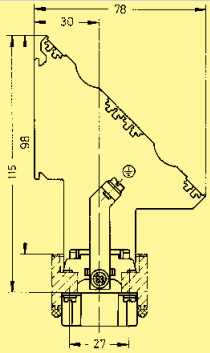
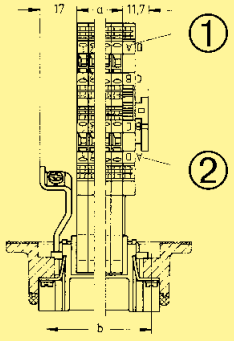
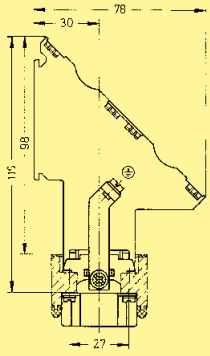
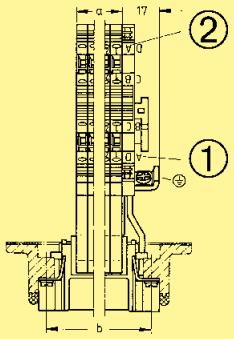
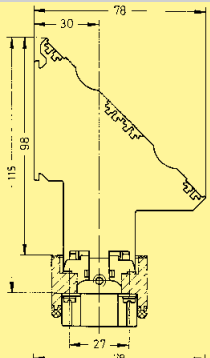
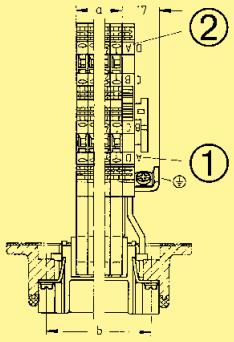
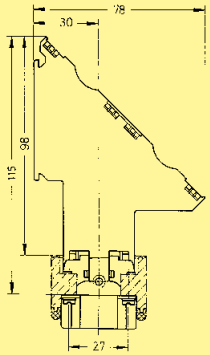
| the following identifcation strips may be used | | |
|---|---|---|
| Multi-Contour (MK) | HARTING | 09 21 000 9971 |
| | Murrplastik | KPX 5/10-5 |
| | Weidmüller | DEK 5 |
| | Phoenix | 4K-DST 5 |
| | | DS 5 |
| | | ZB 5 |
| | WAGO | WSB 5 |
| Single-Contour (SK) | Murrplastik | KWI 5/10 |
| | | KWI 5/10-5 |
| | | KWI 8,6-5 |
| | Wieland | 9705 A/5/10 |
| | WAGO | Mini-WSB |

[1)] geometric wire gauge

Number of contacts

# 40, 64 + ⏚



| Identification | Number of contacts | Part number Male insert | Part number Female insert | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Left hand version** Multi contour (MK) | 40 | **09 21 040 4601** | 09 21 040 4701 |  |  |
| | 64 | 09 21 064 4601 | **09 21 064 4701** | | |
| **Left hand version** Single contour (SK) | 40 | 09 21 040 4602 | 09 21 040 4702 |  |  |
| | 64 | 09 21 064 4602 | 09 21 064 4702 | | |
| **Right hand version** Multi contour (MK) | 40 | 09 21 040 4611 | 09 21 040 4711 |  |  |
| | 64 | 09 21 064 4611 | 09 21 064 4711 | | |
| **Right hand version** Single contour (SK) | 40 | 09 21 040 4612 | 09 21 040 4712 |  |  |
| | 64 | 09 21 064 4612 | 09 21 064 4712 | | |

| | a | b |
|---|---|---|
| Han® 40 D AV | 51 | 77.5 |
| Han® 64 D AV | 81.5 | 104 |

① Contact arrangement for male insert
② Contact arrangement for female insert

**Stock items in bold type**

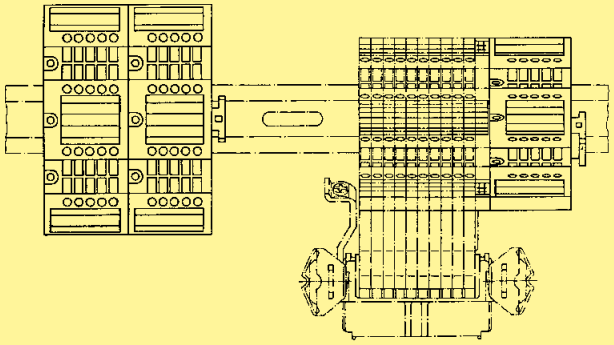
## Features

- Easy mounting direct adjacent to terminal block connector Han D® AV
- By using of fixing elements mountable on standard rails
- Screw terminal with integrated wire protection

### Mounting example

Distributor
on standard rail

Distributor
with teminal block connector
Han D® AV



### Identification

The individual terminals have the same identification as on the mating face. In addition each circuit may be separately labelled with identification strips fitted in the adjacent slots.

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Distributor

| | |
|---|---|
| Number of contacts | 20, 2 x 10, 4 x 4 |
| Electrical data<br>acc. to EN 61 984 | **16 A 400/690 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 480/830 V 6 kV 2 |
| Rated voltage<br>acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life<br>- mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| ContactsMaterial | copper alloy |
| Surface<br>- termination side | tin plated |
| Screw terminal<br>- Wire gauge[1)] | 0.2 ... 2.5 mm² |
| - AWG | 24 ... 14 |
| - Tightening/test torque | 0.5 Nm |

### Identification strips

| the following identification strips may be used | |
|---|---|
| HARTING | 09 21 000 9971 |
| Murrplastik | KPX 5/10-5 |
| Phoenix | 4K-DST 5 |
| | ZB 5 |
| | DS 5 |

Han AV



[1)] geometric wire gauge

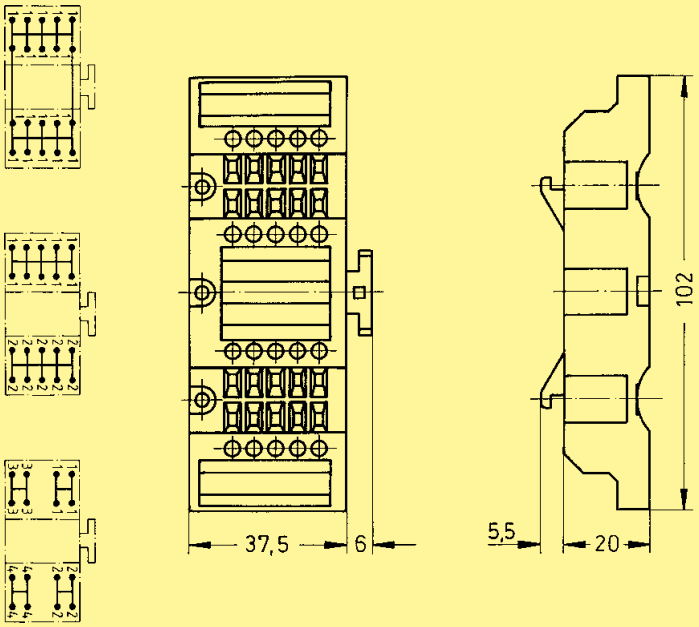
Number of contacts

# 20, 2x10, 4x4



| Identification | Terminals | Part number |
|---|---|---|
| Distributor with screw terminals | 20 | 09 42 020 0111 |
| | 2x10 | 09 42 020 0121 |
| | 4x4 | 09 42 020 0131 |

Drawing




Dimensions in mm

Optionally mountable on terminal block connectors Han D® AV





Stock items in bold type

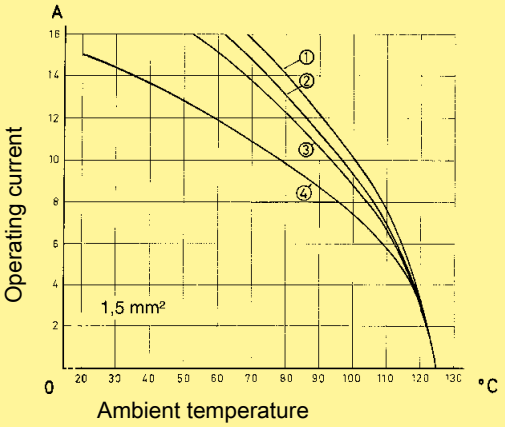
## Features

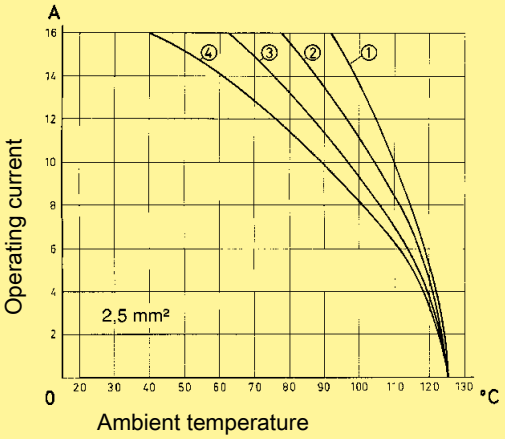
- For left hand or right hand applications available
- PE and connecting terminal for contact no.1 are at the top in both types of installation
- Mountable in standard bulkhead housing and on standard rails by using of fixing elements
- Screw terminal with integrated wire protection at Han E® AV
- Cage-clamp terminal at Han® ES AV

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① Han® 6 E AV / Han® 6 ES AV
② Han® 10 E AV / Han® 10 ES AV
③ Han® 16 E AV / Han® 16 ES AV
④ Han® 24 E AV / Han® 24 ES AV

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 6, 10, 16, 24, 32 (2 x 16), 48 (2 x 24) + PE |
| Electrical data acc. to EN 61 984 | **16 A 500 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 400/690 V 6 kV 2 |
| Rated voltage acc. to UL/CSA | 600 V |
| Rated current acc. to UL/CSA | 12 A (only for Han® ES) |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - mating side | 3 µm Ag |
| - termination side | tin plated |
| Contact resistance | ≤ 4 mΩ |
| Screw terminal | |
| - Wire gauge[1)] | 0.2 ... 2.5 mm² |
| - AWG | 24 ... 14 |
| - Tightening/test torque | 0.5 Nm |
| Cage clamp terminal | |
| - Wire gauge[1)] | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |

### Identification strips Han E® AV

| the following identification strips may be used | | |
|---|---|---|
| Multi contour (MK) | HARTING (6x10) | 09 33 000 9971 |
| | Murrplastik | KPX 6/10 |
| | Weidmüller | DEK 6,5 |
| | Phoenix | 4K-DST 6 |
| | WAGO | WSB |
| Single contour (SK) | Murrplastik | KWI 6/10 |
| | Wieland | 9705 A/6,7 |
| | WAGO | Mini-WSB |

### Identification strips Han® ES AV

| the following identification strips may be used | | |
|---|---|---|
| Single contour (SK) | HARTING (6x15) | 09 33 000 9973 |
| | Murrplastik | KWI 6/15 |
| | Wieland | 9705 A/6.7 |
| | WAGO | Mini-WSB |



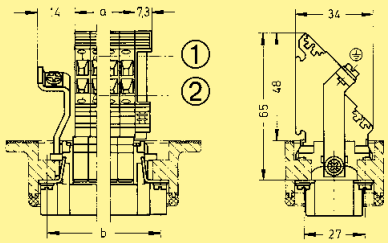
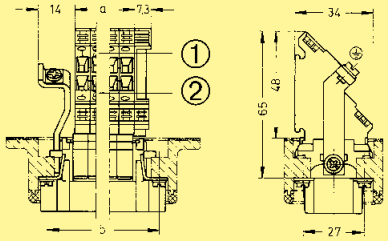
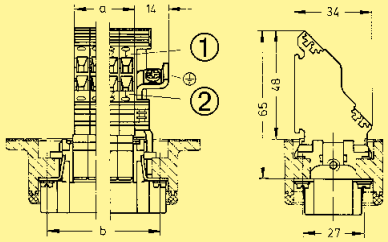
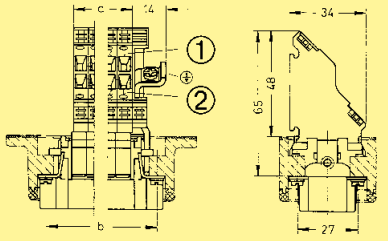


[1)] geometric wire gauge

Number of contacts

# 6, 10, 16, 24 + ⏚



| Identification | Number of contacts | Part number Male insert | Part number Female insert | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Left hand version** Multi contour (MK) | 6 | 09 33 006 4625 | **09 33 006 4725** |  | |
| | 10 | 09 33 010 4625 | 09 33 010 4725 | | |
| | 16 | **09 33 016 4625** | **09 33 016 4725** | | |
| | 24 | **09 33 024 4625** | **09 33 024 4725** | | |
| **Left hand version** Single contour (SK) | 6 | 09 33 006 4626 | 09 33 006 4726 |  | |
| | 10 | 09 33 010 4626 | 09 33 010 4726 | | |
| | 16 | 09 33 016 4626 | 09 33 016 4726 | | |
| | 24 | **09 33 024 4626** | **09 33 024 4726** | | |
| **Right hand version** Multi contour (MK) | 6 | 09 33 006 4635 | **09 33 006 4735** |  | |
| | 10 | 09 33 010 4635 | 09 33 010 4735 | | |
| | 16 | 09 33 016 4635 | **09 33 016 4735** | | |
| | 24 | **09 33 024 4635** | **09 33 024 4735** | | |
| **Right hand version** Single contour (SK) | 6 | 09 33 006 4636 | 09 33 006 4736 |  | |
| | 10 | 09 33 010 4636 | 09 33 010 4736 | | |
| | 16 | 09 33 016 4636 | 09 33 016 4736 | | |
| | 24 | 09 33 024 4636 | 09 33 024 4736 | | |

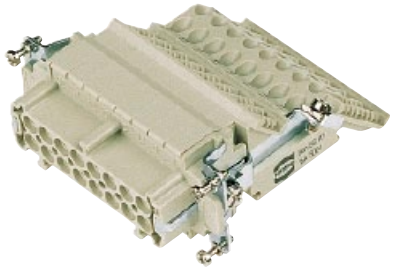
| | a | b |
|---|---|---|
| Han® 6 E AV | 20 | 44 |
| Han® 10 E AV | 34 | 57 |
| Han® 16 E AV | 54 | 77.5 |
| Han® 24 E AV | 81 | 104 |

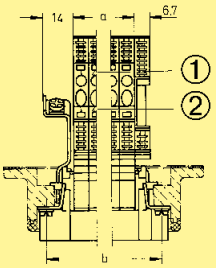
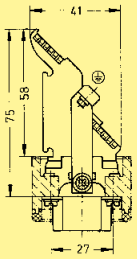
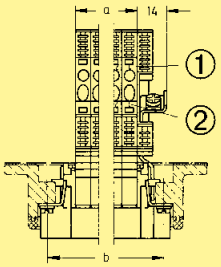
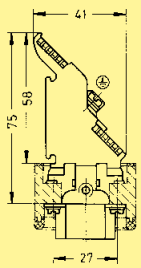
① Contact arrangement for male insert
② Contact arrangement for female insert

**Stock items in bold type**

Number of contacts

# 6, 10, 16, 24 + ⏚



| Identification | Number of contacts | Part number Male insert | Part number Female insert | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Left hand version** Single contour (SK) | 6 | 09 33 006 4629 | 09 33 006 4729 |  |  |
| | 10 | 09 33 010 4629 | 09 33 010 4729 | | |
| | 16 | 09 33 016 4629 | 09 33 016 4729 | | |
| | 24 | **09 33 024 4629** | **09 33 024 4729** | | |
| **Right hand version** Single contour (SK) | 6 | 09 33 006 4639 | 09 33 006 4739 |  |  |
| | 10 | 09 33 010 4639 | 09 33 010 4739 | | |
| | 16 | 09 33 016 4639 | **09 33 016 4739** | | |
| | 24 | 09 33 024 4639 | **09 33 024 4739** | | |

| | a | b |
|---|---|---|
| Han® 6 ES AV | 20 | 44 |
| Han® 10 ES AV | 34 | 57 |
| Han® 16 ES AV | 54 | 77.5 |
| Han® 24 ES AV | 81 | 104 |





① Contact arrangement for male insert
② Contact arrangement for female insert

**Stock items in bold type**



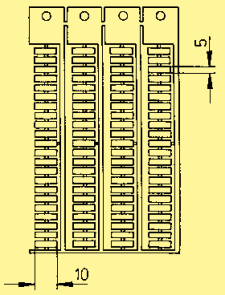
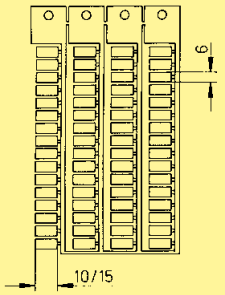
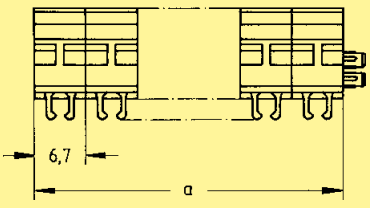
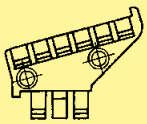
| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **Fixing element**<br>for<br>Terminal block connector<br>Han D® AV,<br>Distributor | 09 33 000 9928 | Terminal block connector Han D® AV<br>Fixing element<br>C-rail<br>DIN EN 60 715-C 30<br>G-rail<br>DIN EN 60 715-G 32<br>Rail<br>DIN EN 60 715-35 x 7.5<br>or -35 x 15 | |
| **Fixing element**<br>for<br>Terminal block connector<br>Han E® AV,<br>Han® ES AV | 09 33 000 9929 | Terminal block connector Han E® AV<br>Fixing element<br>C-rail<br>DIN EN 60 715-C 30<br>G-rail<br>DIN EN 60 715-G 32<br>Rail<br>DIN EN 60 715-35 x 7.5<br>or -35 x 15 | |
| | | There are moulded slots at the rear of the terminal block connectors and distributors to accept the fixing elements. When used these elements, for example, can be used to secure the connectors inside the switch cabinets on standard rails.<br>For mounting<br>Han® 6 E AV, Han® 6 ES AV = 1 fixing element<br>Han® 10/16/24 E AV, Han® 10/16/24 ES AV = 2 fixing elements<br>Han® 40/64 D AV = 2 fixing elements<br>Distributor = 1 fixing element | |





**Stock items in bold type**



| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **Identification strips**<br>88 pieces in one block (MK-contour)<br>5 mm width<br>10 mm long | 09 21 000 9971 | for Terminal block connector Han D® AV and Distributor |  |
| **Identification strips**<br>64 pieces in one block (MK-contour)<br>6 mm width<br>10 mm long | 09 33 000 9971 | for Terminal block connector Han E® AV |  |
| 15 mm long | 09 33 000 9973 | for Terminal block connector Han® ES AV | |
| **Adapter for Han E® AV**<br>to fit identification strips (SK-contour) | | | |
| Han® 6 E AV | 09 33 000 9964 |  |  |
| Han® 10 E AV | 09 33 000 9965 | | |
| Han® 16 E AV | 09 33 000 9966 | | |
| Han® 24 E AV | 09 33 000 9967 | | |

| | a |
|---|---|
| Han® 6 E AV | 26.8 |
| Han® 10 E AV | 40.2 |
| Han® 16 E AV | 60.3 |
| Han® 24 E AV | 87.4 |



**Stock items in bold type**

# Contents


| | Page |
|---|---|
| Technical characteristics Staf® | **09.02** |
| Staf® 6 | **09.03** |
| Staf® 14 | **09.04** |
| Staf® 20 | **09.05** |
| Staf® 40 | **09.06** |

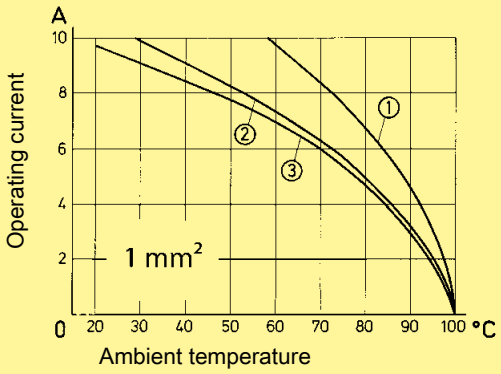
## Features

- Degree of protection for hoods/housings for coupled connector: IP 44

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① Staf® 6

② Staf® 14

③ Staf® 20

## Features

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

### Inserts

| | |
|---|---|
| Number of contacts | 6, 14, 20, 40 (2x20) |
| Electrical data acc. to EN 61 984 | |
| Rated current | 10 A |
| Rated voltage | ~ 25 V / − 60 V |
| Rated voltage acc. to UL/CSA | 50 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polyamide |
| Limiting temperatures | -40 °C ... +100 °C |
| Flammability acc. to UL 94 | HB |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 2 mΩ |
| Screw terminal | |
| - Wire gauge[1)] | 1.5 mm² |
| - AWG | 16 |
| - Tightening/test torque | 0.25 Nm |
| Solder terminal | |
| - Wire gauge[1)] | 2.5 mm² |
| - AWG | 14 |

In accordance with the appropriate regulations a wire-end sleeve has to be used at clamps without wire protection (see „Screw terminal“, chapter 00).

| | |
|---|---|
| Hoods/Housings | see chapter 30 / 31 |

### Accessories

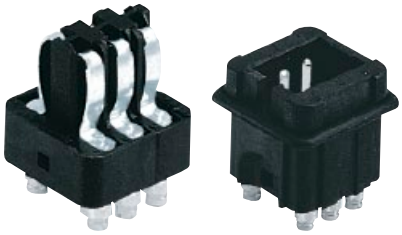
| | |
|---|---|
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |

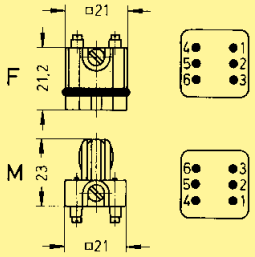
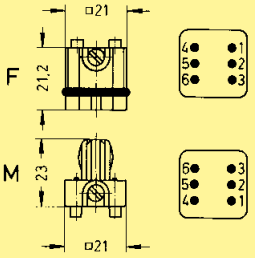
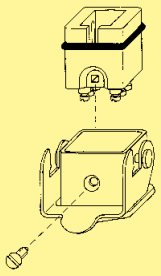


[1)] geometric wire gauge

Number of contacts

# 6



| Identification | Series | Part number Female Insert (M) | Part number Male insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Screw terminal  | Staf® | **09 70 006 2813** | **09 70 006 2616** | Contact arrangement (view from termination side)   | |
| Solder terminal  | Staf® | 09 70 006 2812 | 09 70 006 2615 | Contact arrangement (view from termination side)   Mounting example  | |



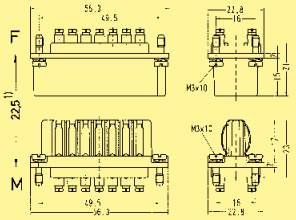


Stock items in bold type

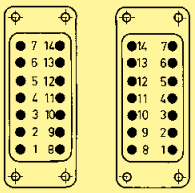
Number of contacts

# 14

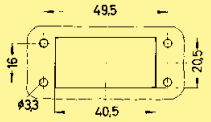


| Identification | Series | Part number Female Insert (M) | Part number Male insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Screw terminal  | Staf® | **09 70 014 2811** | **09 70 014 2614** |  1) Distance for contact max. 24 mm | |
| Solder terminal  | Staf® | **09 70 014 2810** | **09 70 014 2613** | | |

Contact arrangement (view from termination side)




Panel cut out for inserts
for use without hoods/housings

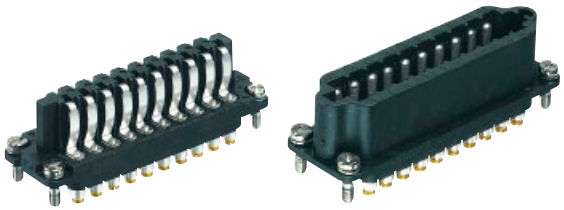


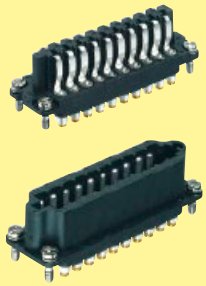
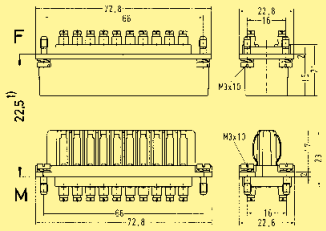



**Stock items in bold type**

Number of contacts

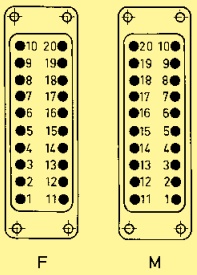
# 20



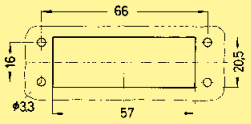
| Identification | Series | Part number Female Insert (M) | Part number Male insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Screw terminal  | Staf® | **09 70 020 2817** | 09 70 020 2622 |  | |
| Solder terminal  | Staf® | **09 70 020 2816** | **09 70 020 2621** | | |

[1] Distance for contact max. 24 mm

Contact arrangement (view from termination side)




Panel cut out for inserts
for use without hoods/housings



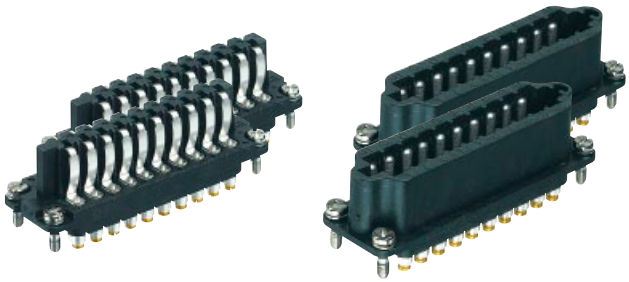


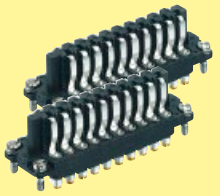
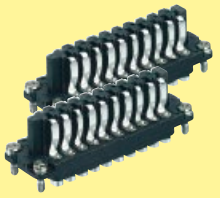



Stock items in bold type

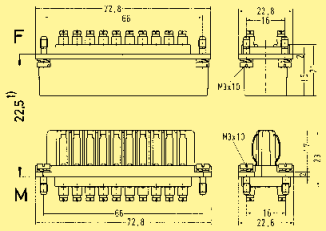
Number of contacts

# 40



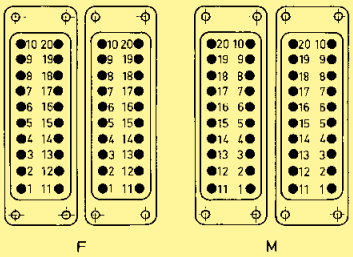
| Identification | Series | Part number Female Insert (M) | Part number Male insert (F) |
|---|---|---|---|
| Screw terminal | Staf® | | |
|  | 1-20 | **09 70 020 2817** | 09 70 020 2622 |
|  | 1-20 | **09 70 020 2817** | 09 70 020 2622 |
| Solder terminal | Staf® | | |
|  | 1-20 | **09 70 020 2816** | **09 70 020 2621** |
|  | 1-20 | **09 70 020 2816** | **09 70 020 2621** |

Drawing

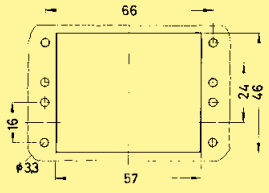



1) Distance for contact max. 24 mm

Contact arrangement (view from termination side)




Panel cut out for inserts
for use without hoods/housings




Dimensions in mm

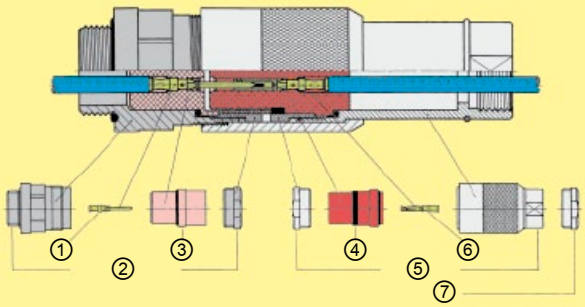
Stock items in bold type

# Contents


| | Page |
|---|---|
| Technical characteristics R 15 | **10.02** |
| Inserts R 15 | **10.03** |
| Hoods/Housings R 15 | **10.04** |

# Features

## Mounting example

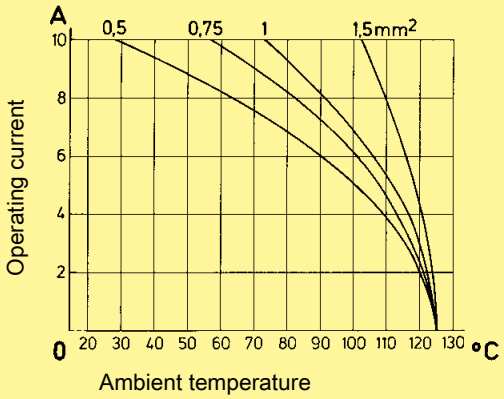



① Male contact
② Housings screw mounting
③ Male insert (M)
④ Female insert (F)
⑤ Hoods
⑥ Female contact
⑦ Cable seal

## Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




# Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | , |

## Inserts

| | |
|---|---|
| Number of contacts | 7 + PE |
| Electrical data<br>acc. to EN 61 984 | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage<br>acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polyamide |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | HB |
| Mechanical working life<br>- mating cycles | ≥ 500 |

## Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal | |
| - Wire gauge[1)] | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |

## Hoods/Housings

| | |
|---|---|
| Material | polycarbonate<br>aluminium die-cast<br>zinc die-cast |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection<br>acc. to DIN 40 050<br>for coupled connector | IP 65 |

## Accessories

| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |

[1)] geometric wire gauge

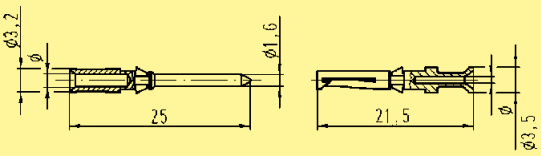
Number of contacts

7 + ⏚

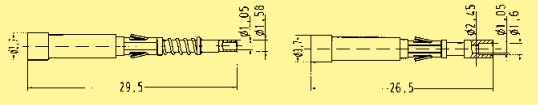


| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp terminal**<br>Inserts<br>for plastic hoods/housings<br>Order crimp contacts<br>separately | R 15 | 09 15 007 3001 | 09 15 007 3101 | Contact arrangement (view from termination side)<br>Male insert (M) / Female insert (F) | |
| Inserts<br>for metal hoods/housings<br>Order crimp contacts<br>separately | R 15 | 09 15 007 3021 | 09 15 007 3121 | | |

| Identification | Wire gauge (mm²) | Part number Male contacts | Part number Female contacts | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts** | | | | | |
| silver plated | 0.14-0.37 | **09 15 000 6104** | **09 15 000 6204** | | |
| | 0.5 | **09 15 000 6103** | **09 15 000 6203** | | |
| | 0.75 | **09 15 000 6105** | **09 15 000 6205** | | |
| | 1 | **09 15 000 6102** | **09 15 000 6202** | | |
| | 1.5 | **09 15 000 6101** | **09 15 000 6201** | | |
| | 2.5 | **09 15 000 6106** | **09 15 000 6206** | | |
| gold plated | 0.14-0.37 | **09 15 000 6124** | **09 15 000 6224** | | |
| | 0.5 | **09 15 000 6123** | **09 15 000 6223** | | |
| | 0.75 | **09 15 000 6125** | **09 15 000 6225** | | |
| | 1 | **09 15 000 6122** | **09 15 000 6222** | | |
| | 1.5 | **09 15 000 6121** | **09 15 000 6221** | | |
| | 2.5 | **09 15 000 6126** | **09 15 000 6226** | | |
| **F.O. contacts**<br>for 1 mm<br>plastic fibre | | **20 10 001 3211** | **20 10 001 3221** | | |



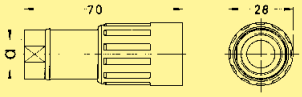
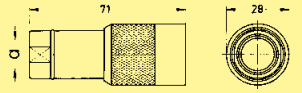

| Wire gauge | | ∅ | Stripping length |
|---|---|---|---|
| 0.14-0.37 mm² | AWG 26-22 | 0.9 mm | 8 mm |
| 0.5 mm² | AWG 20 | 1.1 mm | 8 mm |
| 0.75 mm² | AWG 18 | 1.3 mm | 8 mm |
| 1 mm² | AWG 18 | 1.45 mm | 8 mm |
| 1.5 mm² | AWG 16 | 1.75 mm | 8 mm |
| 2.5 mm² | AWG 14 | 2.25 mm | 6 mm |



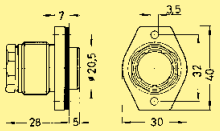
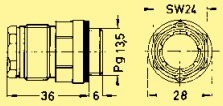
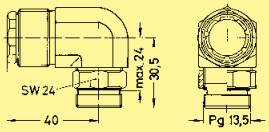
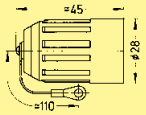
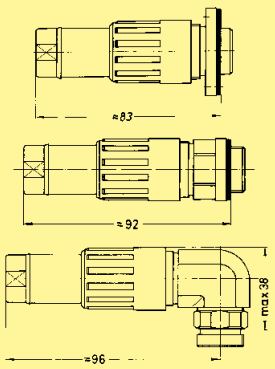





Stock items in bold type

| Identification | Part number Thermoplastic | Part number Metal | | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Hoods** | | | | | |
|  | 09 15 000 0401<br>19 15 000 0401 | | Pg 11<br>M 16 |  | |
|  | | **09 15 000 0421** | Pg 11 |  | |

| | M | Pg |
|---|---|---|
| a | 16 | 11 |

| Identification | Part number Thermoplastic | Part number Metal | | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Housings bulkhead mounting** | | | | | |
|  | 09 15 000 0301 | | |  | |
| **Housings screw mounting** | | | | | |
|  | 09 15 000 0101 | 09 15 000 0121 | |  | |
| **Housings angled** | | | | | |
|  | 09 15 000 0102 | 09 15 000 0122 | |  | |
| **Cover screw mounting** | | | | | |
|  | 09 15 000 5401 | | |  | |
| **Mounting example** | | | |  | |
| **R 15 insert fixing screw**<br>(for replacement) | 09 15 000 9905 | 09 15 000 9921 | | | |



**Stock items in bold type**

# Contents


| | Page |
|---|---|
| Features Han-Snap® | **11.02** |
| Component range Han-Snap® | **11.03** |
| Description of parts | **11.04** |
| Latching parts without/with Strain relief and Panel mounting parts | **11.06** |
| Panel mounting | **11.08** |
| Insert mounting without/with Carrier element | **11.12** |
| Plastic housings | **11.16** |
| Accessories | **11.18** |

**Note:**
A connector mounted with Han-Snap® elements does not offer finger safe protection to the relevant standards. In this case protection against electric shock must be provided by the installation methods of the user.

- ❏ The Han-Snap® system is ideal for connectors within closed electrical operating environments.
  These can be rooms, cabinets or termination boxes.

- ❏ The Han-Snap® components are an innovative design which offer the following advantages and characteristics:
  - reduction of material and assembly costs;
  - fast and easy installation;
  - preassembly of Han connectors;
  - secure and rigid mounting of Han connectors;
  - frequent use of latching systems is possible (up to several thousand cycles).

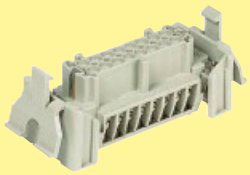
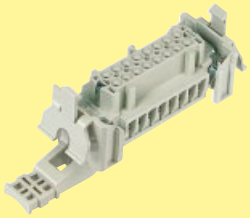
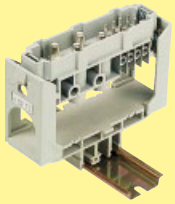
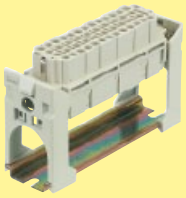
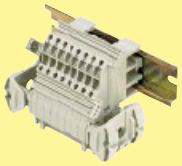
- ❏ The Han-Snap® elements are compatible with the standard inserts and terminal block connectors of the following series (named series Han B as follows)
  - Han D®, 40 and 64 pins
  - Han DD®
  - Han E®
  - Han® EE
  - Han® EEE
  - Han® ES
  - Han Hv E®
  - Han® Hv ES
  - Han® HsB
  - Han® HsC
  - Han-Com®
  - Han-Modular®

- ❏ With the Han-Snap® adapter the following standard inserts are compatible (named series Han A as follows):
  - Han D®, 15 and 25 pins
  - Han A®, 10 and 16 pins

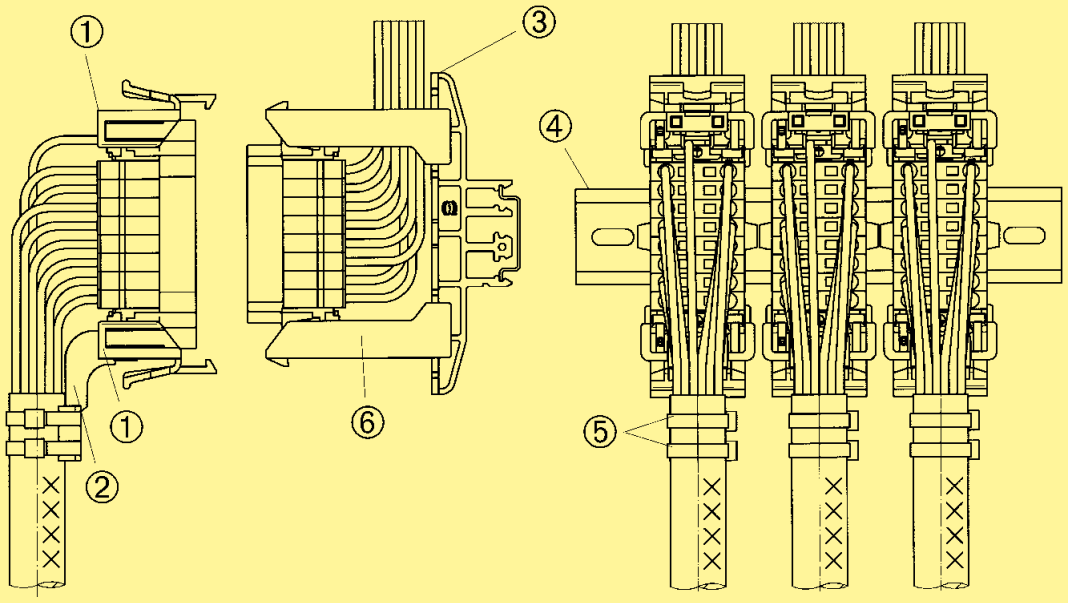
- ❏ The Han-Snap® elements are a mechanical system for the mounting assembly and security of Han connectors.
  Normally the elements are assembled to the connector insert using the standard insert fixing screws.
  If coding is required the standard fixing screws may be replaced by either code pins or guide pins and bushes.

- ❏ On free connectors the wires or cables can be secured to the strain relief element with standard cable ties of 5 mm width maximum.

# Component range

| Figure | Han-Snap® Component | Application |
|---|---|---|
|  | Latching parts | For free connector. |
|  | Latching parts<br>with strain relief | For free connector. |
|  | Latching parts<br>with strain relief<br>and Panel mounting parts | For free coupling of male and female inserts. |
|  | Plastic housings | For free connector. |
|  | Insert mounting<br>with carrier element | For fixing of Han connectors on standard rails, cross direction. |
|  | Insert mounting | For fixing of Han connectors on caprail, in line. |
|  | Fixing element | For mating of free connector with terminal block connector, whereby terminal block connector is fixed by means of the combi-fixing element on standard rail. |
|  | Panel mounting parts | Fixing elements for fixed connectors, standard inserts or terminal block connectors, for fixing in sheet metal panel. |

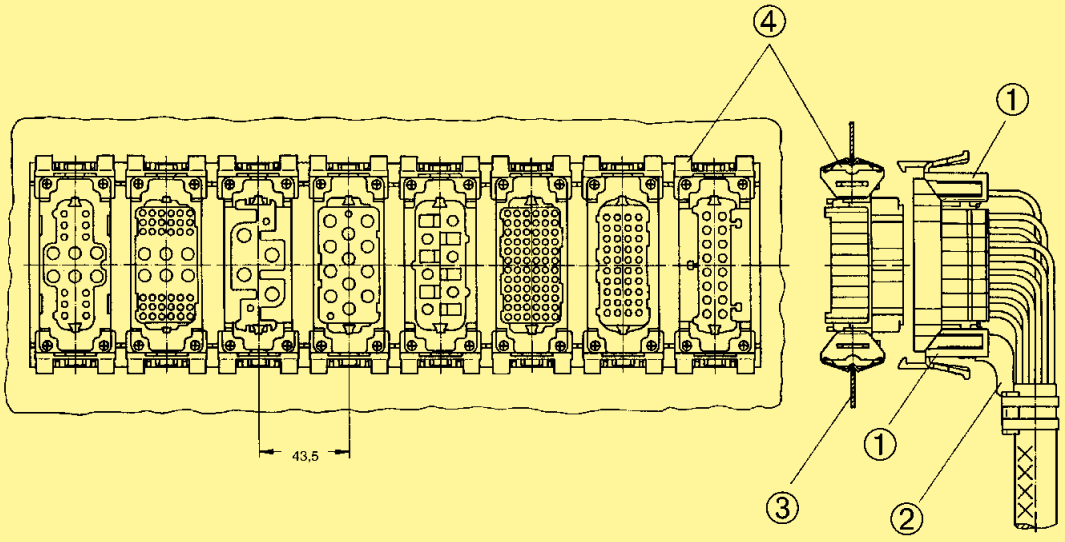
## Han-Snap®  on standard rail



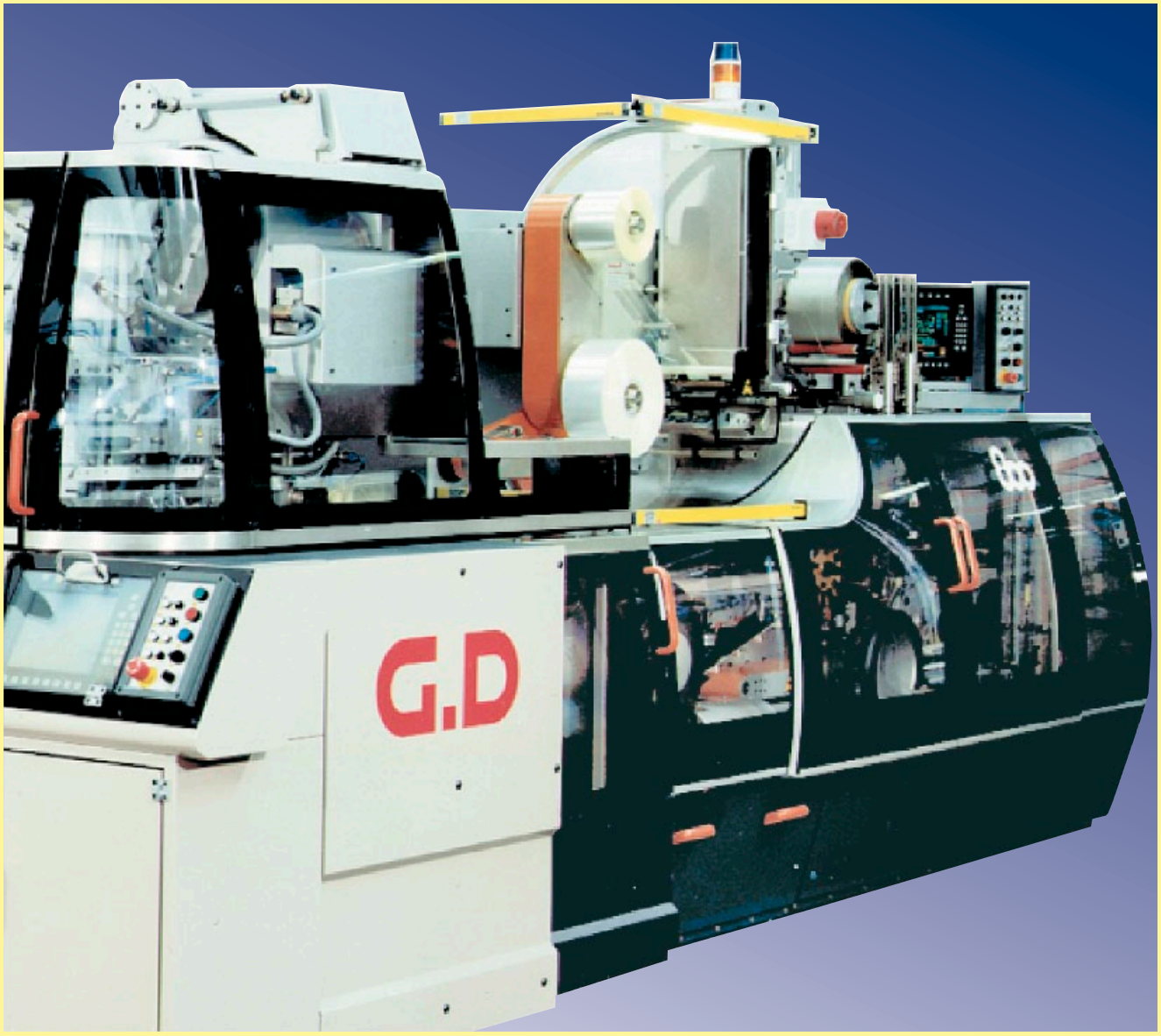

① Latching parts
② Strain relief
③ Carrier element
④ Standard rail
⑤ Cable tie
⑥ Insert mounting



## Han-Snap®  in Panel cut out




① Latching parts
② Strain relief
③ Assembly panel 1.3 ... 3 mm thick
④ Panel mounting parts




Cigarette packing machine C 800,
G. D. S. p. A., Bologna, Italy

## Features

- Space saving
- Practical and easy handling
- Reduction of material and assembly costs
- For all standard Han® B inserts and terminal block connectors

Inserts can be mounted on the panel mounting part and the latching part with the standard insert mounting screws.

High mechanical security of the fixings.

No functional impairment is caused by slight over tightening of the fixing screws.

Alternatively, Han coding elements (code pins or guide pins and bushes) may be used.

Please note: The strain relief element should be assembled to the latching part at the end of the insert opposite to the ground screw.

Up to 2 cable ties with max. 5 mm width can be used on the strain relief.

Label 9 x 20 mm may be fitted in both sides of each latching element.

Label 7 x 20 mm may be fitted to the top of the latching part without the strain relief element.
(more information page 11.19)

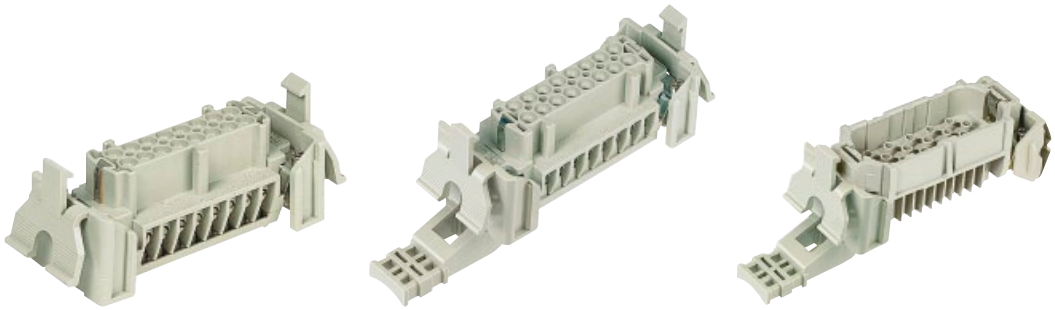
## Technical characteristics

| | |
|---|---|
| Min. retention force on counter part | |
| - without guiding | 200 N |
| - with guiding | 300 N |
| Vibration resistance | IEC 60 068, part 2-6<br>BN 74018 |
| Resistance to shock | IEC 60 068, part 2-27<br>BN 74018 |
| Tightening torque of fixing screws/ coding elements | 0.8 Nm |
| Material | Thermoplastic resin, polycarbonate, RAL 7032, grey |
| Flammability acc. to UL 94 | V 0 |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 20 |

## Range of delivery

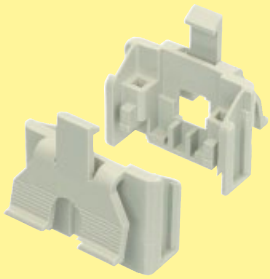
Range of delivery comprises:

| | |
|---|---|
| 09 33 000 9987 | 2 latching parts |
| 09 33 000 9991 | 1 latching part with strain relief<br>1 latching part |
| 09 33 000 9990 | 1 latching part with strain relief<br>1 panel mounting part |

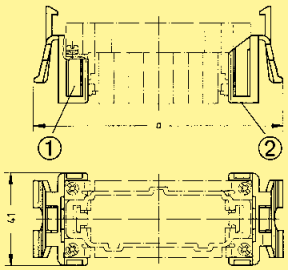


| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|

**Latching parts**



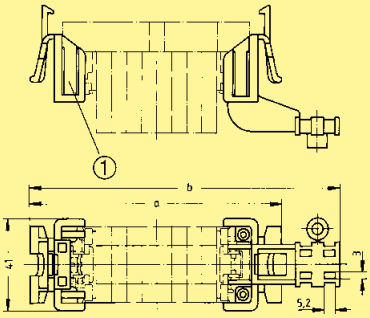
**09 33 000 9987**




**Latching parts with strain relief**

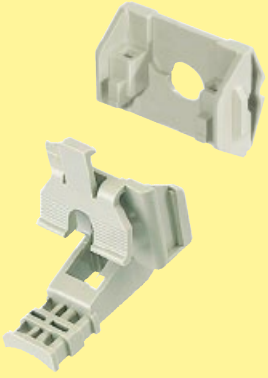


**09 33 000 9991**

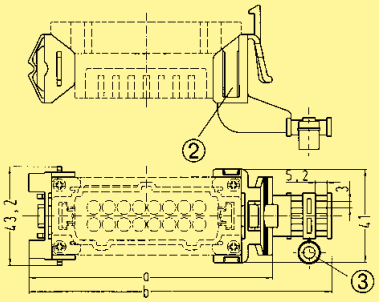



| Size | a | b |
|---|---|---|
| 6 B | 78.5 | 105 |
| 10 B | 91.5 | 118 |
| 16 B | 112 | 138.5 |
| 24 B | 138.5 | 165 |

**Latching parts with strain relief and Panel mounting parts**



09 33 000 9990




| Size | a | b |
|---|---|---|
| 6 B | 75 | 101 |
| 10 B | 88 | 114 |
| 16 B | 108.5 | 134.5 |
| 24 B | 135 | 161 |

① Slot for identification strips 7 mm
② Slot for identification strips 9 mm
③ Distance bush

## Features

- Snap element for sheet-metal cut out
- practical and easy handling
- Reduction of material and assembly costs
- For all standard Han® B inserts and terminal block connectors
- Space saving

Connector inserts and terminal block connectors can be fixed on elements for panel mounting with standard insert mounting screws.

High mechanical security of the fixings. No functional impairment is caused by slight over tightening of the fixing screws.

Alternatively, Han coding elements (code pins or guide pins and bushes) may be used.

Connector assembly into the panel (sheet-metal) cut out or two parallel mounted rails is possible from mating or termination side.

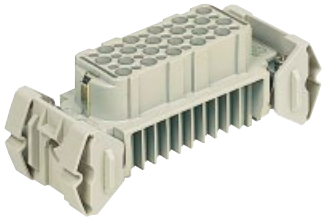
## Technical characteristics

| | |
|---|---|
| Min. retention force in sheet-metal cut out | |
| - Mating | |
| without guiding | 250 N |
| with guiding | 400 N |
| - Unmating | |
| without guiding | 400 N |
| with guiding | 500 N |
| Vibration resistance | IEC 60 068, part 2-6<br>BN 74018 |
| Resistance to shock | IEC 60 068, part 2-27<br>BN 74018 |
| Tightening torque of fixing screws/ coding elements | 0.8 Nm |
| Material | Thermoplastic resin, polycarbonate, RAL 7032, grey |
| Flammability acc. to UL 94 | V 0 |
| Limiting temperatures | -40 °C ... +125 °C |

## Range of delivery

Range of delivery comprises:

2 panel plastic mounting parts sufficient for one insert or terminal block connector

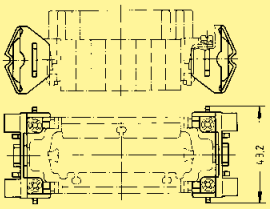


| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|

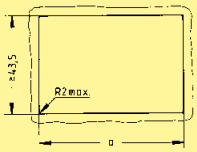
Panel mounting parts
Thermoplastic



**09 33 000 9985**



Panel cut out
Sheet-metal thickness 1.3 - 3 mm




| Size | $a^{+0.5}$ |
|---|---|
| 6 B | 65 |
| 10 B | 78 |
| 16 B | 98 |
| 24 B | 125 |
| 10 A* | 81.5 |
| 16 A* | 98 |

* with corresponding adapter (see page 11.18-19)

## Features

- Snap element for sheet-metal cut out
- practical and easy handling
- Reduction of material and assembly costs
- For all standard Han® B inserts and terminal block connectors
- Space saving

Connector inserts and terminal block connectors can be fixed on elements for panel mounting with standard insert mounting screws.

High mechanical security of the fixings.

Alternatively, Han coding elements (code pins or guide pins and bushes) may be used.

Connector assembly into the panel (sheet-metal) cut out or two parallel mounted rails is possible from mating or termination side.

## Technical characteristics

| | |
|---|---|
| Min. retention force in sheet-metal cut out | |
| - Mating | |
| without guiding | 250 N |
| with guiding | 400 N |
| - Unmating | |
| without guiding | 400 N |
| with guiding | 500 N |
| Vibration resistance | IEC 60 068, part 2-6<br>BN 74018 |
| Resistance to shock | IEC 60 068, part 2-27<br>BN 74018 |
| Tightening torque of fixing screws/ coding elements | 0.8 Nm |
| Material | zinc die-cast |
| Limiting temperatures | -40 °C ... +125 °C |

## Range of delivery

Range of delivery comprises:

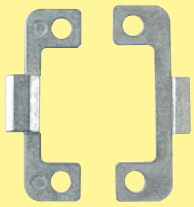
2 panel metallic mounting parts sufficient for one insert or terminal block connector



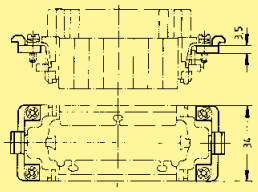
| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|

Panel mounting parts

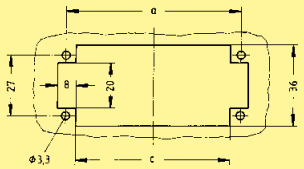
Metal



**09 33 000 9984**




Panel cut out




| Size | a | c |
|---|---|---|
| 6 B | 44 | 36 |
| 10 B | 57 | 49 |
| 16 B | 77.5 | 69.5 |
| 24 B | 104 | 96 |

## Features

- Insert mounting with carrier element
- Suitable for all standard inserts size Han® 6 B / Han® 10 B / Han® 16 B / Han® 24 B
- A practical solution to fix the insert directly on a standard rail
- Insert can be assembled to Han-Snap® element with screwdriver
- Space saving

The carrier element is the basic element to mount the inserts in the cross direction on standard rails, for example:

- Caprail, 35 x 7.5 or 35 x 15 acc. to DIN EN 60 715
- C-rail, C 30 acc. to DIN EN 60 715
- G-rail, G 32 acc. to DIN EN 60 715

Where vibration is likely to be encountered, use the 35 x 15 mounting rails. When using the large carrier element, the 35 x 15 mounting rails are recommended to give greater stability.

Insert mounting type 6/10 is suitable for inserts of sizes Han 6 B and Han 10 B.

Insert mounting type 6/24 is suitable for all insert sizes: Han 6 B / 10 B / 16 B / 24 B, Han 16 A with the corresponding adapter.

Inserts can be assembled to the insert mountings with the standard insert mounting screws.

High mechanical security of the fixings. No functional impairment is caused by slight over tightening of the fixing screws.

Alternatively, Han coding elements (code pins or guide pins and bushes) may be used.

The following labels may be fitted to the insert mounting parts for circuit identification purposes:
- label 7 x 20 mm or
- label 9 x 20 mm (more information page 11.19)

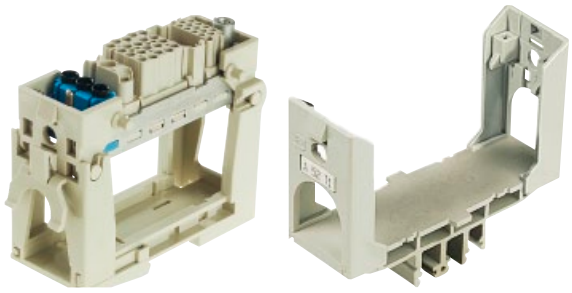
## Technical characteristics

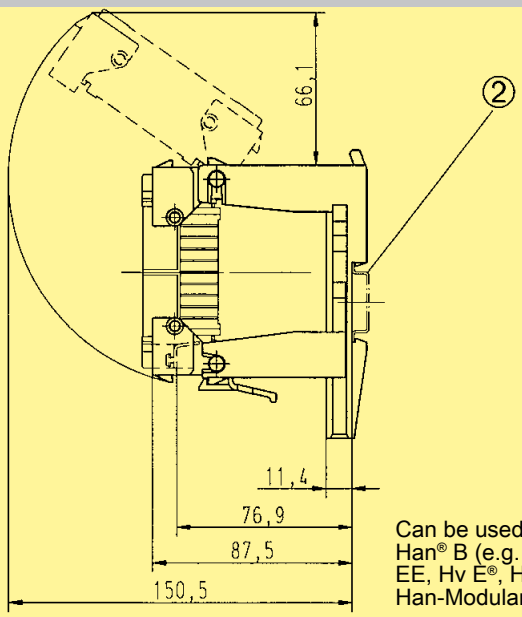
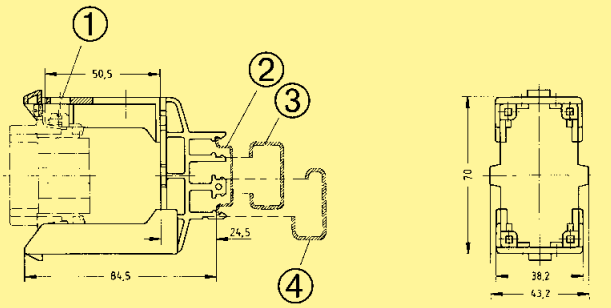
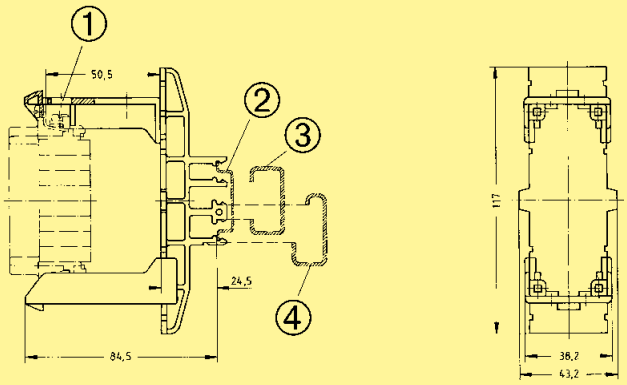
| | |
|---|---|
| Min. retention force on rail | 450 N |
| Vibration resistance | IEC 60 068, part 2-6<br>BN 74018 |
| Resistance to shock | IEC 60 068, part 2-27<br>BN 74018 |
| Tightening torque of fixing screws/ coding elements | 0.8 Nm |
| Material | polycarbonate |
| Flammability acc. to UL 94 | V 0 |
| Limiting temperatures | -40 °C ... +125 °C |

## Range of delivery

Range of delivery comprises:

2 insert mounting parts
1 carrier element



| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Insert mounting, swinging<br>for standard inserts | **09 33 000 9801** |  | Can be used with inserts of size Han® B (e.g. Han D®, DD®, E®, ES, EE, Hv E®, Hv ES, Com, HsB) and for Han-Modular® hinged frames |
| for Han-Modular® hinged frames | **09 33 000 9803** | | |
| Insert mounting with carrier element Type 6/10<br>for size 6 B, 10 B | **09 33 000 9988** |  | ① Slot for identification strip<br>② Rail DIN EN 60 715-35 x 7.5 or -35 x 15<br>③ C-rail DIN EN 60 715-C 30<br>④ G-rail DIN EN 60 715-G 32 |
| Type 6/24*<br>for size 6 B, 10 B, 16 B, 24 B | **09 33 000 9989** |  | |

* Han A-size 16 by using the corresponding adapter (see page 11.18-19)

## Features

- Insert mounting with carrier element
- Suitable for all standard inserts size Han® 6 B, Han® 10 B, Han® 16 B, Han® 24 B
- A practical solution to fix the insert directly on a standard rail
- Insert can be assembled to Han-Snap® element with screwdriver
- Space saving

The insert mounting locks directly on standard rail 35 x 15 or 35 x 7.5 mm.

Inserts can be assembled on the insert mounting with the standard insert fixing screws.

High mechanical security of the fixings.

No functional impairment is caused by slight over tightening of the fixing screws.

Alternatively, Han® coding elements (code pins or guide pins and bushes) may be used.

The following labels may be fitted alternatively to the insert mounting parts for circuit identification purposes:
label 7 x 20 mm or
label 9 x 20 mm (more information page 11.19)

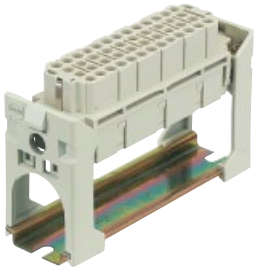
## Technical characteristics

| | |
|---|---|
| Min. retention force on rail | |
| - Tension | 300 N |
| - Pressure | 1000 N |
| Tightening torque of fixing screws/ coding elements | 0.8 Nm |
| Material | Thermoplastic resin, polycarbonate, RAL 7032, grey |
| Flammability acc. to UL 94 | V 0 |
| Limiting temperatures | -40 °C ... +125 °C |

## Range of delivery

Range of delivery comprises:

2 insert mounting parts

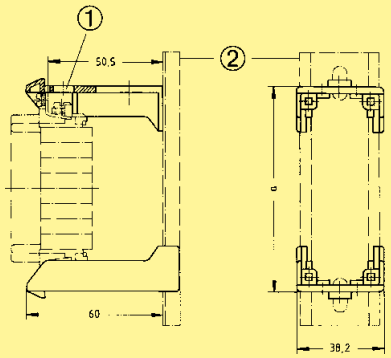


| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|

Insert mounting



**09 33 000 9980**




| Size | a |
|---|---|
| 6 B | 57 |
| 10 B | 70 |
| 16 B | 90.5 |
| 24 B | 117 |
| 10 A* | 74 |
| 16 A* | 90.5 |

① Slot for identification strip
② Rail DIN EN 60 715-35 x 7.5 or -35 x 15

* with corresponding adapter (see page 11.18-19)

## Features

- Ideal for use within closed electrical operation enviroments
- Allows use off preassembled cables
- Optimised cost of material and assembly
- Insert can be assembled to Han-Snap® element with screwdriver

2 identical half shells form a shell housing.

Each housing has 3 cable entries, one on top and one at each end. 2 x cable entries can be closed by enclosed blind plugs.

In the area of cable entries there are rectangular openings for mounting of cable ties up to max. 5 mm width.

In the mating area both housing shells are fixed by the standard insert fixing screws.

To release the half shells use screw driver (3.5 x 0.5).

Alternatively, Han® coding elements (code pins or guide pins and bushings) may be used.

High mechanical security of the fixings.
No functional impairment is caused by slight over tightening of the fixing screws. The blind plugs have slots for identification strips.

The following labels can be fitted:
label 7 x 20 mm or
label 9 x 20 mm (more information page 11.19)

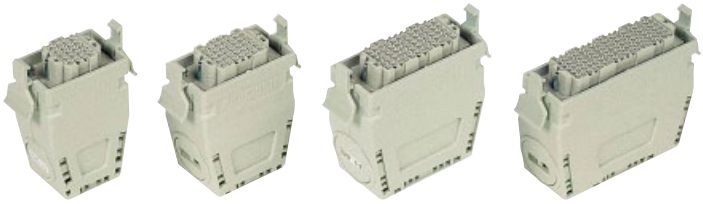
## Technical characteristics

| | |
|---|---|
| Min. retention force, fixed | 300 N |
| Vibration resistance | IEC 60 068, part 2-6<br>BN 74018 |
| Resistance to shock | IEC 60 068, part 2-27<br>BN 74018 |
| Tightening torque of fixing screws/ coding elements | 0.8 Nm |
| Material | Thermoplastic resin, polycarbonate, RAL 7032, grey |
| Flammability acc. to UL 94 | V 0 |
| Limiting temperatures | -40 °C ... +125 °C |

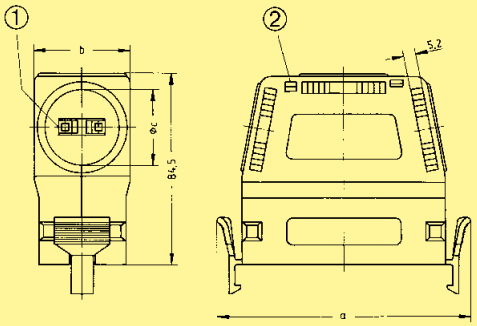
## Range of delivery

Range of delivery comprises:

2 half shells with blind plugs



| Identification | Size | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Plastic housings | 6 B | **09 33 006 0401** | | |
|  | 10 B | **09 33 010 0401** | | |
| | 16 B* | **09 33 016 0401** | | |
| | 24 B | **09 33 024 0401** | | |

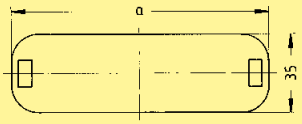



| Size | a | b | c |
|---|---|---|---|
| 6 B | 78.5 | 39 | 24 |
| 10 B | 91.5 | 43 | 30 |
| 16 B | 112 | 43 | 34 |
| 24 B | 138.5 | 43 | 34 |

① Blind plug with slot for identification strips
② Opening for release

* Han A-size 16 by using the corresponding adapter
(see page 11.18-19)

| Protection covers | Size | Part number |
|---|---|---|
| | 6 B | 09 33 006 5401 |
| | 10 B | 09 33 010 5401 |
| | 16 B | 09 33 016 5401 |
| | 24 B | 09 33 024 5401 |




| Size | a |
|---|---|
| 6 B | 81.5 |
| 10 B | 94.5 |
| 16 B | 115 |
| 24 B | 141.5 |

## Features

- Accessories compatible for all contact inserts series Han A®, 10 and 16 pins; series Han D®, 15 and 25 pins
- Practical and easy handling
- Reduction of material and assembly costs
- Compatible with Han-Snap® elements: Panel mounting parts, Latching parts, Insert mountings, Plastic hood size 16 for Han 25 D® and Han A® 16 poles

Inserts can be assembled to the adapters with the standard insert fixing screws.

With the included screws the adapter can be fixed to the selected Han-Snap® element.

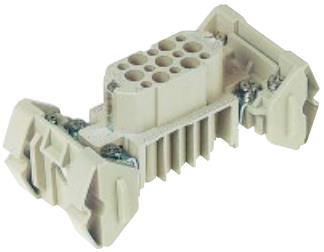
## Technical characteristics

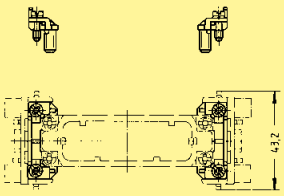
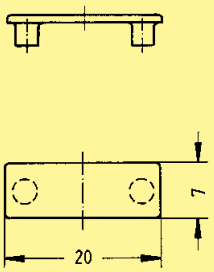
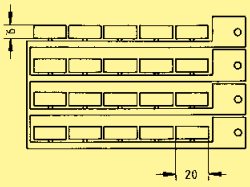
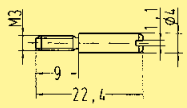
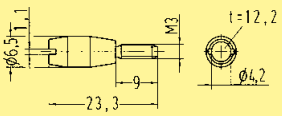
| | |
|---|---|
| Tightening torque of fixing screws/ coding elements | 0.8 Nm |
| Material | Thermoplastic resin, polycarbonate, RAL 7032, grey |
| Flammability acc. to UL 94 | V 0 |
| Limiting temperatures | -40 °C ... +125 °C |

## Range of delivery

Range of delivery comprises:

2 adapters
4 fixing screws



| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Adapter<br>Han A®<br> | **09 20 000 9933** |  | |
| Identification strips<br>single<br>7 mm wide / 20 mm long | 09 33 000 9981 |  | |
| Identification strips<br>20 pieces in one block<br>9 mm width / 20 mm length | **09 33 000 9982** |  | |
| Guide pin | **09 33 000 9956** |  | |
| Guide bushing | **09 33 000 9957** |  | |

# Contents


| | Page |
|---|---|
| Features | **12.02** |
| Technical characteristics | **12.03** |
| Frame | **12.04** |
| Accessories | **12.04** |
| Plug sockets | **12.05** |
| Data connectors | **12.07** |
| Wires | **12.10** |
| Gender Changer | **12.10** |

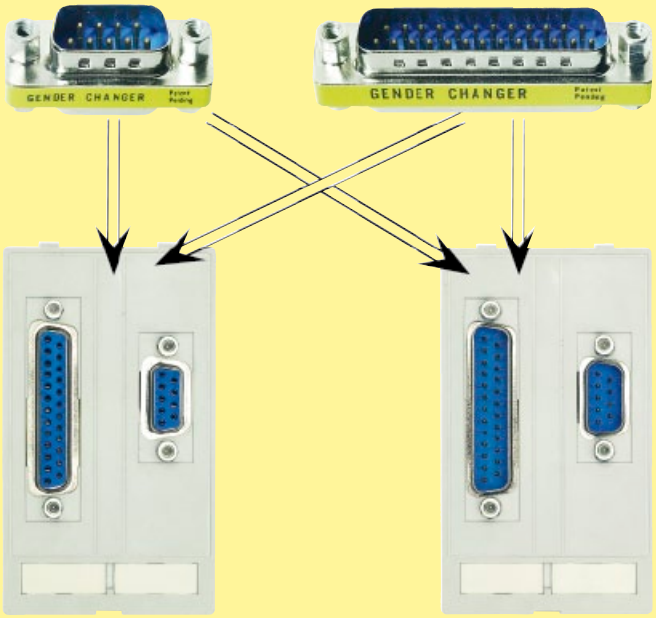
## Features

- Suitable for rough industrial environments (Degree of protection IP 65 with closed cover)
- Plug sockets for the European and international market
- Standard interfaces for easy connection of devices
- Modular assembly
- Professional design

## Termination technology

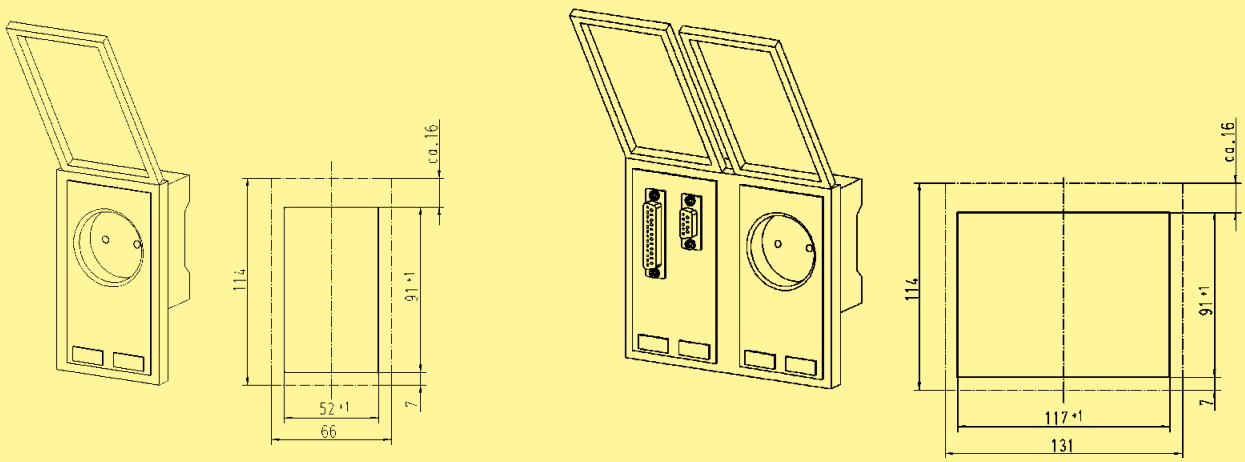
Gender Changer

- Termination technology pluggable from both sides
- No soldering necessary
- Assembly male/female interchangeable




## Drawing

Panel cut out (————) for not centred assembly to the outer edge (----------) of the front panel
suitable to wall thickness 1 ... 5 mm



# Technical characteristics

## Frames

| | |
|---|---|
| Material | zinc die cast, smouthed surface |
| Suitable for wall thickness | 1 … 5 mm |
| Dimensions outside (H x W x D) | single: 114 x 66 x 32 ... 62 mm (depending on equipment)<br>double: 114 x 131 x 32 ... 62 mm (depending on equipment) |
| Operating temperature range | -10 °C ... +60 °C |
| Stock temperature range | -25 °C ... +60 °C |
| Degree of protection | IP 65 |

## Plug sockets

| | Germany (VDE) | USA / Euro | USA (NEMA5-15)/ Japan | France (UTE) |
|---|---|---|---|---|
| Nominal voltage, max. | 250 V AC | 250 V AC | 125 V AC | 250 V AC |
| Nominal frequency | 50 Hz AC | 60 Hz AC | 50 Hz AC | 50 Hz AC |
| Nominal current, max. | 10 ... 16 A | 15 A | 15 A | 10 ... 16 A |
| LED display | Yellow 1) | - | - | Yellow |
| Termination | Screw terminal | Screw terminal | Screw terminal | Screw terminal |
| Mounting depth assembled | approx. 62 mm | approx. 30 mm | approx. 30 mm | approx. 62 mm |

## Plug sockets

| | Switzerland | Great Britain (BS) | Italy (CEI 23-16) | Australia / China |
|---|---|---|---|---|
| Nominal voltage, max. | 250 V AC | 250 V AC | 250 V AC | 250 V AC |
| Nominal frequency | 50 Hz AC | 50/60 Hz AC | 50 Hz AC | 50/60 Hz AC |
| Nominal current, max. | 10 A | 13 A | 10 ... 16 A | 10 A |
| LED display | - | - | - | - |
| Termination | Spring clamp terminal | Screw terminal | Screw terminal | Screw terminal |
| Mounting depth assembled | approx. 20 mm | approx. 20 mm | approx. 20 mm | approx. 20 mm |

## Plug sockets

| | Denmark |
|---|---|
| Nominal voltage, max. | 250 V AC |
| Nominal frequency | 50 Hz AC |
| Nominal current, max. | 13 A |
| LED display | - |
| Termination | Spring clamp terminal |
| Mounting depth assembled | approx. 20 mm |

## Data connectors

| | D-Sub | RJ45 | USB |
|---|---|---|---|
| Nominal voltage, max. | 125 V AC / 150 V DC | 50 V AC/DC | 30 V AC/DC |
| Nominal current, max. | 3 A | 1 A | 1 A |
| Locking | UNC 4-40 bolts | stop bolt | snap-in |
| Specification | DIN 41 652 / IEC 807 | Cat. 5e | size A acc. to 2.0 |
| Mounting depth assembled | approx. 32 mm | approx. 32 mm | approx. 80 mm |

## Termination

| | |
|---|---|
| Gender Changer | Termination technology pluggable from both sides |





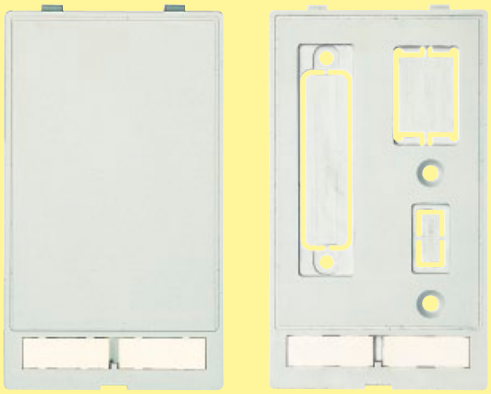
1) Plug socket Yellow without LED display

## Frame

| | Part number | Depiction |
|---|---|---|
| single<br>metal version, nickel plated<br>electrically conductive<br>IP 65<br>transparent plastic cover | **39 50 000 0100** |  |
| metal cover | **39 50 000 0110** | |
| double<br>metal version, nickel plated<br>electrically conductive<br>IP 65<br>transparent plastic cover | **39 50 000 0200** |  |
| metal cover | **39 50 000 0210** | |



## Accessories

| | Part number | Depiction |
|---|---|---|
| Blind plate<br>free space for self assembly<br>of connectors or switches<br>free space: 45 x 75 mm<br>flat | **39 50 000 0890** |  |
| with perforated cut-out for<br>Gender Changer RJ45, USB and D-Sub 25 | **39 50 000 0851** | |
| Identification strips<br>set of 20 pieces | **39 50 000 0900** |  |



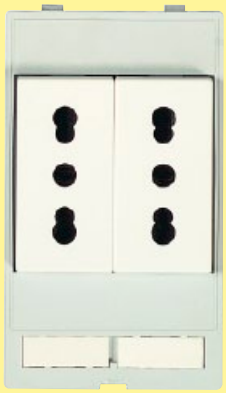
Stock items in bold type

| Plug sockets | Part number | Depiction |
|---|---|---|
| Germany (VDE)<br>with LED display<br>screw terminals for max. 6 mm²<br>connection at the rear | **39 50 001 0001** |   |
| Germany (VDE)<br>for assembly in front of main switch<br>flourescent colour yellow (RAL 1016)<br>without LED display<br>screw terminals for max. 6 mm²<br>connection at the rear | **39 50 001 0002** | |
| USA / Euro<br>finger protected<br>screw terminals for max. AWG 14 (2.5 mm²) | **39 50 001 0010** |    |
| USA (NEMA5-15) / Japan<br>finger protected<br>screw terminals for max. AWG 14 (2.5 mm²) | **39 50 001 0004** | |
| France (UTE)<br>with LED display<br>screw terminals for max. 6 mm²<br>connection at the rear | **39 50 001 0005** |  |
| Great Britain (BS)<br>finger protected<br>screw terminals for max. 4 mm² | **39 50 001 0006** |  |





Stock items in bold type

| Plug sockets | Part number | Depiction |
|---|---|---|
| Italy (CEI 23-16)<br>double<br>finger protected<br>screw terminals for max. 2.5 mm² | **39 50 001 0007** |  |
| Australia / China<br>screw terminals for max. 2.5 mm² | **39 50 001 0009** |  |
| Denmark<br>spring clamp terminals for max. 2.5 mm² | **39 50 001 0017** |  |
| Switzerland<br>spring clamp terminals for max. 1.5 mm² | **39 50 001 0012** |  |





Stock items in bold type

| Data connectors | Part number | Depiction |
|---|---|---|
| 2x D-Sub 9<br>2x female/male<br>Gender Changer<br>not screened | **39 50 003 0020** |  |
| 1x D-Sub 9<br>1x female/female<br>Gender Changer<br>not screened | **39 50 003 0024** |  |
| 1x D-Sub 9, D-Sub 25<br>2x female/male<br>Gender Changer<br>not screened | **39 50 003 0040** |  |
| 1x D-Sub 25<br>1x female/male<br>Gender Changer<br>not screened | **39 50 003 0074** |  |





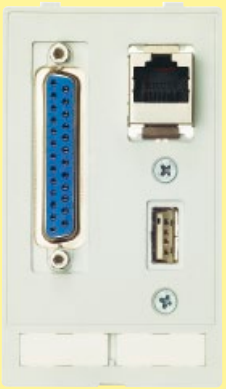
Stock items in bold type

| Data connectors | Part number | Depiction |
|---|---|---|
| 1x RJ45, 2x D-Sub 9<br>1x RJ45, 8-pins, metal, Cat. 5e<br>female/female, Gender Changer<br>1x D-Sub 9<br>female/female, Gender Changer<br>1x D-Sub 9<br>male/male, Gender Changer<br>not screened | **39 50 003 0111** |  |
| 1x RJ45, D-Sub 9, D-Sub 25<br>1x RJ45, 8-pins, metal, Cat. 5e<br>female/female, Gender Changer<br>1x D-Sub 9<br>female/male, Gender Changer<br>1x D-Sub 25<br>female/male, Gender Changer<br>not screened | **39 50 003 0170** |  |
| 2x USB size A<br>2x USB size A acc. to specification 2.0<br>female/female, Gender Changer<br>screened | **39 50 002 0093** |  |
| 2x RJ45<br>2x RJ45, 8-pins, metal, Cat. 5e<br>female/female, Gender Changer<br>screened | **39 50 002 0120** |  |





Stock items in bold type

| Data connectors | Part number | Depiction |
|---|---|---|
| 1x USB size A, RJ45, D-Sub 9<br>1x USB size A acc. to specification 2.0<br>female/female, Gender Changer<br>1x RJ45, 8-pins, metal, Cat. 5e<br>female/female, Gender Changer<br>1x D-Sub 9<br>female/male, Gender Changer<br>screened | **39 50 002 0143** |  |
| 1x USB size A, RJ45, D-Sub 25<br>1x USB size A acc. to specification 2.0<br>female/female, Gender Changer<br>1x RJ45, 8-pins, metal, Cat. 5e<br>female/female, Gender Changer<br>1x D-Sub 25<br>female/male, Gender Changer<br>screened | **39 50 002 0145** |  |
| 1x USB size A, RJ45, 2x D-Sub 9<br>1x USB size A acc. to specification 2.0<br>female/female, Gender Changer<br>1x RJ45, 8-pins, metal, Cat. 5e<br>female/female, Gender Changer<br>2x D-Sub 9<br>male/male, Gender Changer<br>screened | **39 50 002 0117** |  |





Stock items in bold type

## Wires

| | Length | Termination | Part number | Depiction |
|---|---|---|---|---|
| D-Sub 9 | 2 m | male/male | **39 50 903 0010** |  |
| | 5 m | male/male | **39 50 903 0011** | |
| | 2 m | female/male | **39 50 903 0020** | |
| | 5 m | female/male | **39 50 903 0021** | |
| D-Sub 25 | 1.8 m | female/male | **39 50 903 0040** |  |
| | 5 m | female/male | **39 50 903 0041** | |
| USB | 2 m | USB | **39 50 903 0050** |  |
| | 5 m | USB | **39 50 903 0051** | |
| RJ45 | 2 m | 8-pins, metal, Cat. 5e | **39 50 903 0060** |  |
| | 5 m | 8-pins, metal, Cat. 5e | **39 50 903 0061** | |

Han-Port

## Gender Changer

| | Termination | Part number | Depiction |
|---|---|---|---|
| D-Sub 9 | female/female | **39 50 904 0030** |   |
| | female/male | **39 50 904 0031** | |
| | male/male | **39 50 904 0032** | |
| D-Sub 25 | female/female | **39 50 904 0050** |   |
| USB | female/female, size A acc. to specification 2.0 | **39 50 904 0020** |  |
| RJ45 | female/female, 8-pins, Cat. 5e | **39 50 904 0010** |  |



Stock items in bold type

## Contents

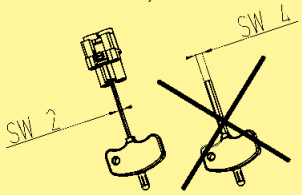

| | Page |
|---|---|
| Han® Q 2/0 | **13.02** |
| Han® Q 2/0 High Voltage | **13.04** |
| Han® Q 5/0 | **13.06** |
| Han® Q 5/0 Quick Lock | **13.08** |
| Han® Q 7/0 | **13.10** |
| Han® Q 12/0 | **13. 12** |
| Han® Q 8/0 | **13. 14** |
| Han® Q 8/0 Quick Lock | **13. 16** |
| Han® Q 17 | **13. 18** |
| Han® Q 4/2 | **13. 20** |
| Han® Q 4/2 Axial screw | **13. 22** |
| Han® Q Data RJ45 | **13. 24** |
| Hoods/Housings Han-Compact® | **13. 26** |

## Features

- Compact designed connector for high current ratings
- 16 coding options
- For hoods/housings size Han® 3 A
- Finger protected male and female contacts
- Assembly without special tool by axial screw termination

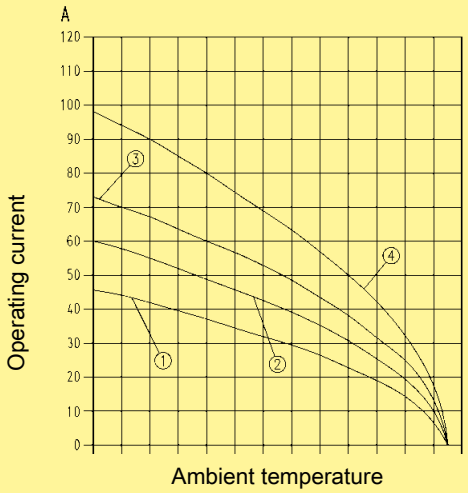
### Attention

- By using in Han® 3 A HPR hoods/housings the sealing on the insert has to be removed.
- For termination please use only hexagonal screw driver with wrench size SW 2.
- If PE contact is not used:
  Please screw the PE contact maximal on both sides clockwise with a hexagonal screwdriver, wrench size SW 2.




### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.
Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge:
① 2.5 mm²
② 4 mm²
③ 6 mm²
④ 10 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 2 + PE |
| Electrical data | |
| acc. to EN 61 984 | **40 A 400 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Rated voltage | |
| acc. to UL/CSA | 400 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Axial screw termination | |
| - mm² | 2.5 ... 10 mm² |
| - AWG | 14 ... 8 |
| Tightening torque | 1.8 Nm |
| Stripping length | 8 mm +1 |

### Hoods/Housings

| | |
|---|---|
| Selection of hoods/housings | see chapter 30 / chapter 31 |

Plastic hoods/housings

| | |
|---|---|
| Material | polycarbonate |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 67 |

Hoods/Housings, metal

| | |
|---|---|
| Material | zinc die-cast |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

### Accessories

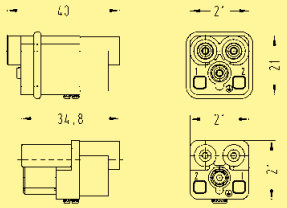
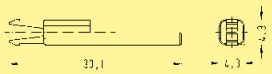
| | |
|---|---|
| Cable clamps | chapter 40 |
| Sealing screw | chapter 40 |

Number of contacts

2 + ⏚





| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Axial screw terminal | | |  | |
| 2.5 ... 6 mm² | **09 12 002 2653** | **09 12 002 2753** | | |
| 4 ... 10 mm² | **09 12 002 2651** | **09 12 002 2751** | | |
| Coding element | **09 12 000 9922** | **09 12 000 9922** |  | |

Han Q

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hex key SW 2 for axial setscrew | | | |
| with grip | 09 99 000 0313 | | |
|  | | | |
| adapter 1/4“ | 09 99 000 0369 | | |
|  | | | |



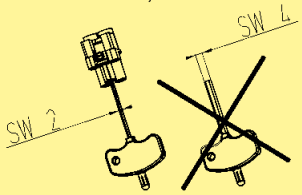
Stock items in bold type

## Features

- Compact designed connector for high current ratings with axial screw terminal
- 16 coding options
- For hoods/housings size Han® 3 A
- Finger protected male and female contacts
- For high voltages please use heat shrink tube (included in delivery range)

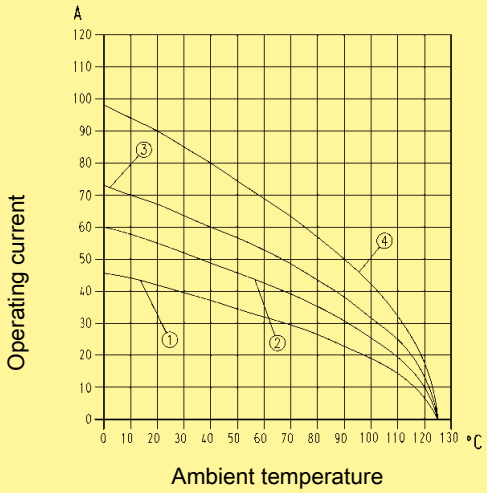
### Attention

- By using in Han® 3 A HPR hoods/housings the sealing on the insert has to be removed.
- For termination please use only hexagonal screw driver with wrench size SW 2.
- If PE contact is not used:
  Please screw the PE contact maximal on both sides clockwise with a hexagonal screwdriver, wrench size SW 2.




### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.
Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge:
① 2.5 mm²
② 4 mm²
③ 6 mm²
④ 10 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 2 + PE |
| Electrical data | |
| acc. to EN 61 984 | **40 A 830 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage | 830 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Rated voltage | |
| acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Axial screw termination | |
| - mm² | 2.5 ... 10 mm² |
| - AWG | 14 ... 8 |
| Tightening torque | 1.8 Nm |
| Stripping length | 8 mm +1 |

### Hoods/Housings

| | |
|---|---|
| Selection of hoods/housings | see chapter 30 / chapter 31 |

Plastic hoods/housings

| | |
|---|---|
| Material | polycarbonate |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 67 |

Hoods/Housings, metal

| | |
|---|---|
| Material | zinc die-cast |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

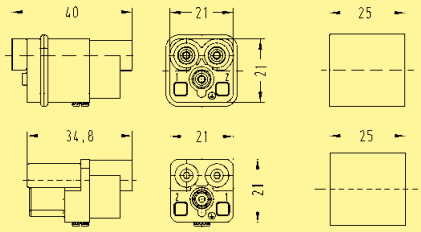
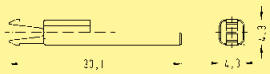
### Accessories

| | |
|---|---|
| Cable clamps | chapter 40 |
| Sealing screw | chapter 40 |

Number of contacts

2 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Axial screw terminal with heat shrink tube | | |  | |
| 2.5 ... 6 mm² | **09 12 002 2654** | **09 12 002 2754** | | |
| 4 ... 10 mm² | **09 12 002 2652** | **09 12 002 2752** | | |
| Coding element | **09 12 000 9922** | **09 12 000 9922** |  | |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hex key SW 2 for axial setscrew | | | |
| with grip | 09 99 000 0313 | | |
| adapter 1/4“ | 09 99 000 0369 | | |





Stock items in bold type

## Features

- 5 contact chambers for crimp contacts of Han E® series
- Space-saving and compact design
- Leading protective ground with screw terminal
- Compatible with plastic and metal hoods of series Han® 3 A

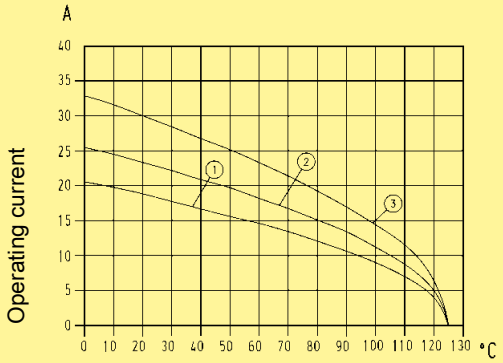
### Attention

By using in Han® 3 A HPR hoods/housings the sealing on the insert has to be removed.

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

Wire gauge:
① 1.0 mm²
② 1.5 mm²
③ 2.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 5 + PE |
| Electrical data | |
| acc. to EN 61 984 | **16 A 230/400 V 4 kV 3** |
| Rated current | 16 A |
| Rated voltage conductor - ground | 230 V |
| Rated voltage conductor - conductor | 400 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 320/500 V 4 kV 2 |
| Rated voltage | |
| acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |
| PE screw terminal | |
| - mm² | 2.5 mm² |
| - AWG | 14 |

### Hoods/Housings

| | |
|---|---|
| Selection of hoods/housings | see chapter 30 / chapter 31 |

Plastic hoods/housings

| | |
|---|---|
| Material | polycarbonate |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 67 |

Hoods/Housings, metal

| | |
|---|---|
| Material | zinc die-cast |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

### Accessories

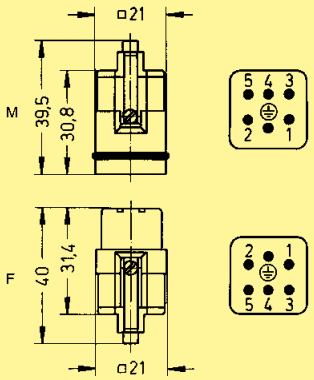
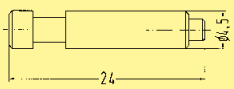
| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Sealing screw | chapter 40 |

Number of contacts

5 + ⏚



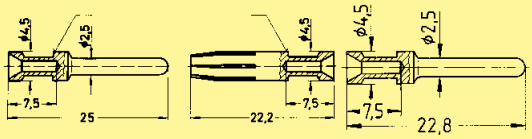


| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 12 005 3001** | **09 12 005 3101** |  Contact arrangement view from termination side | |
| **Coding pin** | | 09 33 000 9954 |  | Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. |

Han Q

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact |
|---|---|---|---|
| **Crimp contacts** | | | |
| Power contacts | | | |
| silver plated | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 |
| | 0.5 | **09 33 000 6121** | **09 33 000 6220** |
| | 0.75 | **09 33 000 6114** | **09 33 000 6214** |
| | 1 | **09 33 000 6105** | **09 33 000 6205** |
| | 1.5 | **09 33 000 6104** | **09 33 000 6204** |
| | 2.5 | **09 33 000 6102** | **09 33 000 6202** |
| gold plated | 0.14-0.37 | **09 33 000 6117** | **09 33 000 6217** |
| | 0.5 | **09 33 000 6122** | **09 33 000 6222** |
| | 0.75 | **09 33 000 6115** | **09 33 000 6215** |
| | 1 | **09 33 000 6118** | **09 33 000 6218** |
| | 1.5 | **09 33 000 6116** | **09 33 000 6216** |
| | 2.5 | **09 33 000 6123** | **09 33 000 6223** |
| Relay contact silver plated | 0.75-1 | 09 33 000 6109 | |
| | 1.5 | 09 33 000 6110 | |
| | 2.5 | 09 33 000 6111 | |
| **F.O. contacts** for 1 mm plastic fibre | | 20 10 001 3311 | 20 10 001 3321 |

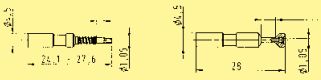
Operating contact Identification — Relay contact




| Identification | Wire gauge | | | Stripping length |
|---|---|---|---|---|
| no groove | 0.14-0.37 | mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 | mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 | mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 | mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 | mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 | mm² | AWG 14 | 7.5 mm |

* on the back crimp collar

Crimp zone — Crimp zone



Crimp contacts 0.14 ... 0.37 mm² only used with BUCHANAN crimping tool 09 99 000 0001

**Stock items in bold type**

## Features

- Innovative Han-Quick Lock® termination technology with up to 20% reduced wiring times
- Field assembly without special tools
- Compatible with Han® Q 5/0 standard inserts
- Compatible with plastic and metal hoods of series Han® 3 A
- Vibration and shock resistant

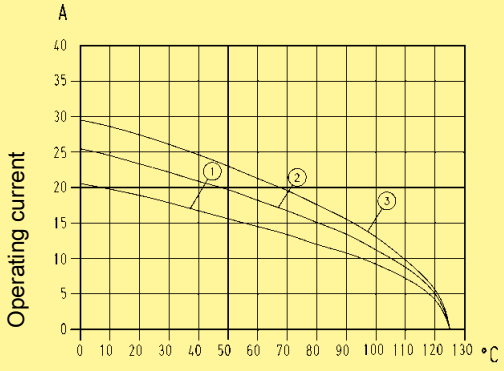
### Attention

By using in Han® 3 A HPR hoods/housings the sealing on the insert has to be removed.

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

Wire gauge:
① 1.0 mm²
② 1.5 mm²
③ 2.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 5 + PE |
| Electrical data | |
| acc. to EN 61 984 | **16 A 230/400 V 4 kV 3** |
| Rated current | 16 A |
| Rated voltage conductor - ground | 230 V |
| Rated voltage conductor - conductor | 400 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage | |
| acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Quick Lock termination | |
| - mm² | 0.5 ... 2.5 mm² |
| - AWG | 20 ... 14 |

### Hoods/Housings

| | |
|---|---|
| Selection of hoods/housings | see chapter 30 / chapter 31 |

Plastic hoods/housings

| | |
|---|---|
| Material | polycarbonate |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 67 |

Hoods/Housings, metal

| | |
|---|---|
| Material | zinc die-cast |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

### Accessories

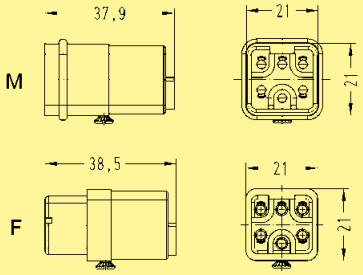
| | |
|---|---|
| Cable clamps | chapter 40 |
| Sealing screw | chapter 40 |

Number of contacts

5 + ⏚





| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han-Quick Lock® | **09 12 005 2633** | **09 12 005 2733** |   | |





Stock items in bold type

## Features

- 7 contact chambers for crimp contacts of Han D® series
- Space-saving and compact design
- Leading protective ground with screw terminal
- Compatible with plastic and metal hoods of series Han® 3 A
- 6 different coding possibilities by means of coding pin

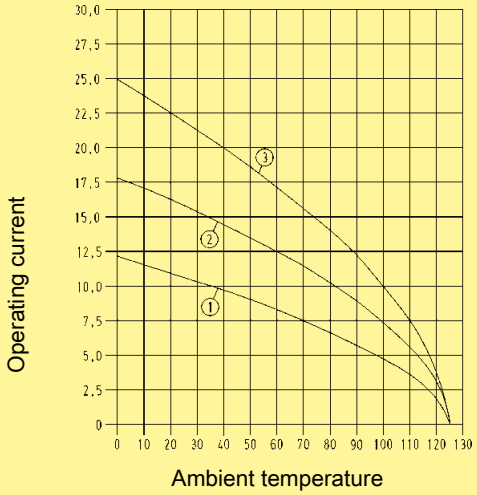
### Attention

By using in Han® 3 A HPR hoods/housings the sealing on the insert has to be removed.

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




| | |
|---|---|
| Wire gauge: | ① 0.75 mm² |
| | ② 1.5 mm² |
| | ③ 2.5 mm² |

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | cULus |

### Inserts

| | |
|---|---|
| Number of contacts | 7 + PE |
| Electrical data | |
| acc. to EN 61 984 | **10 A 400 V 6 kV 3** |
| Rated current | 10 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 10 A 400/690 V 6 kV 2 |
| Rated voltage | |
| acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |
| PE screw terminal | |
| - mm² | 2.5 mm² |
| - AWG | 14 |

### Hoods/Housings

| | |
|---|---|
| Selection of hoods/housings | see chapter 30 / chapter 31 |

Plastic hoods/housings

| | |
|---|---|
| Material | polycarbonate |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 67 |

Hoods/Housings, metal

| | |
|---|---|
| Material | zinc die-cast |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

### Accessories

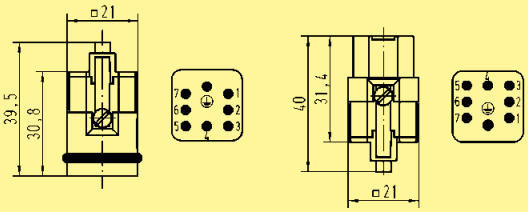
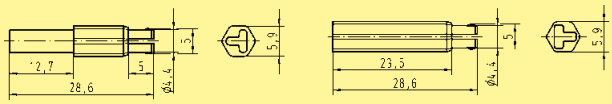
| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Sealing screw | chapter 40 |

Number of contacts

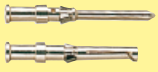
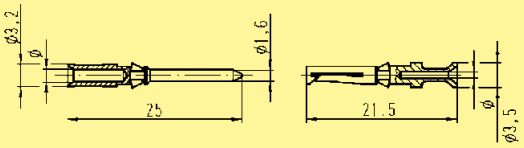
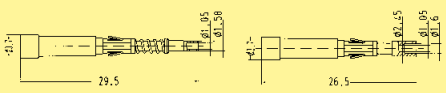
7 + ⏚





| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 12 007 3001** | **09 12 007 3101** | <br>Contact arrangement view from termination side | |
| **Coding pins**  | 09 12 000 9901 | 09 12 000 9902 |  | |

Han Q

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts<br>silver plated  | 0.14-0.37 | **09 15 000 6104** | **09 15 000 6204** |  | |
| | 0.5 | **09 15 000 6103** | **09 15 000 6203** | | |
| | 0.75 | **09 15 000 6105** | **09 15 000 6205** | | |
| | 1 | **09 15 000 6102** | **09 15 000 6202** | | |
| | 1.5 | **09 15 000 6101** | **09 15 000 6201** | | |
| | 2.5 | **09 15 000 6106** | **09 15 000 6206** | | |
| gold plated  | 0.14-0.37 | **09 15 000 6124** | **09 15 000 6224** | | |
| | 0.5 | **09 15 000 6123** | **09 15 000 6223** | | |
| | 0.75 | **09 15 000 6125** | **09 15 000 6225** | | |
| | 1 | **09 15 000 6122** | **09 15 000 6222** | | |
| | 1.5 | **09 15 000 6121** | **09 15 000 6221** | | |
| | 2.5 | **09 15 000 6126** | **09 15 000 6226** | | |
| **F.O. contacts**<br>for 1 mm plastic fibre | | 20 10 001 3211 | 20 10 001 3221 |  | |

| Wire gauge | | | ∅ | Stripping length |
|---|---|---|---|---|
| 0.14-0.37 | mm² | AWG 26-22 | 0.9 | 8 mm |
| 0.5 | mm² | AWG 20 | 1.1 | 8 mm |
| 0.75 | mm² | AWG 18 | 1.3 | 8 mm |
| 1 | mm² | AWG 18 | 1.45 | 8 mm |
| 1.5 | mm² | AWG 16 | 1.75 | 8 mm |
| 2.5 | mm² | AWG 14 | 2.25 | 6 mm |



Stock items in bold type

## Features

- 12 contact chambers taking the control contacts of the series Han D® with crimp termination
- 1 PE contact with innovative Han-Quick Lock® termination technology
- 2 coding pins offering 16 cosing possibilities
- Inserts suitable for metal and plastic hoods and housings of the series Han® 3 A

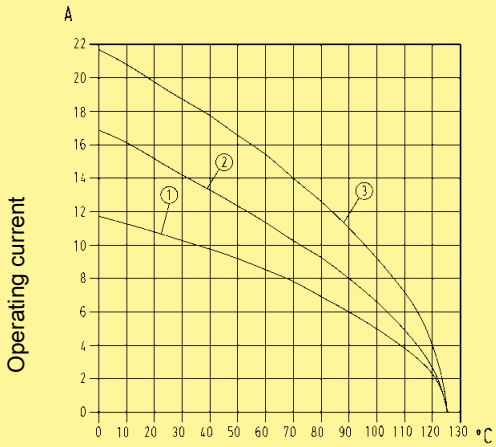
### Attention

By using in Han® 3 A HPR hoods/housings the sealing on the insert has to be removed.

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

Wire gauge:
① 0.75 mm²
② 1.5 mm²
③ 2.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 12 + PE |
| Electrical data | |
| acc. to EN 61 984 | **10 A 400 V 6 kV 3** |
| Rated current | 10 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 10 A 400/690 V 6 kV 2 |
| Rated voltage | |
| acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |
| PE contact | Quick Lock termination |
| - mm² | 0.5 ... 2.5 mm² |
| - AWG | 20 ... 14 |

### Hoods/Housings

| | |
|---|---|
| Selection of hoods/housings | see chapter 30 / chapter 31 |

Plastic hoods/housings

| | |
|---|---|
| Material | polycarbonate |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 67 |

Hoods/Housings, metal

| | |
|---|---|
| Material | zinc die-cast |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

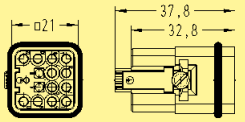
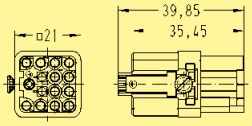
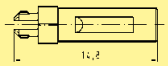
### Accessories

| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Sealing screw | chapter 40 |

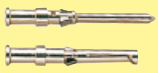
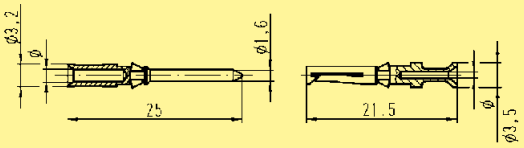
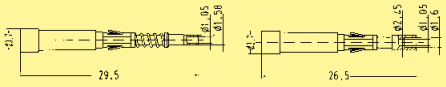
Number of contacts

12 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Crimp termination/ Han-Quick Lock®<br>Order crimp contacts separately<br>PE contact: Quick Lock termination<br>Han-Quick Lock® | **09 12 012 3001** | **09 12 012 3101** | M<br><br>F<br> | |
| Coding pins<br> | **09 12 000 9924** | **09 12 000 9924** |  | Range of delivery:<br>20 pieces per frame |

Han Q

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp contacts<br>Power contacts<br>silver plated<br> | 0.14-0.37 | **09 15 000 6104** | **09 15 000 6204** |  | |
| | 0.5 | **09 15 000 6103** | **09 15 000 6203** | | |
| | 0.75 | **09 15 000 6105** | **09 15 000 6205** | | |
| | 1 | **09 15 000 6102** | **09 15 000 6202** | | |
| | 1.5 | **09 15 000 6101** | **09 15 000 6201** | | |
| | 2.5 | **09 15 000 6106** | **09 15 000 6206** | | |
| gold plated<br> | 0.14-0.37 | **09 15 000 6124** | **09 15 000 6224** | | |
| | 0.5 | **09 15 000 6123** | **09 15 000 6223** | | |
| | 0.75 | **09 15 000 6125** | **09 15 000 6225** | | |
| | 1 | **09 15 000 6122** | **09 15 000 6222** | | |
| | 1.5 | **09 15 000 6121** | **09 15 000 6221** | | |
| | 2.5 | **09 15 000 6126** | **09 15 000 6226** | | |
| F.O. contacts<br>for 1 mm plastic fibre | | 20 10 001 3211 | 20 10 001 3221 |  | |

| Wire gauge | | | ∅ | Stripping length |
|---|---|---|---|---|
| 0.14-0.37 | mm² | AWG 26-22 | 0.9 | 8 mm |
| 0.5 | mm² | AWG 20 | 1.1 | 8 mm |
| 0.75 | mm² | AWG 18 | 1.3 | 8 mm |
| 1 | mm² | AWG 18 | 1.45 | 8 mm |
| 1.5 | mm² | AWG 16 | 1.75 | 8 mm |
| 2.5 | mm² | AWG 14 | 2.25 | 6 mm |



Stock items in bold type

## Features

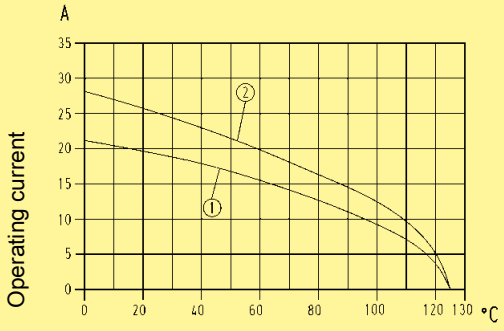
- 8 contact chambers for crimp contacts of Han E® series
- Space-saving and compact design
- Leading protective ground with crimp terminal
- Inserts suitable for metal and plastic hoods and housings of Han-Compact® series
- ISO 23 570 / DESINA conform product



### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

Wire gauge: ① 1.5 mm²
② 2.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 8 + PE |
| Electrical data acc. to EN 61 984 | |
| Mounted plastic hood | **16 A 500 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 400/690 V 6 kV 2 |
| Mounted metal hood | 16 A 230/400 V 4 kV 3 |
| Rated voltage acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 4 mm²<br>partly loaded up to 4 mm² is possible |
| - AWG | 26 ... 12 |

### Hoods/Housings

Plastic hoods/housings

| | |
|---|---|
| Material | thermoplastic |
| Locking element | Polyamide |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

Hoods/Housings, metal

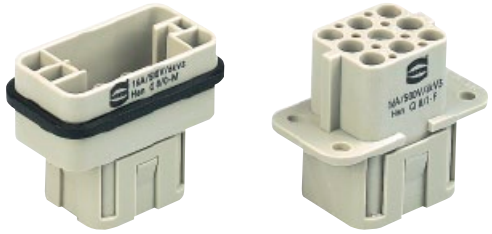
| | |
|---|---|
| Material | metal |
| Locking element | Stainless steel |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... 125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

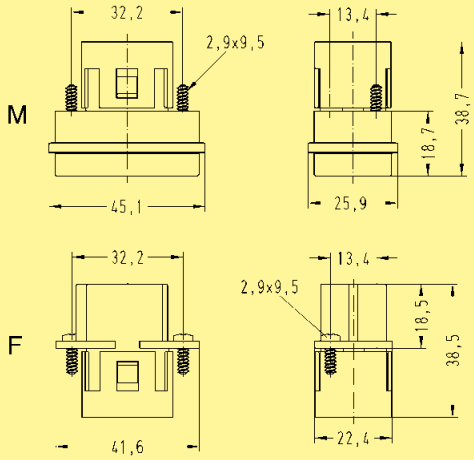
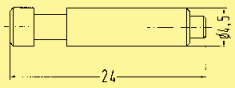
### Accessories

| | |
|---|---|
| Crimping tools | chapter 99 |

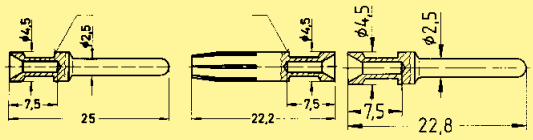
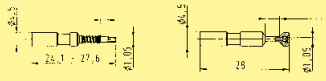
Number of contacts

8 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 12 008 3001** | **09 12 008 3101** |  | |
| **Coding pin** | | 09 33 000 9954 |  | Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. |

Han Q

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts | | | | Operating contact Identification / Relay contact | |
| silver plated | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 |  | |
| | 0.5 | **09 33 000 6121** | **09 33 000 6220** | | |
| | 0.75 | **09 33 000 6114** | **09 33 000 6214** | | |
| | 1 | **09 33 000 6105** | **09 33 000 6205** | | |
| | 1.5 | **09 33 000 6104** | **09 33 000 6204** | | |
| | 2.5 | **09 33 000 6102** | **09 33 000 6202** | | |
| | 4 | **09 33 000 6107** | **09 33 000 6207** | | |
| gold plated | 0.14-0.37 | **09 33 000 6117** | **09 33 000 6217** | | |
| | 0.5 | **09 33 000 6122** | **09 33 000 6222** | | |
| | 0.75 | **09 33 000 6115** | **09 33 000 6215** | | |
| | 1 | **09 33 000 6118** | **09 33 000 6218** | | |
| | 1.5 | **09 33 000 6116** | **09 33 000 6216** | | |
| | 2.5 | **09 33 000 6123** | **09 33 000 6223** | | |
| | 4 | 09 33 000 6119 | **09 33 000 6221** | | |
| Relay contact silver plated | 0.75-1 | 09 33 000 6109 | | | |
| | 1.5 | 09 33 000 6110 | | | |
| | 2.5 | 09 33 000 6111 | | | |
| **F.O. contacts**<br>for 1 mm plastic fibre | | 20 10 001 3311 | 20 10 001 3321 | Crimp zone / Crimp zone  | |

| Identification | Wire gauge | | | Stripping length |
|---|---|---|---|---|
| no groove | 0.14-0.37 | mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 | mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 | mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 | mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 | mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 | mm² | AWG 14 | 7.5 mm |
| no groove | 4 | mm² | AWG 12 | 7.5 mm |

* on the back crimp collar

Crimp contacts 0.14 ... 0.37 mm² only used with BUCHANAN crimping tool 09 99 000 0001

**Stock items in bold type**

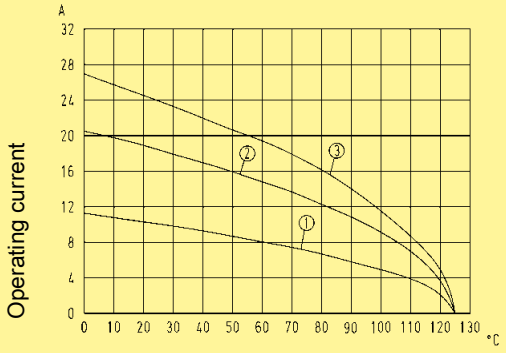
## Features

- Innovative Han-Quick Lock® termination
- Reduced wiring times; field assembly without special tools
- Compatible to Han® Q 8/0 inserts with crimp terminal
- Insert suitable for standard plastic hoods/housings and metal hoods/housings with additional PE contact of the size Han-Compact®
- Leading protective ground contact

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

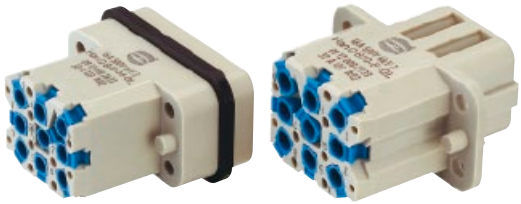
Wire gauge:
① 0.5 mm²
② 1.5 mm²
③ 2.5 mm²

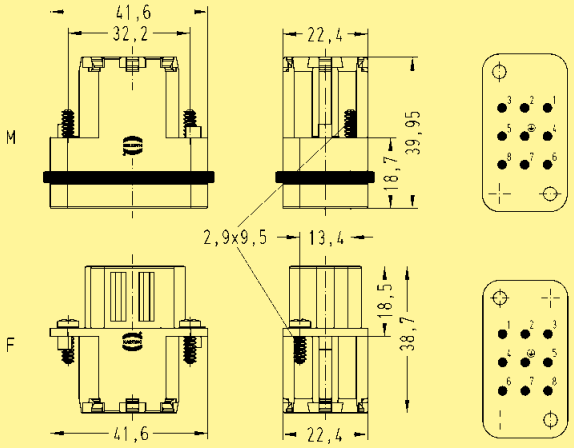
## Technical characteristics

| | |
|---|---|
| **Specifications** | DIN EN 60 664-1<br>DIN EN 61 984 |
| **Inserts** | |
| Number of contacts | 8 + PE |
| Electrical data | |
| acc. to EN 61 984 | **16 A 500 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |
| **Contacts** | |
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 3 mΩ |
| Quick Lock termination | |
| - mm² | 0.5 ... 2.5 mm² |
| - AWG | 20 ... 14 |
| Max. insulation diameter | 3.6 mm |
| **Hoods/Housings** | |
| Selection of hoods/housings | see chapter 30 / chapter 31 |
| **Plastic hoods/housings** | |
| Material | polycarbonate |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 67 |
| **Hoods/Housings, metal, with additional PE contact** | |
| Material | zinc die-cast |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

Number of contacts

8 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han-Quick Lock® | **09 12 008 2633** | **09 12 008 2733** |  | |







Stock items in bold type

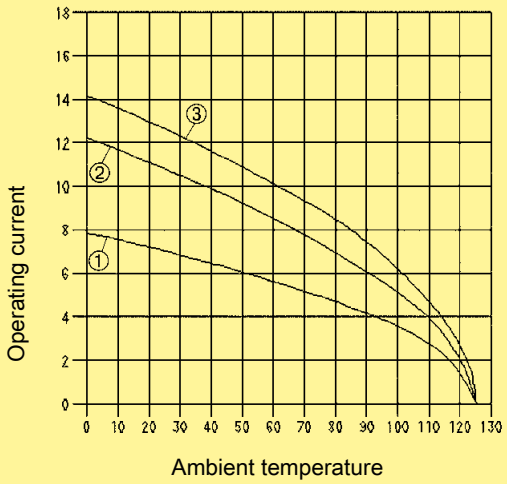
## Features

- 17 contact chambers for crimp contacts of Han D® series
- Space-saving and compact design
- Leading protective ground with crimp terminal
- Inserts suitable for metal and plastic hoods and housings of Han-Compact® series
- 3 coding possibilities by using a coding pin instead of fixing screw

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge:
① 0.5 mm²
② 1.0 mm²
③ 1.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 17 + PE |
| Electrical data | |
| acc. to EN 61 984 | **10 A 250 V 4 kV 2** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 2 |
| Rated voltage | |
| acc. to UL/CSA | 250 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 3 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |

### Hoods/Housings

Plastic hoods/housings

| | |
|---|---|
| Material | thermoplastic |
| Locking element | Polyamide |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 65 |

Hoods/Housings, metal

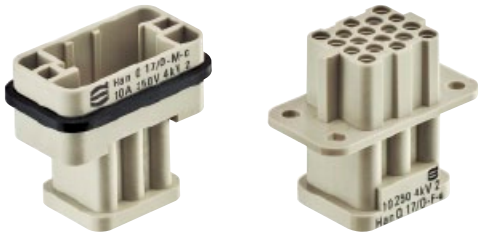
| | |
|---|---|
| Material | metal |
| Locking element | Stainless steel |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... 125 °C |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 65 |

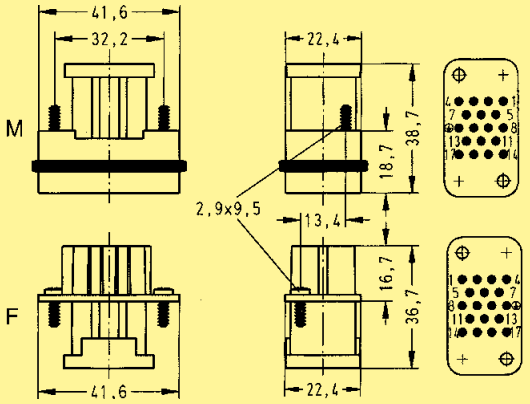
### Accessories

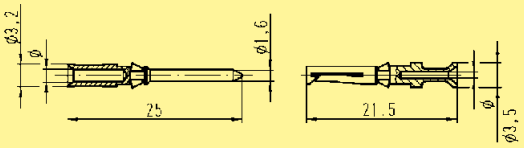
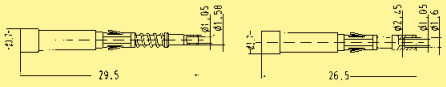
| | |
|---|---|
| Crimping tools | chapter 99 |

Number of contacts

17 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately | **09 12 017 3001** | **09 12 017 3101** |  Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp contacts<br>Power contacts<br>silver plated | 0.14-0.37 | **09 15 000 6104** | **09 15 000 6204** |  | |
| | 0.5 | **09 15 000 6103** | **09 15 000 6203** | | |
| | 0.75 | **09 15 000 6105** | **09 15 000 6205** | | |
| | 1 | **09 15 000 6102** | **09 15 000 6202** | | |
| | 1.5 | **09 15 000 6101** | **09 15 000 6201** | | |
| | 2.5 | **09 15 000 6106** | **09 15 000 6206** | | |
| gold plated | 0.14-0.37 | **09 15 000 6124** | **09 15 000 6224** | | |
| | 0.5 | **09 15 000 6123** | **09 15 000 6223** | | |
| | 0.75 | **09 15 000 6125** | **09 15 000 6225** | | |
| | 1 | **09 15 000 6122** | **09 15 000 6222** | | |
| | 1.5 | **09 15 000 6121** | **09 15 000 6221** | | |
| | 2.5 | **09 15 000 6126** | **09 15 000 6226** | | |
| F.O. contacts<br>for 1 mm plastic fibre | | 20 10 001 3211 | 20 10 001 3221 |  | |

| Wire gauge | | | ∅ | Stripping length |
|---|---|---|---|---|
| 0.14-0.37 | mm² | AWG 26-22 | 0.9 | 8 mm |
| 0.5 | mm² | AWG 20 | 1.1 | 8 mm |
| 0.75 | mm² | AWG 18 | 1.3 | 8 mm |
| 1 | mm² | AWG 18 | 1.45 | 8 mm |
| 1.5 | mm² | AWG 16 | 1.75 | 8 mm |
| 2.5 | mm² | AWG 14 | 2.25 | 6 mm |





Stock items in bold type

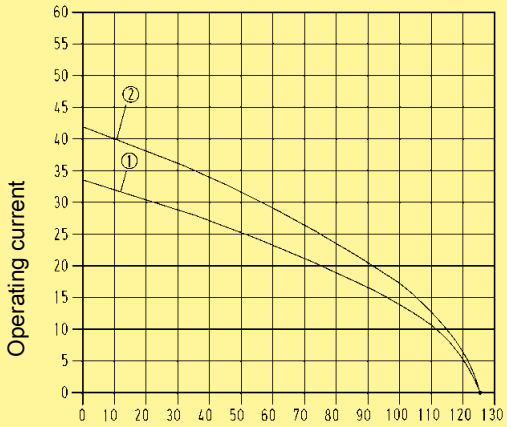
## Features

- 4 power contacts Han® C and 2 signal contacts Han D®
- Finger protection
- Leading protective ground with crimp terminal
- Inserts suitable for standard plastic and metal hoods/housings with additional PE contact from the Han-Compact® size
- 3 coding possibilities by using a coding pin instead of fixing screw

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge: ① 2.5 mm²
② 4 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 4 / 2 + PE |
| Electrical data acc. to EN 61 984 | |
| Power side | **40 A 400/690 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Signal side | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 / 250 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 1.5 ... 6 mm² /<br>0.14 ... 2.5 mm² |
| - AWG | 16 ... 10 /<br>26 ... 14 |
| Max. insulation diameter | |
| - Power contacts | 5 mm |

### Hoods/Housings

Plastic hoods/housings

| | |
|---|---|
| Material | thermoplastic |
| Locking element | Polyamide |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

### Accessories

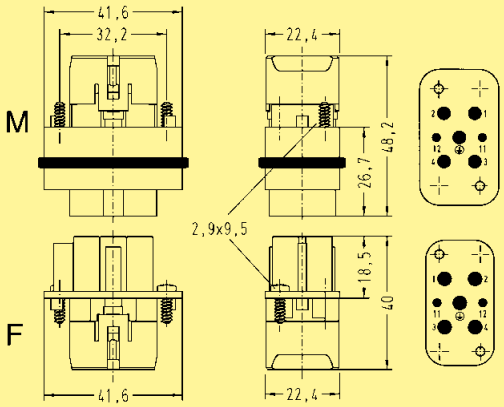
| | |
|---|---|
| Crimping tools | chapter 99 |

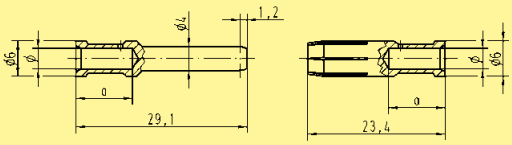
Number of contacts

# 4/2 + ⏚





| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately | **09 12 006 3041** | **09 12 006 3141** |  Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp contacts<br>Han® C contacts<br><br>silver plated | 1.5<br>2.5<br>4<br>6 | 09 32 000 6104<br>**09 32 000 6105**<br>**09 32 000 6107**<br>**09 32 000 6108** | 09 32 000 6204<br>**09 32 000 6205**<br>**09 32 000 6207**<br>**09 32 000 6208** |  | |



| Wire gauge | | | ∅ | Stripping length |
|---|---|---|---|---|
| 1.5 | mm² | AWG 16 | 1.75 | 9 mm |
| 2.5 | mm² | AWG 14 | 2.25 | 9 mm |
| 4 | mm² | AWG 12 | 2.85 | 9.6 mm |
| 6 | mm² | AWG 10 | 3.5 | 9.6 mm |





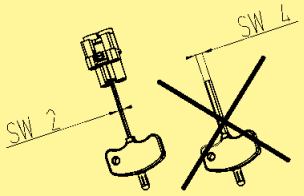
Stock items in bold type

## Features

- Field assembly without special tools - reduced wiring times
- Compatible with Han® Q 4/2 standard inserts with crimp terminations
- Space-saving and compact design
- Inserts suitable for standard plastic and metal hoods/housings with additional PE contact from the Han-Compact® size
- With or without Han-Quick Lock® signal contacts as an option

### Attention

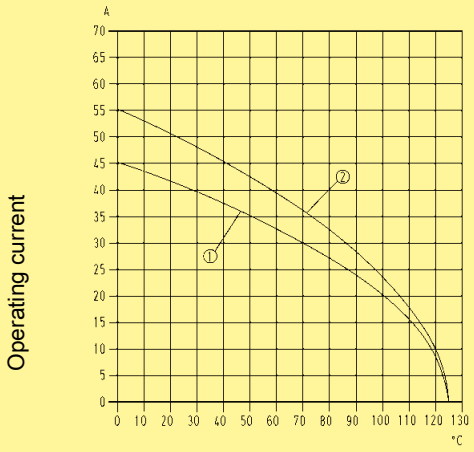
- For termination please use only hexagonal screw driver with wrench size SW 2.
- If PE contact is not used:
  Please screw the PE contact maximal on both sides clockwise with a hexagonal screwdriver, wrench size SW 2.




### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

Wire gauge: ① 4 mm²

② 6 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Inserts

| | |
|---|---|
| Number of contacts | 4 / 2 + PE |
| Electrical data acc. to EN 61 984 | |
| Power side | **40 A 400/690 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Signal side | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Power contacts | |
| Contact resistance | ≤ 0.3 mΩ |
| Axial screw termination | |
| - mm² | 4 ... 10 mm² |
| - AWG | 12 ... 8 |
| Max. insulation diameter | 7.3 mm |
| Stripping length | 8 mm |
| Tightening torque | 1.8 Nm |
| Signal contacts | |
| Contact resistance | ≤ 3 mΩ |
| Han-Quick Lock® | |
| - mm² | 0.25 ... 1.5 mm² |
| - AWG | 23 ... 16 |
| Max. insulation diameter | 3 mm |
| Stripping length | 10 mm |

### Hoods/Housings

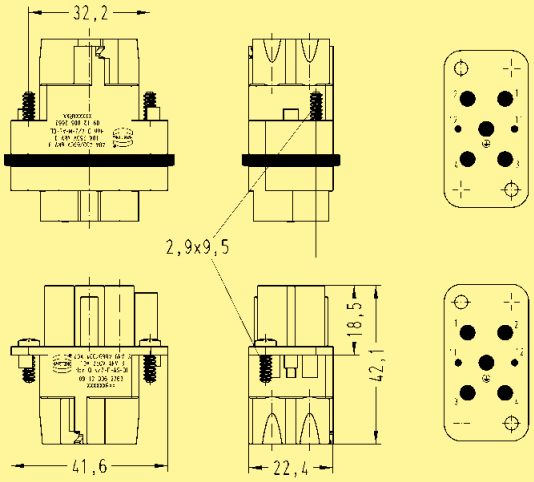
Plastic hoods/housings

| | |
|---|---|
| Material | thermoplastic |
| Locking element | Polyamide |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

Number of contacts

4/2 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Axial screw terminal | | |  | |
| with Han-Quick Lock® signal contacts<br>Han-Quick Lock® | **09 12 006 2663** | **09 12 006 2763** | | |
| without Han-Quick Lock® signal contacts | **09 12 006 2666** | **09 12 006 2766** | | |



| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hex key SW 2 for axial setscrew | | | |
| with grip | 09 99 000 0313 | | |
| adapter 1/4“ | 09 99 000 0369 | | |





Stock items in bold type

## Features

- Combination connector / Ethernet connector based on RJ45 / additionally maximum 10 signal D-Sub contacts, crimp terminal
- Compact design
- High contact density
- Turned D-Sub contacts of performance level 1*
- Suitable for hoods and housings of series Han-Compact®

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Inserts

| | |
|---|---|
| Ethernet connector | |
| Terminal | RJ45 acc. to IEC 60 603-7 |
| Wire gauge | - flexible |
| Transmission features | Cat. 5e |
| Number of contacts | 8 |
| Signal side | |
| Number of contacts | 10 |
| Electrical data | |
| acc. to EN 61 984 | **5 A 50 V 0.8 kV 3** |
| Rated current | 5 A |
| Rated voltage | 50 V |
| Rated impulse voltage | 0.8 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 85 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Crimp terminal | |
| - mm² | 0.13 ... 0.52 mm² |
| - AWG | 26 ... 20 |
| turned contacts | Performance level 1<br>as per CECC 75 301-802,<br>500 mating cycles,<br>10 days 4 mixed gas test -<br>IEC 60 512 |

### Hoods/Housings

| | |
|---|---|
| Plastic hoods/housings | |
| Material | thermoplastic |
| Locking element | Polyamide |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 65 |
| Hoods/Housings, metal | |
| Material | metal |
| Locking element | Stainless steel |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... 125 °C |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 65 |

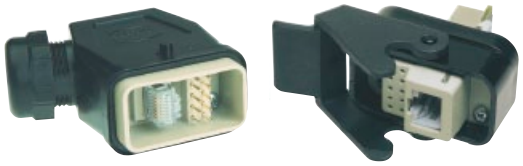


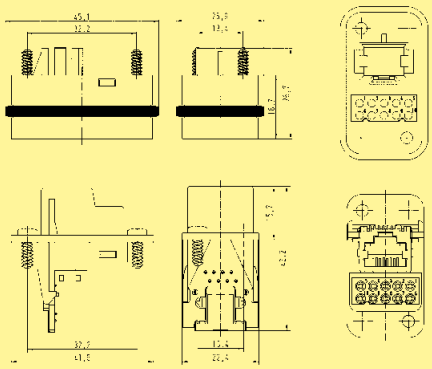


* Performance level 1 acc. to CECC 75 301-802, 500 mating cycles, 10 days 4 mixed gas test as per IEC 60 512

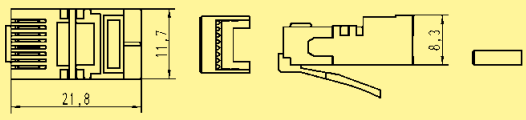
Number of contacts

# 8



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han® Q Data RJ45<br>Order crimp contacts separately<br>female insert usable for panel feed through for patch cables | **09 12 011 3001** | **09 12 011 3111** |  | |

Han Q

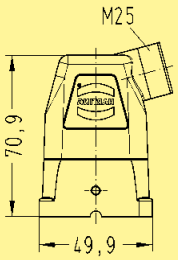
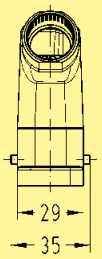
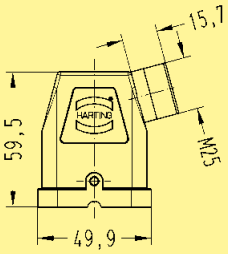
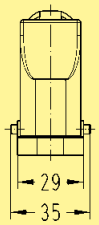
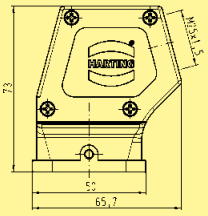
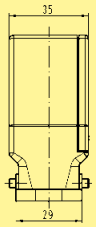
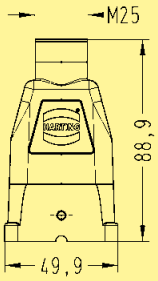
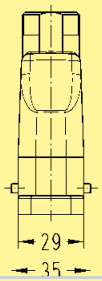
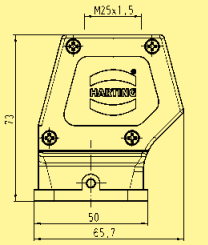
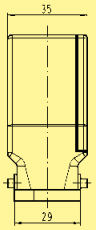
| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Individual contacts<br>Han® D-Sub contacts gold plated<br> | 0.13-0.33<br>0.33-0.52 | **61 03 000 0094**<br>**61 03 000 0073** | **61 03 000 0096**<br>**61 03 000 0074** | | |
| RJ45 plug AMP<br>(for replacement)<br>AWG 24 ... 26<br>Ø 0.89 mm ... 0.99 mm | | 09 12 000 9958 | |  | |

| Wire gauge | | Ø | Stripping length |
|---|---|---|---|
| 0.13-0.33 mm² | AWG 26-22 | 0.9 | 5 mm |
| 0.33-0.52 mm² | AWG 22-20 | 1.12 | 5 mm |



Stock items in bold type

## Metal

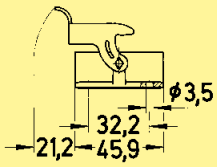
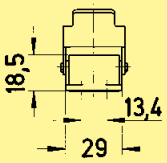
| Identification | | Part number | | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>• side-entry for Han-Compact® half gland<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | black powder coated **19 12 708 0511**<br>black chromated **19 12 008 0511** | M25<br>M25 |  |  |
| Hoods<br>• side-entry for Han-Compact® half gland<br>• for Han® Q 8/0 Crimp, Han® Q 17/0 and Han® Q Data RJ45 |  | black powder coated 19 12 708 0501<br>black chromated **19 12 008 0501** | M25<br>M25 |  |  |
| Hoods<br>• side-entry for standard cable glands<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | black powder coated **19 12 008 0526** | M25 |  |  |
| Hoods<br>• top-entry for Han-Compact® half gland<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | black powder coated **19 12 708 0411**<br>black chromated **19 12 008 0411** | M25<br>M25 |  |  |
| Hoods<br>• top-entry for standard cable glands<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | black powder coated **19 12 008 0426** | M25 |  |  |

Han Q



**Stock items in bold type**

## Metal

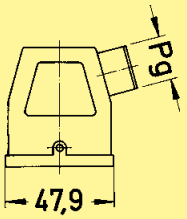
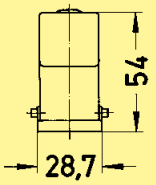
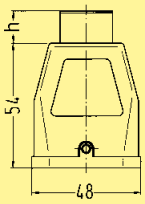
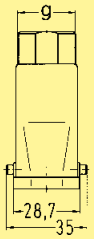
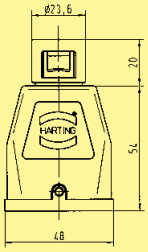
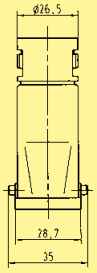
| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Housings, bulkhead mounting  | black powder coated 09 12 708 0301<br><br>black chromated **09 12 008 0301** |     | |





Stock items in bold type

## Thermoplastic

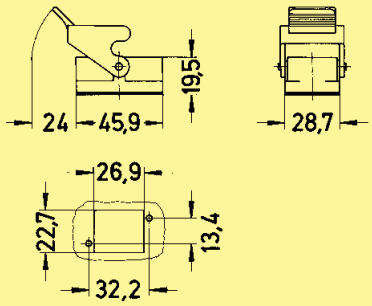
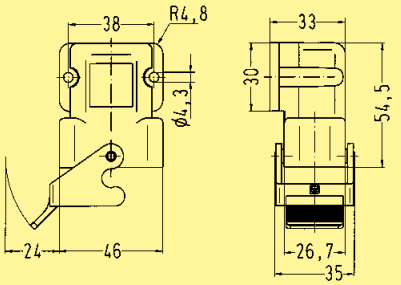
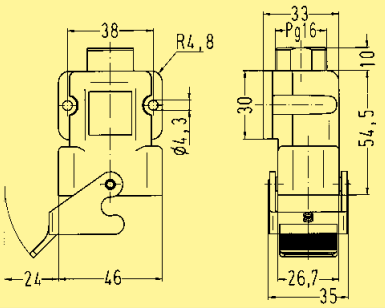
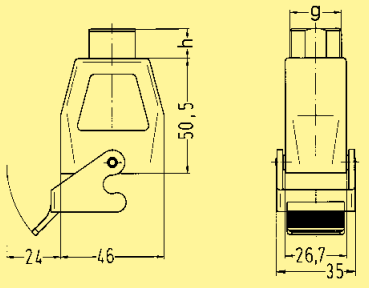
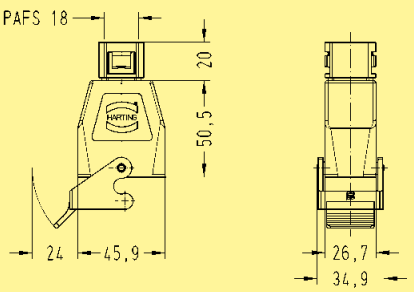
| Identification | | Part number | | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>• side-entry<br>for Han-Compact®<br>half gland |  | **09 12 008 0527** | Pg 16 |  |  |
| Hoods<br>• top-entry<br>for Han-Compact®<br>half gland |  | **19 12 008 0429**<br>09 12 008 0427<br>**09 12 008 0429** | M25<br>Pg 16<br>Pg 21 |  |  |
| Hoods<br>• top-entry<br>for flexible conduits<br>Adaptaflex PAFS18 |  | 09 12 008 0428 | PAFS<br>18 |  |  |





Stock items in bold type

## Thermoplastic

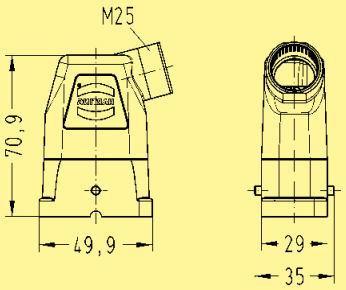
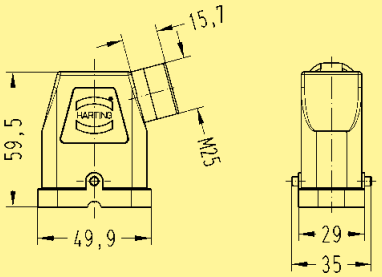
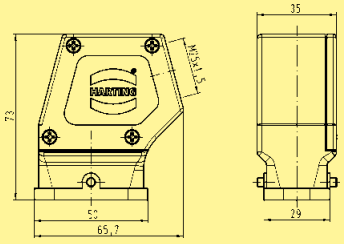
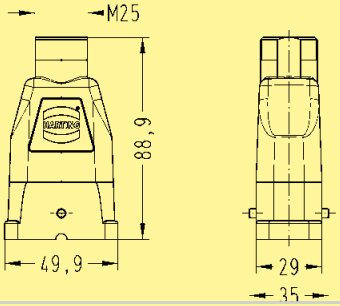
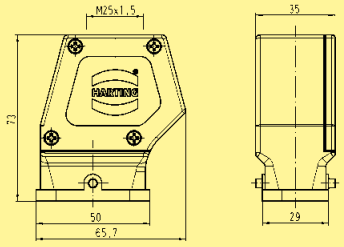
| Identification | | Part number | | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting<br><br>straight |  | **09 12 008 0327** | – |  | |
| Housings, bulkhead mounting<br><br>angled |  | **09 12 008 0902** | – |  | |
| Housings, surface mounting<br><br>• for Han-Compact® half gland |  | 09 12 008 0901 | Pg 16 |  | |
| Hoods, cable to cable<br><br>• for Han-Compact® half gland |  | 19 12 008 0729<br>09 12 008 0727 | M25<br>Pg 16 |  | |
| Hoods, cable to cable<br><br>• for flexible conduits Adaptaflex PAFS18 |  | 09 12 008 0728 | PAFS 18 |  | |





Stock items in bold type

## Metal nickel-plated for EMC applications

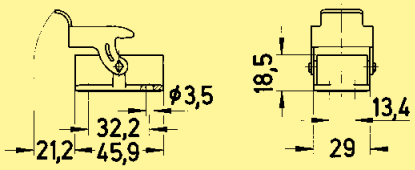
| Identification | | Part number | | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>• side-entry for Han-Compact® EMC half gland<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | **19 12 008 0512** | M25 |  | |
| Hoods<br>• side-entry for Han-Compact® EMC half gland<br>• for Han® Q 8/0 Crimp, Han® Q 17/0 and Han® Q Data RJ45 |  | 19 12 008 0502 | M25 |  | |
| Hoods<br>• side-entry for standard EMC cable glands<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | **19 12 008 0528** | M25 |  | |
| Hoods<br>• top-entry for Han-Compact® EMC half gland<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | **19 12 008 0412** | M25 |  | |
| Hoods<br>• top-entry for standard EMC cable glands<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | **19 12 008 0428** | M25 |  | |

Han Q



**Stock items in bold type**

## Metal nickel-plated for EMC applications

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Housings, bulkhead mounting  | **09 12 008 0303** |   | |





Stock items in bold type

## Accessories

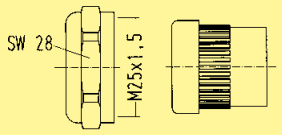
| Identification | Part number | | Drawing | Dimensions in mm |
|---|---|---|---|---|

### Han-Compact® half gland



- Metal
- for hoods

| Part number | |
|---|---|
| 19 12 000 5057 | M25 |
| 19 12 000 5058 | M25 |



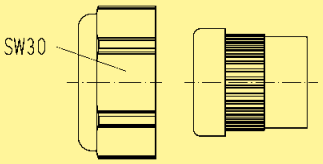

| | cable | | SW |
|---|---|---|---|
| | min. | max. | |
| 19 12 000 5057 | 10,5 mm | 14 mm | 28 |
| 19 12 000 5058 | 14 mm | 17 mm | 28 |

### Han-Compact® half gland



- Thermoplastic
- for hoods

| Part number | |
|---|---|
| 19 12 000 5157 | M25 |
| 19 12 000 5158 | M25 |
| 09 00 000 5059 | Pg 16 |
| 09 00 000 5157 | Pg 21 |
| **09 00 000 5158** | Pg 21 |



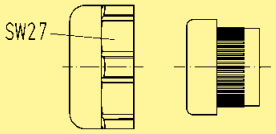

| | cable | | SW |
|---|---|---|---|
| | min. | max. | |
| 19 12 000 5157 | 10,5 mm | 14 mm | 30 |
| 19 12 000 5158 | 14 mm | 17 mm | 30 |
| 09 00 000 5059 | 11,5 mm | 15,5 mm | 27 |
| 09 00 000 5157 | 14 mm | 18 mm | 33 |
| 09 00 000 5158 | 17 mm | 20,5 mm | 33 |

### Han-Compact® half gland



- Thermoplastic
- for housings

| Part number | |
|---|---|
| **09 00 000 5058** | Pg 16 |
| 09 00 000 5057 | Pg 16 |



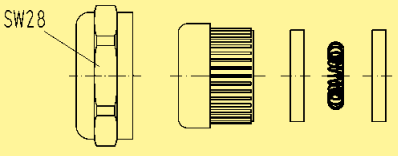

| | cable | | SW |
|---|---|---|---|
| | min. | max. | |
| 09 00 000 5058 | 11,5 mm | 15,5 mm | 27 |
| 09 00 000 5057 | 6,5 mm | 9,5 mm | 27 |

### Han-Compact® EMC half gland



- Metal
- for hoods

| Part number | |
|---|---|
| **19 62 000 5056** | M25 |
| 19 62 000 5057 | M25 |
| 19 62 000 5058 | M25 |




| | cable | | SW |
|---|---|---|---|
| | min. | max. | |
| 19 62 000 5056 | 10,5 mm | 14 mm | 28 |
| 19 62 000 5057 | 10,5 mm | 14 mm | 28 |
| 19 62 000 5058 | 14 mm | 17 mm | 28 |

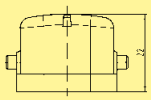
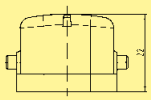
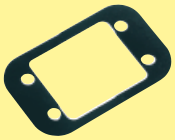
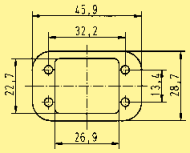
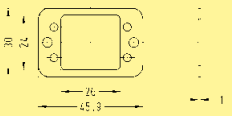
| | shielding | |
|---|---|---|
| | min. | max. |
| 19 62 000 5056 | 9 mm | 13 mm |
| 19 62 000 5057 | 6 mm | 11 mm |
| 19 62 000 5058 | 9 mm | 13 mm |





**Stock items in bold type**

## Accessories

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Protection covers<br>• Thermoplastic<br>• for housings for mounted male insert  | 09 12 008 5407 |  | |
| Protection covers<br>• Thermoplastic<br>• for housings for mounted female insert  | 09 12 008 5408 |  | |
| Gasket for plastic housings, bulkhead mounting, straight  | 09 12 000 9912 |  | |
| Gasket for plastic housings, bulkhead mounting, angled, and for housings, surface mounting  | 09 12 000 9911 |  | |

Han Q



Stock items in bold type




ET 200pro distributed I/O system with degree of protection IP 65 / IP 67
Siemens AG, Erlangen, Germany

## Contents


| | Page |
|---|---|
| Technical characteristics Han® K 3/0, Han® K 3/2 | **14.02** |
| Inserts Han® K 3/0, Han® K 3/2 | **14.03** |
| Hoods/Housings Han® 24 HPR for Han® K 3/0, Han® K 3/2 | **14.04** |
| Technical characteristics Han® HC Modular 350 | **14.08** |
| Contacts Han® HC Modular 350 | **14.09** |
| Technical characteristics Han® HC Modular 350 Crimp | **14.10** |
| Contacts Han® HC Modular 350 Crimp | **14.11** |
| Hoods/Housings for Han® HC Modular 350 | **14.12** |
| Hoods/Housings for Han® HC Modular 350 enlarged | **14.15** |
| Technical characteristics Han® HC Modular 650 | **14.18** |
| Contacts Han® HC Modular 650 | **14.19** |
| Technical characteristics Han® HC Modular 650 Crimp | **14.20** |
| Contacts Han® HC Modular 650 Crimp | **14.21** |
| Hoods/Housings for Han® HC Modular 650 | **14.22** |
| Hoods/Housings for Han® HC Modular 650 enlarged | **14.23** |
| Hoods/Housings Han® 48 HPR | **14.25** |
| Han® 48 HPR | **14.26** |

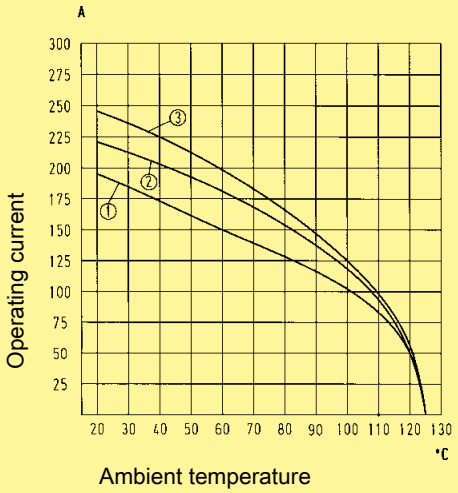
## Features

- Only to be used with Han® 24 HPR special hoods and housings (see page 14.04)
- The ideal connector for transmission of high currents requiring little space
- The vertical and angled versions offer solutions for almost all applications
- The angled versions offer a space-saving 90° cable wiring

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① Wire gauge 35 mm²

② Wire gauge 50 mm²

③ Wire gauge 70 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |

### Inserts

| | |
|---|---|
| Number of contacts | 3, 3/2 + PE |
| Electrical data acc. to EN 61 984 | |
| Power area | **200 A 1150/2000 V 8 kV 3** |
| Rated current | 200 A |
| Rated voltage conductor - ground | 1150 V |
| Rated voltage conductor - conductor | 2000 V |
| Rated impulse voltage | 8 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 200 A 2000 V 12 kV 2 |
| Signal area | **16 A 400 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 500 V 6 kV 2 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | silver |
| Contact resistance | ≤ 0.2 mΩ |
| Axial screw termination | |
| Power contacts | |
| - Wire gauge[1)] | 35 ... 70 mm² |
| - AWG | 2 ... 00 |
| - Hexagonal driver | SW 5, 09 99 000 0371, Page 99.05 |
| - Stripping length | 22 mm |
| - Tightening torque | |

| mm² | 35 | 50 | 70 |
|---|---|---|---|
| Nm | 8 | 9 | 10 |

| | |
|---|---|
| PE contact (only Han® K 3/2) | |
| - Wire gauge[1)] | 16 ... 35 mm² |
| - AWG | 5 ... 2 |
| - Hexagonal driver | SW 4, 09 99 000 0370, Page 99.05 |
| - Stripping length | 14 mm |
| - Tightening torque | 6 Nm |
| Signal contact (only Han® K 3/2) | |
| - Wire gauge[1)] | 2.5 mm² |
| - AWG | 14 |
| - Stripping length | 7 mm |
| - Tightening torque | 0.5 Nm |

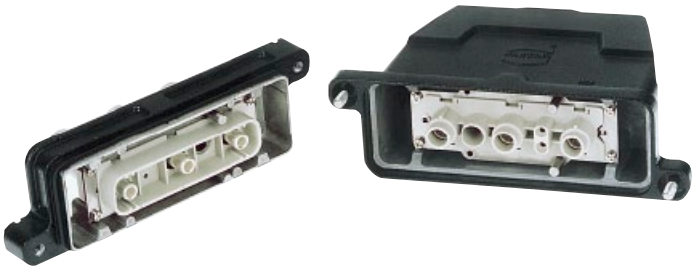
### Hoods/Housings

For technical details see chapter 31

[1)] geometric wire gauge

Number of contacts

# 3/0 without ⏚
# 3/2 with ⏚



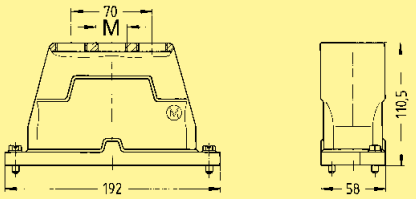
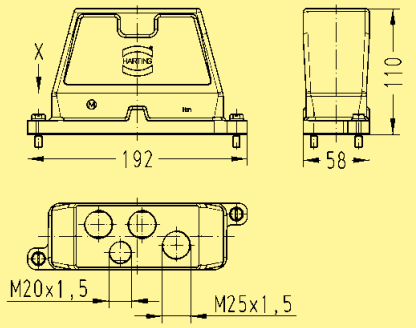
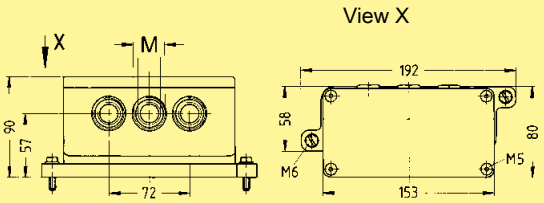
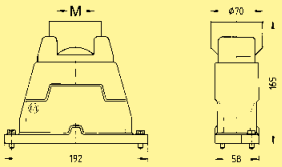
| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Axial screw terminal straight | Han® K | | | | |
| | 3/0 | 09 38 005 2621 | 09 38 005 2721 | | |
| angled | | | | | |
| | 3/0 | 09 38 005 2622 | 09 38 005 2722 | | |
| | | | | Distance for contact max. 21 mm | |
| Axial screw terminal straight | Han® K | | | | |
| | 3/2 | 09 38 005 2601 | 09 38 005 2701 | | |
| angled | | | | | |
| | 3/2 | 09 38 005 2602 | 09 38 005 2702 | | |
| | | | | Distance for contact max. 21 mm | |





Stock items in bold type

## Special hood/housing for Han® K 3/0, Han® K 3/2

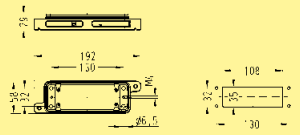
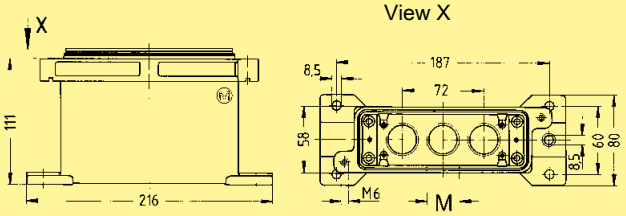
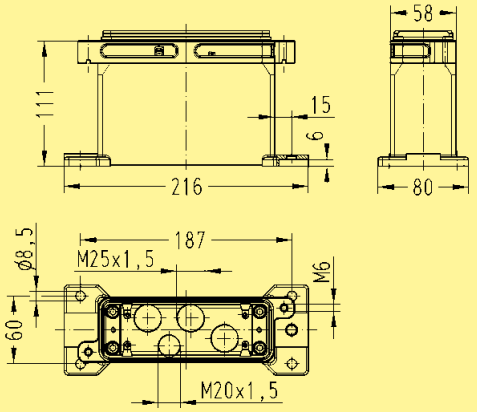
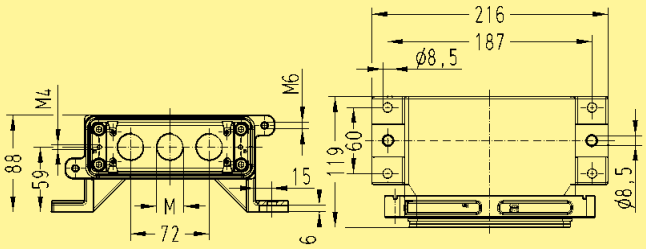
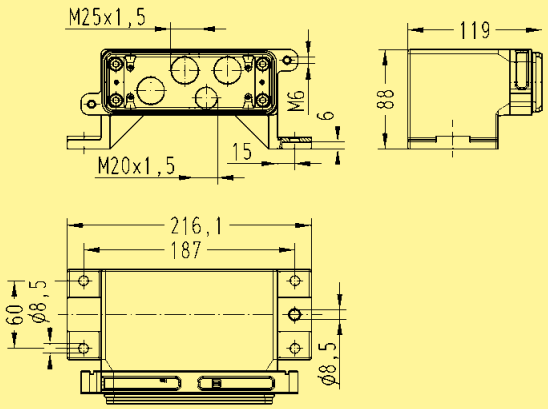
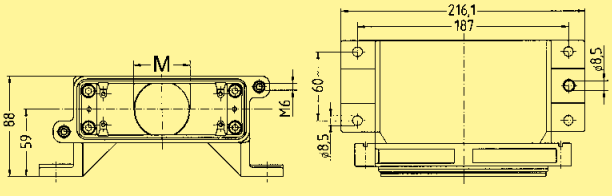
| Identification | Part number | M | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Hoods<br>top entry  | 19 40 024 0461 | 3 x 25 |  | |
| top entry  | 19 40 024 0471 | 3 x 25<br>1 x 20 |  | |
| angled entry  | 19 40 024 0631 | 3 x 25 |  | View X |
| top entry  | 19 40 024 0420 | 1 x 63 |  | |

Han HC Modular



Stock items in bold type

## Special hood/housing for Han® K 3/0, Han® K 3/2

| Identification | Part number | M | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 40 024 0311** | | Panel cut out  | |
| Housings, surface mounting straight version  | 19 40 024 1231 | 3 x 25 |  | |
| straight version  | 19 40 024 1271 | 3 x 25<br>1 x 20 |  | |
| horizontal version  | **19 40 024 0931** | 3 x 25 |  | |
| horizontal version  | **19 40 024 0971** | 3 x 25<br>1 x 20 |  | |
|  | 19 40 024 0914 | 1 x 50 |  | |

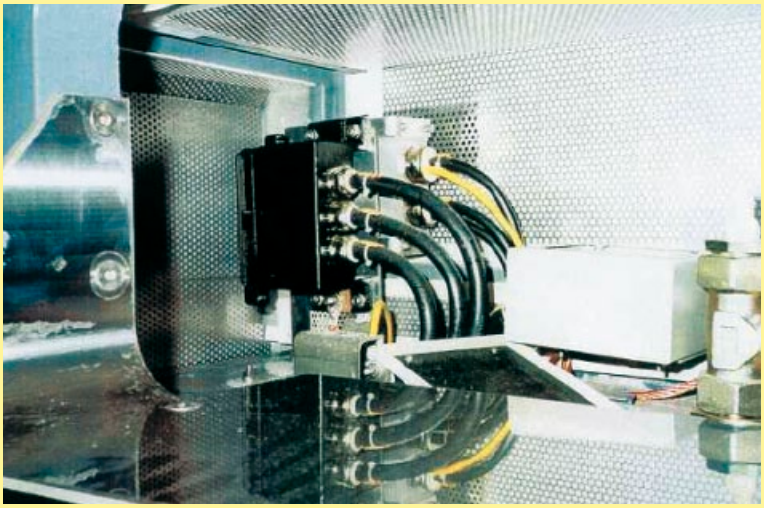
Han HC Modular



Stock items in bold type

Regional Express Railcars
of the series ET 424-426
Bombardier Transportation,
Siemens AG, ALSTOM



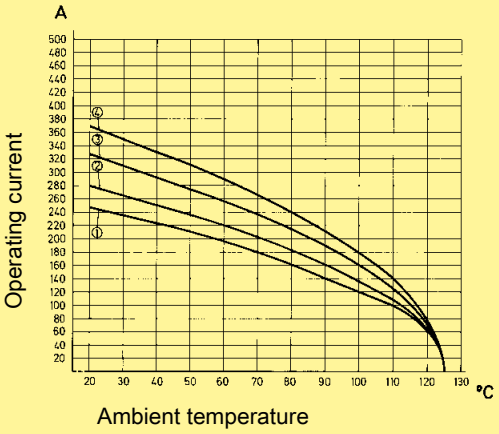
Motor connection of the traction bogie
with Han® K 3/0 and Han® HPR hood/
housing
Bombardier Transportation,
Siemens AG, ALSTOM

## Current carrying capacity

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① Wire gauge 50 mm²
② Wire gauge 70 mm²
③ Wire gauge 95 mm²
④ Wire gauge 120 mm²
three contacts in Han® 24 HPR

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 1, 2, 3 or 3 + PE |
| Electrical data acc. to EN 61 984 | |
| without adapter | **350 A 2000 V 12 kV 3** |
| Rated current | 350 A |
| Rated voltage | 2000 V |
| Rated impulse voltage | 12 kV |
| Pollution degree | 3 |
| with adapter | **350 A 4000 V 18 kV 3** |
| Rated current | 350 A |
| Rated voltage | 4000 V |
| Rated impulse voltage | 18 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polyamide |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | silver |
| Contact resistance | ≤ 0.2 mΩ |
| Axial screw termination | |
| - Wire gauge[1)] | 35 ... 120 mm² |
| - AWG | 1 ... 0000 |
| - Stripping length | 19 ... 20 mm |
| - Max. cable diameter | 19.5 mm |

| mm² | 35 | 50 | 70 | 95 | 120 |
|---|---|---|---|---|---|
| Nm | 8 | 10 | 12 | 14 | 16 |

- Tightening torque

| | |
|---|---|
| Screw terminal | |
| - Thread | M 10 |
| - Wrench size | SW 17 |
| - Tightening torque | 14 Nm |

### Hoods/Housings

For technical details see chapter 31

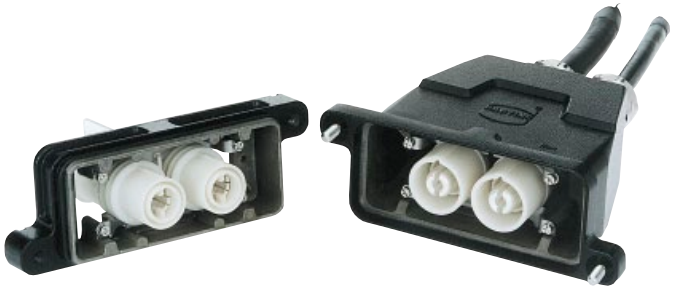
### Frame

| | |
|---|---|
| Tightening torque of the fixing screws | 0.5 Nm |
| Tightening torque of the cross-tying screws on the frame for 4 poles | 1.5 Nm |

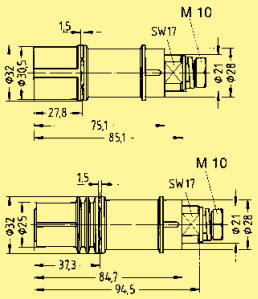
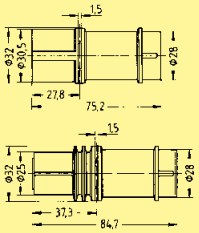
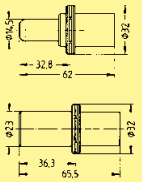




[1)] geometric wire gauge



## Modular
## High Current Connector System

| Identification | Part number Male contact | Female contact | Wire gauge | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Contacts**<br>with Screw terminal<br>for housing bulkhead mounting<br> | 09 11 001 2655 | **09 11 001 2755** | for cable lug up to max. 120 mm² |  | |
| with Axial screw termination<br> | **09 11 001 2651**<br>**09 11 001 2652** | **09 11 001 2751**<br>09 11 001 2752 | 35 ... 70 mm²<br>95 ... 120 mm² |  | |
| **PE contact**<br>with Axial screw termination<br> | 09 11 000 6156 | 09 11 000 6256 | 35 ... 70 mm² |  | |
| **Hexagonal driver**<br>Adapter (SW 5)<br> | **09 99 000 0371** | | | | |

| Identification | Part number | M | SW | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Hexagonal adapter**<br>metal version<br>with O-Ring<br> | 19 36 000 5134<br>19 36 000 5135 | 25<br>32 | 30<br>40 |  | |

Han HC Modular



Stock items in bold type

## Features

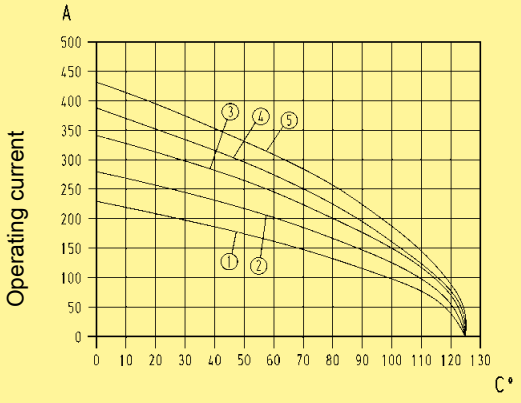
- Crimp termination
- Compatible to Han® HC Modular 350 axial screw termination
- Designed for thick cable insulations
- For crimp dies according to DIN 46 235

## Current carrying capacity

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge

| | |
|---|---|
| ① 35 mm² | ② 50 mm² |
| ③ 70 mm² | ④ 95 mm² |
| ⑤ 120 mm² | |

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Inserts

| | |
|---|---|
| Number of contacts | 1, 2, 3 or 3 + PE |
| Electrical data acc. to EN 61 984 | |
| without adapter | **350 A 2000 V 12 kV 3** |
| Rated current | 350 A |
| Rated voltage | 2000 V |
| Rated impulse voltage | 12 kV |
| Pollution degree | 3 |
| with adapter | **350 A 4000 V 18 kV 3** |
| Rated current | 350 A |
| Rated voltage | 4000 V |
| Rated impulse voltage | 18 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polyamide |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

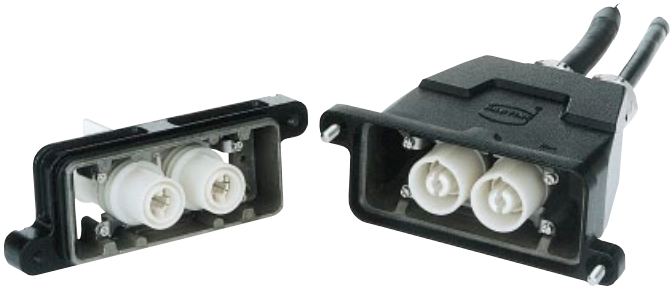
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0,3 mΩ |
| Crimp terminal | |
| - mm² | 35 ... 120 mm² |
| Max. insulation diameter | 22 mm |
| Crimp dies | acc. to DIN 46 235 |
| Pressing force requirement | 130 kN |

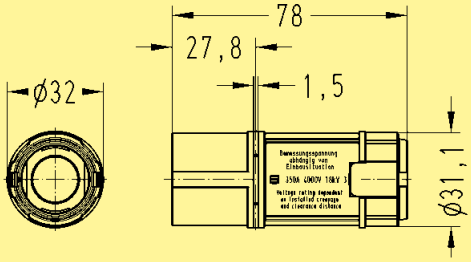
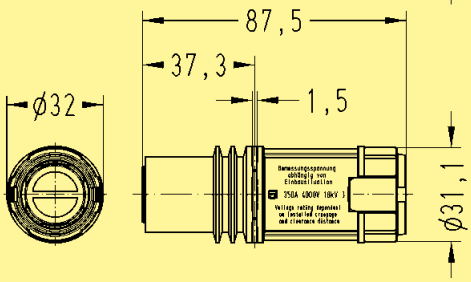
### Hoods/Housings

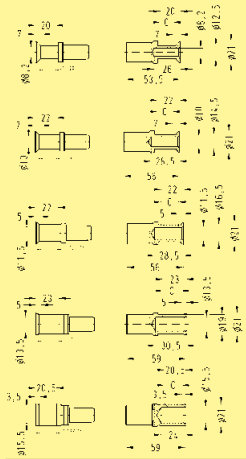
For technical details see chapter 31

### Frame

| | |
|---|---|
| Tightening torque of the fixing screws | 0,5 Nm |
| Tightening torque of the cross-tying screws on the frame for 4 poles | 1,5 Nm |
| Material | stainless steel |



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han® HC Modular 350 Crimp terminal  | **09 11 001 3001** | **09 11 001 3101** | M   F   | |

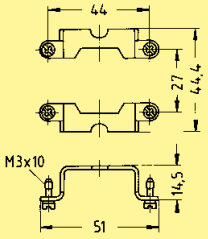
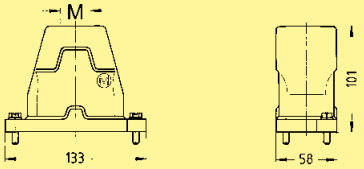
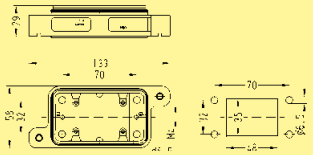
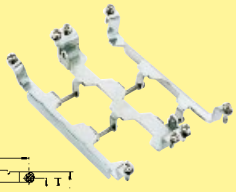
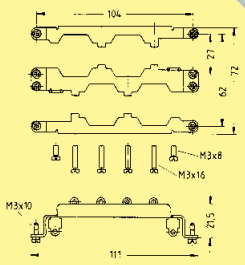
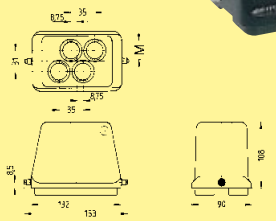
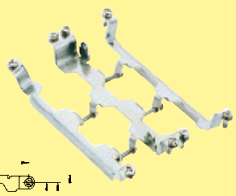
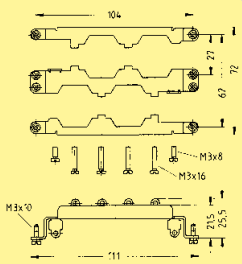
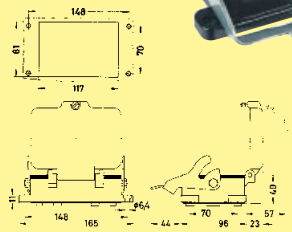
| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp contacts* silver plated | | | |  | |
|  | 35 | **09 11 000 6140** | **09 11 000 6240** | | |
|  | 50 | **09 11 000 6141** | **09 11 000 6241** | | |
|  | 70 | **09 11 000 6142** | **09 11 000 6242** | | |
|  | 95 | **09 11 000 6143** | **09 11 000 6243** | | |
|  | 120 | **09 11 000 6144** | **09 11 000 6244** | | |

| Wire gauge | ∅ | Stripping length |
|---|---|---|
| 35 mm² | 8,2 | 26 mm |
| 50 mm² | 10 | 28 mm |
| 70 mm² | 11,5 | 28 mm |
| 95 mm² | 13,5 | 30 mm |
| 120 mm² | 15,5 | 24 mm |
| for stranded wire according to IEC 60 228 Class 5 | | |

Han HC Modular

* Crimp zone acc. to EN 46 235

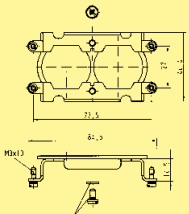
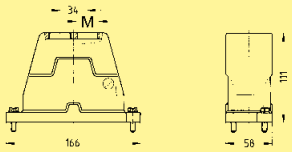
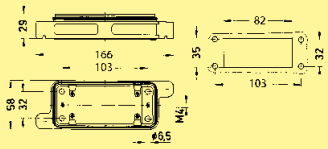
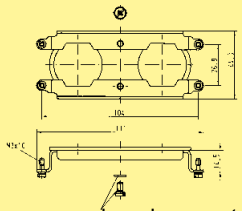
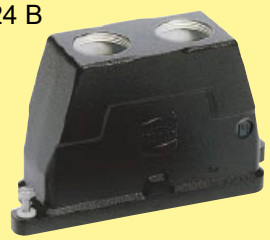
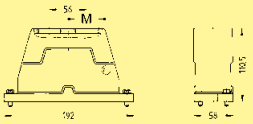
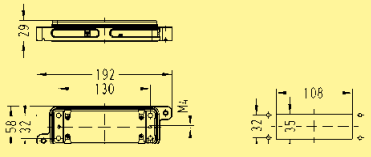
**Stock items in bold type**

| Frame | Part number | Hoods/Housings | M | Part number |
|---|---|---|---|---|
| 1 pole    | 09 11 000 9951 | Hoods Han® HPR 6 B    | 25<br>32 | **19 40 006 0411**<br>**19 40 006 0412** |
| | | Housings, bulk-head mounting Han® HPR 6 B    | – | **09 40 006 0311** |
| 4 poles    | 09 11 000 9954 | Hoods Han® M 48 B    | 4 x 25 | **19 37 048 0401** |
| 4 poles    | 09 11 000 9955 | Housings, bulk-head mounting Han® M 48 B    | – | **09 37 048 0301** |





Stock items in bold type

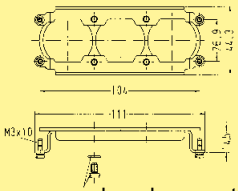
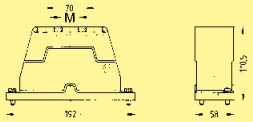
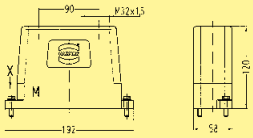
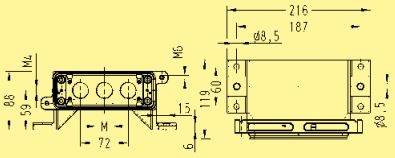
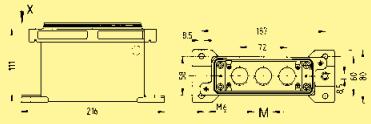
| Frame | Part number | Hoods/Housings | M | Part number |
|---|---|---|---|---|
| 2 poles   enclosed separately | 09 11 000 9952 | Hoods Han® HPR 16 B   | 2 x 25 | 19 40 016 0431 |
| | | Housings, bulk-head mounting Han® HPR 16 B   | – | **09 40 016 0311** |
| 2 poles   enclosed separately | 09 11 000 9956 | Hoods Han® HPR 24 B   | 2 x 32 | **19 40 024 0432** |
| | | Housings, bulk-head mounting Han® HPR 24 B   | – | **09 40 024 0311** |

Han HC Modular



* A working voltage of 4000 V is only possible to realize by using a hexagonal adapter and the HARTING cable gland, in order to realize the clearance and creepage distance according to DIN EN 60 664-1.

**Stock items in bold type**

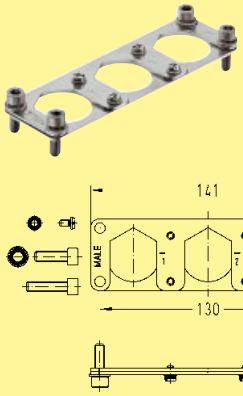
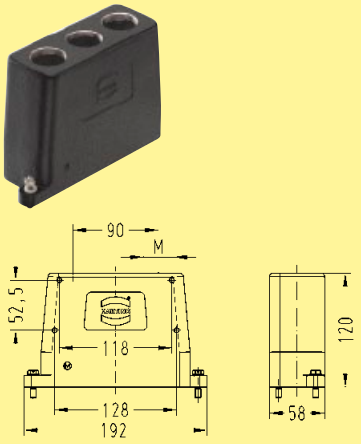
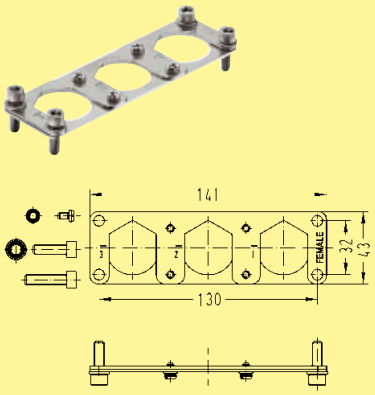
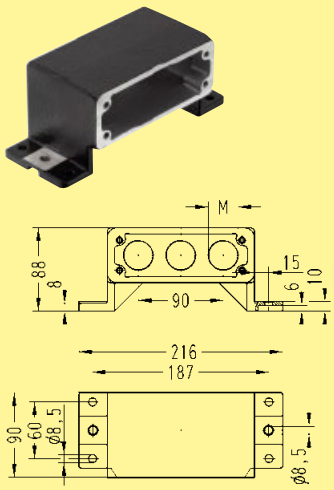
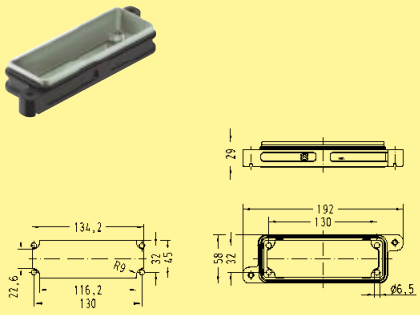
| Frame | Part number | Hoods/Housings | M | Part number |
|---|---|---|---|---|
| 3 poles   enclosed separately | 09 11 000 9963 | Hoods Han® HPR 24 B   | 3 x 25 | **19 40 024 0461** |
| | | Hoods Han® HPR 24 B   | 3 x 32 | 19 40 024 0467 |
| | | Housings, bulkhead mounting Han® HPR 24 B  Drawing see page 14.09 | – | **09 40 024 0311** |
| | | Housings, surface mounting Han® HPR 24 B horizontal version   | 3 x 25 | **19 40 024 0931** |
| | | Housings, surface mounting Han® HPR 24 B straight version   | 3 x 25 | 19 40 024 1231 |

Han HC Modular



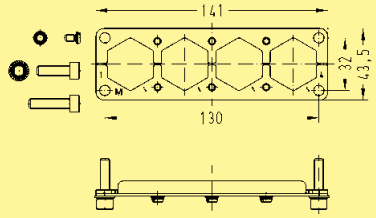
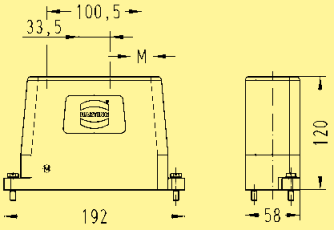
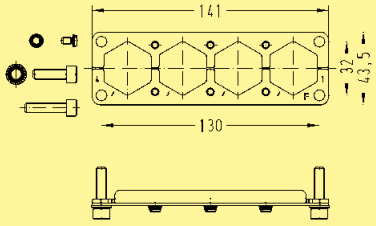
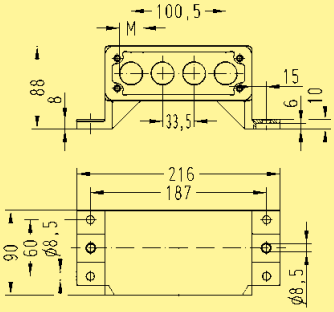
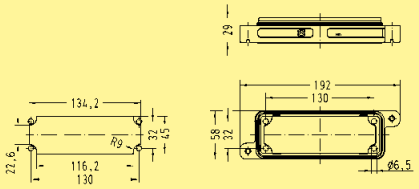
* A working voltage of 4000 V is only possible to realize by using a hexagonal adapter and the HARTING cable gland, in order to realize the clearance and creepage distance according to DIN EN 60 664-1.

**Stock items in bold type**

| Frame | Part number | Hoods/Housings | M | Part number |
|---|---|---|---|---|
| 3 poles, male<br><br> | 09 11 000 9957 | Hoods* Han® 24 HPR enlarged<br><br> | 3x 32 | 19 40 024 0468 |
| 3 poles, female<br><br> | 09 11 000 9958 | Housings, surface mounting<br>Han® 24 HPR enlarged, horizontal version<br><br><br>Required housing, bulkhead mounting, 09 40 024 0368 not included, must be ordered separately | 3x 32 | 19 40 024 0968 |
| | | Housings, bulkhead mounting<br>Han® 24 HPR enlarged<br><br> | | 09 40 024 0368 |

* A working voltage of 4000 V is only possible to realize by using a hexagonal adapter and the HARTING cable gland, in order to realize the clearance and creepage distance according to DIN EN 60 664-1.

Stock items in bold type

| Frame | Part number | Hoods/Housings | M | Part number |
|---|---|---|---|---|
| 4 poles, male<br><br><br> | 09 11 000 9964 | Hoods* Han® 24 HPR enlarged<br><br><br> | 4x 25 | 19 40 024 0478 |
| 4 poles, female<br><br><br> | 09 11 000 9965 | Housings, surface mounting<br>Han® 24 HPR enlarged, horizontal version<br><br><br><br>Required housing, bulkhead mounting, 09 40 024 0368 not included, must be ordered separately | 4x 25 | 19 40 024 0978 |
| | | Housings, bulkhead mounting<br>Han® 24 HPR enlarged<br><br><br> | | 09 40 024 0368 |



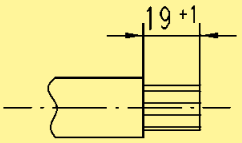


* A working voltage of 4000 V is only possible to realize by using a hexagonal adapter and the HARTING cable gland, in order to realize the clearance and creepage distance according to DIN EN 60 664-1.

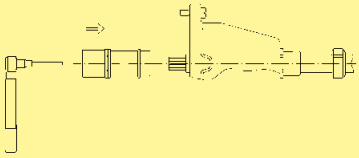
**Stock items in bold type**

## Assembly instructions

Remarks on the axial screw termination see chapter 00

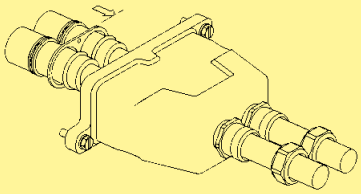



**Step 1:** The outer diameter of the cable must not exceed 19.5 mm.
Strip the cable by 19 mm.



Insert the cable through hood.

**Step 2:** Press the Han NC contact on the cable strand and apply tightening torque according table 1 by using a tightening torques tool. Take care that all cable strands fit completely inside the contact termination cavity. During assembling adhere the cable and the contact to minimise axial movement or twisting.



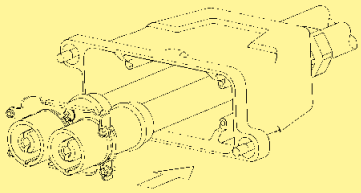
**Step 3:** Move the perforated plate D across the HC contacts.

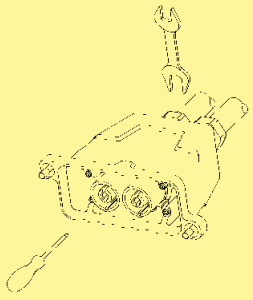
**Step 4:** Fit frame E onto the hexagon shape of the HC contact. Coding can be arranged by turning the contact within 60° steps. Bolt the frame E together with perforated plate D.



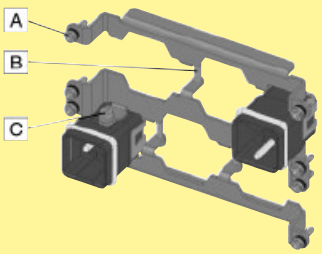
**Step 5:** Push back the packet inside the good.

**Step 6:** Tighten the four M3 (tightening torque 0.5 Nm) screws and the cable gland according manufacturer recommendation.





During the assembly of the frame for 4 poles the following tightening torques have to be taken into consideration:
A = 0.5 Nm
B = 1.5 Nm
C = 0.25 Nm

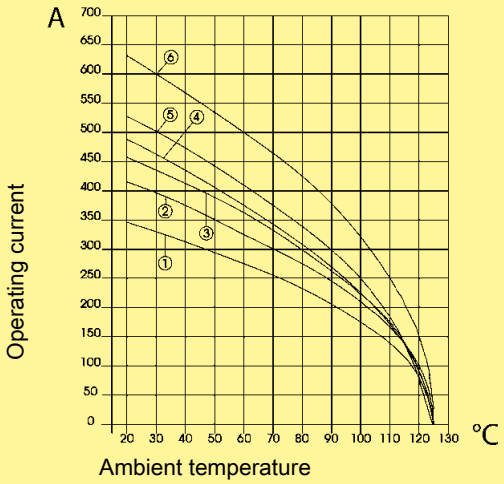


## Current carrying capacity

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




① Wire gauge 70 mm²
② Wire gauge 95 mm²
③ Wire gauge 120 mm²
④ Wire gauge 150 mm²
⑤ Wire gauge 180 mm²
⑥ Wire gauge 240 mm²

with cable SHXAFO1x240, 4 kV

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 1, 2 |
| Electrical data acc. to EN 61 984 | **650 A 4000 V 18 kV 3** |
| Rated current | 650 A |
| Rated voltage | 4000 V |
| Rated impulse voltage | 18 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polyamide |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | silver |
| Contact resistance | ≤ 0.2 mΩ |
| Axial screw termination | |
| - Wire gauge[1)] | 70 ... 185 mm² |
| - MCM | 138 ... 350 |
| - Stripping length | 23 ... 25 mm |
| - Max. cable diameter | 26.5 mm |

| mm² | 70 | 95 | 120 | 150 | 185 |
|---|---|---|---|---|---|
| Nm | 12 | 14 | 16 | 17 | 18 |

- Tightening torque

| | |
|---|---|
| Screw terminal | |
| - Thread | M 12 |
| - Tightening torque | 16 ... 18 Nm |

### Hoods/Housings

For technical details see chapter 31

### Frame

| | |
|---|---|
| Tightening torque of the fixing screws | 0.5 Nm |
| Material | stainless steel |

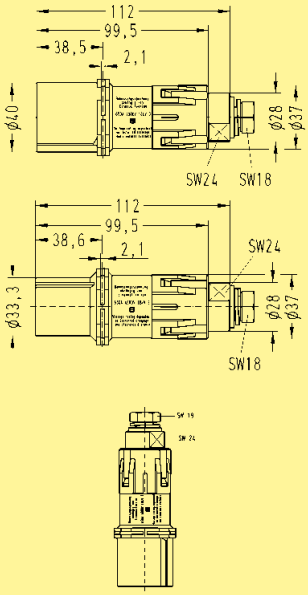
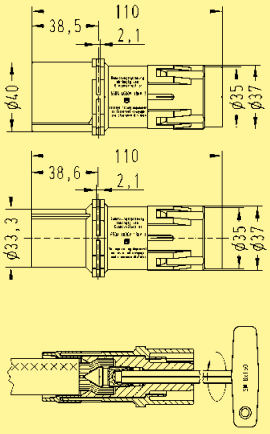




[1)] geometric wire gauge



## Modular
## High Current Connector System

| Identification | Part number Male contact | Female contact | Wire gauge | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Contacts**<br>with screw terminal for housing bulkhead mounting<br> | 09 11 001 2675 | 09 11 001 2775 | 70 ... 240 mm² | <br>Please ensure to hold up the contact with a wrench size 24 to apply the tightening torque | |
| with axial screw terminal<br> | 09 11 001 2671<br>09 11 001 2672 | 09 11 001 2771<br>09 11 001 2772 | 70 ... 120 mm²<br>150 ... 185 mm² | <br>min. length of wrench: 60 mm | |
| **Hexagonal driver**<br>Adapter (SW 8)<br> | **09 99 000 0372** | | | | |





Stock items in bold type

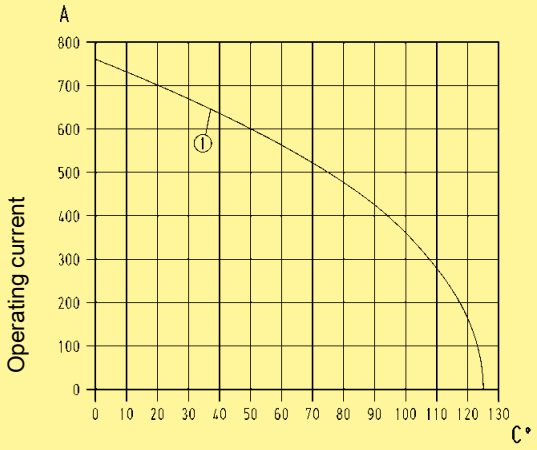
## Features

- Crimp termination
- Plug compatible to Han® HC Modular 650 with axial screw terminal
- Contact in one piece

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① wire gauge: 240 mm²

in a Han® 24 HPR hood/housing with 2 modules

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |

### Inserts

| | |
|---|---|
| Number of contacts | 1 or 2 |
| Electrical data acc. to EN 61 984 | |
| without adapter | **650 A 2000 V 12 kV 3** |
| Rated current | 650 A |
| Rated voltage | 2000 V |
| Rated impulse voltage | 12 kV |
| Pollution degree | 3 |
| with adapter | **650 A 4000 V 18 kV 3** |
| Rated current | 650 A |
| Rated voltage | 4000 V |
| Rated impulse voltage | 18 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polyamide |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 0,3 mΩ |
| Crimp terminal | |
| - mm² | 240 mm² |
| Max. insulation diameter | |
| Pressing force requirement | 130 kN |

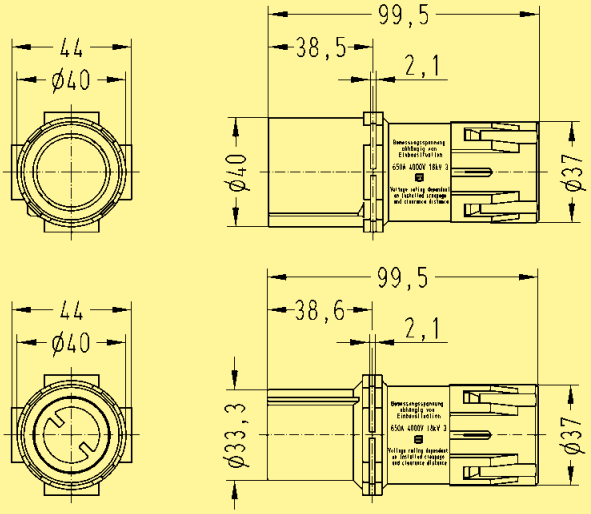
### Hoods/Housings

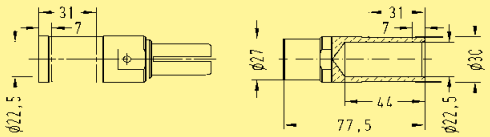
For technical details see chapter 31

### Frame

| | |
|---|---|
| Tightening torque of the fixing screws | 0,5 Nm |
| Material | stainless steel |



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han® HC Modular 650  | **09 11 001 3011** | **09 11 001 3111** |   | |

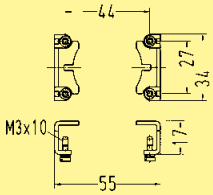
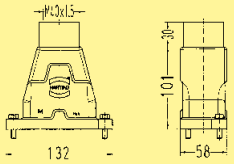
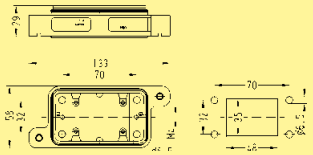
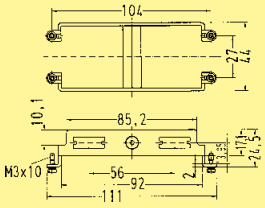
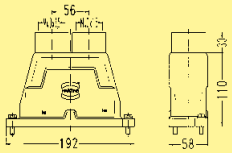
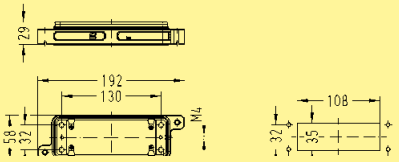
| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp contacts* silver plated  Additional wire gauges ranges on request | 240 | **09 11 000 6167** | **09 11 000 6267** |   | |

| Wire gauge | | ∅ | Stripping length |
|---|---|---|---|
| 240 mm² | | 22,5 | 46 mm |
| for stranded wire according to IEC 60 228 Class 5 | | | |

Han HC Modular

* Crimp zone acc. to EN 46 235

**Stock items in bold type**

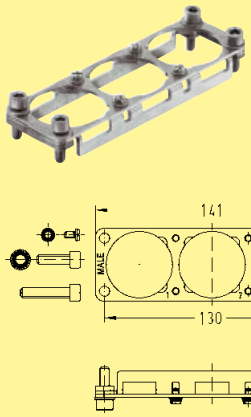
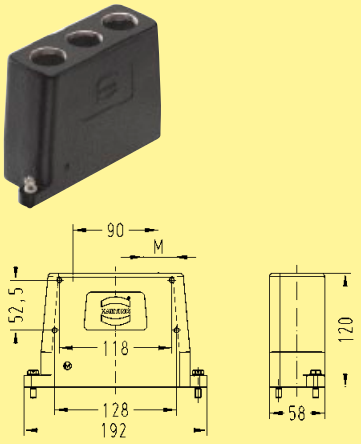
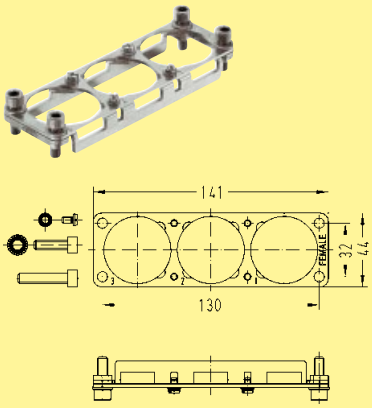
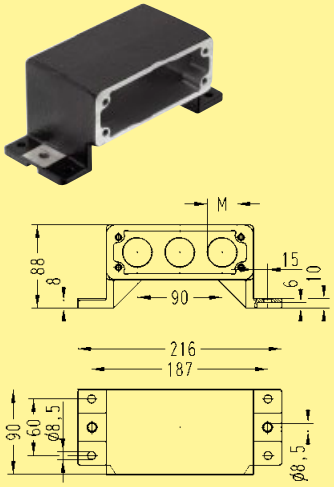
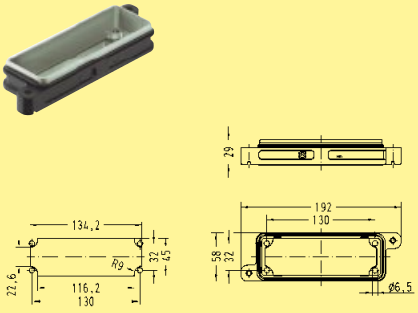
| Frame | Part number | Hoods/Housings | M | Part number |
|---|---|---|---|---|
| 1 pole   | 09 11 000 9971 | Hood Han® HPR 6 B   | 40 | 19 40 006 0418 |
| | | Housings bulk-head mounting* Han® HPR 6 B   | – | 09 40 006 0314 |
| 2 poles   | 09 11 000 9972 | Hood Han® HPR 24 B   | 2 x 40 | 19 40 024 0438 |
| | | Housings bulk-head mounting* Han® HPR 24 B   | – | **09 40 024 0311** |





* HPR mounting frames of appropriate size from chapter 31 are not fitting for compatibility

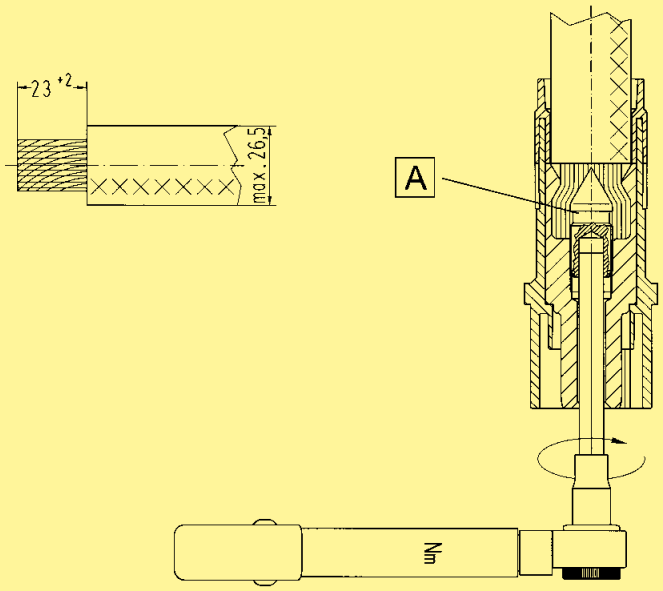
**Stock items in bold type**

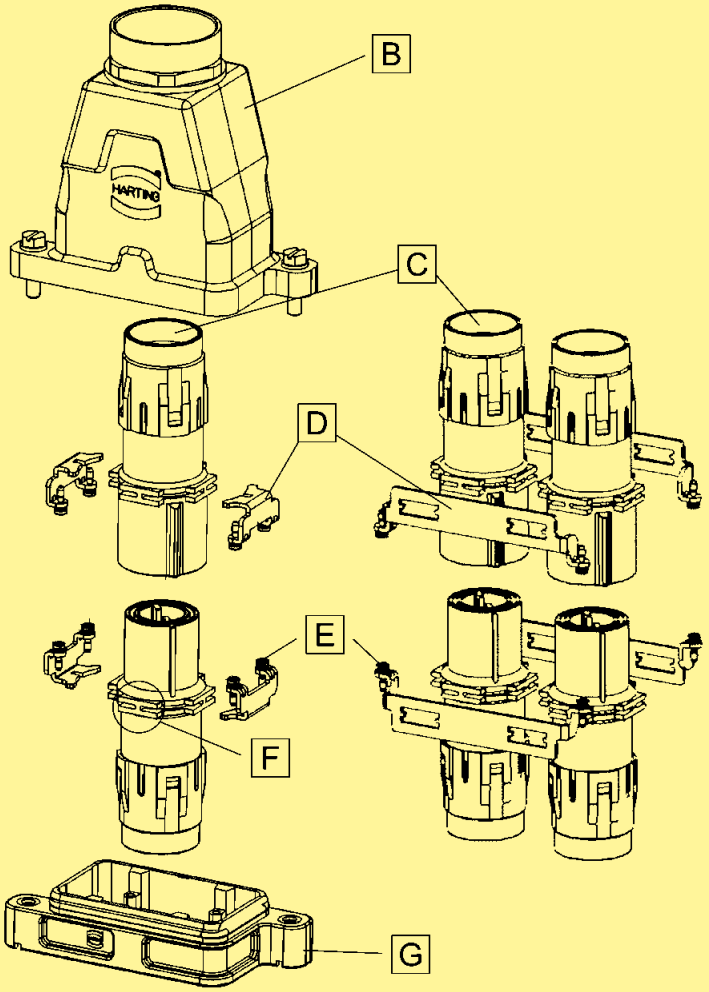
| Frame | Part number | Hoods/Housings | M | Part number |
|---|---|---|---|---|
| 3 pins, male   | 09 11 000 9973 | Hoods** Han® 24 HPR enlarged   | 3x 32 | 19 40 024 0468 |
| 3 pins, female   | 09 11 000 9974 | Housings, surface mounting** Han® 24 HPR enlarged, horizontal version   Required housing, bulkhead mounting, 09 40 024 0368 not included, must be ordered separately | 3x 32 | 19 40 024 0968 |
| | | Housings, bulkhead mounting* Han® 24 HPR enlarged   | | 09 40 024 0368 |

* A working voltage of 4000 V is only possible to realize by using a hexagonal adapter and the HARTING cable gland, in order to realize the clearance and creepage distance according to DIN EN 60 664-1.

Stock items in bold type

## Assembly instructions




**1.** Strip cable to 23+2 mm.

**2.** Push conductor through the cable gland and the housing. Push the stripped end of the conductor into the termination entry of the module until the insulation touches the contact.

**3.** To tighten the axial screw, a hexagonal wrench size 8 is needed. Insert the hexagonal wrench on the mating side of the contact. At the same time, push the conductor over the axial screw.The locking screw has to be tightened with the recommended tightening torque that is determined by the conductor's cross section.

**4.** Once the modules are terminated, they are mounted into the housing by using two metal frames (tightening torque of the fixing screws = 0.5 Nm). The modules have 4 pegs formed by 2 parallel ribs (each peg shapes like a "H"). Each rib takes 1 pole frame, where the lateral link has to go into the relief of the frame. The 2 pole frames have 2 cutouts on the wall which get fitted to the "H"-shaped pegs (see figure). The heads of the screws have to face the mating direction of the module. Coding can be established by rotating the contact by 90 degrees. Therefore it is important that the corresponding modules are assembled in the correct position otherwise mating is not possible.

**5.** After assembling the modules in the housing, the tightening torque of the locking screw can be checked and corrected if necessary.

**6. After final assembly of the contacts, the user should ensure that the cable is adequately strain reliefed to protect the contact from radial stress.**

A - Axialscrew, B - Hood, C - Termination entry, D - Frame, E - Fixing screws, F - parallel ribs with H-shape, G - Housings bulkhead mounting,



## Features

- Easy assembly
- Good EMC features
- Secure termination, easy to control
- Vibration resistant acc. to DIN EN 61 373 Category 1B (Category 2 possible with usage of M6 distance bolts)
- Ideal motor / drive connector for transportation sector

## Technical characteristics

### Han® HPR Hoods/Housings

| | |
|---|---|
| Material | aluminium die-cast, corrosion resistant |
| Surface | |
| - Top coat | Epoxy powder paint RAL 9005 |
| Locking element | Stainless steel |
| Tightening torque | 4 Nm |
| Sealing | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 68 |

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Inserts

| | |
|---|---|
| Number of contacts | i. e. 4, 5, 6, 10 depending on the frame |
| Electrical data acc. to EN 61 984 | **350/650 A 4000 V 18 kV 3** |
| Rated current | 350/650 A |
| Rated voltage | 4000 V |
| Rated impulse voltage | 18 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polyamide |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts Han® HC Modular 350

| | |
|---|---|
| Material | copper alloy |
| Surface | silver |
| Contact resistance | ≤ 0.2 mΩ |
| Axial screw termination | |
| - Wire gauge[1)] | 35 ... 120 mm² |
| - AWG | 1 ... 0000 |
| - Stripping length | 19 ... 20 mm |
| - Max. cable diameter | 19.5 mm |

| | | | | | | |
|---|---|---|---|---|---|---|
| - Tightening torque | mm² | 35 | 50 | 70 | 95 | 120 |
| | Nm | 8 | 10 | 12 | 14 | 16 |

### Contacts Han® HC Modular 650

| | |
|---|---|
| Material | copper alloy |
| Surface | silver |
| Contact resistance | ≤ 0.2 mΩ |
| Axial screw termination | |
| - Wire gauge[1)] | 70 ... 185 mm² |
| - MCM | 138 ... 350 |
| - Stripping length | 23 ... 25 mm |
| - Max. cable diameter | 26.5 mm |

| | | | | | | |
|---|---|---|---|---|---|---|
| - Tightening torque | mm² | 70 | 95 | 120 | 150 | 185 |
| | Nm | 12 | 14 | 16 | 17 | 18 |

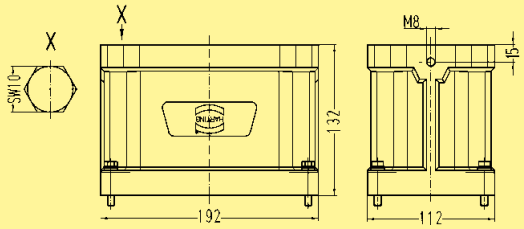
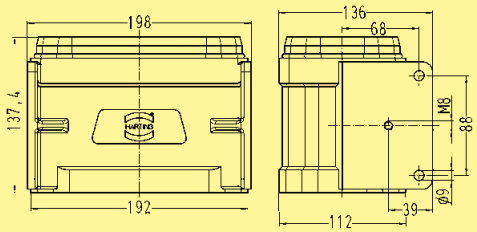
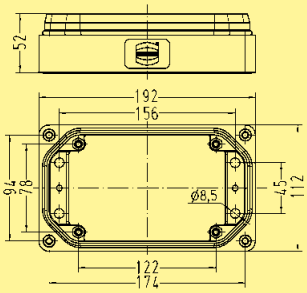
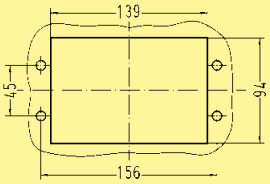
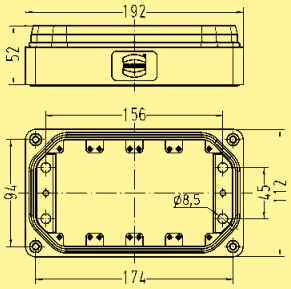
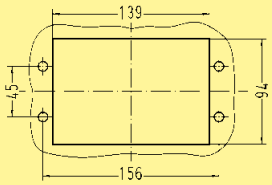
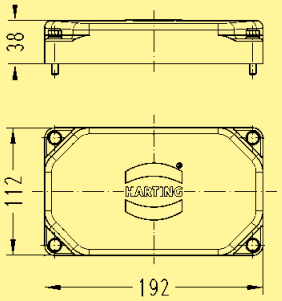
### Frame

| | |
|---|---|
| Tightening torque of the fixing screws | 2 Nm |
| Material | stainless steel |





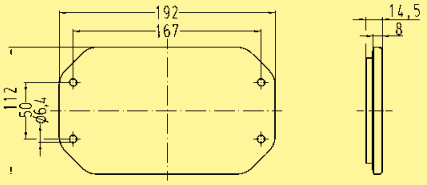
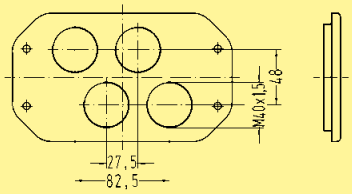
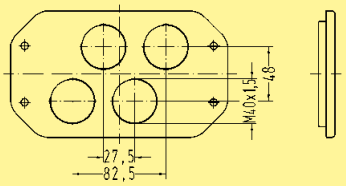
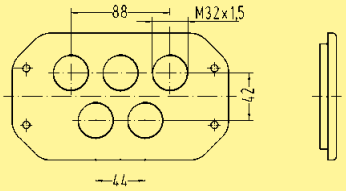
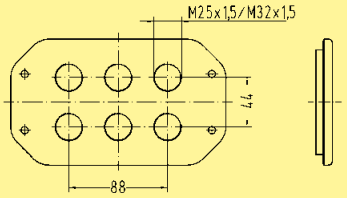
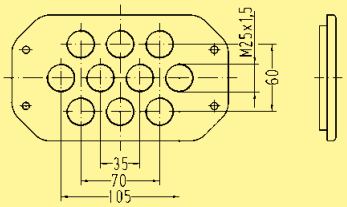
[1)] geometric wire gauge

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hoods<br> | 09 40 048 0451 |  | |
| Housings, surface mounting<br> | 09 40 048 0951 |  | |
| Housings, bulkhead mounting<br> | **09 40 048 0311** | <br>Panel cut out<br> | |
| Housings, bulkhead mounting<br>for 4 inserts<br>size 16 B<br> | 09 40 048 0331 | <br>Panel cut out<br> | |
| Protection covers<br> | 09 40 048 5401 |  | |

Han HC Modular

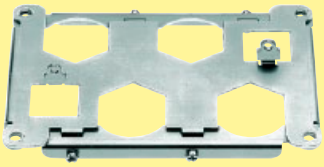
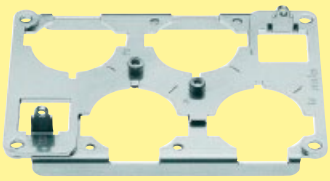
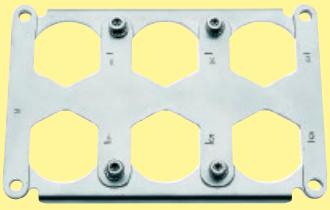
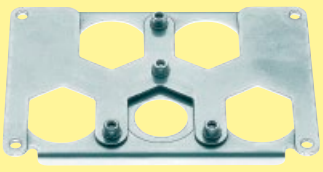
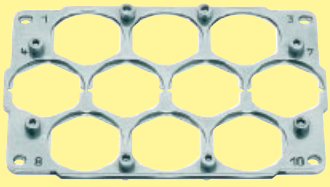


**Stock items in bold type**

| Identification | Part number | M | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Cover*<br>without cable entry<br> | 09 40 048 9801<br>(Distance bolt M 6)<br><br>09 40 048 9803<br>(Distance bolt M 5) | –<br><br>– |  | |
| Cover*<br>for male inserts<br> | 19 40 048 9801<br>(Distance bolt M 5) | 4 x 40 |  | |
| Cover*<br>for female inserts<br> | 19 40 048 9901<br>(Distance bolt M 5) | 4 x 40 |  | |
| Cover*<br> | 19 40 048 9812<br>(Distance bolt M 6) | 5 x 32 |  | |
| Cover*<br> | 19 40 048 9820<br>(Distance bolt M 6)<br><br>19 40 048 9822<br>(Distance bolt M 6) | 6 x 25<br><br>6 x 32 |  | |
| Cover*<br> | 19 40 048 9860<br>(Distance bolt M 6) | 10 x 25 |  | |

* Included in delivery range: 4 distance pieces, 4 screws M6, 4 washers

**Stock items in bold type**

| Identification | | Part number male | Part number female |
|---|---|---|---|
| Frame<br>for 4 inserts<br>size 16 B<br><br>suitable for hoods and surface mounted housings (p. 14.16)<br>in conjunction with cover 09 40 048 9803/<br>19 40 048 9801/19 40 048 9901 only |  | 09 40 048 9912 | 09 40 048 9912 |
| Frame<br>for 4 x HC 350 contacts + 2 x Han® Q 5/0 |  | **09 40 048 9810** | **09 40 048 9910** |
| Frame<br>for 4 x HC 650 contacts + 2 x Han® Q 5/0 |  | **09 40 048 9811** | **09 40 048 9911** |
| Frame<br>for 6 x HC 350 contacts |  | **09 40 048 9806** | **09 40 048 9906** |
| Frame<br>for 4 x HC 350 contacts + PE |  | **09 40 048 9809** | **09 40 048 9909** |
| Frame<br>for 10 x HC 350 contacts |  | **09 40 048 9860** | **09 40 048 9960** |

Han HC Modular



Stock items in bold type

## Contents


| | Page |
|---|---|
| Han-Power® S with 1x Han® Q 4/2 | **15.02** |
| Han-Power® S with 2x Han® Q 4/2 | **15.04** |
| Han-Power® S with 1x Han® Q 8/0 | **15.06** |
| Han-Power® S with 2x Han® Q 8/0 | **15.08** |
| Han-Power® S with 1x Han® Q 4/2, metal | **15.10** |
| Han-Power® T with 3x Han® Q 4/2 | **15.12** |
| Han-Power® T with 3x Han-Modular® Twin | **15.14** |
| Han-Power® T with 3x Han® Q 2/0 | **15.16** |
| Han-Power® T with 3x Han® Q 5/0 | **15.18** |
| Han® Q 4/2 | **15.20** |
| Han® Q 8/0 | **15.22** |
| Han® Q 5/0 | **15.24** |
| Han® Q 2/0 | **15.26** |
| Hoods/Housings Han-Compact® | **15.28** |
| Han-Power® Accessories | **15.34** |

## Features

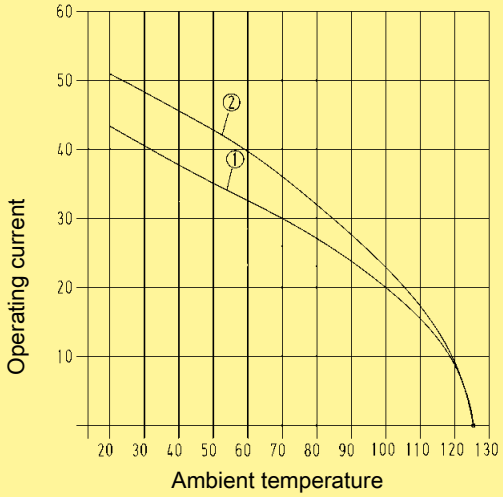
- 6 IDCs + PE for 2.5 mm² up to 6 mm² wire gauge
- No interuption of the energy supply
- Space-saving and compact design
- Leading protective ground within the insert
- Assembly with standard tools

## Description

The Han-Power® S connector is suitable for the assembly of serial power bus. Having assembled the energy supply Han-Power® S can be inserted at any place of the power cable. The cable mantle has to be removed, the conductor is placed without interruption in the IDC.
Han-Power® S is suitable for cables with single strands manufactured acc. to DIN VDE 0281/ DIN EN 60 228 with wire gauges of 2.5 mm² up to 6 mm². For the distribution of the device Han-Compact® hoods or cable to cable housings are used. This power supply has to be realized with one Han-Compact® cable to cable hood.

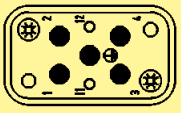
### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.
Measuring and testing techniques according to DIN EN 60 512-5




① Han® Q 4/2 Wire gauge: 4 mm²

② Han® Q 4/2 Wire gauge: 6 mm²



Han® Q 4/2 fully loaded with wire gauge 4x 6 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |

### Han-Power® S

| | |
|---|---|
| Number of contacts | |
| - Power contacts | 4 + PE |
| - Signal contacts | 2 |
| Electrical data acc. to EN 61 984 | |
| Power side | **40 A 400/690 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Signal side | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 / 250 V |
| Insulation resistance | ≥ $10^{10}$ kΩ |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |
| Degree of protection acc. to DIN EN 60 529 | IP 65 |

### Contacts

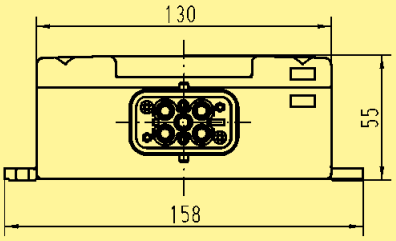
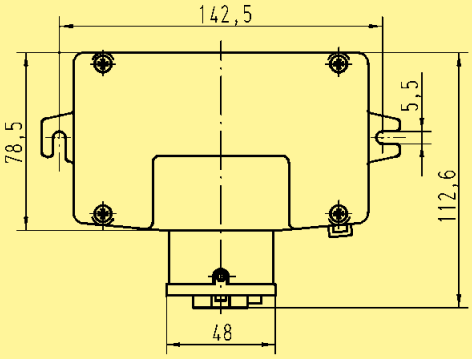
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 2.5 ... 6 mm² /<br>0.14 ... 2.5 mm² |
| - AWG | 14 ... 10 / 26 ... 14 |
| Max. insulation diameter | |
| - Power contacts | 5 mm |

### Cables

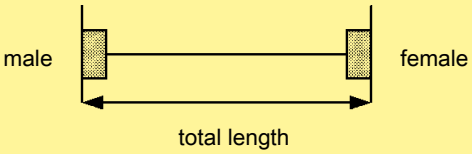
| | |
|---|---|
| Design of conductor acc. to | DIN VDE 0281<br>DIN EN 60 228 |
| Single strand | |
| Wire gauge | 2.5 mm² |
| - Number of single strands | 50 x 0.25 mm ∅ |
| - Outer diameter | 3.6 mm |
| Wire gauge | 4 mm² |
| - Number of single strands | 56 x 0.3 mm ∅ |
| - Outer diameter | 4.2 mm |
| Wire gauge | 6 mm² |
| - Number of single strands | 84 x 0.3 mm ∅ |
| - Outer diameter | 4.8 mm |



with 1x Han® Q 4/2

| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Han-Power® S** | | | | |
| Power supply<br>Han® Q 4/2; 1 moulded<br>Han-Compact® Hoods | 2.5 - 4 mm² | **09 12 008 4804** |  | |
| | 4 - 6 mm² | **09 12 008 4806** |  | |



| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **System cables in fixed lengths** | | | | |
| Cable lengths (total length) in m<br>pre-assembled on both sides<br>plastic hood, black<br>top entry<br>cable to cable hood with male insert<br>and hood with female insert<br>cable: 5x 4 mm² | 1.5 | **20 88 641 1015** |  | |
| | 3 | 20 88 641 1030 | | |
| | 5 | **20 88 641 1050** | | |
| | 10 | **20 88 641 1100** | | |
| | 15 | **20 88 641 1150** | | |
| | 30 | **20 88 641 1300** | | |







Stock items in bold type

# Han-Power® S with 2x Han® Q 4/2

## Features

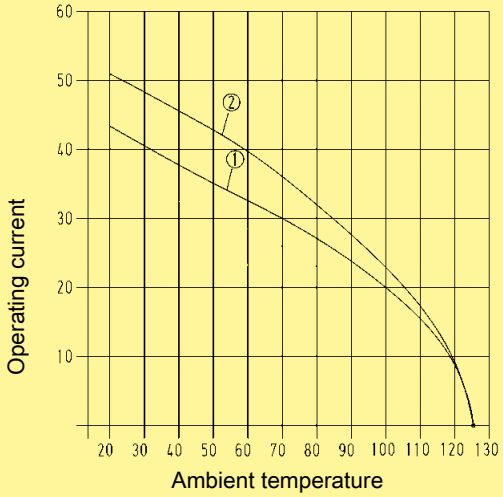
- 6 IDCs + PE for 4 mm² up to 6 mm² wire gauge
- No interuption of the energy supply
- Space-saving and compact design
- Leading protective ground within the insert
- Assembly with standard tools

## Description

The Han-Power® S connector is suitable for the assembly of serial power bus. Having assembled the energy supply Han-Power® S can be inserted at any place of the power cable. The cable mantle has to be removed, the conductor is placed without interruption in the IDC.
Han-Power® S is suitable for cables with single strands manufactured acc. to DIN VDE 0281/ DIN EN 60 228 with wire gauges of 2.5 mm² up to 6 mm². For the distribution of the device Han-Compact® hoods or cable to cable housings are used. This power supply has to be realized with one Han-Compact® hood.

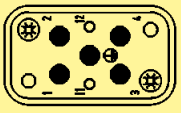
### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.
Measuring and testing techniques according to DIN EN 60 512-5




① Han® Q 4/2 Wire gauge: 4 mm²

② Han® Q 4/2 Wire gauge: 6 mm²



Han® Q 4/2 fully loaded with wire gauge 4x 6 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |

### Han-Power® S

| | |
|---|---|
| Number of contacts | |
| - Power contacts | 4 + PE |
| - Signal contacts | 2 |
| Electrical data acc. to EN 61 984 | |
| Power side | **40 A 400/690 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Signal side | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 / 250 V |
| Insulation resistance | ≥ $10^{10}$ kΩ |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |
| Degree of protection acc. to DIN EN 60 529 | IP 65 |

### Contacts

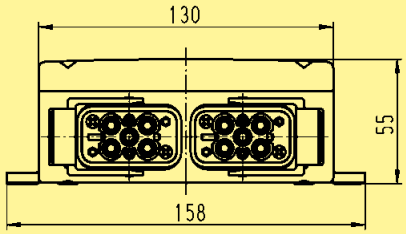
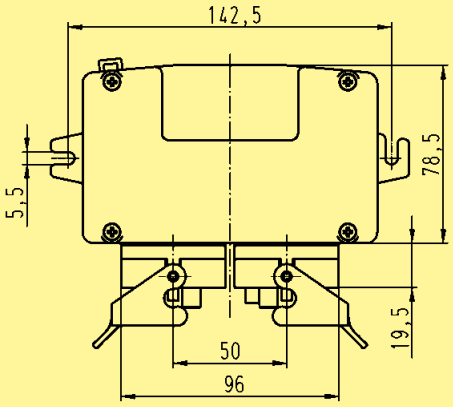
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 4 ... 6 mm² /<br>0.14 ... 2.5 mm² |
| - AWG | 14 ... 10 / 26 ... 14 |
| Max. insulation diameter | |
| - Power contacts | 5 mm |

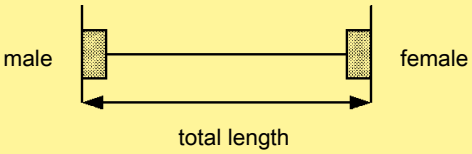
### Cables

| | |
|---|---|
| Design of conductor acc. to | DIN VDE 0281<br>DIN EN 60 228 |
| Single strand | |
| Wire gauge | 4 mm² |
| - Number of single strands | 56 x 0.3 mm ∅ |
| - Outer diameter | 4.2 mm |
| Wire gauge | 6 mm² |
| - Number of single strands | 84 x 0.3 mm ∅ |
| - Outer diameter | 4.8 mm |



with 2x Han® Q 4/2

| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Han-Power® S**<br>Power supply<br>Han® Q 4/2; 2 screwed<br>Han-Compact® Housings,<br>bulkhead mounting | 4 - 6 mm² | **09 12 008 4807** | <br> | |

| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **System cables in fixed lengths** | | |  | |
| Cable lengths (total length) in m | 1.5 | **20 88 641 1015** | | |
| pre-assembled on both sides | 3 | 20 88 641 1030 | | |
| plastic hood, black | 5 | **20 88 641 1050** | | |
| top entry | 10 | **20 88 641 1100** | | |
| cable to cable hood with male insert | 15 | **20 88 641 1150** | | |
| and hood with female insert | 30 | **20 88 641 1300** | | |
| cable: 5x 4 mm² | | | | |





Stock items in bold type

## Features

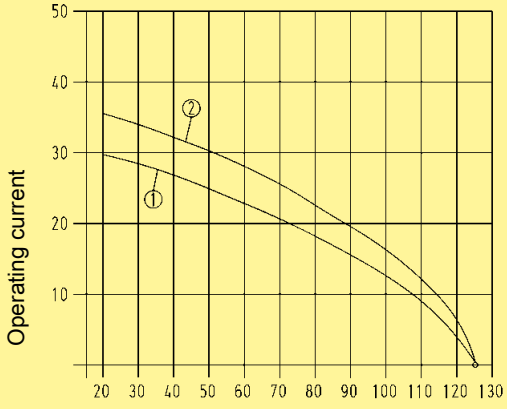
- 6 IDCs + PE for 2.5 mm² up to 6 mm² wire gauge
- No interuption of the energy supply
- Space-saving and compact design
- Leading protective ground within the insert
- Assembly with standard tools

## Description

The Han-Power® S connector is suitable for the assembly of serial power bus. Having assembled the energy supply Han-Power® S can be inserted at any place of the power cable. The cable mantle has to be removed, the conductor is placed without interruption in the IDC.
Han-Power® S is suitable for cables with single strands manufactured acc. to DIN VDE 0281/ DIN EN 60 228 with wire gauges of 2.5 mm² up to 6 mm². For the distribution of the device Han-Compact® hoods or cable to cable housings are used. This power supply has to be realized with one Han-Compact® cable to cable hood.

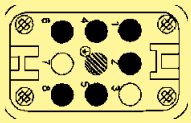
### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.
Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

① Han® Q 4/2 Wire gauge: 2.5 mm²
② Han® Q 4/2 Wire gauge: 4 mm²
② Han® Q 4/2 Wire gauge: 6 mm²



Han® Q 8/0 partly loaded with wire gauge 7x 4 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |

### Han-Power® S

| | |
|---|---|
| Number of contacts | |
| - Power contacts | 6 + PE |
| Electrical data | |
| acc. to EN 61 984 | **25 A 500 V 6 kV 3** |
| Rated current | 25 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Rated voltage | |
| acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ kΩ |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |
| Degree of protection acc. to DIN EN 60 529 | IP 65 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 2.5 ... 6 mm² |
| - AWG | 14 ... 10 |

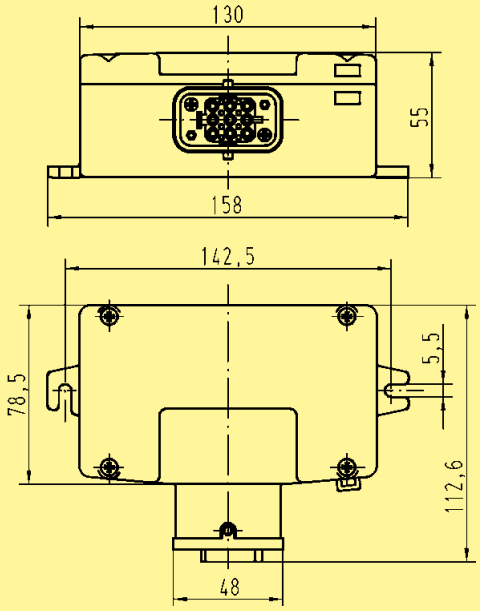
### Cables

| | |
|---|---|
| Design of conductor acc. to | DIN VDE 0281<br>DIN EN 60 228 |
| <u>Single strand</u> | |
| Wire gauge | 2.5 mm² |
| - Number of single strands | 50 x 0.25 mm ∅ |
| - Outer diameter | 3.6 mm |
| Wire gauge | 4 mm² |
| - Number of single strands | 56 x 0.3 mm ∅ |
| - Outer diameter | 4.2 mm |
| Wire gauge | 6 mm² |
| - Number of single strands | 84 x 0.3 mm ∅ |
| - Outer diameter | 4.8 mm |

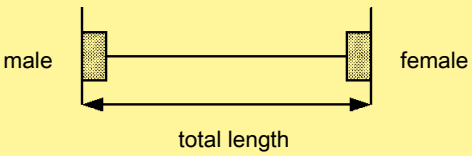


with 1x Han® Q 8/0

| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Han-Power® S** | | | | |
| Power supply<br>Han® Q 8/0; 1 moulded<br>Han-Compact® Hoods | 2.5 - 4 mm² | **09 12 008 4801** | | |
| | 4 - 6 mm² | 09 12 008 4811 | | |




| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **System cables in fixed lengths** | | | | |
| Cable lengths (total length) in m<br>pre-assembled on both sides<br>plastic hood, black<br>top entry<br>cable to cable hood with male insert<br>and hood with female insert<br>cable: 7x 2.5 mm² | 1.5<br>3<br>5<br>10<br>15<br>30 | 20 88 841 0015<br>**20 88 841 0030**<br>20 88 841 0050<br>**20 88 841 0100**<br>**20 88 841 0150**<br>**20 88 841 0300** | | |




Power Distribution



Stock items in bold type

# Han-Power® S with 2x Han® Q 8/0

## Features

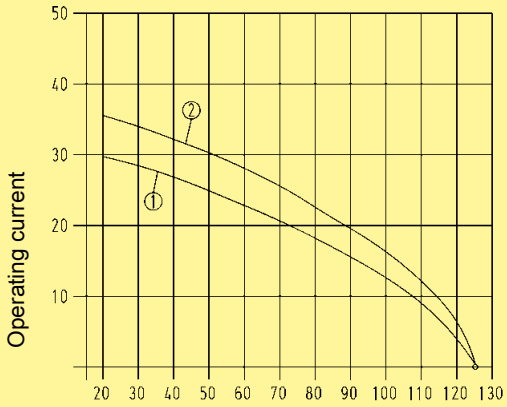
- 6 IDCs + PE for 2.5 mm² up to 4 mm² wire gauge
- No interuption of the energy supply
- Space-saving and compact design
- Leading protective ground within the insert
- Assembly with standard tools

## Description

The Han-Power® S connector is suitable for the assembly of serial power bus. Having assembled the energy supply Han-Power® S can be inserted at any place of the power cable. The cable mantle has to be removed, the conductor is placed without interruption in the IDC.
Han-Power® S is suitable for cables with single strands manufactured acc. to DIN VDE 0281/ DIN EN 60 228 with wire gauges of 2.5 mm² up to 6 mm². For the distribution of the device Han-Compact® hoods or cable to cable housings are used. This power supply has to be realized with two Han-Compact® hoods.

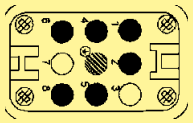
### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.
Measuring and testing techniques according to DIN EN 60 512-5




① Han® Q 8/0 Wire gauge: 2.5 mm²

② Han® Q 8/0 Wire gauge: 4 mm²



Han® Q 8/0 partly loaded with wire gauge 7x 4 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |

### Han-Power® S

| | |
|---|---|
| Number of contacts | |
| - Power contacts | 6 + PE |
| Electrical data | |
| acc. to EN 61 984 | **25 A 500 V 6 kV 3** |
| Rated current | 25 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Rated voltage | |
| acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ kΩ |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |
| Degree of protection acc. to DIN EN 60 529 | IP 65 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 2.5 ... 4 mm² |
| - AWG | 14 ... 12 |

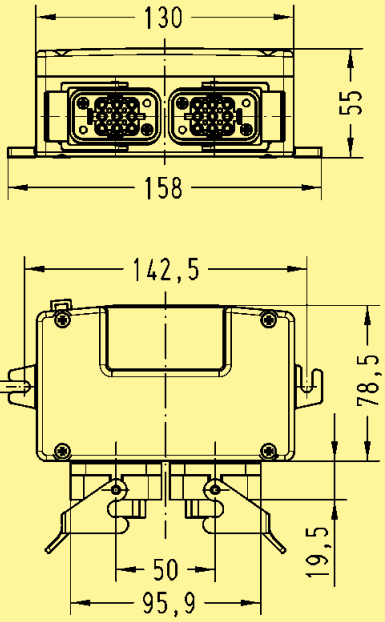
### Cables

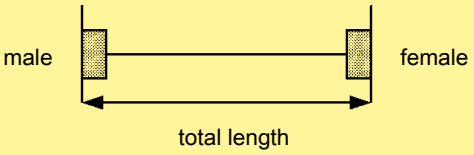
| | |
|---|---|
| Design of conductor acc. to | DIN VDE 0281<br>DIN EN 60 228 |
| <u>Single strand</u> | |
| Wire gauge | 2.5 mm² |
| - Number of single strands | 50 x 0.25 mm ∅ |
| - Outer diameter | 3.6 mm |
| Wire gauge | 4 mm² |
| - Number of single strands | 56 x 0.3 mm ∅ |
| - Outer diameter | 4.2 mm |

Power Distribution



with 2x Han® Q 8/0

| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Han-Power® S**<br>Power supply<br>Han® Q 8/0; 2 screwed<br>Han-Compact® Housings, bulkhead mounting | 2.5 - 4 mm² | **09 12 008 4802** |  | |

| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **System cables in fixed lengths**<br>Cable lengths (total length) in m<br>pre-assembled on both sides<br>plastic hood, black<br>top entry<br>hood on both sides<br>cable: 7x 2.5 mm² | 1.5<br>3<br>5<br>10<br>15<br>30 | 20 88 821 0015<br>20 88 821 0030<br>20 88 821 0050<br>20 88 821 0100<br>20 88 821 0150<br>20 88 821 0300 |  | |





Stock items in bold type

## Features

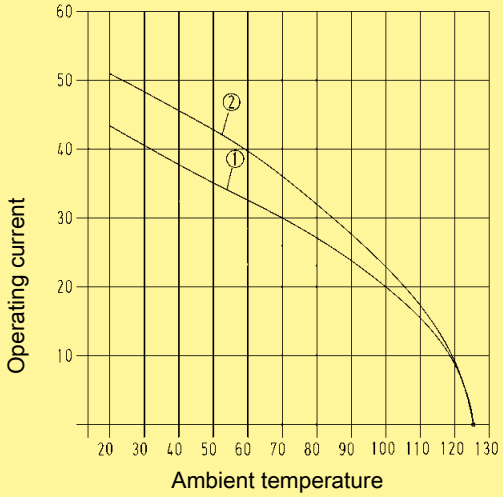
- 6 IDCs/screw terminals + PE for 4 mm² up to 6 mm² wire gauge; 4 IDCs + PE for 10 mm² wire gauge
- No interuption of the energy supply
- Space-saving and compact design
- Leading protective ground within the insert
- Assembly with standard tools

## Description

Han-Power® S metal version allows the realisation of applications where a high degree of protection is required against dust, splashed water and mechanical shock. This new variant continues to support the user in providing simple installation and maintenance practices but now offers greater protection against harsh industrial environments.
Han-Power® S metal offers optimal handling characteristics and now features an increased wire gauge range. It is now possible to realise power distribution networks with wire gauge up to 10 mm².
This power supply has to be realized with one Han-Compact® hood.

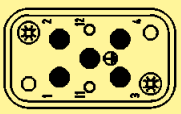
### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.
Measuring and testing techniques according to DIN EN 60 512-5




① Han® Q 4/2 Wire gauge: 4 mm²

② Han® Q 4/2 Wire gauge: 6 mm²



Han® Q 4/2 fully loaded with wire gauge 4x 6 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |

### Han-Power® S

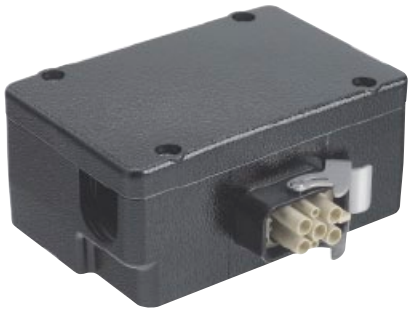
| | |
|---|---|
| Number of contacts | |
| - Power contacts | 4 + PE |
| - Signal contacts | 2 |
| Electrical data acc. to EN 61 984 | |
| Power side | **40 A 400/690 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Signal side | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 / 250 V |
| Insulation resistance | ≥ $10^{10}$ kΩ |
| Material | aluminium die-cast |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |
| Degree of protection acc. to DIN EN 60 529 | IP 65 |

### Contacts

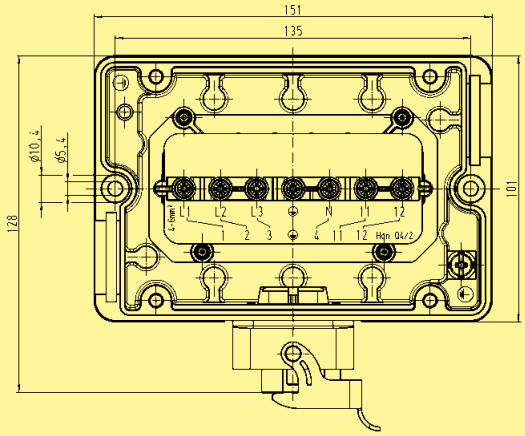
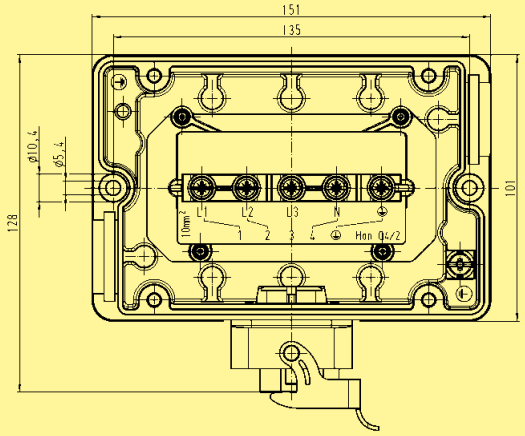
| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 4 ... 10 mm² /<br>0.14 ... 2.5 mm² |
| - AWG | 12 ... 8 / 26 ... 14 |
| Max. insulation diameter | |
| - Power contacts | 5 mm |

### Cables

| | |
|---|---|
| Design of conductor acc. to | DIN VDE 0281<br>DIN EN 60 228 |
| Single strand | |
| Wire gauge | 4 mm² |
| - Number of single strands | 56 x 0.3 mm ∅ |
| - Outer diameter | 4.2 mm |
| Wire gauge | 6 mm² |
| - Number of single strands | 84 x 0.3 mm ∅ |
| - Outer diameter | 4.8 mm |
| Wire gauge | 10 mm² |
| - Number of single strands | 80 x 0.4 mm ∅ |
| - Outer diameter | 6.3 mm |



with 1x Han® Q 4/2, metal

| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han-Power® S<br>Power supply<br>Han® Q 4/2; 1 screwed<br>Han-Compact® Housings, bulkhead mounting | 4 - 6 mm² | **09 12 008 4901** |  | |
| | 10 mm² | **09 12 008 4951** |  | |





Stock items in bold type

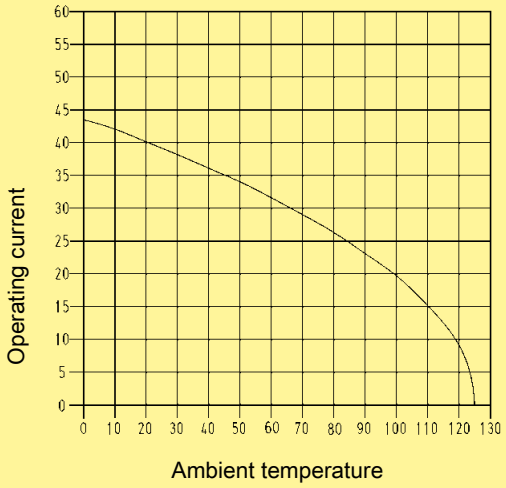
## Features

- Per 1 connection for power input, power output and to device
- Male and female inserts finger protected
- 4 power contacts; 2 signal contacts
- Metal housing
- Locking lever stainless steel

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge: 4 mm²

## Technical characteristics

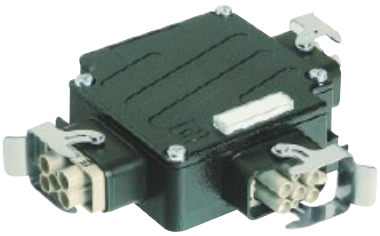
| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |

### Han-Power® T

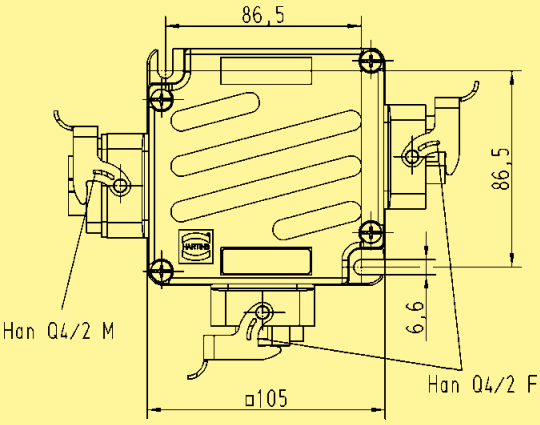
| | |
|---|---|
| Number of contacts | |
| - Power contacts | 4 + PE |
| - Signal contacts | 2 |
| Electrical data acc. to EN 61 984 | |
| Power side | **40 A 400/690 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Signal side | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 / 250 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | zinc die-cast |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |
| Degree of protection acc. to DIN EN 60 529 | IP 65 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 4 ... 6 mm² /<br>0.14 ... 2.5 mm² |
| - AWG | 12 ... 10 / 26 ... 14 |
| Max. insulation diameter | |
| - Power contacts | 5 mm |



with 3x Han® Q 4/2

| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han-Power® T<br>Power supply<br>with 3x Han® Q 4/2<br>in Han-Compact®<br>Housings, bulkhead mounting | 4 mm² | **09 12 008 4720** |  | |







Stock items in bold type

## Features

- 1 connection for power input and power output each
- 1 T-connection to device
- 3 power contacts; 4 signal contacts
- Metal housing
- Locking lever Han-Easy Lock®

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |

### Han-Power® T

| | |
|---|---|
| Number of contacts | |
| - Power contacts | 3 |
| - Signal contacts | 4 |
| Electrical data acc. to EN 61 984 | |
| Power side | **40 A 400/690 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Signal side | **16 A 400 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 / V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | zinc die-cast |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |
| Degree of protection acc. to DIN EN 60 529 | IP 65 |

### Contacts

Han® C module with Crimp terminal *

| | |
|---|---|
| Number of contacts | 3 |
| Electrical data acc. to EN 61 984 | **40 A 400/690 V 6 kV 3** |
| Material | polycarbonate |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Temperature range | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Crimp terminal | |
| - mm² | 2.5 ... 6 mm² |
| - AWG | 14 ... 10 |

Han® EE module with Crimp terminal *

| | |
|---|---|
| Number of contacts | 8 |
| Electrical data acc. to EN 61 984 | **16 A 400 V 6 kV 3** |
| Material | polycarbonate |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Temperature range | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |





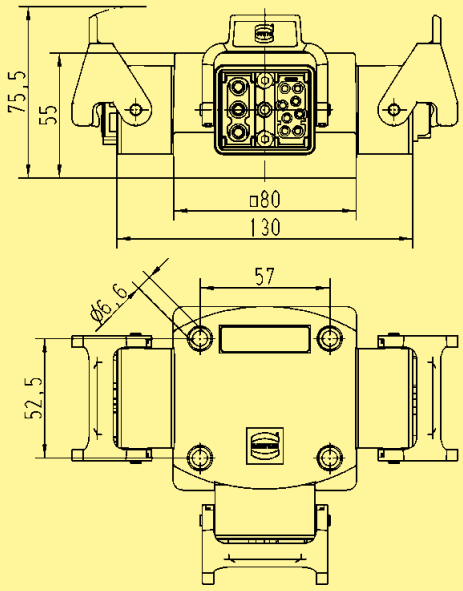
* for more technical details see chapter 06



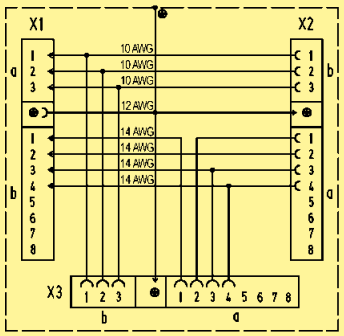
with 3x Han-Modular® Twin

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Han-Power® T<br>Power supply<br>with 3x Han-Modular® Twin | **09 12 008 4760** | | |






Wiring diagram



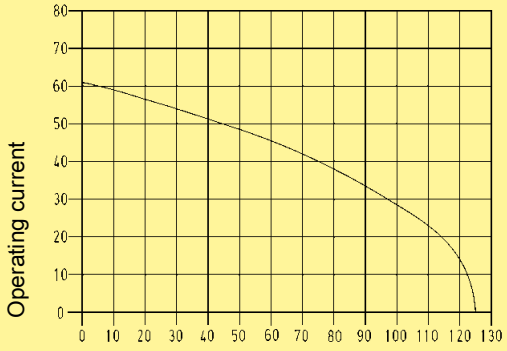
## Features

- Per 1 connection for power input, power output and to device
- 2 power contacts
- Plastic housings are integrated in the moulding
- Compact design

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge: 6 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |

### Han-Power® T

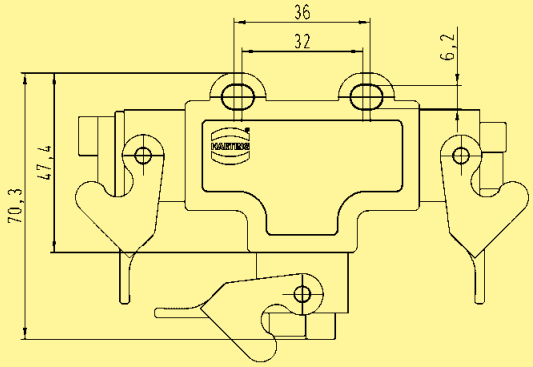
| | |
|---|---|
| Number of contacts | |
| - Power contacts | 2 + PE |
| Electrical data acc. to EN 61 984 | |
| Power side | **40 A 400 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |
| Degree of protection acc. to DIN EN 60 529 | IP 65 / IP 67 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 2.5 ... 10 mm² |
| - AWG | 14 ... 8 |



with 3x Han® Q 2/0

| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han-Power® T<br>Power supply<br>with 3x Han® Q 2/0<br>in Han® 3 A<br>Housings, bulkhead mounting<br> | 6 mm² | **09 12 008 4752** |  | |





Stock items in bold type

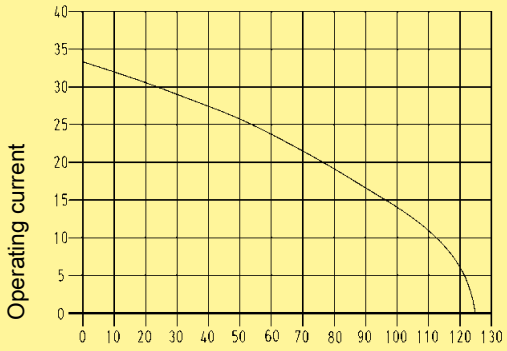
## Features

- Per 1 connection for power input, power output and to device
- 4 power contacts
- Plastic housings are integrated in the moulding
- Compact design

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge: 2.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 61 984<br>DIN EN 60 664-1 |

### Han-Power® T

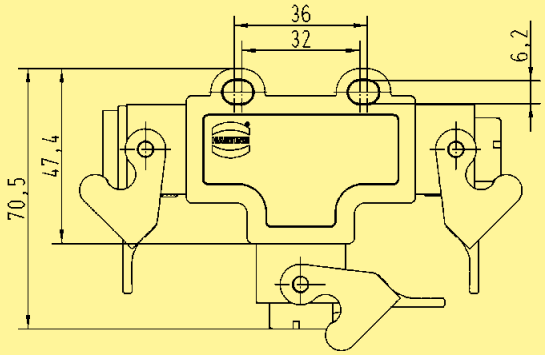
| | |
|---|---|
| Number of contacts | |
| - Power contacts | 4 + PE |
| Electrical data | |
| acc. to EN 61 984 | **16 A 230/400 V 4 kV 3** |
| Rated current | 16 A |
| Rated voltage conductor - ground | 230 V |
| Rated voltage conductor - conductor | 400 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage | |
| acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |
| Degree of protection acc. to DIN EN 60 529 | IP 65 / IP 67 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |



with 3x Han® Q 5/0

| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han-Power® T<br>Power supply<br>with 3x Han® Q 5/0<br>in Han® 3 A<br>Housings, bulkhead mounting | 2,5 mm² | **09 12 008 4751** |  | |







Stock items in bold type

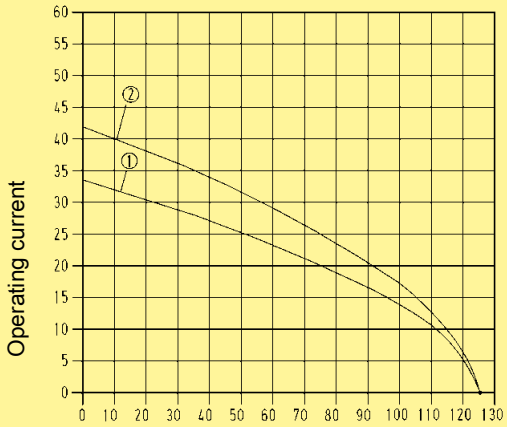
## Features

- 4 power contacts Han® C and 2 signal contacts Han D®
- Finger protection
- Leading protective ground with crimp terminal
- Inserts suitable for metal and plastic hoods and housings of Han-Compact® series (not suitable for 19 12 008 0501, 19 12 708 0501 and 19 12 008 0502)
- 3 coding possibilities by using a coding pin instead of fixing screw

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge: ① 2.5 mm²
② 4 mm²

## Technical characteristics

| | |
|---|---|
| **Specifications** | DIN EN 60 664-1<br>DIN EN 61 984 |
| **Approvals** | |

### Inserts

| | |
|---|---|
| Number of contacts | 4 / 2 + PE |
| Electrical data acc. to EN 61 984 | |
| Power side | **40 A 400/690 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Signal side | **10 A 250 V 4 kV 3** |
| Rated current | 10 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage acc. to UL/CSA | 600 / 250 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 0.3 mΩ |
| Crimp terminal | |
| - mm² | 1.5 ... 6 mm² / 0.14 ... 2.5 mm² |
| - AWG | 16 ... 10 / 26 ... 14 |
| Max. insulation diameter | |
| - Power contacts | 5 mm |

### Hoods/Housings

Plastic hoods/housings

| | |
|---|---|
| Material | polycarbonate |
| Locking element | Polyamide |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

### Accessories

| | |
|---|---|
| Crimping tools | chapter 99 |

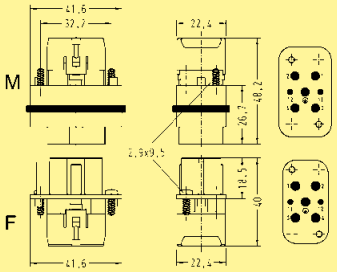
Power Distribution

Number of contacts

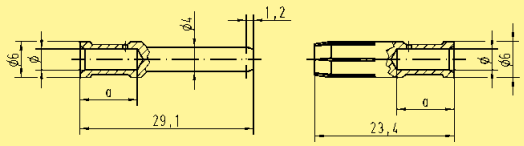
# 4/2 + ⏚



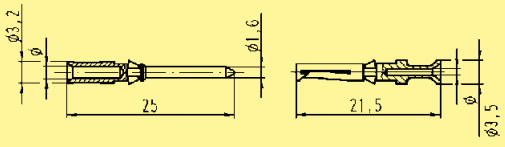


| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 12 006 3041** | **09 12 006 3141** | <br>Contact arrangement view from termination side | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts** | | | | | |
| Han® C contacts<br>Power contacts<br>silver plated | 1.5 | **09 32 000 6104** | **09 32 000 6204** | | |
| | 2.5 | **09 32 000 6105** | **09 32 000 6205** | | |
| | 4 | **09 32 000 6107** | **09 32 000 6207** | | |
| | 6 | **09 32 000 6108** | **09 32 000 6208** | | |
| Han D® contacts<br>Signal contacts<br>silver plated | 0.14-0.37 | **09 15 000 6104** | **09 15 000 6204** | | |
| | 0.5 | **09 15 000 6103** | **09 15 000 6203** | | |
| | 0.75 | **09 15 000 6105** | **09 15 000 6205** | | |
| | 1 | **09 15 000 6102** | **09 15 000 6202** | | |
| | 1.5 | **09 15 000 6101** | **09 15 000 6201** | | |
| | 2.5 | **09 15 000 6106** | **09 15 000 6206** | | |
| gold plated | 0.14-0.37 | **09 15 000 6124** | **09 15 000 6224** | | |
| | 0.5 | **09 15 000 6123** | **09 15 000 6223** | | |
| | 0.75 | **09 15 000 6125** | **09 15 000 6225** | | |
| | 1 | **09 15 000 6122** | **09 15 000 6222** | | |
| | 1.5 | **09 15 000 6121** | **09 15 000 6221** | | |
| | 2.5 | **09 15 000 6126** | **09 15 000 6226** | | |



| Wire gauge | | | ∅ | Stripping length |
|---|---|---|---|---|
| 1.5 | mm² | AWG 16 | 1.75 | 9 mm |
| 2.5 | mm² | AWG 14 | 2.25 | 9 mm |
| 4 | mm² | AWG 12 | 2.85 | 9.6 mm |
| 6 | mm² | AWG 10 | 3.5 | 9.6 mm |



| Wire gauge | | | ∅ | Stripping length |
|---|---|---|---|---|
| 0.14-0.37 | mm² | AWG 26-22 | 0.9 | 8 mm |
| 0.5 | mm² | AWG 20 | 1.1 | 8 mm |
| 0.75 | mm² | AWG 18 | 1.3 | 8 mm |
| 1 | mm² | AWG 18 | 1.45 | 8 mm |
| 1.5 | mm² | AWG 16 | 1.75 | 8 mm |
| 2.5 | mm² | AWG 14 | 2.25 | 6 mm |





Stock items in bold type

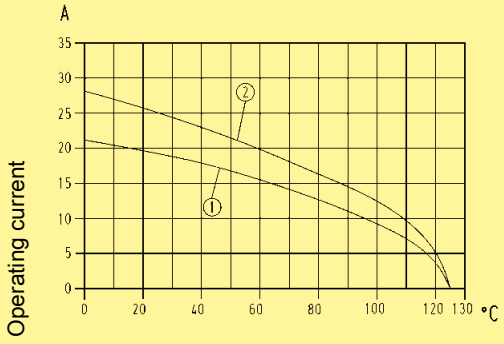
## Features

- 8 contact chambers for crimp contacts of Han E® series
- Space-saving and compact design
- Leading protective ground with crimp terminal
- Inserts suitable for metal and plastic hoods and housings of Han-Compact® series
- ISO 23 570 / DESINA conform product

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

Wire gauge: ① 1.5 mm²
② 2.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 8 + PE |
| Electrical data acc. to EN 61 984 | |
| Mounted plastic hood | **16 A 500 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 400/690 V 6 kV 2 |
| Mounted metal hood | 16 A 230/400 V 4 kV 3 |
| Rated voltage acc. to UL/CSA | 500 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 4 mm²<br>partly loaded up to 4 mm² is possible |
| - AWG | 26 ... 12 |

### Hoods/Housings

Plastic hoods/housings

| | |
|---|---|
| Material | polycarbonate |
| Locking element | Polyamide |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

Hoods/Housings, metal

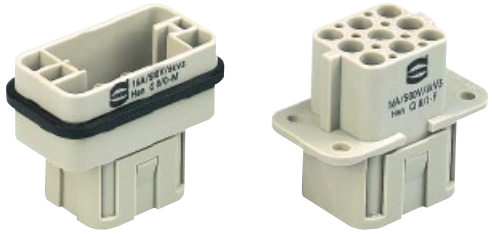
| | |
|---|---|
| Material | zinc die-cast |
| Locking element | Stainless steel |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... 125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

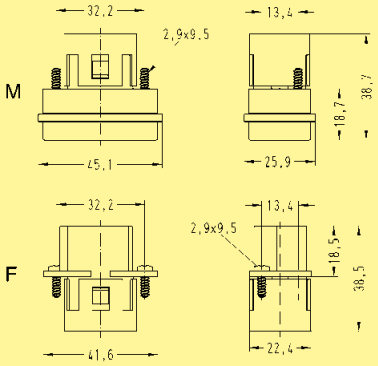
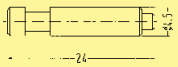
### Accessories

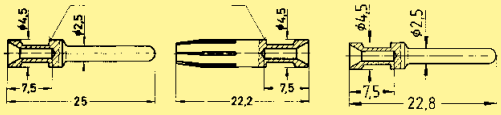
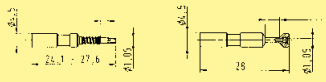
| | |
|---|---|
| Crimping tools | chapter 99 |

Number of contacts

8 + ⏚



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 12 008 3001** | **09 12 008 3101** |  Contact arrangement view from termination side | |
| **Coding pin** | | 09 33 000 9954 |  | Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts | | | | Operating contact Identification / Relay contact | |
| silver plated | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 |  | |
| | 0.5 | **09 33 000 6121** | **09 33 000 6220** | | |
| | 0.75 | **09 33 000 6114** | **09 33 000 6214** | | |
| | 1 | **09 33 000 6105** | **09 33 000 6205** | | |
| | 1.5 | **09 33 000 6104** | **09 33 000 6204** | | |
| | 2.5 | **09 33 000 6102** | **09 33 000 6202** | | |
| | 4 | **09 33 000 6107** | **09 33 000 6207** | | |
| gold plated | 0.14-0.37 | **09 33 000 6117** | **09 33 000 6217** | | |
| | 0.5 | **09 33 000 6122** | **09 33 000 6222** | | |
| | 0.75 | **09 33 000 6115** | **09 33 000 6215** | | |
| | 1 | **09 33 000 6118** | **09 33 000 6218** | | |
| | 1.5 | **09 33 000 6116** | **09 33 000 6216** | | |
| | 2.5 | **09 33 000 6123** | **09 33 000 6223** | | |
| | 4 | 09 33 000 6119 | **09 33 000 6221** | | |
| Relay contact silver plated | 0.75-1 | 09 33 000 6109 | | | |
| | 1.5 | 09 33 000 6110 | | | |
| | 2.5 | 09 33 000 6111 | | | |
| **F.O. contacts**<br>for 1 mm plastic fibre | | 20 10 001 3311 | 20 10 001 3321 | Crimp zone / Crimp zone  | |

| Identification | Wire gauge | | | Stripping length |
|---|---|---|---|---|
| no groove | 0.14-0.37 | mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 | mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 | mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 | mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 | mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 | mm² | AWG 14 | 7.5 mm |
| no groove | 4 | mm² | AWG 12 | 7.5 mm |

* on the back crimp collar

Crimp contacts 0.14 ... 0.37 mm² only used with BUCHANAN crimping tool 09 99 000 0001

**Stock items in bold type**

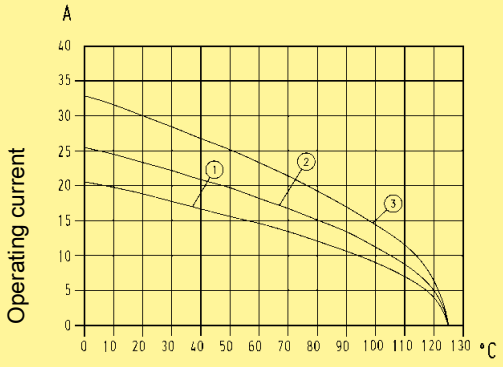
## Features

- 5 contact chambers for crimp contacts of Han E® series
- Space-saving and compact design
- Leading protective ground with screw terminal
- Compatible with plastic and metal hoods of series Han® 3 A

### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Ambient temperature

Wire gauge:
① 1.0 mm²
② 1.5 mm²
③ 2.5 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | |

### Inserts

| | |
|---|---|
| Number of contacts | 5 + PE |
| Electrical data | |
| acc. to EN 61 984 | **16 A 230/400 V 4 kV 3** |
| Rated current | 16 A |
| Rated voltage conductor - ground | 230 V |
| Rated voltage conductor - conductor | 400 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 320/500 V 4 kV 2 |
| Rated voltage | |
| acc. to UL/CSA | 600 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| - hard-gold plated | 2 µm Au over 3 µm Ni |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal | |
| - mm² | 0.14 ... 2.5 mm² |
| - AWG | 26 ... 14 |
| PE screw terminal | |
| - mm² | 2.5 mm² |
| - AWG | 14 |

### Hoods/Housings

| | |
|---|---|
| Selection of hoods/housings | see chapter 30 / chapter 31 |

Plastic hoods/housings

| | |
|---|---|
| Material | polycarbonate |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 67 |

Hoods/Housings, metal

| | |
|---|---|
| Material | zinc die-cast |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 44<br>IP 67 is achieved with seal |
| screw | 09 20 000 9918 |

### Accessories

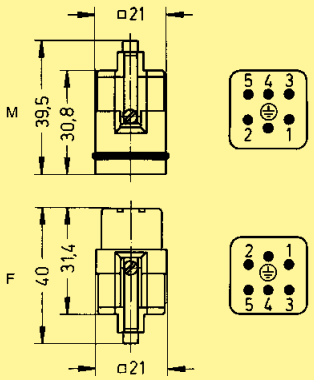
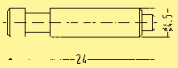
| | |
|---|---|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Sealing screw | chapter 40 |

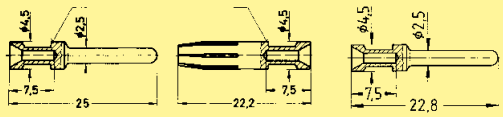
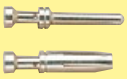
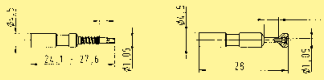
Number of contacts

5 + ⏚





| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Crimp terminal**<br>Order crimp contacts separately | **09 12 005 3001** | **09 12 005 3101** |  Contact arrangement view from termination side | |
| **Coding pin**  | | 09 33 000 9954 |  | Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Crimp contacts**<br>Power contacts | | | | Operating contact Identification / Relay contact  | |
| silver plated  | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 | | |
| | 0.5 | **09 33 000 6121** | **09 33 000 6220** | | |
| | 0.75 | **09 33 000 6114** | **09 33 000 6214** | | |
| | 1 | **09 33 000 6105** | **09 33 000 6205** | | |
| | 1.5 | **09 33 000 6104** | **09 33 000 6204** | | |
| | 2.5 | **09 33 000 6102** | **09 33 000 6202** | | |
| gold plated  | 0.14-0.37 | **09 33 000 6117** | **09 33 000 6217** | | |
| | 0.5 | **09 33 000 6122** | **09 33 000 6222** | | |
| | 0.75 | **09 33 000 6115** | **09 33 000 6215** | | |
| | 1 | **09 33 000 6118** | **09 33 000 6218** | | |
| | 1.5 | **09 33 000 6116** | **09 33 000 6216** | | |
| | 2.5 | **09 33 000 6123** | **09 33 000 6223** | | |
| Relay contact silver plated  | 0.75-1 | 09 33 000 6109 | | | |
| | 1.5 | 09 33 000 6110 | | | |
| | 2.5 | 09 33 000 6111 | | | |
| **F.O. contacts**<br>for 1 mm plastic fibre | | 20 10 001 3311 | 20 10 001 3321 | Crimp zone Crimp zone  | |

| Identification | Wire gauge | | | Stripping length |
|---|---|---|---|---|
| no groove | 0.14-0.37 | mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 | mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 | mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 | mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 | mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 | mm² | AWG 14 | 7.5 mm |

* on the back crimp collar

Crimp contacts 0.14 ... 0.37 mm² only used with BUCHANAN crimping tool 09 99 000 0001

**Stock items in bold type**

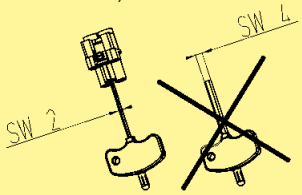
## Features

- Compact designed connector for high current ratings
- 16 coding options
- For hoods/housings size Han® 3 A
- Finger protected male and female contacts
- Assembly without special tool by axial screw termination

### Attention

- By using in Han® 3 A HPR hoods/housings the sealing on the insert has to be removed.
- For termination please use only hexagonal screw driver with wrench size SW 2.
- If PE contact is not used:

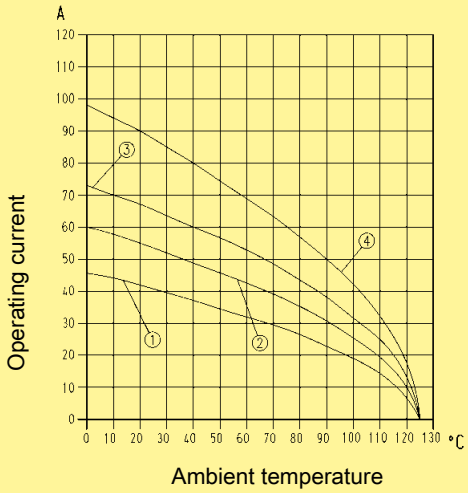
Please screw the PE contact maximal on both sides clockwise with a hexagonal screwdriver, wrench size SW 2.




### Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5




Wire gauge:
① 2.5 mm²
② 4 mm²
③ 6 mm²
④ 10 mm²

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Approvals | c UL us |

### Inserts

| | |
|---|---|
| Number of contacts | 2 + PE |
| Electrical data | |
| acc. to EN 61 984 | **40 A 400 V 6 kV 3** |
| Rated current | 40 A |
| Rated voltage | 400 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Rated voltage | |
| acc. to UL/CSA | 400 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... 125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life | |
| - mating cycles | ≥ 500 |

### Contacts

| | |
|---|---|
| Material | copper alloy |
| Surface | |
| - hard-silver plated | 3 µm Ag |
| Contact resistance | ≤ 1 mΩ |
| Axial screw termination | |
| - mm² | 2,5 ... 10 mm² |
| - AWG | 14 ... 8 |
| Tightening torque | 1,8 Nm |
| Stripping length | 8 mm +1 |

### Hoods/Housings

| | |
|---|---|
| Selection of hoods/housings | see chapter 30 / chapter 31 |

Plastic hoods/housings

| | |
|---|---|
| Material | polycarbonate |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 67 |

Hoods/Housings, metal

| | |
|---|---|
| Material | zinc die-cast |
| Degree of protection acc. to DIN EN 60 529 | |
| for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

### Accessories

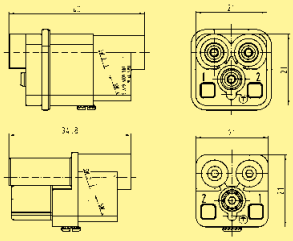
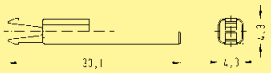
| | |
|---|---|
| Cable clamps | chapter 40 |
| Sealing screw | chapter 40 |

Number of contacts

2 + ⏚





| Identification | Part number Male insert (M) | Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Axial screw terminal | | |  | |
| 4 ... 10 mm² | **09 12 002 2651** | **09 12 002 2751** | | |
| 2,5 ... 6 mm² | **09 12 002 2653** | **09 12 002 2753** | | |
| Coding element | **09 12 000 9922** | **09 12 000 9922** |  | |

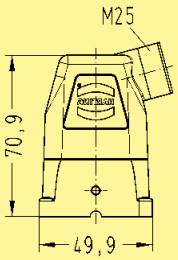
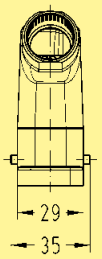
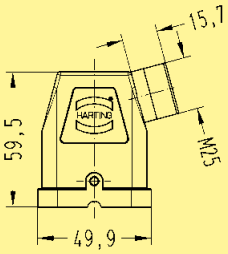
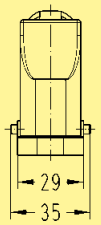
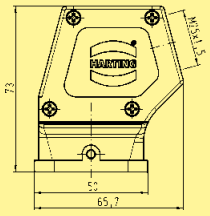
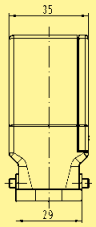
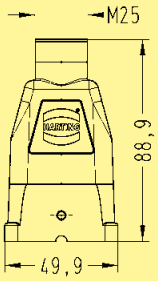
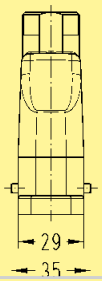
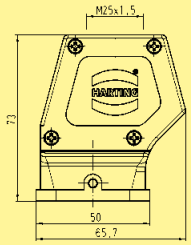
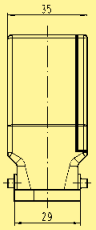
| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Hex key SW 2<br>for axial setscrew | | | |
| with grip | 09 99 000 0313 | | |
|  | | | |
| adapter 1/4“ | 09 99 000 0369 | | |
|  | | | |





Stock items in bold type

## Metal

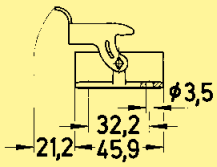
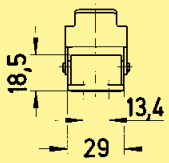
| Identification | | Part number | | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>• side-entry for Han-Compact® half gland<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | black powder coated<br>19 12 708 0511<br><br>black chromated<br>19 12 008 0511 | M25<br><br>M25 |  |  |
| Hoods<br>• side-entry for Han-Compact® half gland<br>• for Han® Q 8/0 Crimp, Han® Q 17/0 and Han® Q Data RJ45 |  | black powder coated<br>19 12 708 0501<br><br>black chromated<br>**19 12 008 0501** | M25<br><br>M25 |  |  |
| Hoods<br>• side-entry for standard cable glands<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | black powder coated<br>**19 12 008 0526** | M25 |  |  |
| Hoods<br>• top-entry for Han-Compact® half gland<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | black powder coated<br>19 12 708 0411<br><br>black chromated<br>19 12 008 0411 | M25<br><br>M25 |  |  |
| Hoods<br>• top-entry for standard cable glands<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | black powder coated<br>**19 12 008 0426** | M25 |  |  |

Power Distribution



**Stock items in bold type**

## Metal

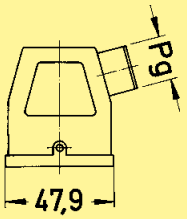
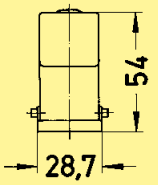
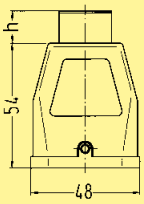
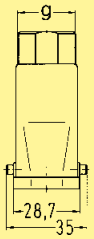
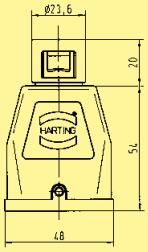
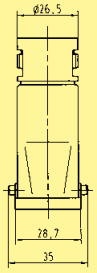
| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, bulkhead mounting |  | black powder coated 09 12 708 0301<br><br>black chromated **09 12 008 0301** |  |  |





Stock items in bold type

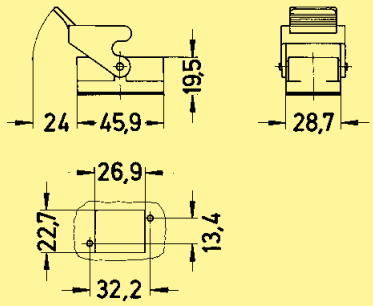
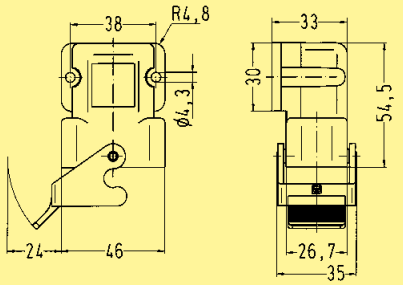
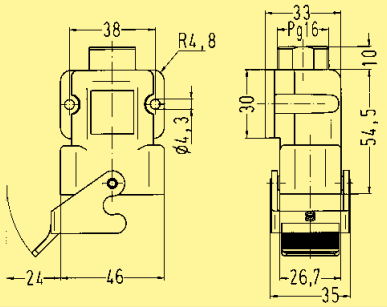
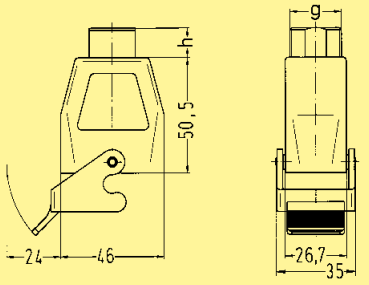
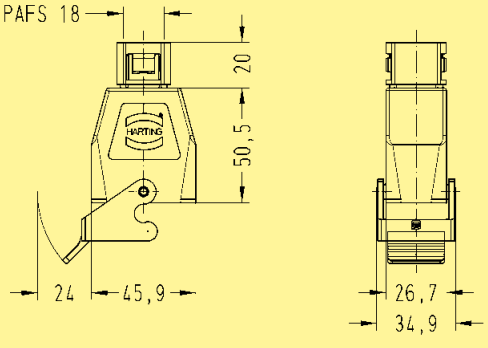
## Thermoplastic

| Identification | | Part number | | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>• side-entry<br>for Han-Compact®<br>half gland |  | 09 12 008 0527 | Pg 16 |  |  |
| Hoods<br>• top-entry<br>for Han-Compact®<br>half gland |  | 19 12 008 0429<br>09 12 008 0427<br>**09 12 008 0429** | M25<br>Pg 16<br>Pg 21 |  |  |
| Hoods<br>• top-entry<br>for flexible conduits<br>Adaptaflex PAFS18 |  | 09 12 008 0428 | PAFS<br>18 |  |  |



**Stock items in bold type**

## Thermoplastic

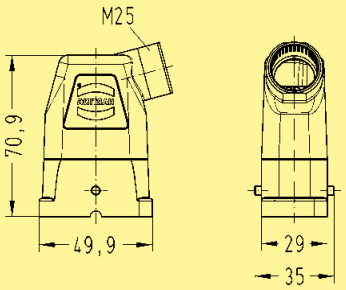
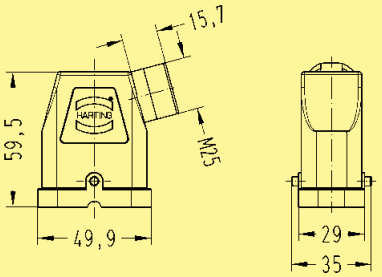
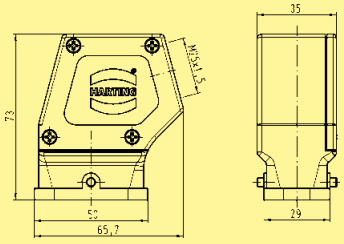
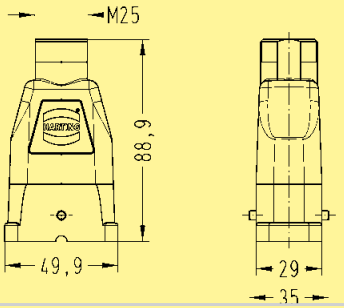
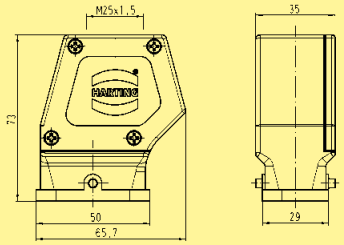
| Identification | | Part number | | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting<br>• straight |  | **09 12 008 0327** | – |  | |
| Housings, bulkhead mounting<br>• angled |  | 09 12 008 0902 | – |  | |
| Housings, surface mounting<br>• for Han-Compact® half gland |  | 09 12 008 0901 | Pg 16 |  | |
| Hoods, cable to cable<br>• for Han-Compact® half gland |  | 19 12 008 0729<br>09 12 008 0727 | M25<br>Pg 16 |  | |
| Hoods, cable to cable<br>• for flexible conduits Adaptaflex PAFS18 |  | 09 12 008 0728 | PAFS 18 |  | |

Power Distribution



Stock items in bold type

## Metal nickel-plated for EMC applications

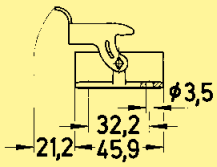
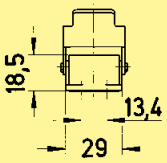
| Identification | | Part number | | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>• side-entry for Han-Compact® EMC half gland<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | 19 12 008 0512 | M25 |  | |
| Hoods<br>• side-entry for Han-Compact® EMC half gland<br>• for Han® Q 8/0 Crimp, Han® Q 17/0 and Han® Q Data RJ45 |  | 19 12 008 0502 | M25 |  | |
| Hoods<br>• side-entry for standard EMC cable glands<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | **19 12 008 0528** | M25 |  | |
| Hoods<br>• top-entry for Han-Compact® EMC half gland<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | 19 12 008 0412 | M25 |  | |
| Hoods<br>• top-entry for standard EMC cable glands<br>• with separate PE termination<br>• for all inserts of size Han-Compact® |  | **19 12 008 0428** | M25 |  | |

Power Distribution



**Stock items in bold type**

## Metal nickel-plated for EMC applications

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Housings, bulkhead mounting  | **09 12 008 0303** |     | |





Stock items in bold type

## Accessories

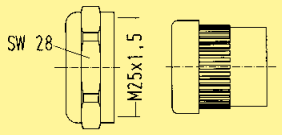
| Identification | Part number | | Drawing | Dimensions in mm |
|---|---|---|---|---|

### Han-Compact® half gland



- Metal
- for hoods

| Part number | |
|---|---|
| 19 12 000 5057 | M25 |
| 19 12 000 5058 | M25 |



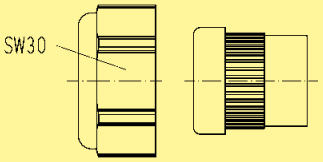

| | cable | | SW |
|---|---|---|---|
| | min. | max. | |
| 19 12 000 5057 | 10,5 mm | 14 mm | 28 |
| 19 12 000 5058 | 14 mm | 17 mm | 28 |

### Han-Compact® half gland



- Thermoplastic
- for hoods

| Part number | |
|---|---|
| 19 12 000 5157 | M25 |
| 19 12 000 5158 | M25 |
| 09 00 000 5059 | Pg 16 |
| 09 00 000 5157 | Pg 21 |
| **09 00 000 5158** | Pg 21 |



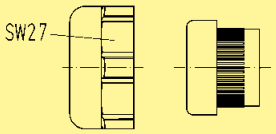

| | cable | | SW |
|---|---|---|---|
| | min. | max. | |
| 19 12 000 5157 | 10,5 mm | 14 mm | 30 |
| 19 12 000 5158 | 14 mm | 17 mm | 30 |
| 09 00 000 5059 | 11,5 mm | 15,5 mm | 27 |
| 09 00 000 5157 | 14 mm | 18 mm | 33 |
| 09 00 000 5158 | 17 mm | 20,5 mm | 33 |

### Han-Compact® half gland



- Thermoplastic
- for housings

| Part number | |
|---|---|
| **09 00 000 5058** | Pg 16 |
| 09 00 000 5057 | Pg 16 |



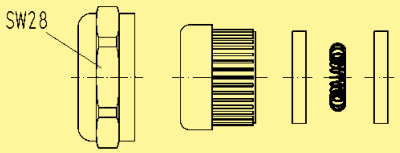

| | cable | | SW |
|---|---|---|---|
| | min. | max. | |
| 09 00 000 5058 | 11,5 mm | 15,5 mm | 27 |
| 09 00 000 5057 | 6,5 mm | 9,5 mm | 27 |

### Han-Compact® EMC half gland



- Metal
- for hoods

| Part number | |
|---|---|
| **19 62 000 5056** | M25 |
| 19 62 000 5057 | M25 |
| 19 62 000 5058 | M25 |




| | cable | | SW |
|---|---|---|---|
| | min. | max. | |
| 19 62 000 5056 | 10,5 mm | 14 mm | 28 |
| 19 62 000 5057 | 10,5 mm | 14 mm | 28 |
| 19 62 000 5058 | 14 mm | 17 mm | 28 |

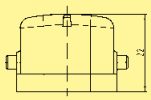
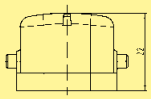
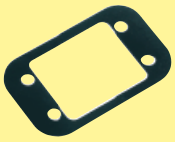
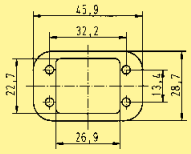
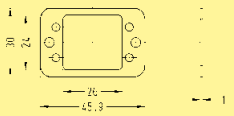
| | shielding | |
|---|---|---|
| | min. | max. |
| 19 62 000 5056 | 9 mm | 13 mm |
| 19 62 000 5057 | 6 mm | 11 mm |
| 19 62 000 5058 | 9 mm | 13 mm |





**Stock items in bold type**

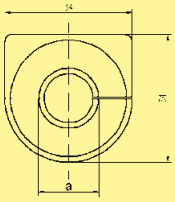
## Accessories

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Protection covers<br><br>• Thermoplastic<br>• for housings<br>• for mounted male insert  | 09 12 008 5407 |  | |
| Protection covers<br><br>• Thermoplastic<br>• for housings<br>• for mounted female insert  | 09 12 008 5408 |  | |
| Gasket for plastic housings, bulkhead mounting, straight  | 09 12 000 9912 |  | |
| Gasket for plastic housings, bulkhead mounting, angled, and for housings, surface mounting  | 09 12 000 9911 |  | |





Stock items in bold type

| Identification | | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Panel feed through seals** | | | | |
| Cable diameter | | | | |
|   | 7 ... 10 mm | 09 12 000 9969 |  | |
| | 10 ... 13 mm | 09 12 000 9970 | | |
| | 13 ... 16 mm | 09 12 000 9971 | | |
| | 16 ... 19 mm | 09 12 000 9972 | | |
| | 19 ... 22 mm | 09 12 000 9973 | | |
| | blind grommet | 09 12 000 9974 | | |



Stock items in bold type

## Contents


| | Page |
|---|---|
| Han-Brid® Features | **19.02** |
| Han-Brid® Data interfaces | **19.03** |
| Han-Brid® Overview | **19.04** |
| Han-Brid® Cu | **19.06** |
| Han-Brid® F.O. | **19.08** |
| Han-Brid® Quintax 3 A | **19.10** |
| Han-Brid® RJ45 C | **19.12** |
| Han-Brid® USB / Han-Brid® FireWire | **19.14** |
| Han® 4 A SC | **19.16** |
| Han-Brid® Hoods/Housings | **19.18** |

## Features

General Description

The Han-Brid® series allows the connection of a data interface and a power supply in a single space saving connector. This means that it is now possible to provide data transmission and power to devices in a single bus structure. This hybrid connector family includes provision for connection of a max. 50 V, 10 A power supply together with a range of inserts for connection of a variety of data protocols and transmission medias:

- Han-Brid® F.O. for plastic (POF) or for HCS®* optical fibre
- Han-Brid® Cu for shielded twisted pair.
- Han-Brid® Quintax 3 A for shielded 4 wire bus systems (2 pair STP)
- Han-Brid® RJ45 C for Ethernet application
- Han-Brid® USB / Firewire for fast data transmission

Han-Brid® inserts fit into the standard plastic as well as metal hoods and housings with seal of the Han® 3 A series offering a degree of protection IP 65 according to DIN EN 60 529. For harsher environments Han® 3 HPR hoods and housings with a degree of protection of IP 68 can be used.

## Power supply

- Han D® male and female with standard crimp contacts (Order crimp contacts separately)
- Rated current 10 A
- Rated voltage 50 V
- termination side 0.14 - 2.5 mm²
- Approval





* HCS® Hard Clad Silica (is registered trade mark of the SpecTran Corporation)

# Data interfaces

Han-Brid® F.O.
- Is suitable for all HP Versatile Link (Horizontal Package) transmitters and receivers
- Data rates: Standard 12 Mbit/s, suitable for all common fieldbus systems
- Insert allows integration of HP standard contacts for POF and HCS®* fibres
- Temperature range -40 °C ... +70 °C

Han-Brid® Cu
- For termination of a shielded twisted pair
- Insert for 2x Han D® male or female contacts
- Connection of the shield by means of shielding plate and fixing clamps
- Connection of the device side can be realized either by a printed circuit board as a modular version or as part of the appliance PCB
- Insert for bulkhead mounted housing or the coupling housing are always equipped with a screening spring

Bus Terminator
- Active bus terminator in male and female version
- Standard Han® 3 A hoods and housings
- Power supply to the termination network via electrical contacts of Han-Brid®
- Integrated, galvanically separated DC/DC converter 24 V / 5 V

Han-Brid® Quintax 3 A
- Possibility to terminate shielded 4 wires conductors (2 pair STP)
- Suitable for all 4-wire bus systems
- Suitable for shielded cable conductor diameter 3 – 9.5 mm
- Transmission of shielding separately from the hood's ground
- Connections are carried out acc. to DIN EN 50 173, Cat. 5
- Temperature range -40 °C ... +70 °C

Han-Brid® RJ45 C
- Suitable for standard RJ 45 Plug and Jack, shielded version
- Connections provided for conductors acc. to DIN EN 50 173, Cat. 5
- Termination from the device side is carried out via a PCB, two versions are possible: modular version or as part of the appliance PCB
- Assembly with standard tools
- Insert for 2 Han-D® male or female contacts offers the combination with electrical bus connector
- Rated current 10 A
- Rated voltage 24 V
- termination side 0.14 - 2.5 mm²

Han-Brid® USB
- Insert for all Han® 3 A hoods and housings
- Hood with glued sealing
- Simple and low-cost termination via insert of a patch cable
- Strain-relief via cable tie

Han-Brid® FireWire
- Insert for all Han® 3 A hoods and housings
- Hood with glued sealing
- Simple and low-cost termination via insert of a patch cable
- Strain-relief via cable tie
- Compatible to IEEE 1394

Han® 4 A SC
- Suitable with housings, size Han® 3 A including versions Han® M, Han® EMV and Han® HPR
- Degree of protection up to IP 68
- For fibre optic SC contacts; up to 4 SC contacts per connector
- For Multimode fibre 50 - 62.5 / 125 µm and Single-mode fibre 9 / 125 µm
- Full ceramic sleeves for a minimal insertion loss



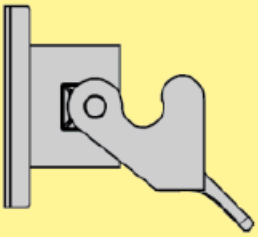


* HCS® Hard Clad Silica (is registered trade mark of the SpecTran Corporation)

## Overview (Sample: Han-Brid® Cu)

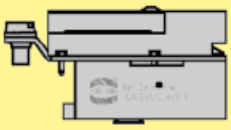
Thermoplastic
09 20 003 0320 (light grey)
09 20 003 0327 (black)

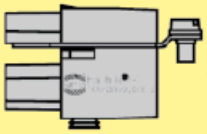
Metal
09 20 003 0301



Device side
09 12 006 2611
09 12 006 2695
09 12 006 2694

Cable side
09 12 006 3111





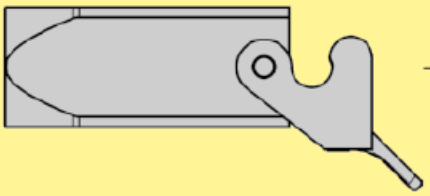
Thermoplastic
09 20 003 0423 (light grey)
09 20 003 0426 (black)
19 20 003 0423 (light grey)
19 20 003 0426 (black)

Metal
09 20 003 1443
19 20 003 1443



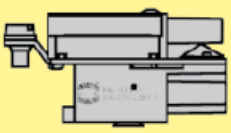
Thermoplastic
09 20 003 0720 (light grey)
09 20 003 0727 (black)
19 20 003 0720 (light grey)
19 20 003 0727 (black)

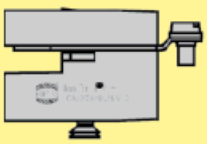
Metal
09 20 003 1750
19 20 003 1750



Device side
09 12 006 2701
09 12 006 2795
09 12 006 2794

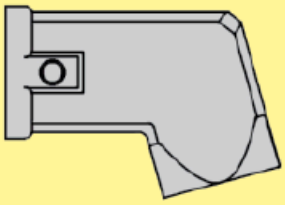
Cable side
09 12 006 3001





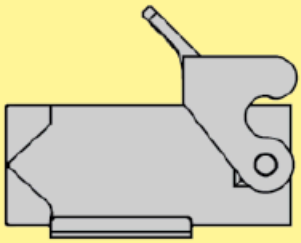
Thermoplastic
09 20 003 0623 (light grey)
09 20 003 0626 (black)
19 20 003 0623 (light grey)
19 20 003 0627 (black)

Metal
09 20 003 1643
19 20 003 1643



Thermoplastic
09 20 003 0220 (light grey)
09 20 003 0227 (black)
19 20 003 0220 (light grey)
19 20 003 0227 (black)

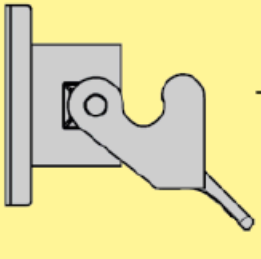
Metal
09 20 003 1250
19 20 003 1250



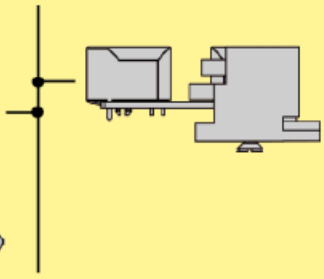
## Overview (Sample: Han-Brid® RJ45 C)

Thermoplastic
09 20 003 0320 (light grey)
09 20 003 0327 (black)

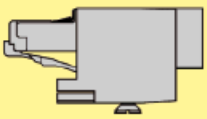
Metal
09 20 003 0301



Device side
09 12 003 2770
09 12 003 2774
09 12 003 2776



Cable side
09 12 003 3011
09 12 003 3021
09 12 003 3031



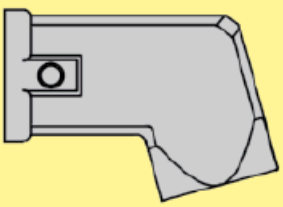
Thermoplastic
09 20 003 0423 (light grey)
09 20 003 0426 (black)
19 20 003 0423 (light grey)
19 20 003 0427 (black)

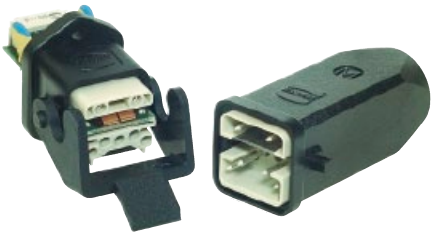
Metal
09 20 003 1443
19 20 003 1443



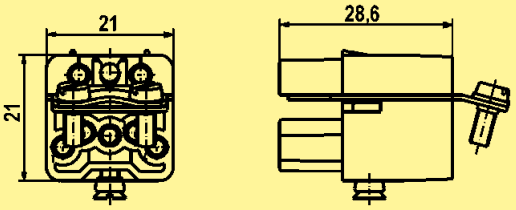
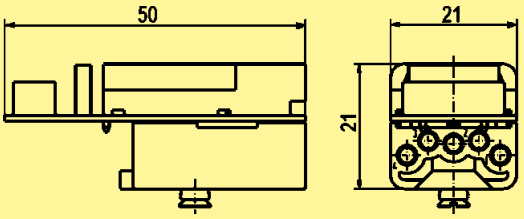
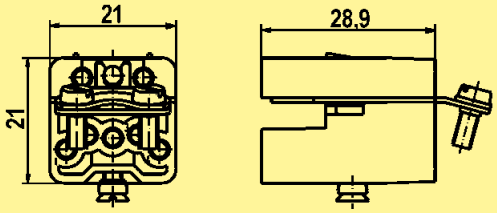
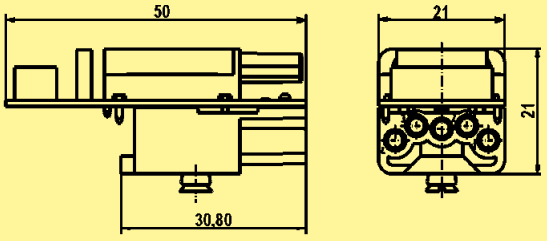
Thermoplastic
09 20 003 0623 (light grey)
09 20 003 0626 (black)
19 20 003 0623 (light grey)
19 20 003 0627 (black)

Metal
09 20 003 1643
19 20 003 1643





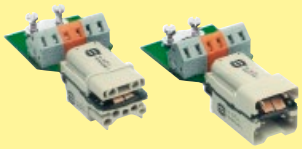
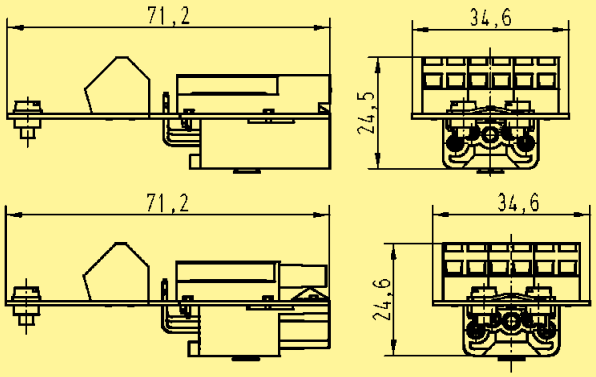
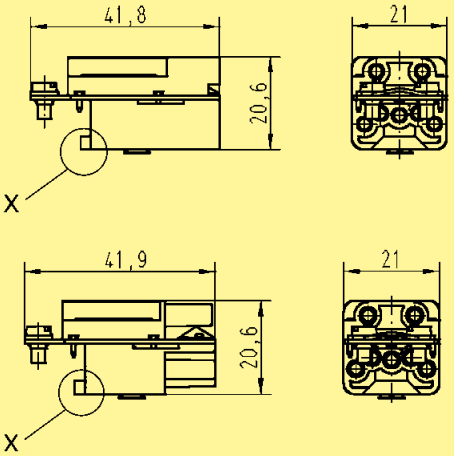
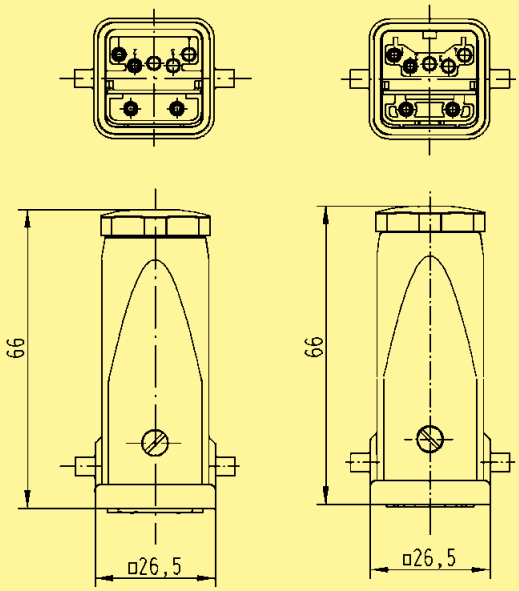
Hybrid field bus connector
for shielded twisted pair
+ 4 electrical contacts 10 A
+ option for PE

| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Cable side<br>Female insert<br> | | **09 12 006 3111** | <br>view from termination side<br> | |
| Device side<br>Male insert<br> | 09 12 006 2611<br><br>Also available as single part<br><br>loaded<br>09 12 002 2611<br>unloaded<br>09 12 002 3011<br>unloaded<br>09 12 004 3011 | | | |
| Cable side<br>Male insert<br> | **09 12 006 3001** | | <br>view from termination side<br> | |
| Device side<br>Female insert<br> | | 09 12 006 2701<br><br>Also available as single part<br><br>loaded<br>09 12 002 2701<br>unloaded<br>09 12 002 3101<br>unloaded<br>09 12 004 3101 | | |





Stock items in bold type

| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Panel feed through<br>with cage clamp<br> | **09 12 006 2695** | **09 12 006 2795** |  | |
| Coupling / Panel feed through<br><br>X = Cutting off the fin allows the use in cable to cable housings | **09 12 006 2694** | **09 12 006 2794** |  | |
| Bus terminator<br>Plastic hoods/housings<br><br>Hoods/Housings, metal<br> | **09 12 006 2691**<br>**09 12 006 2692** | 09 12 006 2791<br>09 12 006 2792 |  | |

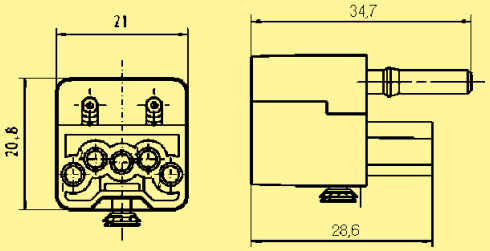
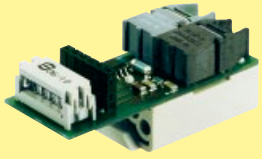
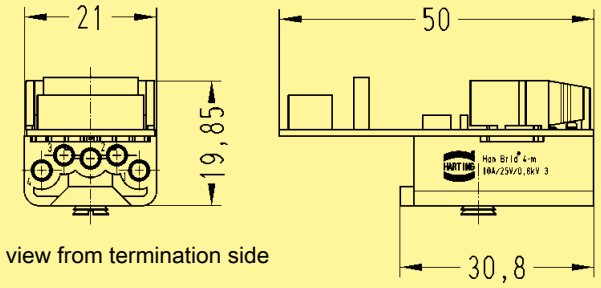




Stock items in bold type



Hybrid field bus connector
with F.O. transmitter and receiver
+ 4 electrical contacts 10 A
+ option for PE

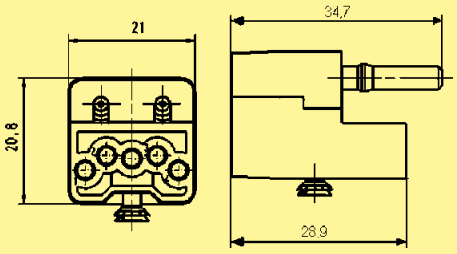
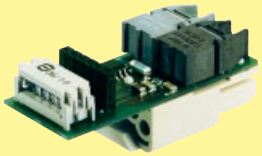
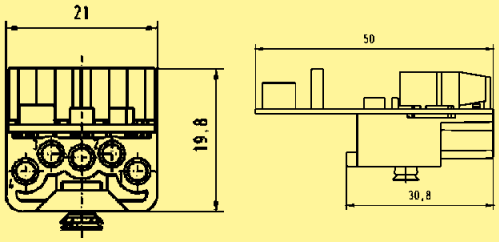
| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Cable side, female**<br>F.O. (m) + Han D® (f) | | | | |
| with F.O. contacts  | | for POF<br>09 12 004 2711<br><br>for POF crimpless<br>09 12 004 2713<br><br>for HCS®* fibre<br>09 12 004 2716 | <br>view from termination side | |
| without F.O. contacts  | | for POF<br>09 12 004 3111<br><br>for POF crimpless<br>09 12 004 3113<br><br>for HCS®* fibre<br>09 12 004 3116 | | |
| **Device side, male**<br>F.O. (f) + Han D® (m) | | | | |
| with PCB  | 09 12 004 2611 | | <br>view from termination side | |
| without PCB  | 09 12 004 3011 | | | |

Han-Brid



* HCS®=Hard Clad Silica (is registered trade mark of the SpecTran Corporation)

**Stock items in bold type**

| Identification | Part number Male insert (M) | Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Cable side, male**<br>F.O. (m) + Han D® (m) | | | | |
| with F.O. contact<br> | for POF<br>09 12 004 2601<br><br>for POF crimpless<br>**09 12 004 2603**<br><br>for HCS®* fibre<br>09 12 004 2606 | | <br>view from termination side | |
| without F.O. contact<br> | for POF<br>09 12 004 3001<br><br>for POF crimpless<br>09 12 004 3003<br><br>for HCS®* fibre<br>**09 12 004 3006** | | | |
| **Device side, female**<br>F.O. (f) + Han D® (f) | | | | |
| with PCB<br> | | 09 12 004 2701 | <br>view from termination side | |
| without PCB<br> | | 09 12 004 3101 | | |

Han-Brid

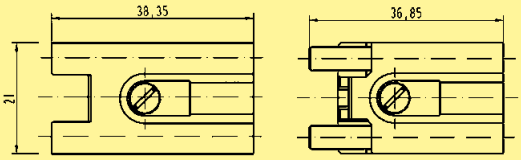


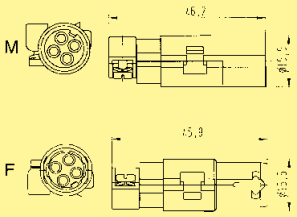
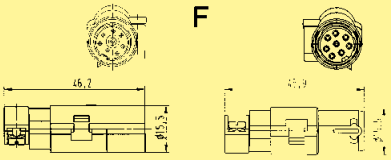
* HCS®=Hard Clad Silica (is registered trade mark of the SpecTran Corporation)

**Stock items in bold type**



4 contacts + shielding
+ 2 power contacts
suitable in Han® 3 A metric
hoods and housings

| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Quintax insert  | **09 15 003 3001** | 09 15 003 3101 |   | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Han-Quintax® contact<br>4 + shielding<br>Han D® crimp contacts  | | **09 15 004 3013** | **09 15 004 3113** |   | |
| Han D® Crimp contact<br>gold plated  | 0,14-0,37 | **09 15 000 6124** | **09 15 000 6224** | | |
| | 0,5 | **09 15 000 6123** | **09 15 000 6223** | | |
| | 0,75 | **09 15 000 6125** | **09 15 000 6225** | | |
| | 1 | **09 15 000 6122** | **09 15 000 6222** | | |
| | 1,5 | **09 15 000 6121** | **09 15 000 6221** | | |
| | 2,5 | **09 15 000 6126** | **09 15 000 6226** | | |
| High Density Quintax contact<br>8 + shielding<br>Han® D-Sub contacts  | | **09 15 008 3013** | **09 15 008 3113** | M F  | |
| D-Sub crimp contact  | 0,08-0,21 | 61 03 000 0078 | 61 03 000 0080 | | |
| | 0,13-0,33 | **61 03 000 0094** | **61 03 000 0096** | | |
| | 0,33-0,52 | **61 03 000 0073** | **61 03 000 0074** | | |





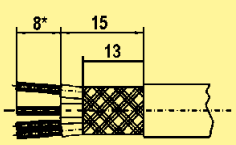
Stock items in bold type

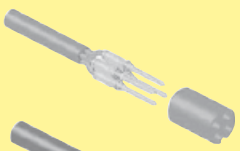
| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Han D® Coax contact 75 Ω**<br>1 + shielding, 75 Ω<br>Han D® crimp contacts | | **09 15 001 3013** | **09 15 001 3113** | M F | |
| **Han D® Crimp contact**<br>gold plated | 0,14-0,37 | **09 15 000 6124** | **09 15 000 6224** | | |
| | 0,5 | **09 15 000 6123** | **09 15 000 6223** | | |
| | 0,75 | **09 15 000 6125** | **09 15 000 6225** | | |
| | 1 | **09 15 000 6122** | **09 15 000 6222** | | |
| | 1,5 | **09 15 000 6121** | **09 15 000 6221** | | |
| | 2,5 | **09 15 000 6126** | **09 15 000 6226** | | |
| **Han E® Coax contact 50 Ω**<br>1 + shielding, 50 Ω<br>Han E® crimp contacts | | **09 15 001 3023** | **09 15 001 3123** | M F | |
| **Han E® contacts**<br>gold plated | 0,14-0,37 | **09 33 000 6117** | **09 33 000 6217** | | |
| | 0,5 | **09 33 000 6122** | **09 33 000 6222** | | |
| | 0,75 | **09 33 000 6115** | **09 33 000 6215** | | |
| | 1 | **09 33 000 6118** | **09 33 000 6218** | | |
| | 1,5 | **09 33 000 6116** | **09 33 000 6216** | | |
| | 2,5 | **09 33 000 6123** | **09 33 000 6223** | | |
| | 4 | 09 33 000 6119 | **09 33 000 6221** | | |
| | 5,5 | 09 33 000 6139 | 09 33 000 6239 | | |

## Assembly instructions

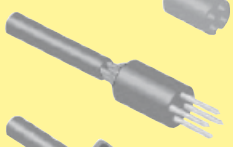
Quintax-Z-contact

1. Strip cable acc. to drawing 1 and fold the shielding over the cable.
2. Crimp Han D® contacts onto the wires.

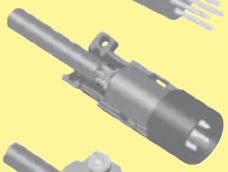
1. 


2. 

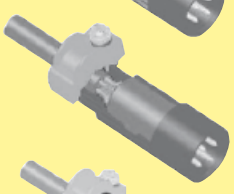
3. Insert Han D® contacts into corresponding cavaties of insulator until they are snapped in.

3. 

4. Fit the insert including the cable into the opened shielded bushing. The coding pin of the shielded bushing has to meet the groove of the insulator.

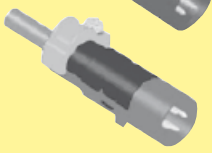
4. 

5. Clamp the tilt over the shielding onto the cable by means of the special clamp (small opening for cable diameter of 3 - 6 mm, large opening for cable diameter of 6 - 9.5 mm).

5. 

6. Check the wiring.

7. Close the shielded bushing with the cover and insert it into the corresponding cavity of the Quintax Module as usual.

6. 

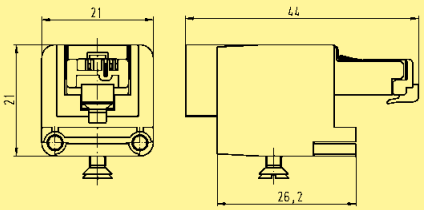
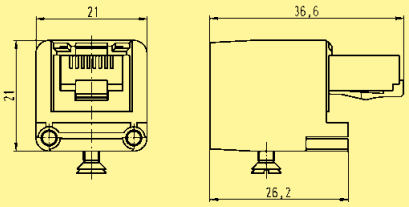
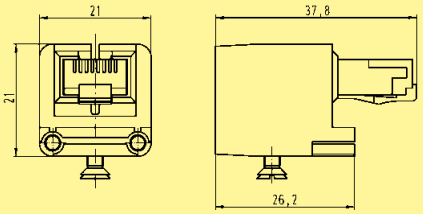
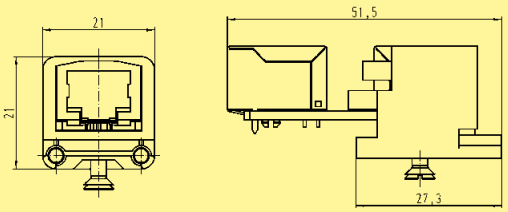
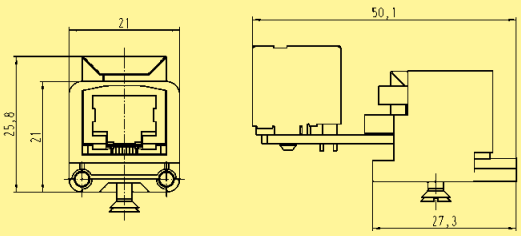
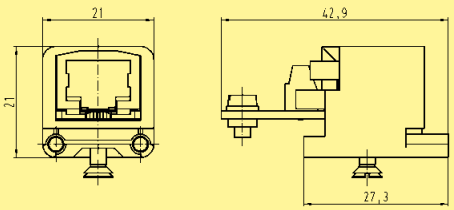




Stock items in bold type



Hybrid network connector
+ 2 electrical contacts 10 A

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Han-Brid® RJ45 C<br>with RJ Industrial  | **09 12 003 3011** |  | |
| Han-Brid® RJ45 C<br>with Stewart RJ45  | **09 12 003 3021** |  | |
| Han-Brid® RJ45 C<br>with HIROSE RJ45  | **09 12 003 3031** |  | |
| Panel feed through<br>straight  | **09 12 003 2774** |  | |
| Panel feed through<br>angled  | **09 12 003 2776** |  | |
| Panel feed through<br>with 4 pole terminal block  | **09 12 003 2770** |  | |



**Stock items in bold type**

## Han-Brid® USB

### Features

- Insert for all Han® 3 A hoods and housings
- Hood with glued sealing
- Simple and low-cost termination via insert of a patch cable
- Strain-relief via cable tie

### Technical characteristics

USB style A, 2.0 Standard

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Number of contacts | 4 |
| Electrical data<br>acc. to EN 61 984 | **1 A 50 V 0.8 kV 3** |
| Rated current | 1 A |
| Rated voltage | 50 V |
| Rated impulse voltage | 0.8 kV |
| Pollution degree | 3 |
| Material | polycarbonate |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Contact resistance | ≥ 4 mΩ |
| Temperature range | -40 °C ... +85 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life<br>- mating cycles | ≥ 500 |

## Han-Brid® FireWire

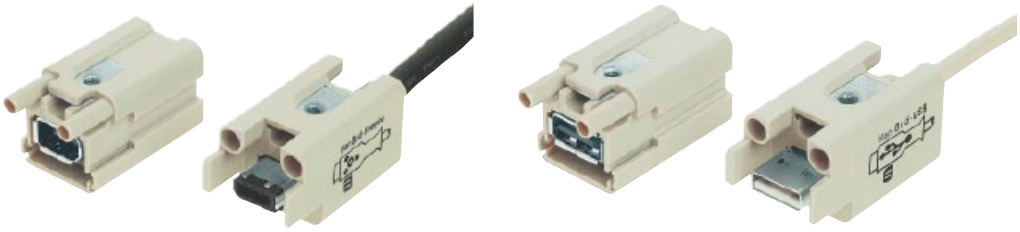
### Features

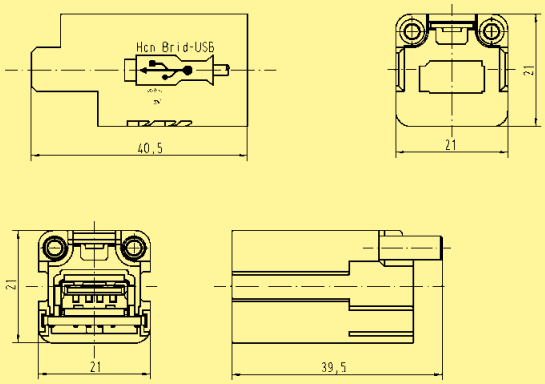
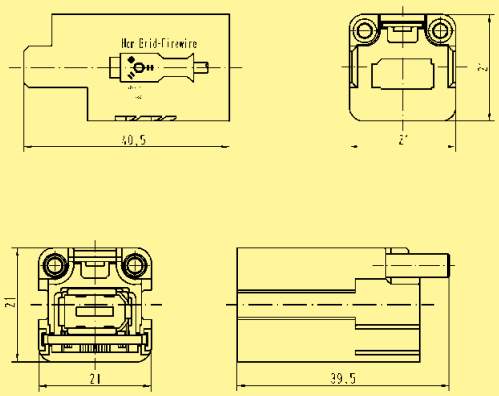
- Insert for all Han® 3 A hoods and housings
- Hood with glued sealing
- Simple and low-cost termination via insert of a patch cable
- Strain-relief via cable tie
- Compatible to IEEE 1394

### Technical characteristics

Firewire IEEE 1394

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |
| Number of contacts | 6 |
| Electrical data<br>acc. to EN 61 984 | **1 A 50 V 0.8 kV 3** |
| Rated current | 1 A |
| Rated voltage | 50 V |
| Rated impulse voltage | 0.8 kV |
| Pollution degree | 3 |
| Material | polycarbonate |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Contact resistance | ≥ 4 mΩ |
| Temperature range | -40 °C ... +85 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life<br>- mating cycles | ≥ 500 |



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **Han-Brid® USB**<br>Cable side<br>Female insert<br><br>Device side<br>Male insert<br> | **09 12 001 2794** | **09 12 001 3091** |  | |
| **Han-Brid® FireWire**<br>Cable side<br>Female insert<br><br>Device side<br>Male insert<br> | **09 12 001 2774** | **09 12 001 3071** |  | |





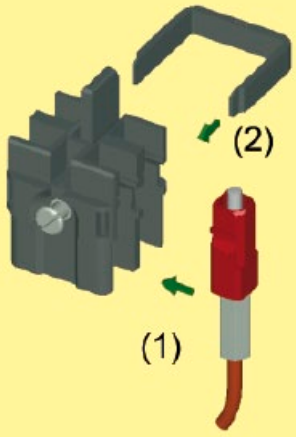
Stock items in bold type

Features

- Suitable with housings, size Han® 3 A including versions Han® M, Han® EMV and Han® HPR
- Degree of protection up to IP 68
- For HARTING fibre optic SC contacts; up to 4 SC contacts per connector
- For Multimode fibre 50 - 62.5 / 125 µm and Single-mode fibre 9 / 125 µm
- Full ceramic sleeves for a minimal insertion loss

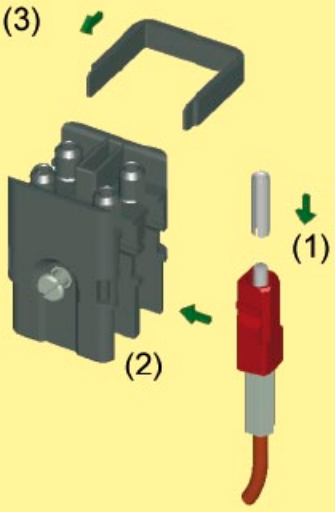
## Assembly instructions

Male insert (09 20 004 4701)




Assemble the SC contact
(1) Push the SC contact from the side into the relevant insert
(2) Push the spring clip over the contact body.

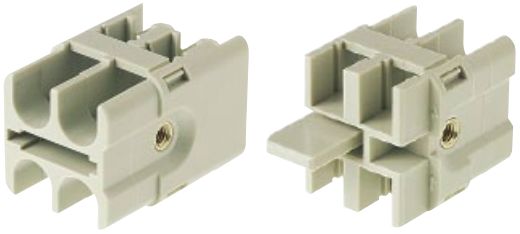
Female insert (09 20 004 4711)

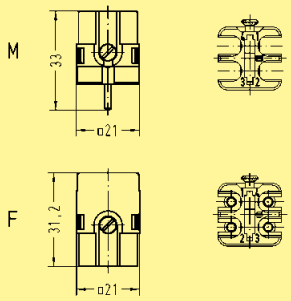


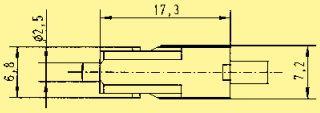

Assemble the SC contact
(1) Push the centering ferrule (included in delivery) on the SC contact
(2) Push the SC contact from the side into the relevant insert
(3) Push the spring clip over the contact body.

Number of contacts

# 4



| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **SC module**<br>Order SC contacts separately | **09 20 004 4701** | **09 20 004 4711** | <br>Contact arrangement view from termination side<br>The female inserts are equipped with centering ferrules.<br>4 ferrules are included in delivery range. | |

| Identification | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|
| **SC contact**<br>for GI fibre 50/125 µm or 62.5/125 µm ceramic ferrule<br> | **20 10 125 5211** | **20 10 125 5211** |  | |
| for SI fibre (HCS®) 200/230 µm | 20 10 230 5211 | 20 10 230 5211 | | |
| with quick assembly technique for 1 mm POF | **20 10 001 5217** | **20 10 001 5217** | | |
| with crimp technique for 1 mm POF | **20 10 001 5211** | **20 10 001 5211** | | |





Stock items in bold type

## Han® 3 A Standard Hoods/Housings
Metal hoods/housings for industrial applications

| | |
|---|---|
| Material | zinc die-cast |
| Colour | RAL 7037 (grey) |
| Surface | powder-coated |
| Locking element | steel, zinc-plated |
| Lever type | lever, metal |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

## Han® 3 A EMC Hoods/Housings
Hoods/Housings for higher EMC requirements

| | |
|---|---|
| Material | zinc die-cast |
| Colour | non coloured |
| Surface | electrical conductive |
| Locking element | steel, zinc-plated |
| Lever type | lever, metal |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

## Han® 3 A Hoods/Housings
Plastic hoods/housings for industrial applications

| | |
|---|---|
| Material | polycarbonate |
| Colour | RAL 7032 (light grey)<br>RAL 9005 (black) |
| Locking element | Polyamide |
| Lever type | Lever, plastic |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA 4/12 |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 67 |

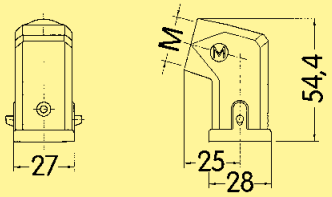
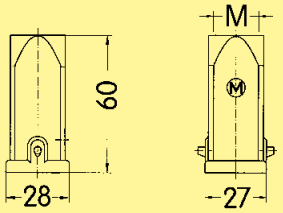
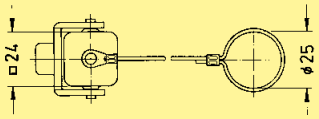
## Han-INOX® Hoods/Housings for higher corrosion requirements

| | |
|---|---|
| Material | stainless steel |
| Colour | non coloured |
| Surface | electrical conductive |
| Locking element | Stainless steel |
| Lever type | lever, metal |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |
| - Size Han® 3 A | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

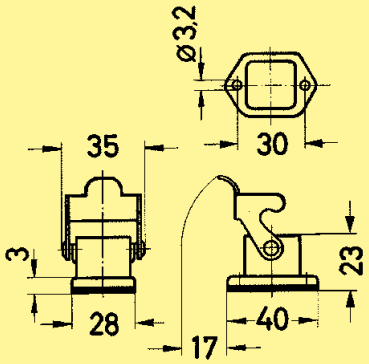
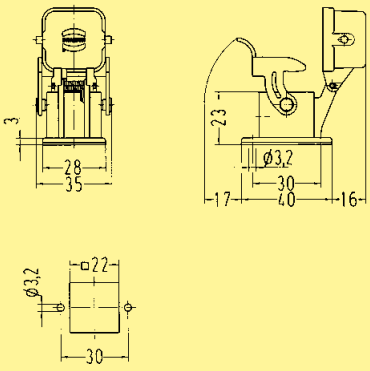
## Han® M Hoods/Housings
Hoods/Housings for higher environmental requirements

| | |
|---|---|
| Material<br>- Size Han® 3 A | aluminium die-cast<br>zinc die-cast |
| Colour | RAL 9005 (black) |
| Surface<br>- Top coat | Epoxy powder paint |
| Locking element | Stainless steel |
| Lever type | lever, metal |
| Hoods/Housings sealing | FPM |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA 4/12 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |
| - Size Han® 3 A | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

## Metal hoods/housings for industrial applications / 1 lever locking system with sealing

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Hoods<br>side entry  | **19 20 003 1643** | M 20 |   | |
| Hoods<br>top entry  | **19 20 003 1443** | M 20 |   | |
| Protection covers for hoods | **09 20 003 5422** | |   | |

## Metal hoods/housings for industrial applications / 1 lever locking system

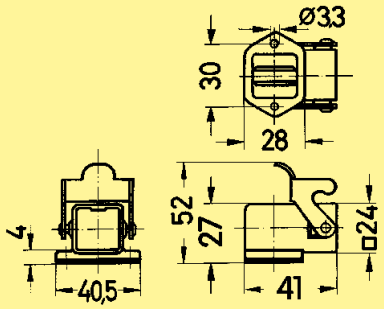
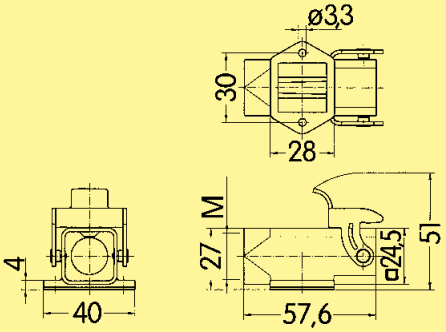
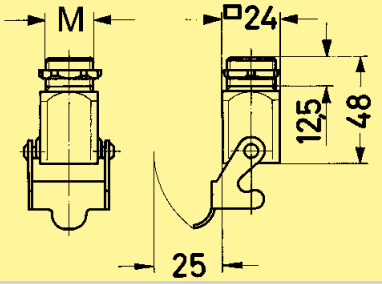
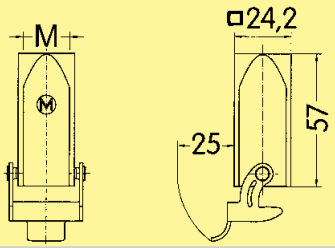
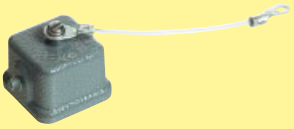
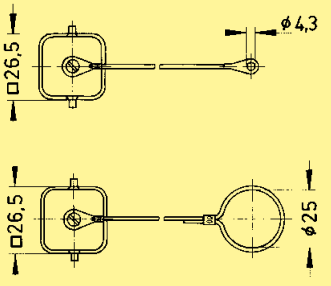
| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 20 003 0301** | |   Panel cut out 22 x 22 mm | |
|  | **09 20 003 0306** | |   Panel cut out 22 x 22 mm | |





Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

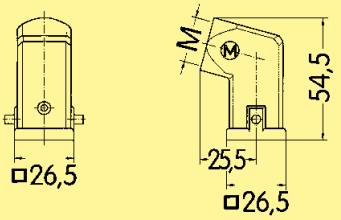
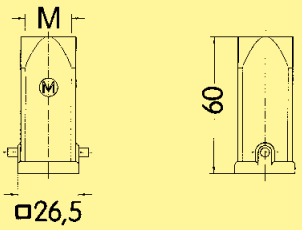
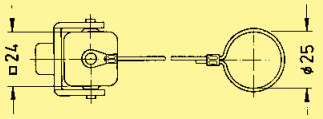
| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
|  | **09 20 003 0801** | |   Panel cut out 22 x 22 mm | |
| Housings, surface mounting<br>side entry  | **19 20 003 1250**<br><br>bottom closed<br>**19 20 003 1252** | M 20<br><br>M 20 |   Panel cut out 22 x 22 mm | |
| Housings, screw mounting<br>top entry  | **19 20 003 1150** | M 20 |   | |
| Hoods, cable to cable<br>top entry  | **19 20 003 1750** | M 20 |   | |
| Protection covers   | **09 20 003 5425**<br><br>**09 20 003 5427** | |   | |

Han-Brid

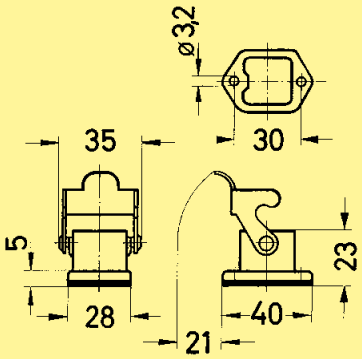
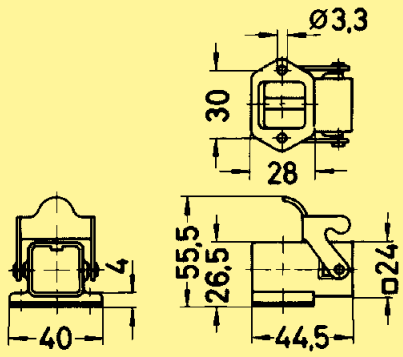


**Stock items in bold type**

## Plastic hoods/housings for industrial applications / 1 lever locking system with sealing

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Hoods<br>side entry  | light grey<br>**19 20 003 0623**<br>black<br>19 20 003 0626 | M 20<br>M 20 |  | |
| Hoods<br>top entry  | light grey<br>19 20 003 0423<br>black<br>**19 20 003 0426** | M 20<br>M 20 |  | |
| Protection covers for hoods | light grey<br>09 20 003 5442 | |  | |

## Plastic hoods/housings for industrial applications / 1 lever locking system

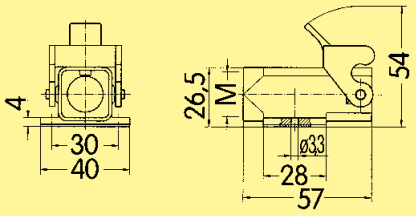
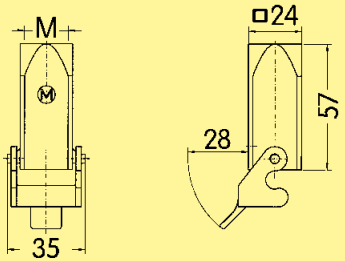
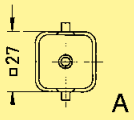
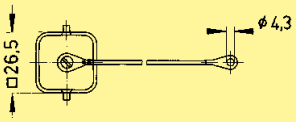
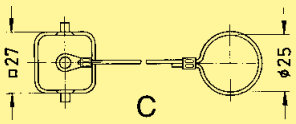
| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, bulkhead mounting   | light grey<br>**09 20 003 0320**<br>black<br>**09 20 003 0327**<br><br>light grey<br>**09 20 003 0820**<br>black<br>09 20 003 0827 | |  Panel cut out 22 x 22 mm  Panel cut out 22 x 22 mm | |

Han-Brid



Stock items in bold type

## Plastic hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, surface mounting<br>side entry  | light grey<br>**19 20 003 0220**<br>black<br>19 20 003 0227 | M 20<br>M 20 |  Panel cut out 22 x 22 mm | |
| Hoods, cable to cable<br>top entry  | light grey<br>**19 20 003 0720**<br>black<br>**19 20 003 0727** | M 20<br>M 20 |  | |
| Protection covers  | light grey<br>**09 20 003 5408**[2]<br>black<br>**09 20 003 5409**[2] | |  | |
| Protection covers for housings | light grey<br>**09 20 003 5445**[2]<br>black<br>**09 20 003 5449**[2] | |  | |
| Protection covers for hoods cable to cable | light grey<br>09 20 003 5447[1][2] | |  | |

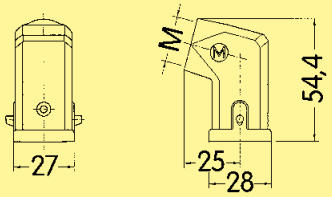
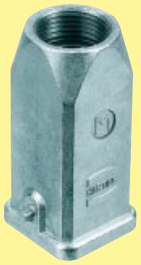
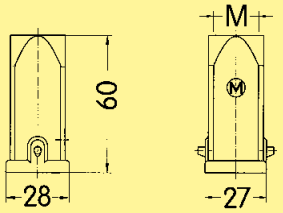
Han-Brid



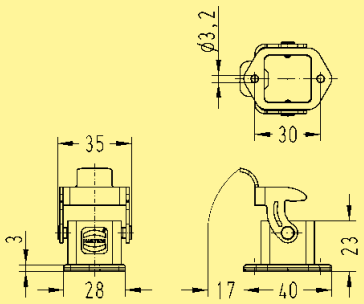
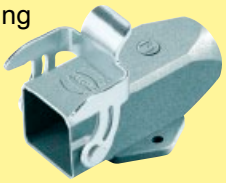
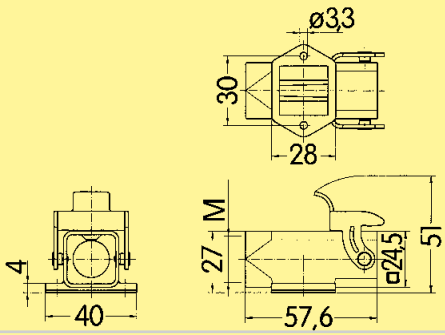
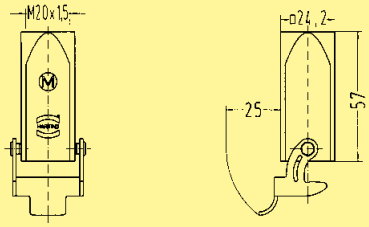
[1] for metal housings and cable to cable hoods also
[2] for mounted female insert or for mounted Han-Brid® insert

**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / 1 lever locking system with sealing

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Hoods<br>side entry  | 19 62 003 1643 | M 20 |   | |
| Hoods<br>top entry  | 19 62 003 1443 | M 20 |   | |

## Hoods/Housings for higher EMC requirements / 1 lever locking system

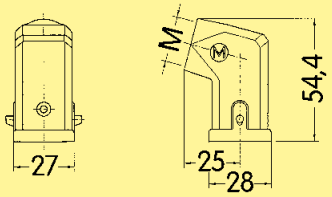
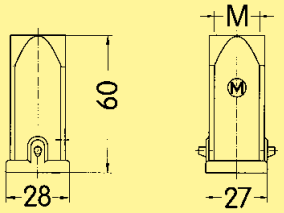
| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 62 003 0301** | |   | |
| Housings, surface mounting<br>top entry  | 19 62 003 1250 | M 20 |   | |
| Hoods, cable to cable<br>top entry  | 19 62 003 1750 | M 20 |   | |



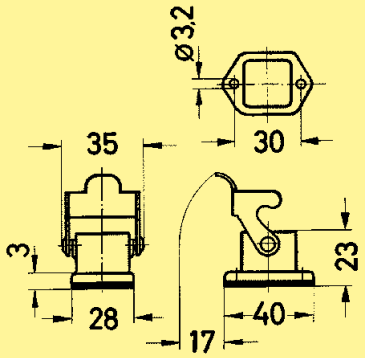
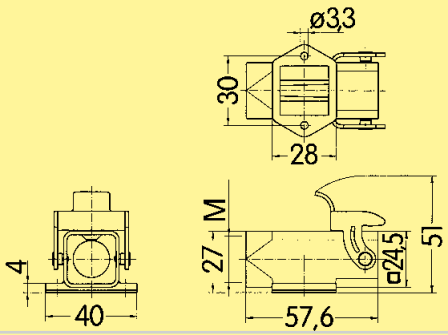
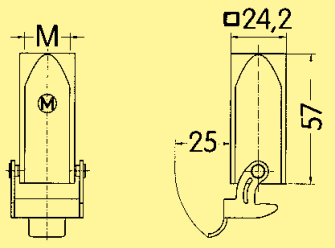


Stock items in bold type

## Hoods/Housings for higher environmental requirements / 1 lever locking system with sealing

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Hoods<br>side entry  | 19 37 003 1643 | M 20 |   | |
| Hoods<br>top entry  | **19 37 003 1443** | M 20 |   | |

## Hoods/Housings for higher environmental requirements / 1 lever locking system

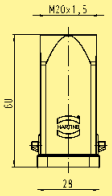
| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, bulkhead mounting<br>top entry  | **09 37 003 0301** | |   | |
| Housings, surface mounting<br>top entry  | 19 37 003 1250 | M 20 |   | |
| Hoods, cable to cable<br>top entry  | 19 37 003 1750 | M 20 |   | |

Han-Brid

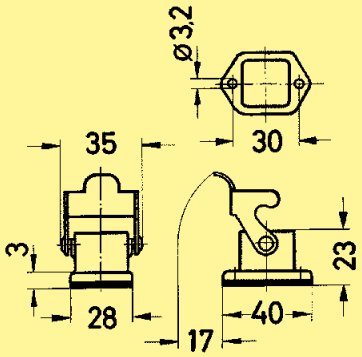


Stock items in bold type

## Hoods/Housings made of stainless steel / 1 lever locking system with sealing

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Hoods<br>top entry  | **19 44 003 1443** | M 20 |  | |

## Hoods/Housings made of stainless steel / 1 lever locking system

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, bulkhead mounting  | **19 44 003 0301** | |  Panel cut out 22 x 22 mm | |
| Cable gland  | **19 44 000 5082** | M 20 | | |





Stock items in bold type

## Contents


| | Page |
|---|---|
| Technical characteristics PCB adapter for Han DD® | **20.02** |
| Han DD® Inserts with PCB adapter | **20.03** |
| Technical characteristics PCB adapter for Han E® | **20.04** |
| Han E® Inserts with PCB adapter | **20.05** |
| Technical characteristics PCB adapter for Han® Q 4/2 | **20.06** |
| Han® Q 4/2 Inserts with PCB adapter | **20.07** |
| Technical characteristics PCB adapter for Han® Q 5/0 | **20.08** |
| Han® Q 5/0 Inserts with PCB adapter | **20.09** |
| Technical characteristics PCB adapter for Han® Q 7/0 | **20.10** |
| Han® Q 7/0 Inserts with PCB adapter | **20.11** |
| Technical characteristics PCB adapter for Han® Q 8/0 | **20.12** |
| Han® Q 8/0 Inserts with PCB adapter | **20.13** |
| Technical characteristics PCB adapter for Han-Modular® | **20.14** |
| Han-Modular® Inserts with PCB adapter | **20.15** |
| Applications | **20.16** |

# PCB adapter for Han DD®

## Features

- Robust design
- Suitable for standard and EMC housings
- Low wiring costs
- High contact density

## Technical characteristics

| | |
|---|---|
| Approvals | c UL us |
| Electrical data | |
| acc. to EN 61 984 | **7.5 A 250 V 4 kV 3** |
| Rated current | 7.5 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Rated voltage | |
| acc. to UL/CSA | 250 V |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polyamide |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | HB |

## Layout of PCB

Han® 42 DD

Han® 24 DD

Han® 72 DD

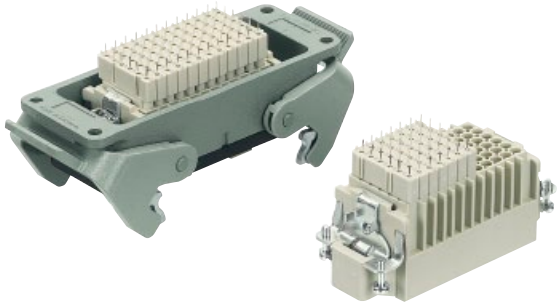
Han® 108 DD

## Assembly situation

[1)] for Han® B EMC housings spacing of 12.5 ± 0.2 mm is necessary as no flange seal is used

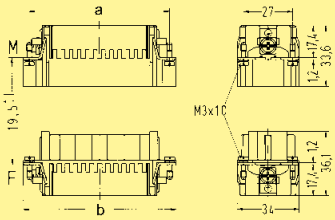
# Han DD® Inserts with PCB adapter

250 V 7.5 A



| insert | Size | Part number Male insert (M) | Part number Female insert (F) |
|---|---|---|---|
| Order contacts separately | | | |
| Han® 24 DD | 6 B | **09 16 024 3001** | **09 16 024 3101** |
| Han® 42 DD | 10 B | **09 16 042 3001** | **09 16 042 3101** |
| Han® 72 DD | 16 B | **09 16 072 3001** | **09 16 072 3101** |
| Han® 108 DD | 24 B | **09 16 108 3001** | **09 16 108 3101** |

Drawing




Dimensions in mm

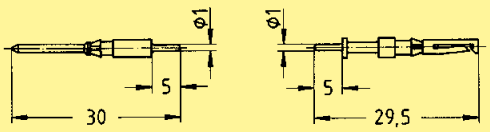
| | a | b |
|---|---|---|
| 24 DD | 44 | 51 |
| 42 DD | 57 | 64 |
| 72 DD | 77.5 | 84.5 |
| 108 DD | 104 | 111 |

1) Distance for contact max. 21 mm

| Han DD® double contact | Part number Male contacts | Part number Female contacts |
|---|---|---|
| to connect the PCP-Adapter | 09 15 000 6191 | **09 15 000 6291** |



Drawing

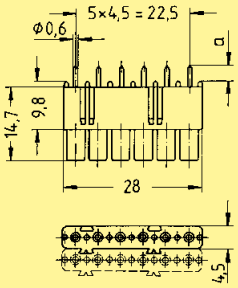



Dimensions in mm

| PCB adapter | PCB thickness | Part number |
|---|---|---|
| | 1.6 mm | 09 16 000 9905 |
| | 2.4 mm | **09 16 000 9908** |



Drawing

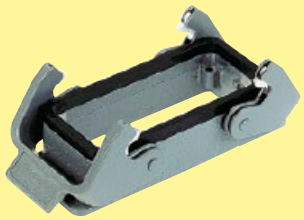



Dimensions in mm

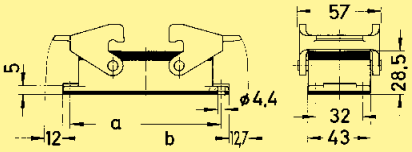
| Part number | a |
|---|---|
| 09 16 000 9905 | 2.6 |
| **09 16 000 9908** | 3.4 |

PCB-Adapter

| Housings bulkhead mounting | Size | Part number |
|---|---|---|
| | 6 B | 09 30 006 0301 |
| | 10 B | 09 30 010 0301 |
| | 16 B | 09 30 016 0301 |
| | 24 B | 09 30 024 0301 |



Drawing




| Size | a | b | Panel cut out |
|---|---|---|---|
| 6 B | 70 | 80 | 48 x 35 |
| 10 B | 83 | 93 | 60 x 35 |
| 16 B | 103 | 113 | 82 x 35 |
| 24 B | 130 | 140 | 108 x 35 |

Size 6 B with 1 locking lever

Further informations see chapter 02 (Han D®/Han DD®)



Stock items in bold type

# PCB adapter for Han E®

## Features

- Robust design
- Suitable for standard and EMC housings
- Low wiring costs
- Counter connector available with screw or crimp or cage clamp termination

## Technical characteristics

| | |
|---|---|
| Electrical data | |
| acc. to EN 61 984 | **16 A 500 V 6 kV 3** |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |

## Layout of PCB

Han® 6 E

Han® 10 E

Han® 16 E

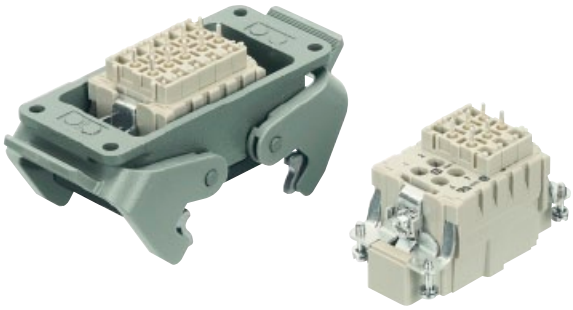
Han® 24 E

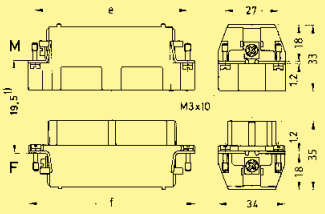
## Assembly situation

[1] for Han® B EMC housings spacing of 12.5 ± 0.7 mm is necessary as no flange seal is used

# Han E® Inserts with PCB adapter

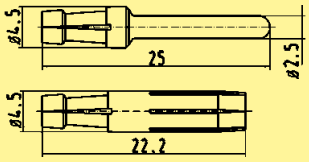
500 V 16 A

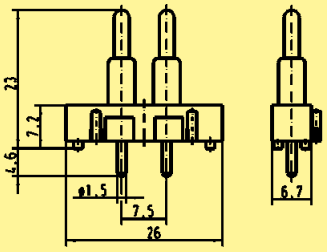


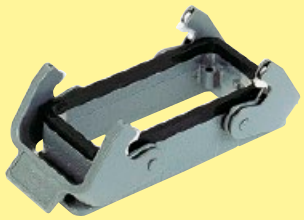
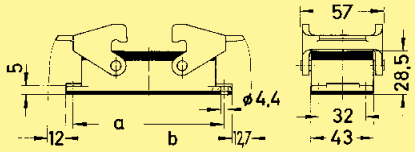
| insert | Size | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Order contacts separately<br><br>Han® 6 E<br>Han® 10 E<br>Han® 16 E<br>Han® 24 E | 6 B<br>10 B<br>16 B<br>24 B | **09 33 006 2602**<br>**09 33 010 2602**<br>**09 33 016 2602**<br>**09 33 024 2602** | **09 33 006 2702**<br>**09 33 010 2702**<br>**09 33 016 2702**<br>**09 33 024 2702** |  | |

| | e | f |
|---|---|---|
| 6 E | 44 | 51 |
| 10 E | 57 | 64 |
| 16 E | 77.5 | 84.5 |
| 24 E | 104 | 111 |

1) Distance for contact max. 21 mm

| Han E® double contacts | Part number Male contacts | Part number Female contacts | Drawing | Dimensions in mm |
|---|---|---|---|---|
| to connect<br>the PCP-Adapter<br><br> | 09 33 000 6180 | 09 33 000 6280 |  | |

| PCB adapter | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
|  | 09 33 000 9996 |  | |

| Housings bulkhead mounting | Size | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
|  | 6 B<br>10 B<br>16 B<br>24 B | **09 30 006 0301**<br>**09 30 010 0301**<br>**09 30 016 0301**<br>**09 30 024 0301** |  | |

| Size | a | b | Panel cut out |
|---|---|---|---|
| 6 B | 70 | 80 | 48 x 35 |
| 10 B | 83 | 93 | 60 x 35 |
| 16 B | 103 | 113 | 82 x 35 |
| 24 B | 130 | 140 | 108 x 35 |

Size 6 B with 1 locking lever

Further informations see chapter 03 (Han E®)





Stock items in bold type

# PCB adapter for Han® Q 4/2

## Features

- Robust Design
- Suitable for Han-Compact® hoods and housings
- Low wiring costs
- High contact density

## Technical characteristics

Approvals

| | |
|---|---|
| Power area | **30 A 400/690 V 6 kV 2** |
| Rated current | 30 A |
| Rated voltage conductor - ground | 400 V |
| Rated voltage conductor - conductor | 690 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 2 |
| Signal area | **7.5 A 250 V 4 kV 2** |
| Rated current | 7.5 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 2 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | LCP |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |

## Layout of PCB

Dimensions in mm

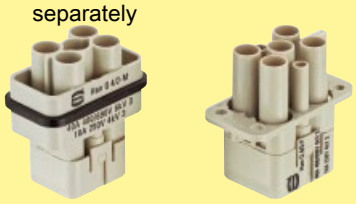
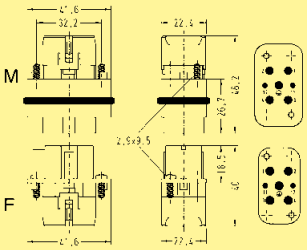
## Assembly situation

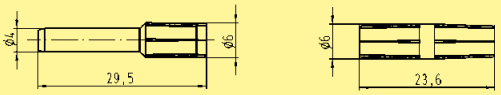
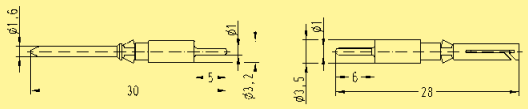
X = $16^{+1}$ with signal contact or $16^{+2}$ without signal contact

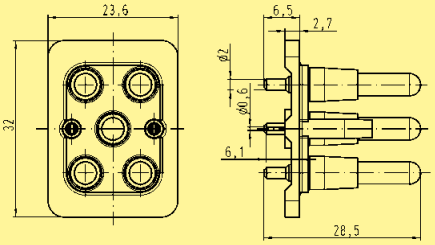
# Han® Q 4/2 Inserts with PCB adapter

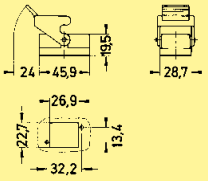
230/400 V 16 A



| insert | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Order contacts separately  | **09 12 006 3041** | **09 12 006 3141** |   | Contact arrangement (view from termination side) |

| Double contacts | Part number Male contacts | Part number Female contacts | Drawing | Dimensions in mm |
|---|---|---|---|---|
| to connect the PCP-Adapter<br>Han® C double contacts<br>Power contacts  | 09 32 000 6180 | 09 32 000 6280 |   | |
| Han D® double contacts<br>Signal contacts  | 09 15 000 6191 | 09 15 000 6293 |   | |

| PCB adapter | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| for PCBs up to 2.4 mm  | 09 12 006 9901 |   | |

| Housings bulkhead mounting | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Thermoplastic  | **09 12 008 0327** |   | |

Further informations see chapter 13 (Han® Q)

PCB-Adapter



Stock items in bold type

# PCB adapter for Han® Q 5/0

## Features

- PCB adaptor for Han® Q 5/0
- Robust design
- Suitable only for EMC housings size Han® 3A
- Additional robust and secure PE-connection between housing and PCB

## Technical characteristics

Approvals

| | | | | |
|---|---|---|---|---|
| Electrical data | | | | |
| acc. to EN 61 984 | **10 A** | **230/400 V** | **4 kV** | **3** |
| Rated current | 10 A | | | |
| Rated voltage conductor - ground | 230 V | | | |
| Rated voltage conductor - conductor | 400 V | | | |
| Rated impulse voltage | 4 kV | | | |
| Pollution degree | 3 | | | |
| Pollution degree 2 also | 10 A | 320/500 V | 4 kV | 2 |
| Rated voltage acc. to UL/CSA | 400 V | | | |
| Insulation resistance | ≥ $10^{10}$ Ω | | | |
| Material | polycarbonate | | | |
| Limiting temperatures | -40 °C ... +125 °C | | | |
| Flammability acc. to UL 94 | V 0 | | | |

## Layout of PCB

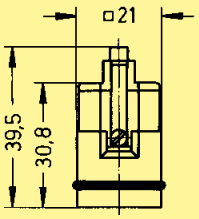
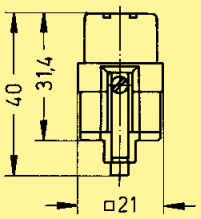
Dimensions in mm

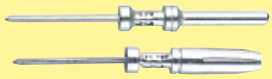
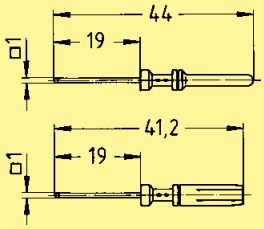


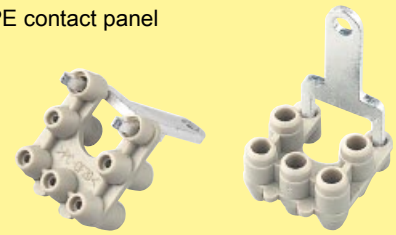
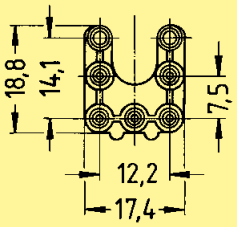
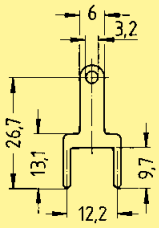

PCB-Adapter

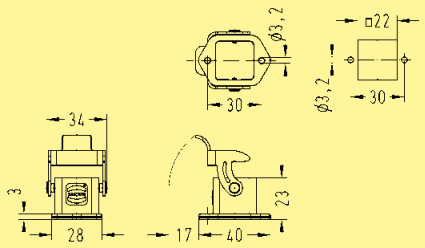
## Assembly situation



| insert | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Order contacts separately  | **09 12 005 3001** | **09 12 005 3101** |  Distance for contact max. 21 mm |  |

| Solder contacts | Part number Male contacts | Part number Female contacts | Drawing | Dimensions in mm |
|---|---|---|---|---|
| to connect the PCP-Adapter  | 09 33 000 6195 | 09 33 000 6295 |  | |

| PCB adapter | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| with PE contact panel  | 09 12 000 9905 |  Adapter |  PE contact panel |

| Housings bulkhead mounting | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Metal  | 09 62 003 0304 |  | |

Further informations see chapter 13 (Han® Q)





Stock items in bold type

# PCB adapter for Han® Q 7/0

## Features

- PCB adaptor for Han® Q 7/0
- Robust design
- Suitable for standard and EMC housings size Han® 3A
- High contact density

## Technical characteristics

Approvals

| | |
|---|---|
| Electrical data | |
| acc. to EN 61 984 | **7.5 A 250 V 4 kV 3** |
| Rated current | 7.5 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |

## Layout of PCB

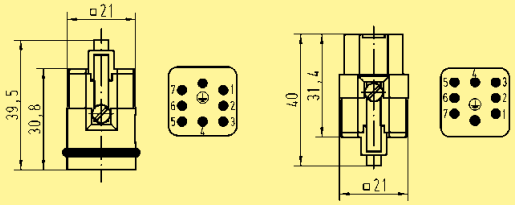
Dimensions in mm

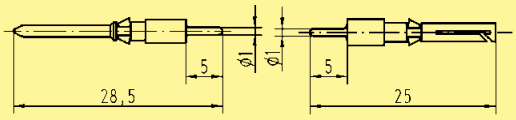
## Assembly situation

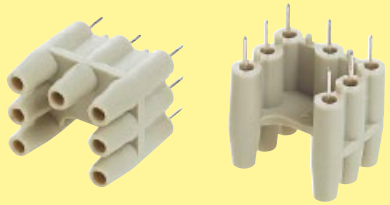
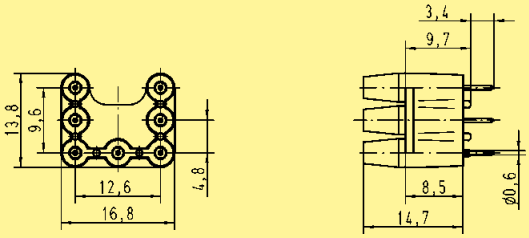
# Han® Q 7/0 Inserts with PCB adapter

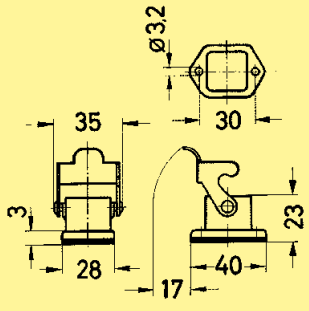
250 V 7.5 A



| insert | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Order contacts separately  | **09 12 007 3001** | **09 12 007 3101** |  Contact arrangement (view from termination side) | |
| Coding pins | 09 12 000 9901 | 09 12 000 9902 | | |

| Han D® double contacts | Part number Male contacts | Part number Female contacts | Drawing | Dimensions in mm |
|---|---|---|---|---|
| to connect the PCP-Adapter  | 09 15 000 6190 | 09 15 000 6290 |  | |

| PCB adapter | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| for PCBs up to 2.4 mm  | 09 12 000 9908 |  | |

| Housings bulkhead mounting | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
|  | **09 20 003 0301** |  | |

Further informations see chapter 13 (Han® Q)

PCB-Adapter



Stock items in bold type

# PCB adapter for Han® Q 8/0

## Features

- Robust Design
- Suitable for Han-Compact® hoods and housings
- Low wiring costs
- High contact density

## Technical characteristics

Approvals

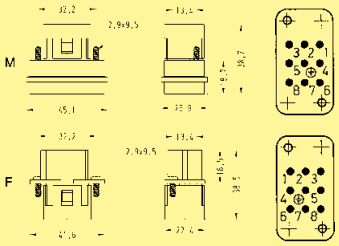
| | |
|---|---|
| Electrical data | |
| acc. to EN 61 984 | **16 A 230/400 V 4 kV 2** |
| Rated current | 16 A |
| Rated voltage conductor - ground | 230 V |
| Rated voltage conductor - conductor | 400 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 2 |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | LCP |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |

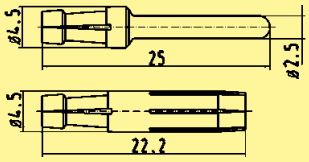
## Layout of PCB

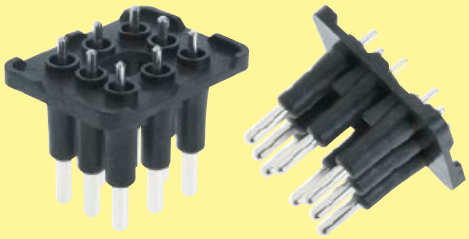
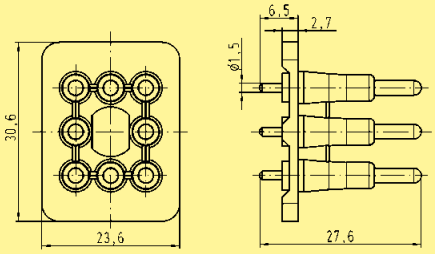
Dimensions in mm

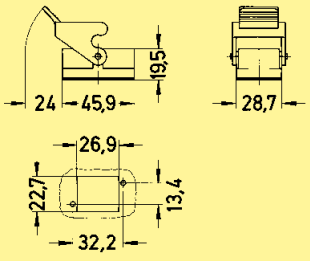
## Assembly situation



| insert | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Order contacts separately  | **09 12 008 3001** | **09 12 008 3101** |  | Contact arrangement (view from termination side) |

| Han E® double contacts | Part number Male contacts | Part number Female contacts | Drawing | Dimensions in mm |
|---|---|---|---|---|
| to connect the PCP-Adapter  | 09 33 000 6180 | 09 33 000 6280 |  | |

| PCB adapter | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| for PCBs up to 1.6 mm  | **09 12 008 9901** |  | |

| Housings bulkhead mounting | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Thermoplastic  | **09 12 008 0327** |  | |

Further informations see chapter 13 (Han® Q)





Stock items in bold type

# PCB adapter for Han-Modular®

## Features

- Modular assembly
- Robust design
- Suitable for standard and EMC housings
- Low wiring costs

## Technical characteristics

### Han DD® module with PCB-Adapter

| Electrical data | |
|---|---|
| acc. to EN 61 984 | **7.5 A 250 V 4 kV 3** |
| Rated current | 7.5 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |

### Han® 40 A module for PCB adaptions

| Electrical data | |
|---|---|
| acc. to EN 61 984 | **40 A 500 V** |
| Rated current | 40 A |
| Rated voltage | 500 V |

## Layout of PCB

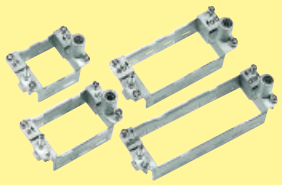
Dimensions in mm

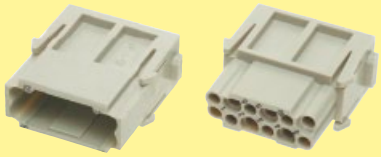
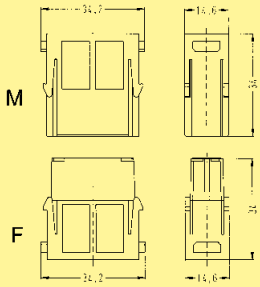
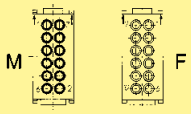
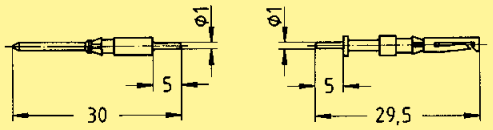
Han DD® module

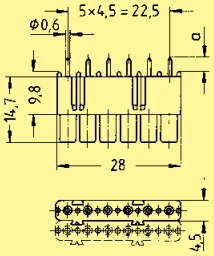
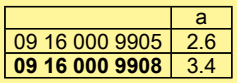
Han® 40 A module

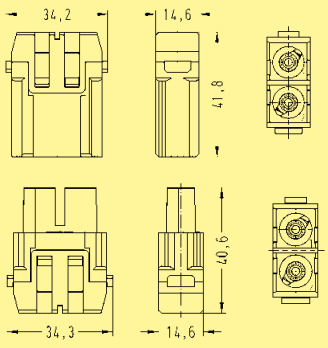
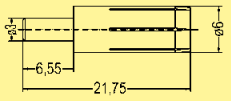
## Assembly situation

[1)] for Han® B EMC housings spacing of 12.5 ± 0.7 mm is necessary as no flange seal is used

| Identification | Size | Part number Marking A ... F | Part number Marking a ... f | Numbers of modules | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
|  | 10 A<br>6 B<br>10 B<br>16 B<br>24 B | **09 14 000 0304**<br>**09 14 006 0303**<br>**09 14 010 0303**<br>**09 14 016 0303**<br>**09 14 024 0303** | **09 14 000 0304**<br>**09 14 006 0313**<br>**09 14 010 0313**<br>**09 14 016 0313**<br>**09 14 024 0313** | 1<br>2<br>3<br>4<br>6 | Drawings and further details see chapter 06 | |

| Identification | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Han DD® module<br>PCB termination / crimp termination<br> | **09 14 012 3001**<br>**09 14 012 3001** | **09 14 012 3101**<br>**09 14 012 3101** |  | <br>Contact arrangement (view from termination side) |
| Han D® double contacts<br>to connect<br>the PCP-Adapter<br> | 09 15 000 6191 | **09 15 000 6291** |  | |

| Identification | PCB thick-ness | Part number | Drawing | Dimensions in mm |
|---|---|---|---|---|
| PCB adapter<br> | 1.6 mm<br>2.4 mm | 09 16 000 9905<br>**09 16 000 9908** |  |  |

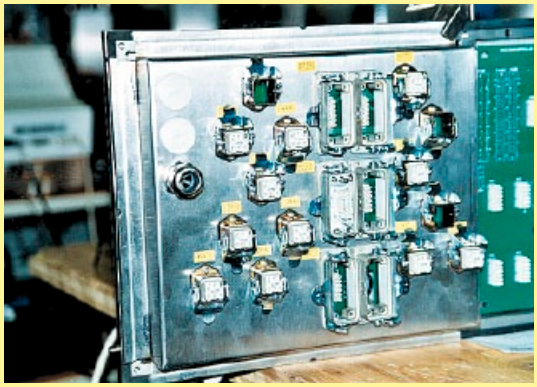
| Han® 40 A module | Part number Male insert (M) | Part number Female insert (F) | Drawing | Dimensions in mm |
|---|---|---|---|---|
| PCB adapter<br>Device side<br>Axial screw termination<br>Cable side<br> | 09 14 002 2601<br>**09 14 002 2603** | 09 14 002 2701<br>**09 14 002 2703** |  | |
| Han® C Solder contact<br> | 09 32 000 6295 | |  | |



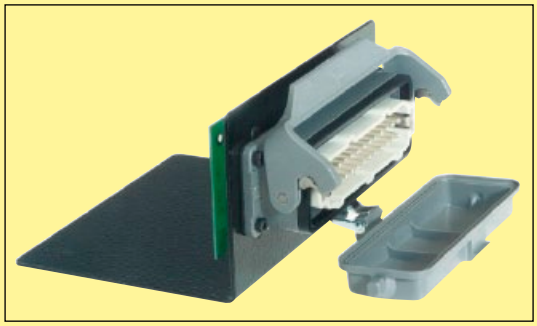


Stock items in bold type

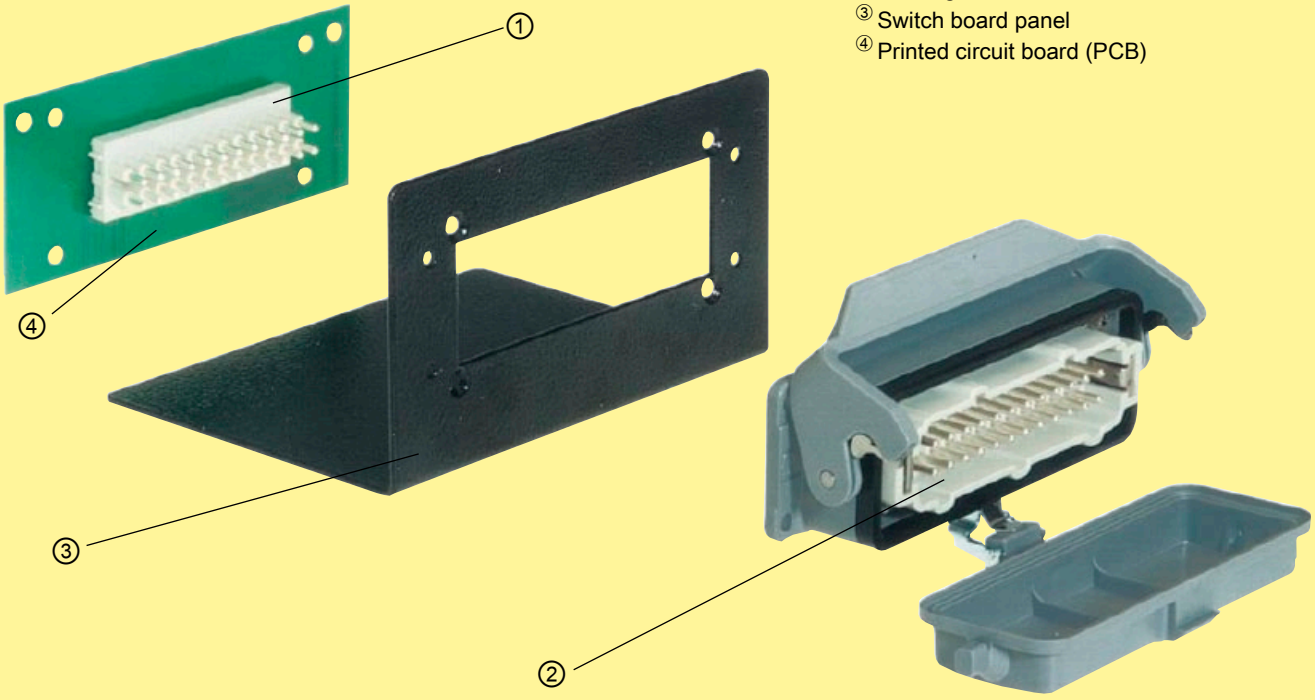
- Secondary mating between industrial connector and printed circuit board.
- Ho higher force is applied on the soldering joint when mating the industrial connector due to an additional matting point.
- No wiring between printed circuit board and industrial connector necessary.
- This no wiring faults ➪ no testing, no costs
- Connecting times are minimized.
- Easy handling is time and cost saving.
- The production of mechanical and electrical / electronically components can be completely separated.
- Possibility to reach a higher degree of automation in the production (i. E. wave soldering of the PCBs).



Han DD® dnd Han® Q 5/0 PCB adapter
Wilhelm Fette GmbH, Germany



① PCB adapter for Han E®
② Han E® connector in a bulkhead mounted housing
③ Switch board panel
④ Printed circuit board (PCB)



## Contents


| | | Page |
|---|---|---|
| Technical Characteristics | | **30.02** |
| **Size Han® 3 A** | Standard Hoods/Housings | **30.04** |
| | Han® M | **30.09** |
| | Han® EMC | **30.11** |
| | Han® HPR | **30.13** |
| **Size Han® 10 A** | Standard Hoods/Housings | **30.14** |
| | Han® EMC | **30.16** |
| **Size Han® 16 A** | Standard Hoods/Housings | **30.17** |
| | Han® EMC | **30.19** |
| **Size Han® 32 A** | Standard Hoods/Housings | **30.20** |
| **Size Han® 6 B** | Standard Hoods/Housings | **30.24** |
| | Han® M | **30.29** |
| | Han® EMC | **30.31** |
| | Han® EMC/B | **30.32** |
| | Han® HPR | **30.34** |
| **Size Han® 10 B** | Standard Hoods/Housings | **30.36** |
| | Han-Drive® | **30.42** |
| | Han® M | **30.47** |
| | Han® EMC | **30.49** |
| | Han® EMC/B | **30.50** |
| | Han® HPR | **30.52** |
| **Size Han® 16 B** | Standard Hoods/Housings | **30.54** |
| | Han® Easy Hood | **30.57** |
| | Han® M | **30.65** |
| | Han® EMC | **30.67** |
| | Han® EMC/B | **30.68** |
| | Han® HPR | **30.69** |
| **Size Han® 24 B** | Standard Hoods/Housings | **30.72** |
| | Han® Easy Hood | **30.76** |
| | Han® M | **30.83** |
| | Han® EMC | **30.85** |
| | Han® EMC/B | **30.86** |
| | Han® HPR | **30.87** |
| **Size Han® 32 B** | Standard Hoods/Housings | **30.89** |
| **Size Han® 48 B** | Standard Hoods/Housings | **30.91** |


Note: Han® hoods and housing with NPT-thread also available by HARTING Inc. of North America, USA

## Han® 3 A Standard Hoods/Housings
### Metal hoods/housings for industrial applications

| | |
|---|---|
| Material | zinc die-cast |
| Colour | RAL 7037 (grey) |
| Surface | powder-coated |
| Locking element | steel, zinc-plated |
| Lever type | lever, metal |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

## Han® 3 A Hoods/Housings
### Plastic hoods/housings for industrial applications

| | |
|---|---|
| Material | thermoplastic |
| Colour | RAL 7032 (light grey) / RAL 9005 (black) |
| Lever type | lever, plastic |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 67 |

## Han® Standard Hoods/Housings
### Metal hoods/housings for industrial applications

| | |
|---|---|
| Material | aluminium die-cast |
| Colour | RAL 7037 (grey) |
| Surface | powder-coated |
| Locking element | Stainless steel |
| Lever type | Han-Easy Lock® |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

## Han-Drive® Housings for motor applications

| | |
|---|---|
| Material | aluminium die-cast |
| Colour | non coloured / RAL 7037 (grey) |
| Surface | electrical conductive / powder-coated / unpainted |
| Locking element | Stainless steel |
| Lever type | Han-Easy Lock® |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

## Han® 3 M Hoods/Housings
### Hoods/Housings for higher environmental requirements

| | |
|---|---|
| Material | zinc die-cast |
| Colour | RAL 9005 (black) |
| Surface | |
| - Top coat | Epoxy powder paint |
| Locking element | Stainless steel |
| Lever type | lever, metal |
| Hoods/Housings seal | FPM |
| Limiting temperatures | -40 °C ... +125 °C |
| Corrosion resistance | ASTM B117-09 (500 h) |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

## Han® M Hoods/Housings
### Hoods/Housings for higher environmental requirements

| | |
|---|---|
| Material | aluminium die-cast |
| Colour | RAL 9005 (black) |
| Surface | |
| - Top coat | Epoxy powder paint |
| Locking element | Stainless steel |
| Lever type | lever, metal |
| Hoods/Housings seal | FPM |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Corrosion resistance | ASTM B117-09 (500 h) |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

## Han® 3 EMC Hoods/Housings
Hoods/Housings for higher EMC requirements

| | |
|---|---|
| Material | zinc die-cast |
| Colour | non coloured |
| Surface | electrical conductive |
| Locking element | steel, zinc-plated |
| Lever type | lever, metal |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

## Han® 3 HPR Hoods/Housings
Hoods/Housings for harsh environmental requirements

| | |
|---|---|
| Material | zinc die-cast |
| Colour | RAL 9005 (black) |
| Surface | |
| - Top coat | Epoxy powder paint / chromated |
| Locking element | |
| - Screw locking | M4 |
| - Material | Stainless steel |
| - Tightening torque | 2 Nm |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Corrosion resistance | ASTM B117-09 (500 h) |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 68 / IP 69K |

Attention
The sealing on the insert has to be removed.

## Han® EMC Hoods/Housings
Hoods/Housings for higher EMC requirements

| | |
|---|---|
| Material | aluminium die-cast |
| Colour | non coloured |
| Surface | electrical conductive |
| Locking element | |
| - central locking lever | Stainless steel |
| - Screw locking | M5 |
| - Material | Stainless steel |
| - Tightening torque | 3 Nm |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

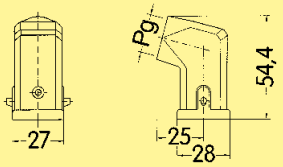
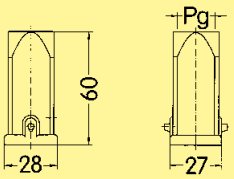
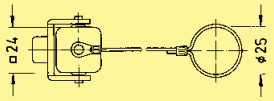
## Han® HPR Hoods/Housings
Hoods/Housings for harsh environmental requirements

| | |
|---|---|
| Material | aluminium die-cast, corrosion resistant |
| Colour | RAL 9005 (black) |
| Surface | |
| - Top coat | Epoxy powder paint |
| Locking element | |
| - Screw locking | M6 |
| - Material | Stainless steel |
| - Tightening torque | 4 Nm |
| - Toggle locking | |
| - Material | Stainless steel |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Corrosion resistance | ASTM B117-09 (500 h) |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 68 / IP 69K (does not apply to Han® 48 HPR) |

## Han® EMC/B Hoods/Housings
Hoods/Housings for higher EMC requirements

| | |
|---|---|
| Material | |
| - Hoods/Housings | aluminium die-cast |
| - shielded frames | zinc die-cast alloy |
| Colour | non coloured |
| Surface | |
| - Hoods/Housings | electrical conductive |
| - shielded frames | electrical conductive |
| Locking element | Stainless steel |
| Lever type | Han-Easy Lock® |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | **09 20 003 1640** | 1 x 11 |  | |
| Hoods<br>top entry |  | **09 20 003 1440** | 1 x 11 |  | |
| Protection covers for hoods |  | **09 20 003 5422**[2)]<br>**09 20 003 5421**[1)] | |  | |

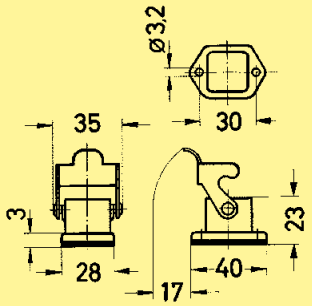
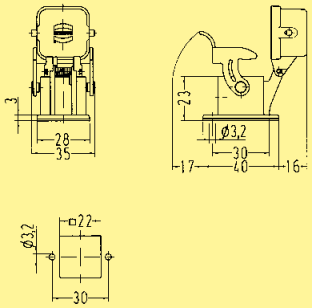
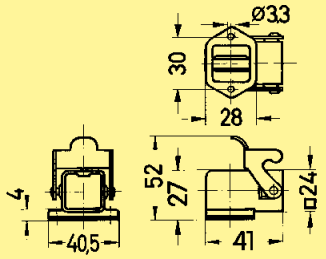
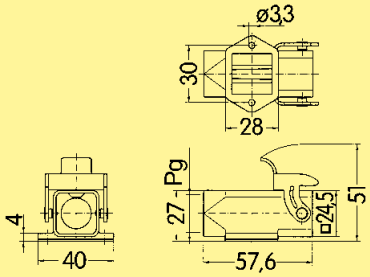
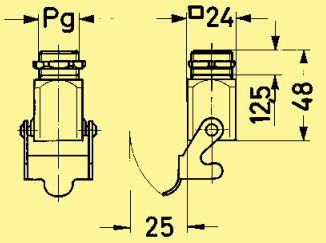




[1)] for mounted female insert
[2)] for mounted male insert

**Stock items in bold type**

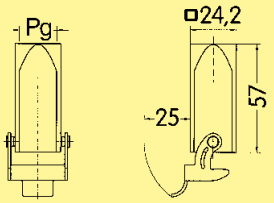
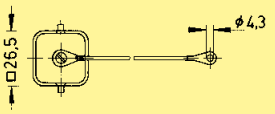
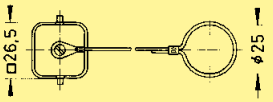
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 20 003 0301** | |  Panel cut out 22 x 22 mm | |
|  | 09 20 003 0305[2] **09 20 003 0306**[1] | |  Panel cut out 22 x 22 mm | |
|  | **09 20 003 0801** | |  Panel cut out 22 x 22 mm | |
| Housings, surface mounting<br>top entry  | **09 20 003 1250** | 1 x 11 |  Panel cut out 22 x 22 mm | |
| | bottom closed **09 20 003 1252** | 1 x 11 | | |
| Housings, screw mounting<br>top entry  | **09 20 003 0102** | 1 x 13.5 |  | |

[1] for mounted female insert
[2] for mounted male insert

Stock items in bold type

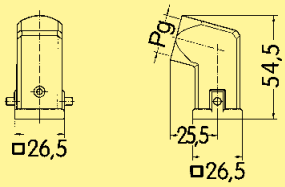
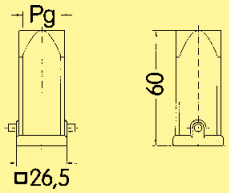
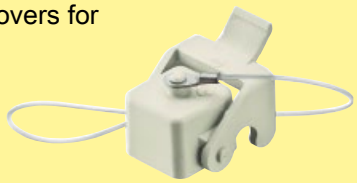
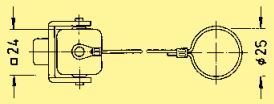
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Hoods, cable to cable<br>top entry  | **09 20 003 1750** | 1 x 11 |  | |
| Protection covers   | for housings **09 20 003 5426**[2)]<br>for housings **09 20 003 5425**[1)]<br>for hoods cable to cable 09 20 003 5428[2)]<br>for hoods cable to cable 09 20 003 5427[1)] | |   | |

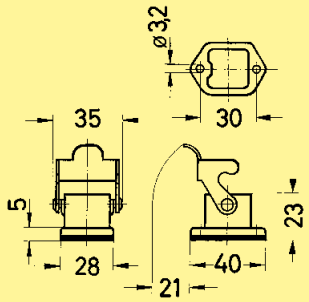
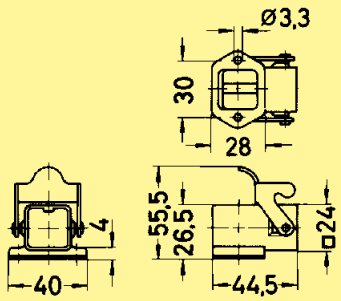
[1)] for mounted female insert
[2)] for mounted male insert

**Stock items in bold type**

## Plastic hoods/housings for industrial applications / 1 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | light grey<br>09 20 003 0620<br>black<br>09 20 003 0627 | 1 x 11<br>1 x 11 |  | |
| Hoods<br>top entry |  | light grey<br>**09 20 003 0420**<br>black<br>09 20 003 0427 | 1 x 11<br>1 x 11 |  | |
| Protection covers for hoods |  | light grey<br>09 20 003 5442[3]<br>light grey<br>09 20 003 5441[2] | |  | |

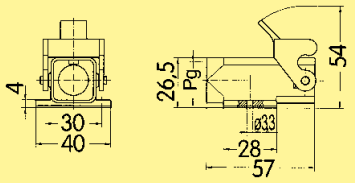
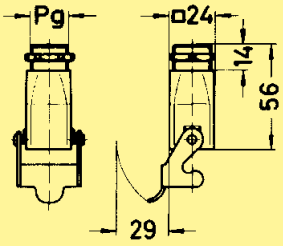
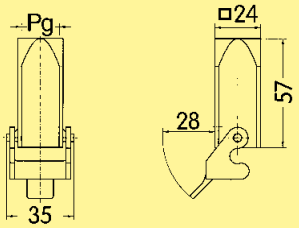
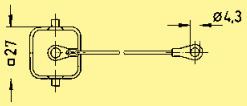
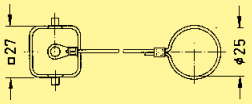
## Plastic hoods/housings for industrial applications / 1 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | light grey<br>**09 20 003 0320**<br>black<br>**09 20 003 0327** | | <br>Panel cut out 22 x 22 mm | |
| |  | light grey<br>**09 20 003 0820**<br>black<br>09 20 003 0827 | | <br>Panel cut out 22 x 22 mm | |

[1] for metal housings and cable to cable hoods also
[2] for mounted female insert or for mounted Han-Brid® insert
[3] for mounted male insert

Stock items in bold type

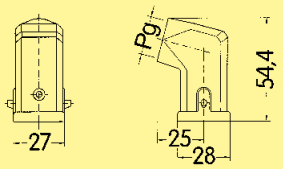
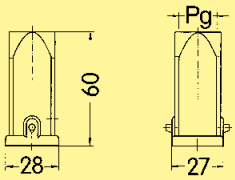
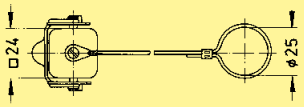
## Plastic hoods/housings for industrial applications / 1 lever locking system

| Identification | | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, surface mounting<br>top entry |  | light grey<br>**09 20 003 0220**<br>black<br>09 20 003 0227 | 1 x 11<br>1 x 11 | <br>Panel cut out 22 x 22 mm |
| Housings, screw mounting<br>top entry |  | light grey<br>09 20 003 0120 | 1 x<br>13.5 |  |
| Hoods, cable to cable<br>top entry |  | light grey<br>**09 20 003 0720**<br>black<br>09 20 003 0727 | 1 x 11<br>1 x 11 |  |
| Protection covers |  | light grey<br>09 20 003 5407[1]<br>light grey<br>09 20 003 5408[1)2)] | |  |
| Protection cover with lanyard |  | light grey<br>**09 20 003 5445**[2)]<br>light grey<br>09 20 003 5446[3)]<br>black<br>09 20 003 5449[2)]<br>black<br>09 20 003 5450[3)] | |  |
| Protection covers for hoods cable to cable | | light grey<br>09 20 003 5447[2)]<br>light grey<br>09 20 003 5448[3)] | |  |

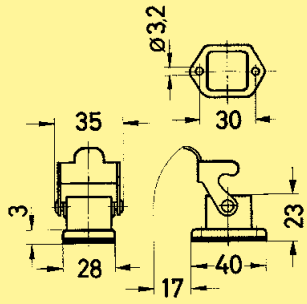
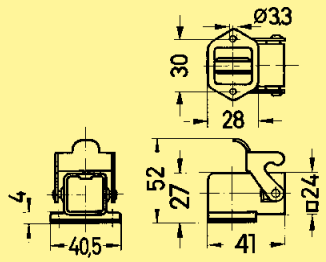
[1)] for metal housings and cable to cable hoods also
[2)] for mounted female insert or for mounted Han-Brid® insert
[3)] for mounted male insert

**Stock items in bold type**

## Hoods/Housings for higher environmental requirements / 1 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 37 003 1640 | 1 x 11 |  | |
| Hoods<br>top entry |  | 09 37 003 1440 | 1 x 11 |  | |
| Protection covers |  | 09 37 003 5402[2]<br>09 37 003 5401[1] | |  | |

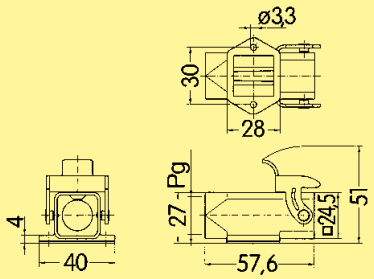
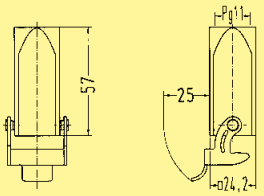
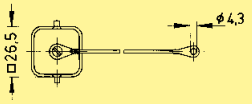
## Hoods/Housings for higher environmental requirements / 1 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 37 003 0301** | | <br>Panel cut out 22 x 22 mm | |
| |  | **09 37 003 0801** | | <br>Panel cut out 22 x 22 mm | |

[1] for mounted female insert
[2] for mounted male insert

**Stock items in bold type**

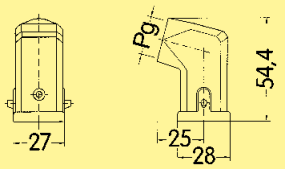
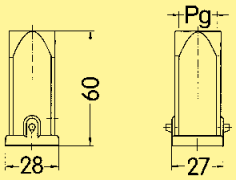
## Hoods/Housings for higher environmental requirements / 1 lever locking system

| Identification | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, surface mounting<br>top entry  | 09 37 003 1250 | 1 x 11 |  Panel cut out 22 x 22 mm | |
| Hoods, cable to cable<br>top entry  | 09 37 003 1750 | 1 x 11 |  | |
| Protection covers for housings  | **09 37 003 5405**[1]<br>09 37 003 5406[2] | |  | |

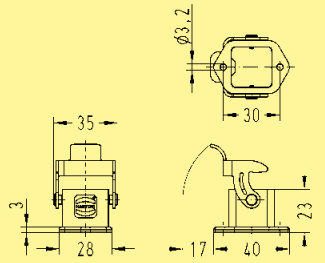
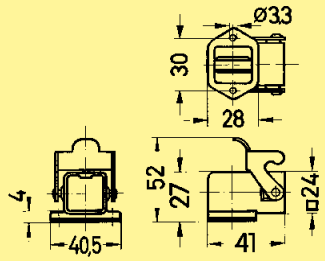
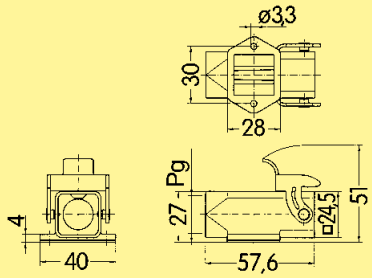
[1] for mounted female insert
[2] for mounted male insert

**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 62 003 1640 | 1 x 11 |  | |
| Hoods<br>top entry |  | **09 62 003 1440** | 1 x 11 |  | |

## Hoods/Housings for higher EMC requirements / 1 lever locking system

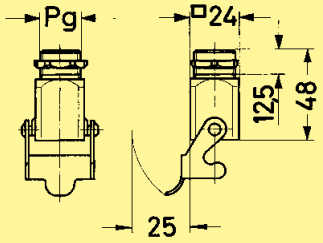
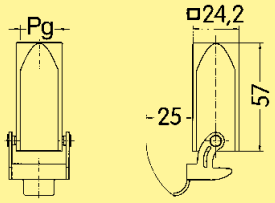
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 62 003 0301** | |  Panel cut out 22 x 22 mm | |
| |  | **09 62 003 0801** | |  Panel cut out 22 x 22 mm | |
| Housings, surface mounting<br>top entry |  | 09 62 003 1250<br><br>bottom closed<br>09 62 003 1252 | 1 x 11<br><br>1 x 11 |  Panel cut out 22 x 22 mm | |

Han Hoods Housings



Stock items in bold type

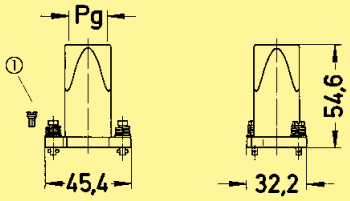
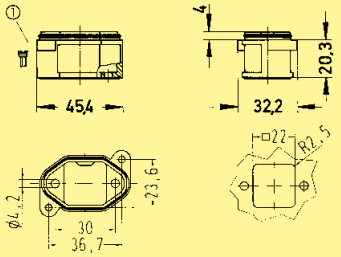
## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, screw mounting<br>top entry |  | 09 62 003 0102 | 1 x 13.5 |  | |
| Hoods, cable to cable<br>top entry |  | 09 62 003 1750 | 1 x 11 |  | |

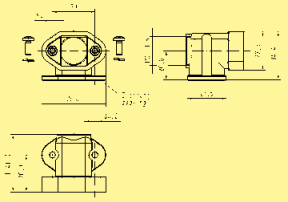
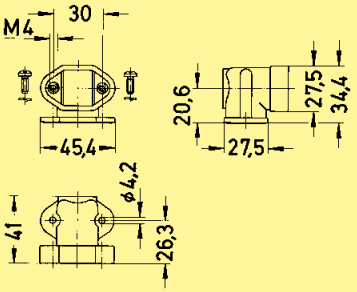


**Stock items in bold type**

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | Part number Toggle locking | screw | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>top entry  | chromated<br>09 40 003 0402[1)]<br>Epoxy powder paint<br>09 40 703 0402[1)] | | 1 x 13.5<br>1 x 13.5 |  ① Sealing screw | |
| Housings, bulk-head mounting  | chromated<br>**09 40 003 0301**[1)]<br>Epoxy powder paint<br>09 40 703 0301[1)] | | |  Panel cut out 21.3 x 21.3 mm<br>① Sealing screw | |

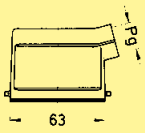
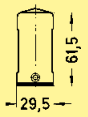
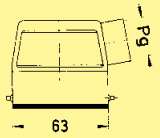
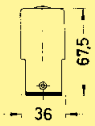
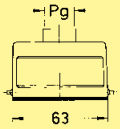
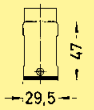
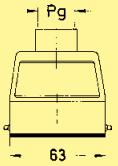
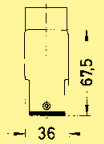
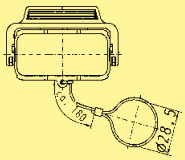
## Accessories

| Identification | Part number Toggle locking | screw | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Adaptor<br>for assembly of bulkhead mounted housings in angled position, with Pg-entry  | | chromated<br>09 40 003 0901<br>Epoxy powder paint<br>09 40 703 0901 | 1 x 13.5<br>1 x 13.5 |  | |
| Adaptor<br>for assembly of bulkhead mounted housings in angled position  | chromated<br>09 40 003 0902<br>Epoxy powder paint<br>09 40 703 0902 | chromated<br>09 40 003 0902<br>Epoxy powder paint<br>09 40 703 0902 | –<br>– |  | |

[1)] with sealing screw; sealing on the insert has to be removed

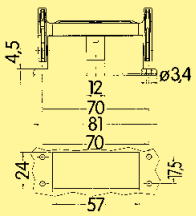
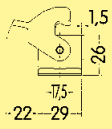
Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **09 20 010 1541** | | 1 x 16 |  |  |
| side entry  | | **09 20 010 0540**<br>**09 20 010 0541** | 1 x 16<br>1 x 21 |  |  |
| Hoods<br>top entry  | **09 20 010 1440** | | 1 x 13.5 |  |  |
| top entry  | | **09 20 010 0440**<br>**09 20 010 0441**<br>09 20 010 0801 | 1 x 16<br>1 x 21<br>– |  |  |
| Protection covers  | metal<br>**09 20 010 5423** | metal<br>**09 20 010 5423** | |  | |



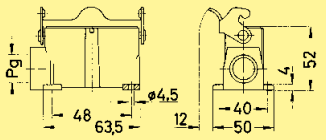
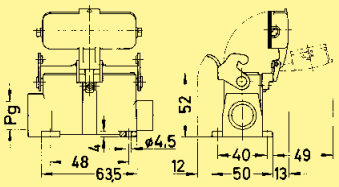
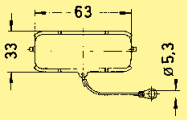
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 20 010 0301**<br>with thermo-plastic cover<br>**09 20 010 0321** | | | <br>Panel cut out |  |



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

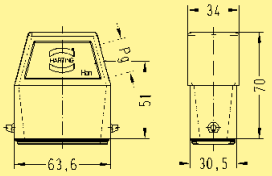
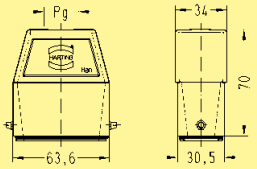
| Identification | Part number Low construction | High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry  | **09 20 010 0251**<br>09 20 010 0291 | | 1 x 16<br>2 x 16 |  | |
| side entry  | with thermo-plastic cover<br>09 20 010 0221<br>with thermo-plastic cover<br>09 20 010 0296 | | 1 x 16<br>2 x 16 |  | |
| Protection covers  | metal<br>**09 20 010 5425** | | |  | |



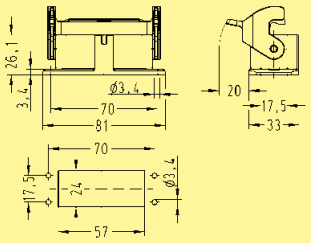


Stock items in bold type

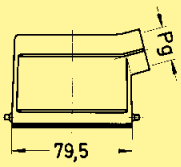
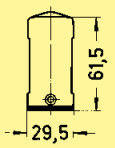
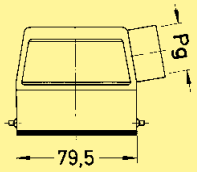
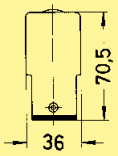
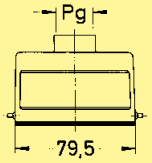
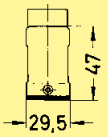
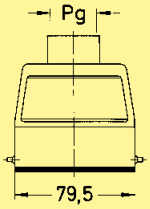
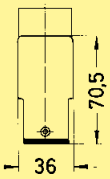
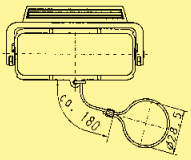
## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 62 015 0540<br>09 62 015 0541 | 1 x 16<br>1 x 21 |  | |
| Hoods<br>top entry |  | 09 62 015 0440<br>09 62 015 0441 | 1 x 16<br>1 x 21 |  | |

## Hoods/Housings for higher EMC requirements / 1 lever locking system

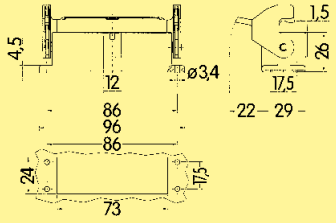
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 62 015 0301 | | <br>Panel cut out | |

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **09 20 016 1541** | | 1 x 16 |  |  |
| side entry  | | **09 20 016 0540**<br>**09 20 016 0541** | 1 x 16<br>1 x 21 |  |  |
| Hoods<br>top entry  | **09 20 016 1441** | | 1 x 16 |  |  |
| top entry  | | **09 20 016 0440**<br>**09 20 016 0441**<br>09 20 016 0801 | 1 x 16<br>1 x 21<br>– |  |  |
| Protection covers  | metal<br>09 20 016 5423 | metal<br>09 20 016 5423 | |  | |

Han Hoods Housings

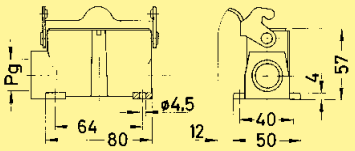
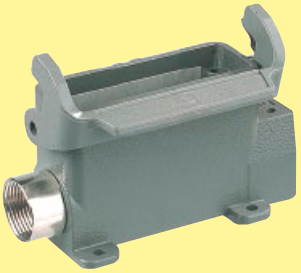
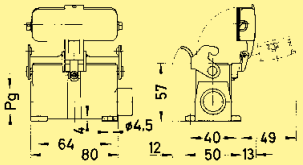
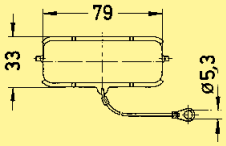
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 20 016 0301**<br>with thermo-plastic cover<br>**09 20 016 0321** | | | <br>Panel cut out | |



Stock items in bold type

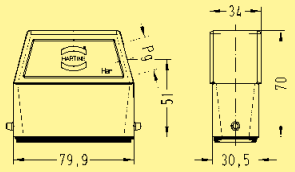
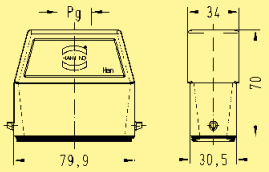
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry  | **09 20 016 0251**<br>**09 20 016 0252**<br>**09 20 016 0291** | | 1 x 16<br>1 x 21<br>2 x 16 |  | |
| side entry  | with thermo-plastic cover<br>09 20 016 0221<br>with thermo-plastic cover<br>09 20 016 0222<br>with thermo-plastic cover<br>09 20 016 0296 | | 1 x 16<br>1 x 21<br>2 x 16 |  | |
| Protection covers  | metal<br>**09 20 016 5425** | | |  | |

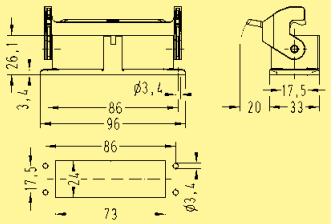


**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 62 025 0540<br>09 62 025 0541 | 1 x 16<br>1 x 21 |  | |
| Hoods<br>top entry |  | 09 62 025 0440<br>09 62 025 0441 | 1 x 16<br>1 x 21 |  | |

## Hoods/Housings for higher EMC requirements / 1 lever locking system

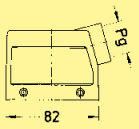
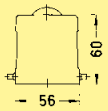
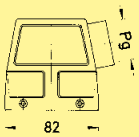
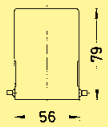
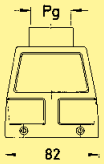
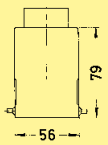
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 62 025 0301 | | <br>Panel cut out | |



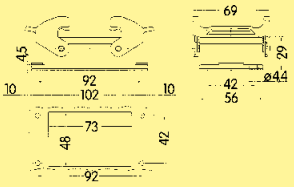


Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **09 20 032 1520** | | 1 x 21 |  |  |
| side entry  | | **09 20 032 0520**<br>**09 20 032 0521** | 1 x 21<br>1 x 29 |  |  |
| Hoods<br>top entry  | | 09 20 032 0420<br>**09 20 032 0421** | 1 x 21<br>1 x 29 |  |  |
| Dust protection cover  | 09 20 032 5401 | 09 20 032 5401 | |  | |

## Metal hoods/housings for industrial applications / 2 lever locking system

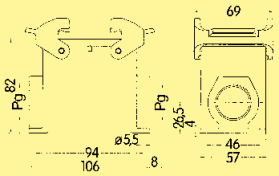
| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 20 032 0301** | | | <br>Panel cut out | |
| | | | | | |





* usable for two inserts of size 16 A
Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

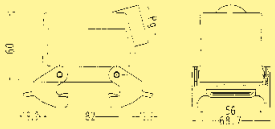
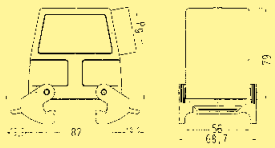
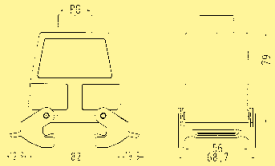
| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry  | | 09 20 032 0230<br>09 20 032 0231<br>09 20 032 0270<br>09 20 032 0271 | 1 x 21<br>1 x 29<br>2 x 21<br>2 x 29 |  Blind way for one cable entry | |
| Dust protection cover  | 09 20 032 5405 | 09 20 032 5405 | |  | |



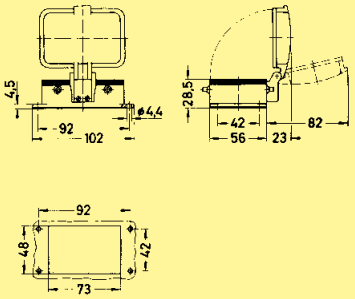


* usable for two inserts of size 16 A
Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 09 20 032 1530 | | 1 x 21 |  | |
| side entry  | | 09 20 032 0530<br>09 20 032 0531 | 1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry  | | 09 20 032 0430<br>09 20 032 0431 | 1 x 21<br>1 x 29 |  | |

## Metal hoods/housings for industrial applications / 2 lever locking system

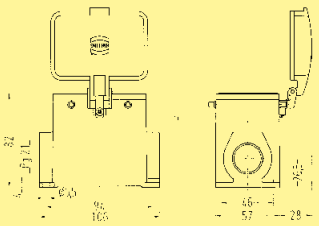
| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | with thermo-plastic cover<br>09 20 032 0302 | | | <br>Panel cut out | |





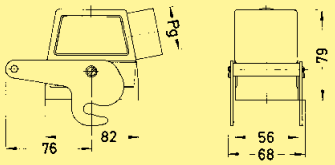
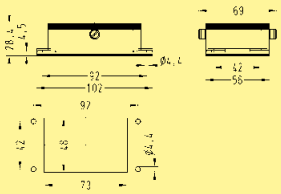
* usable for two inserts of size 16 A
Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry  | | with thermo-plastic cover<br>09 20 032 0220<br>with thermo-plastic cover<br>09 20 032 0221<br>with thermo-plastic cover<br>09 20 032 0260<br>with thermo-plastic cover<br>09 20 032 0261 | 1 x 21<br>1 x 29<br>2 x 21<br>2 x 29 |  | |

[1] Blind way for one cable entry

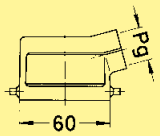
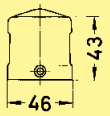
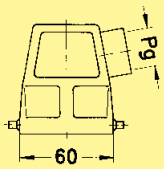
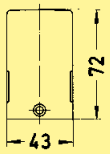
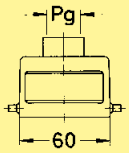
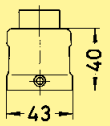
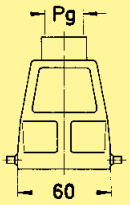
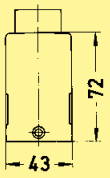
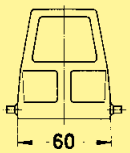
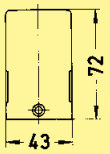
## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | | 09 20 032 0581 | 1 x 29 |  | |
| Housings, bulkhead mounting  | 09 20 032 0381 | | |  Panel cut out | |



* usable for two inserts of size 16 A
Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

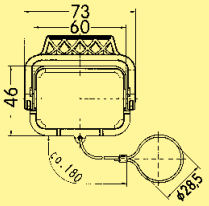
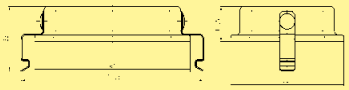
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **09 30 006 1540**<br>**09 30 006 1541** | | 1 x 13.5<br>1 x 16 |  |  |
| side entry |  | | **09 30 006 0542**<br>**09 30 006 0543** | 1 x 21<br>1 x 29 |  |  |
| Hoods<br>top entry |  | **09 30 006 1440**<br>**09 30 006 1441** | | 1 x 13.5<br>1 x 16 |  |  |
| top entry |  | | **09 30 006 0442**<br>**09 30 006 0443** | 1 x 21<br>1 x 29 |  |  |
| Hoods<br>without cable entry |  | | 09 30 006 0801 | – |  |  |



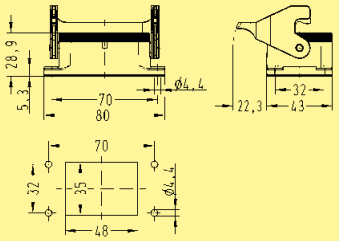
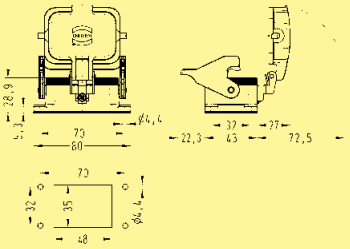


**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Protection covers  | metal **09 30 006 5423** | metal **09 30 006 5423** | |   | |
| Dust protection cover  | 09 30 006 5401 | 09 30 006 5401 | |  | |

## Metal hoods/housings for industrial applications / 1 lever locking system

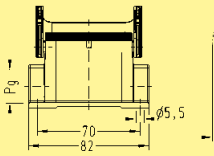
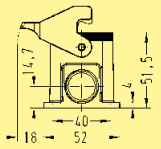
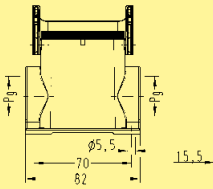
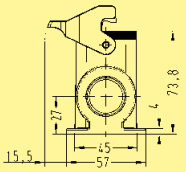
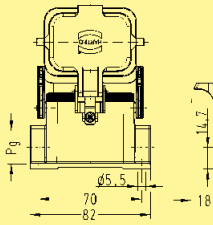
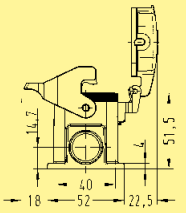
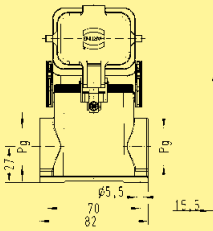
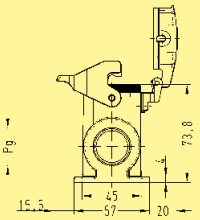
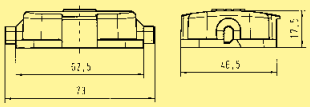
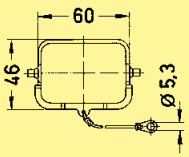
| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 30 006 0301** | | |   Panel cut out | |
|  | with thermo-plastic cover **09 30 006 0302** with metal cover **09 30 006 0318** | | |   Panel cut out | |





Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

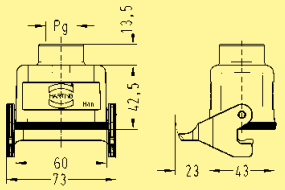
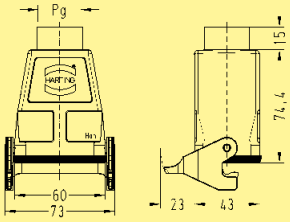
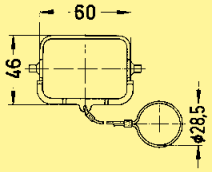
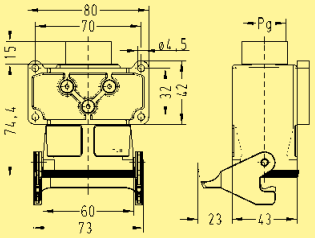
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | **09 30 006 1251**<br>**09 30 006 1291** | | 1 x 16<br>2 x 16 |  |  |
| side entry |  | | **09 30 006 0292**<br>09 30 006 0293 | 2 x 21<br>2 x 29 |  |  |
| side entry |  | with thermo-plastic cover<br>**09 30 006 1256**<br>with thermo-plastic cover<br>**09 30 006 1296**<br>with metal cover<br>09 30 006 2256<br>with metal cover<br>**09 30 006 2296** | | 1 x 16<br>2 x 16<br>1 x 16<br>2 x 16 |  |  |
| side entry |  | | with thermo-plastic cover<br>09 30 006 0297<br>with thermo-plastic cover<br>09 30 006 0298<br>with metal cover<br>09 30 006 2297 | 2 x 21<br>2 x 29<br>2 x 21 |  |  |
| Protection covers |  | plastic<br>**09 30 006 5404** | plastic<br>**09 30 006 5404** | |  | |
| |  | metal<br>**09 30 006 5425** | metal<br>**09 30 006 5425** | |  | |





Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

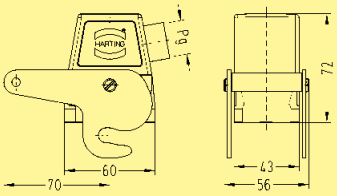
| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods, cable to cable<br>top entry  | **09 30 006 1750** | | 1 x 13.5 |  | |
| top entry  | | 09 30 006 0752<br>09 30 006 0753 | 1 x 21<br>1 x 29 |  | |
| Protection covers  | metal<br>09 30 006 5427 | metal<br>09 30 006 5427 | |  | |
| Flange housings<br>top entry  | | 09 30 006 0757 | 1 x 21 |  | |



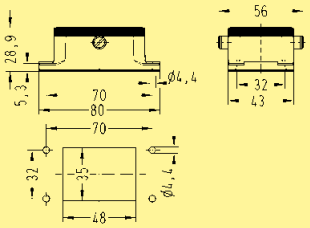


Stock items in bold type

## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 30 006 0581 | 1 x 16 |  | |

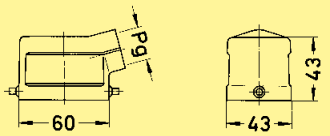
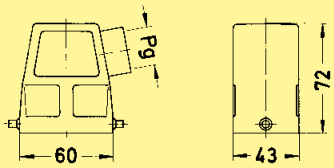
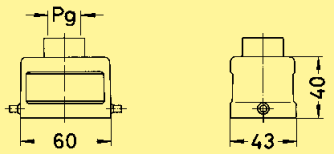
## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 30 006 0381 | | <br>Panel cut out | |

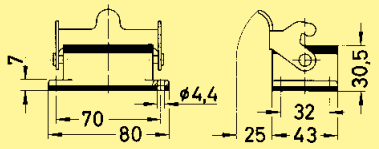
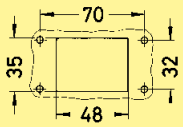
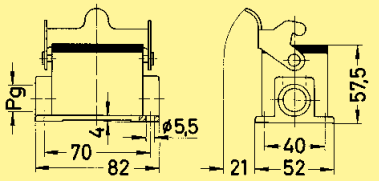


**Stock items in bold type**

## Hoods/Housings for higher environmental requirements / 1 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 37 006 1540 | 1 x 13.5 |  | |
| side entry |  | 09 37 006 0542 | 1 x 21 |  | |
| Hoods<br>top entry |  | 09 37 006 1440<br>09 37 006 1441 | 1 x 13.5<br>1 x 16 |  | |

## Hoods/Housings for higher environmental requirements / 1 lever locking system

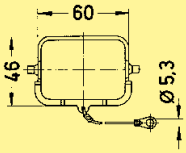
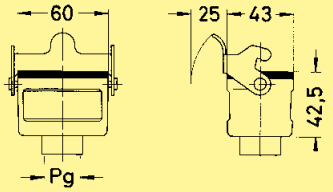
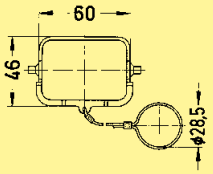
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 37 006 0301** | | <br><br>Panel cut out | |
| Housings, surface mounting<br>side entry |  | 09 37 006 1291 | 2 x 16 |  | |





Stock items in bold type

## Hoods/Housings for higher environmental requirements / 1 lever locking system

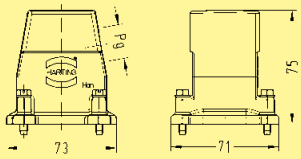
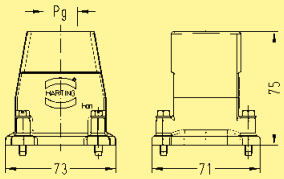
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Protection covers |  | metal<br>09 37 006 5405 | |  | |
| Hoods, cable to cable<br>top entry |  | 09 37 006 1750 | 1 x<br>13.5 |  | |
| Protection covers |  | metal<br>09 37 006 5407 | |  | |



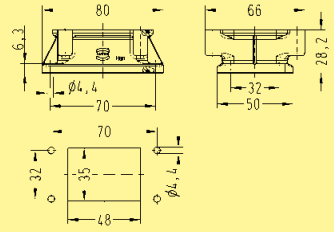
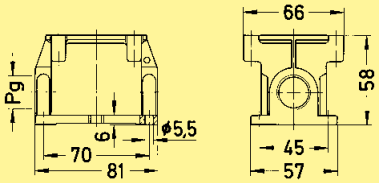


Stock items in bold type

## Hoods/Housings for higher EMC requirements / Screw locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 62 006 0540<br>09 62 006 0541 | 1 x 16<br>1 x 21 |  | |
| Hoods<br>top entry |  | 09 62 006 0440<br>09 62 006 0441 | 1 x 16<br>1 x 21 |  | |

## Hoods/Housings for higher EMC requirements / Screw locking system

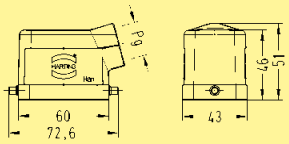
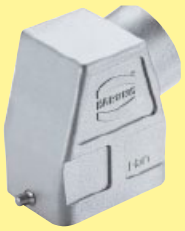
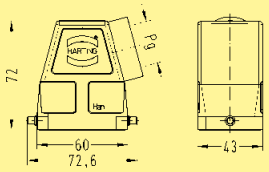
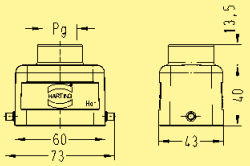
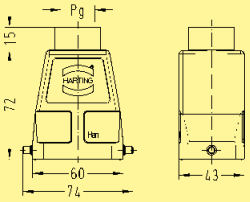
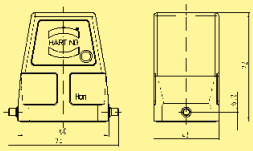
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 62 006 0301 | | <br>Panel cut out | |
| Housings, surface mounting<br>side entry |  | 09 62 006 1205 | 2 x 16 |  | |





Stock items in bold type

## Hoods/Housings for higher EMC requirements / 1 lever locking system

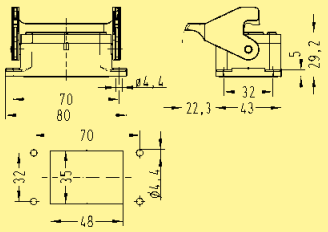
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 62 806 1541 | | 1 x 16 |  | |
| side entry |  | | 09 62 806 0542 | 1 x 21 |  | |
| Hoods<br>top entry |  | 09 62 806 1441 | | 1 x 16 |  | |
| top entry |  | | 09 62 806 0442 | 1 x 21 |  | |
| Hoods<br>without cable entry |  | | 09 62 806 0801 | – |  | |





**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | Part number Low construction | High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 62 806 0301** | | |  Panel cut out | |

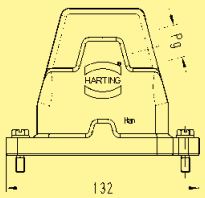
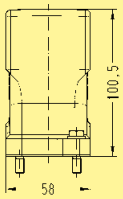
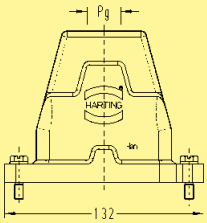
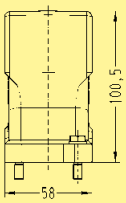
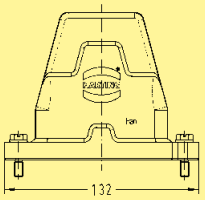
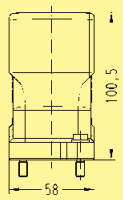






Stock items in bold type

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

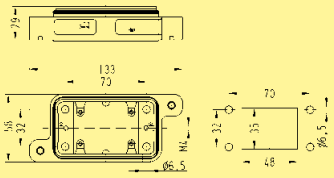
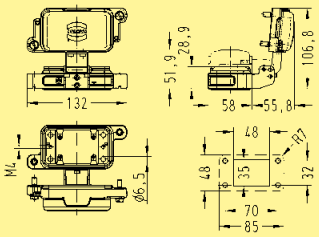
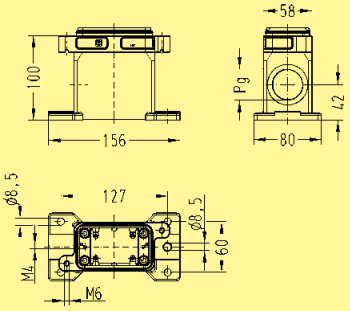
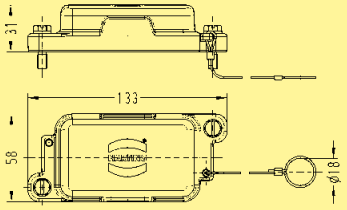
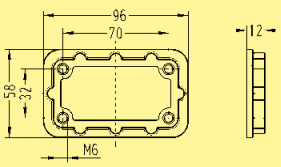
| Identification | | Part number Toggle locking | screw | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 40 006 0501<br>09 40 006 0502 | 09 40 006 0511<br>09 40 006 0512<br>09 40 006 0513 | 1 x 16<br>1 x 21<br>1 x 16<br>1 x 21<br>1 x 29 |  |  |
| Hoods<br>top entry |  | 09 40 006 0401<br>09 40 006 0402 | 09 40 006 0411<br>09 40 006 0412<br>09 40 006 0413 | 1 x 16<br>1 x 21<br>1 x 16<br>1 x 21<br>1 x 29 |  |  |
| Hoods<br>without cable entry |  | | 09 40 006 0811 | – |  |  |





Stock items in bold type

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | Part number Toggle locking | screw | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | 09 40 006 0301 | **09 40 006 0311** | |  Panel cut out | |
| Housings, bulkhead mounting  | | with metal cover **09 40 006 0317** | |  Panel cut out | |
| Housings, surface mounting side entry  | | 09 40 006 1262 | 1 x 29 |  | |
| Protection covers  | metal 09 40 006 5401 | metal 09 40 006 5411 | |  | |
| Mounting frames  | | 09 40 000 9901[1)] | |  | |

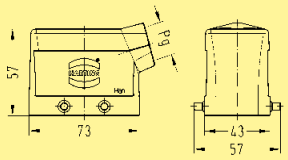
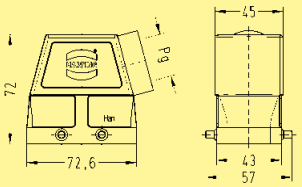
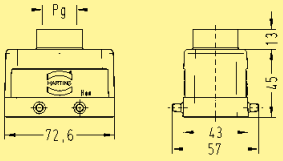
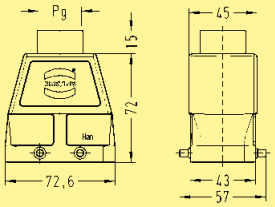
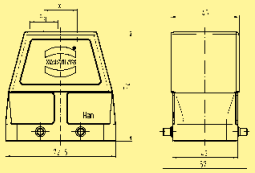
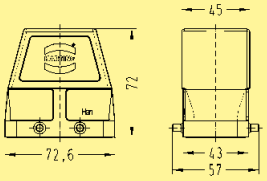
[1)] not applicable for using Han® HC 650





Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

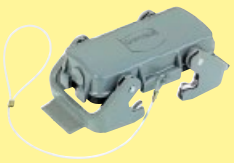
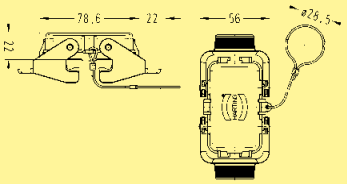
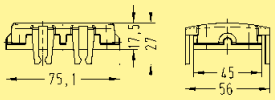
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **09 30 010 1521** | | 1 x 16 |  | |
| side entry |  | | **09 30 010 0522**<br>**09 30 010 0523** | 1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry |  | **09 30 010 1421** | | 1 x 16 |  | |
| top entry |  | | **09 30 010 0422**<br>**09 30 010 0423** | 1 x 21<br>1 x 29 |  | |
| top entry |  | | **09 30 010 0460** | 2 x 13,5 |  | |
| Hoods<br>without cable entry |  | | 09 30 010 0801 | – |  | |



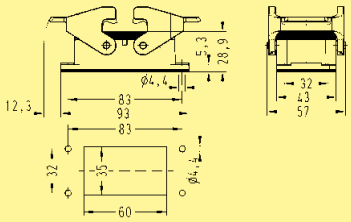
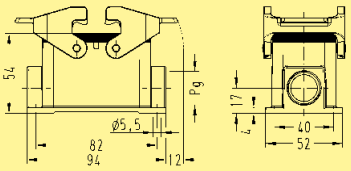
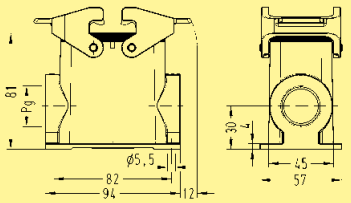


**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Protection covers  | metal **09 30 010 5423** | metal **09 30 010 5423** | |  | |
| Protection covers  | plastic 09 30 010 5401 | plastic 09 30 010 5401 | |  | |

## Metal hoods/housings for industrial applications / 2 lever locking system

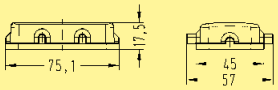
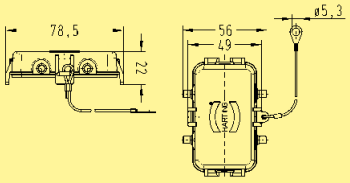
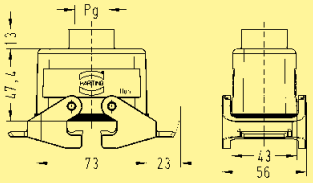
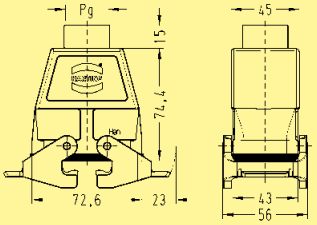
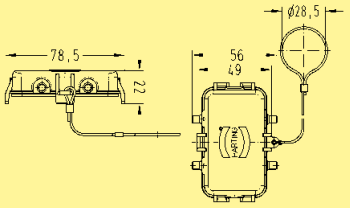
| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 30 010 0301** | | |  Panel cut out | |
| Housings, surface mounting side entry  | **09 30 010 1231** **09 30 010 1271** | | 1 x 16 2 x 16 |  Blind way for one cable entry | |
| side entry  | | 09 30 010 0232 09 30 010 0233 09 30 010 0272 09 30 010 0273 | 1 x 21 1 x 29 2 x 21 2 x 29 |  Blind way for one cable entry | |

Han Hoods Housings



Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

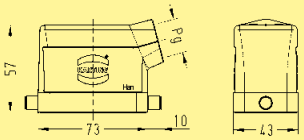
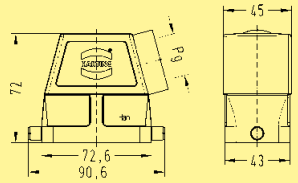
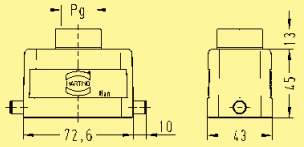
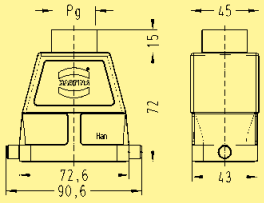
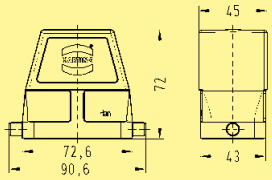
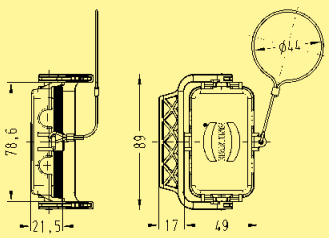
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Protection covers for housings |  | plastic 09 30 010 5407 | plastic 09 30 010 5407 | |  | |
| |  | metal **09 30 010 5425** | metal **09 30 010 5425** | |  | |
| Hoods, cable to cable<br>top entry |  | 09 30 010 1731 | | 1 x 16 |  | |
| top entry |  | | 09 30 010 0732<br>09 30 010 0733 | 1 x 21<br>1 x 29 |  | |
| Protection covers for hoods cable to cable |  | metal **09 30 010 5427** | metal **09 30 010 5427** | |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

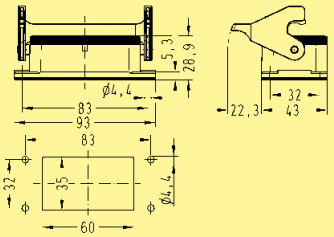
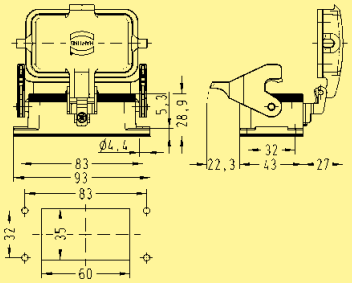
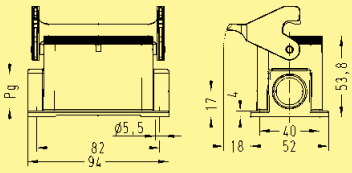
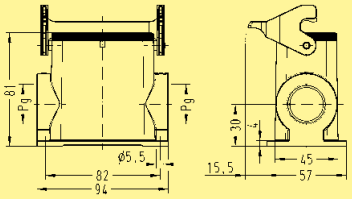
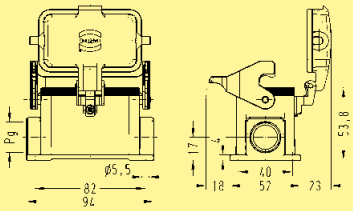
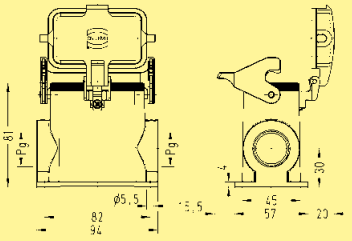
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **09 30 010 1541** | | 1 x 16 |  | |
| side entry |  | | **09 30 010 0542**<br>**09 30 010 0543** | 1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry |  | **09 30 010 1441** | | 1 x 16 |  | |
| top entry |  | | **09 30 010 0442**<br>09 30 010 0443 | 1 x 21<br>1 x 29 |  | |
| Hoods<br>without cable entry |  | | 09 30 010 0803 | – |  | |
| Protection covers |  | metal<br>**09 30 010 5432** | metal<br>**09 30 010 5432** | |  | |





Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

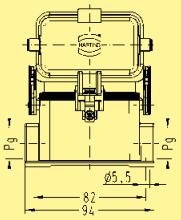
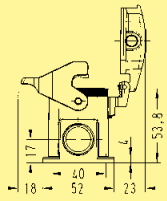
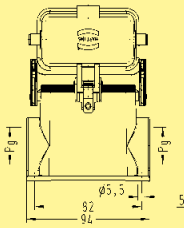
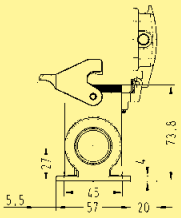
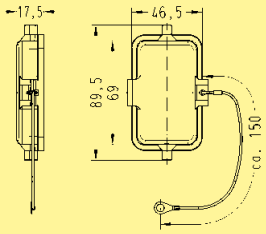
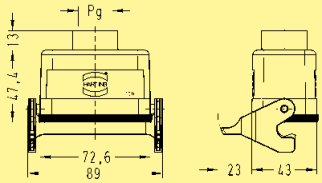
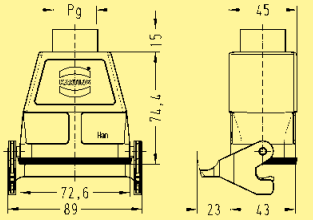
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 30 010 0305** | | |  Panel cut out | |
| |  | with thermo-plastic cover **09 30 010 0303** with metal cover **09 30 010 0318** | | |  Panel cut out | |
| Housings, surface mounting side entry |  | **09 30 010 1251** 09 30 010 1291 | | 1 x 16 2 x 16 |  | |
| side entry |  | | 09 30 010 0292 09 30 010 0293 | 2 x 21 2 x 29 |  | |
| Housings, surface mounting side entry |  | with thermo-plastic cover 09 30 010 1256 with thermo-plastic cover 09 30 010 1296 | | 1 x 16 2 x 16 |  | |
| side entry |  | | with thermo-plastic cover 09 30 010 0297 with thermo-plastic cover 09 30 010 0298 | 2 x 21 2 x 29 |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry  | with metal cover<br>09 30 010 2296 | | 2 x 16 |  |  |
| side entry  | | with metal cover<br>09 30 010 2297 | 2 x 21 |  |  |
| Protection covers  | plastic<br>**09 30 010 5412** | plastic<br>**09 30 010 5412** | |  | |
| Hoods, cable to cable<br>top entry  | **09 30 010 1751** | | 1 x 16 |  | |
| top entry  | | 09 30 010 0752<br>09 30 010 0753 | 1 x 21<br>1 x 29 |  | |





Stock items in bold type



| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|

## Housings for motor termination

powder-coated RAL 7037

**09 30 010 0901**
09 30 010 0902

powder-coated, with protection cover

09 30 010 0961

unpainted

09 30 410 0901
09 30 410 0909
09 30 410 0921

unpainted, with protection cover

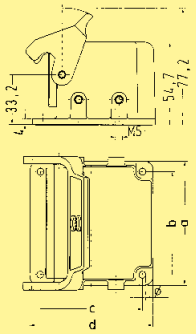
09 30 410 0951
09 30 410 0960
09 30 410 0970
09 30 410 0971
09 30 410 0974
09 30 410 0983

highly EMI resistant

09 62 810 0901

highly EMI resistant, with protection cover

09 62 810 0974



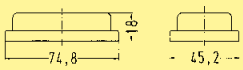

| | a | b | c | d | Ø |
|---|---|---|---|---|---|
| 09 30 010 0901 | 82 | 68 | 68 | 82 | 4.5 |
| 09 30 010 0902 | 98 | | | 98 | |
| 09 30 010 0961 | 82 | 70 | 70 | 82 | |
| 09 30 410 0901 | 82 | 68 | 68 | 82 | 4.5 |
| 09 30 410 0909 | 98 | | | 98 | |
| 09 30 410 0921 | 85 | 73 | 73 | 85 | |
| 09 30 410 0951 | 82 | 68 | 68 | 82 | 4.5 |
| 09 30 410 0960 | 98 | 70 | 70 | 98 | 4.3 |
| 09 30 410 0970 | 92 | 77 | 77 | 92 | 4.3 |
| 09 30 410 0971 | 85 | 73 | 73 | 85 | 5.5 |
| 09 30 410 0974 | 92 | 70 | 70 | 92 | 4.3 |
| 09 30 410 0983 | 92 | 80 | 80 | 92 | 5.1 |
| 09 62 810 0901 | 82 | 68 | 68 | 82 | 4.5 |
| 09 62 810 0974 | 92 | 70 | 70 | 92 | 4.1 |

Other dimensions (a + d) on request (98 x 98 mm)

## Dust protection cover



09 30 010 5406



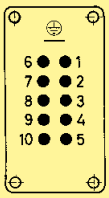





Stock items in bold type

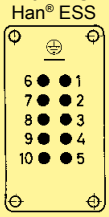
## Compatible connector inserts

Screw terminal
500 V
16 A
Han E®



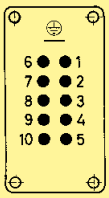

10 + ⏚

Cage-clamp terminal
500 V
16 A
Han® ES
Han® ESS



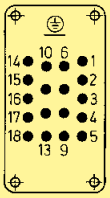

10 + ⏚

Crimp terminal
500 V
16 A
Han E®



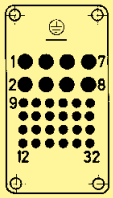

10 + ⏚

Crimp terminal
500 V
16 A
Han® EE



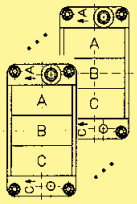

18 + ⏚

Crimp terminal
400/160 V
16/10 A
Han-Com®




8/24 + ⏚

Crimp terminal/
Screw terminal
50 V - 830 V
10 A - 40 A

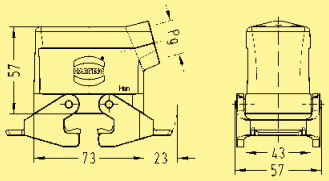
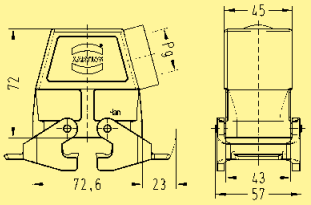
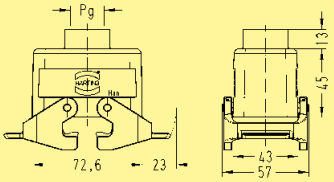
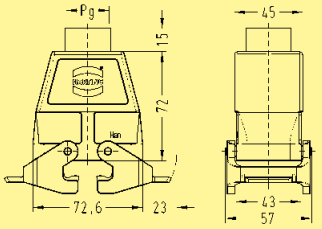
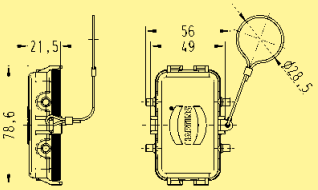



Han-Modular + ⏚

## Features

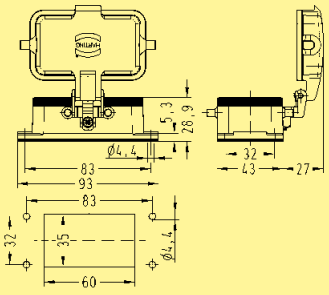
- Angled housing replaces the terminal box
- Space saving and compact design
- The position of the terminal housing can be switched by 90°
- Compatible with standard hoods for single lever
- Locking element Han-Easy Lock®
- Star and delta circuits can be realized in the female connector Han® ESS
- Suitable for standard inserts (see compatible connector inserts)

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **09 30 010 1531** | | 1 x 16 |  | |
| side entry  | | 09 30 010 0532<br>09 30 010 0533 | 1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry  | 09 30 010 1431 | | 1 x 16 |  | |
| top entry  | | 09 30 010 0432<br>09 30 010 0433 | 1 x 21<br>1 x 29 |  | |
| Protection covers  | metal<br>**09 30 010 5457** | metal<br>**09 30 010 5457** | |  | |



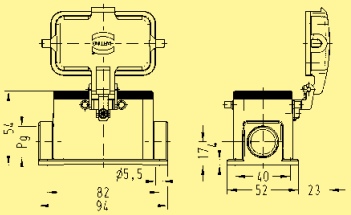
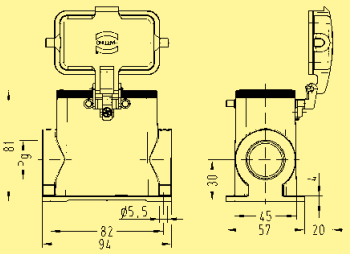
## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | with thermo-plastic cover<br>**09 30 010 0302**<br>with<br>metal cover<br>09 30 010 0317 | | | <br>Panel cut out | |



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

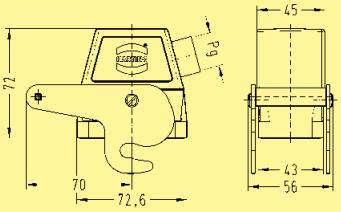
| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry  | with thermo-plastic cover<br>**09 30 010 1221** | | 1 x 16 |  | |
| | with thermo-plastic cover<br>09 30 010 1261 | | 2 x 16 | | |
| | with metal cover<br>09 30 010 2261 | | 2 x 16 | Blind way for one cable entry | |
| side entry  | | with thermo-plastic cover<br>09 30 010 0222 | 1 x 21 |  | |
| | | with thermo-plastic cover<br>09 30 010 0223 | 1 x 29 | | |
| | | with thermo-plastic cover<br>09 30 010 0262 | 2 x 21 | | |
| | | with thermo-plastic cover<br>09 30 010 0263 | 2 x 29 | Blind way for one cable entry | |
| | | with metal cover<br>09 30 010 2263 | 2 x 29 | | |

Han Hoods Housings

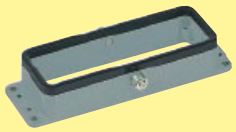
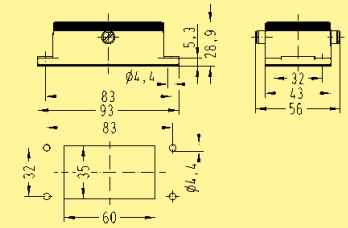


Stock items in bold type

## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | | 09 30 010 0581<br>09 30 010 0582 | 1 x 16<br>1 x 21 |  | |

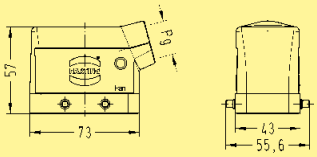
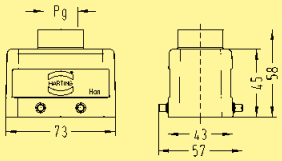
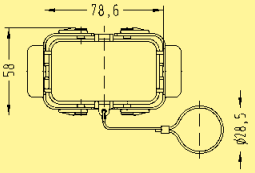
## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | 09 30 010 0381 | | |  Panel cut out | |

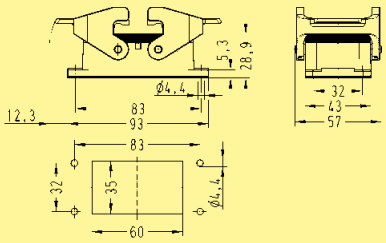
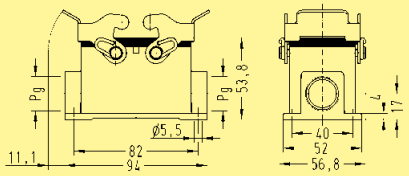
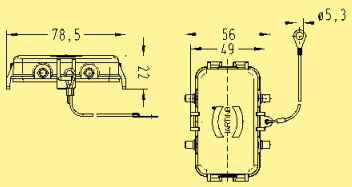


**Stock items in bold type**

## Hoods/Housings for higher environmental requirements / 2 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 37 010 1521 | 1 x 16 |  | |
| Hoods<br>top entry |  | 09 37 010 1421 | 1 x 16 |  | |
| Protection covers |  | metal<br>09 37 010 5403 | |  | |

## Hoods/Housings for higher environmental requirements / 2 lever locking system

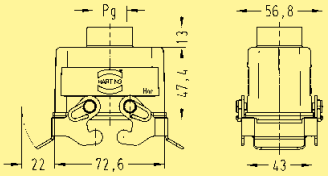
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 37 010 0301** | |  | |
| Housings, surface mounting<br>side entry |  | 09 37 010 1271 | 2 x 16 |  | |
| Protection covers |  | metal<br>09 37 010 5405 | |  | |





Stock items in bold type

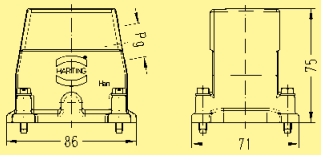
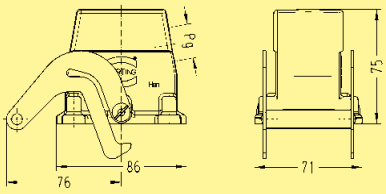
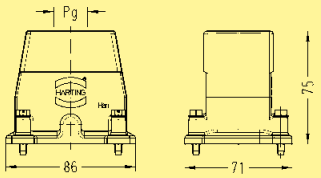
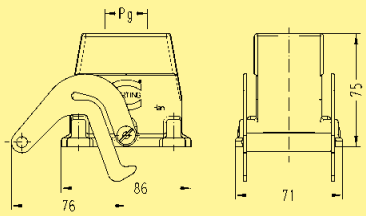
## Hoods/Housings for higher environmental requirements / 2 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods, cable to cable<br>top entry |  | 09 37 010 1731 | 1 x 16 |  | |

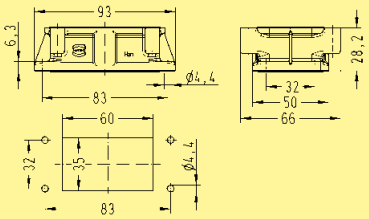
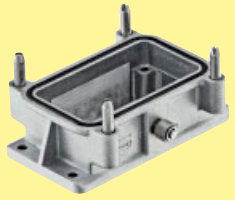
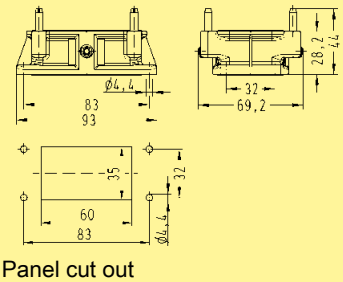


**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / Screw/1 central locking lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 62 010 0540<br>09 62 010 0541<br>09 62 010 0542 | 1 x 16<br>1 x 21<br>1 x 29 |  | |
| Hoods<br>side entry |  | with central locking lever<br>09 62 010 0580<br>with central locking lever<br>09 62 010 0581<br>with central locking lever<br>09 62 010 0582 | 1 x 16<br>1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry |  | 09 62 010 0440<br>09 62 010 0441<br>09 62 010 0442 | 1 x 16<br>1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry | | with central locking lever<br>09 62 010 0481 | 1 x 21 |  | |

## Hoods/Housings for higher EMC requirements / Screw/1 central locking lever locking system

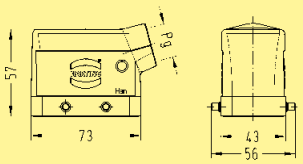
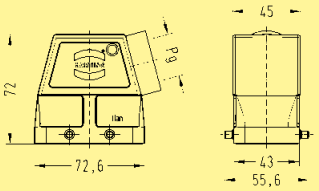
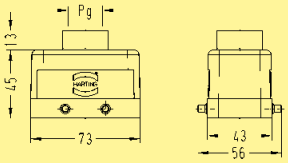
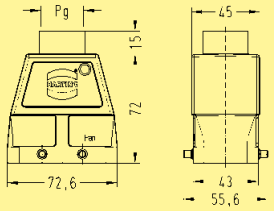
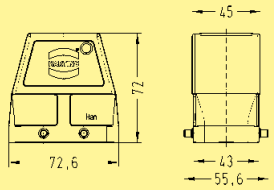
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 62 010 0301 | | <br>Panel cut out | |
| Housings, bulkhead mounting |  | with central locking lever<br>09 62 010 0381 | | <br>Panel cut out | |





Stock items in bold type

## Hoods/Housings for higher EMC requirements / 2 lever locking system

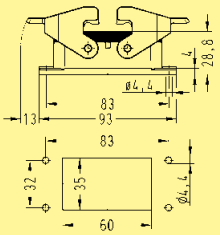
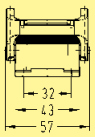
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 62 810 1521 | | 1 x 16 |  | |
| side entry |  | | 09 62 810 0522 | 1 x 21 |  | |
| Hoods<br>top entry |  | 09 62 810 1421 | | 1 x 16 |  | |
| top entry |  | | 09 62 810 0422 | 1 x 21 |  | |
| Hoods<br>without cable entry |  | | 09 62 810 0801 | – |  | |





Stock items in bold type

## Hoods/Housings for higher EMC requirements / 2 lever locking system

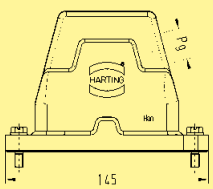
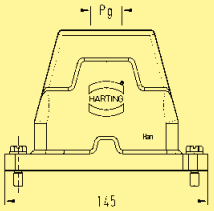
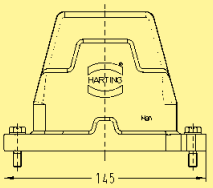
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 62 810 0301 | | |  Panel cut out |  |





**Stock items in bold type**

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

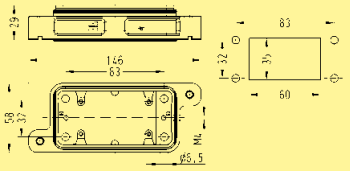
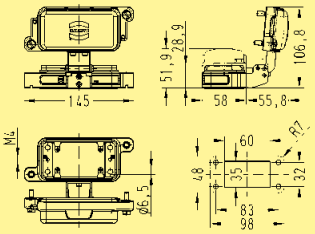
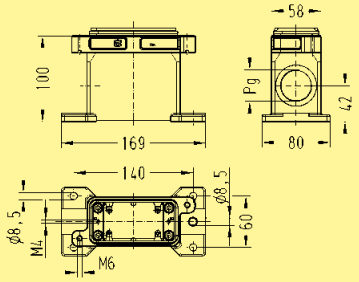
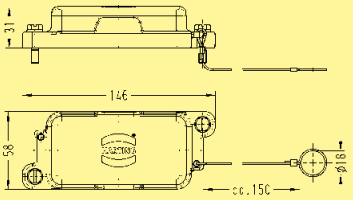
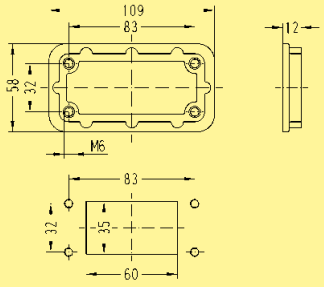
| Identification | Part number Toggle locking | Part number screw | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 09 40 010 0502<br>09 40 010 0503 | 09 40 010 0511<br>09 40 010 0512<br>09 40 010 0513 | 1 x 21<br>1 x 29<br>1 x 16<br>1 x 21<br>1 x 29 |  | 145<br>58<br>100,5 |
| Hoods<br>top entry  | 09 40 010 0401<br>09 40 010 0402<br>09 40 010 0403 | 09 40 010 0411<br>09 40 010 0412<br>09 40 010 0413 | 1 x 16<br>1 x 21<br>1 x 29<br>1 x 16<br>1 x 21<br>1 x 29 |  | Pg<br>145<br>58<br>100,5 |
| Hoods<br>without cable entry  | | 09 40 010 0811 | – |  | 145<br>58<br>100,5 |

Han Hoods Housings



**Stock items in bold type**

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | | Part number Toggle locking | screw | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 40 010 0301 | **09 40 010 0311** | |  Panel cut out | |
| Housings, bulkhead mounting |  | | with metal cover **09 40 010 0317** | |  Panel cut out | |
| Housings, surface mounting side entry |  | | 09 40 010 1262 | 1 x 29 |  | |
| Protection covers |  | metal 09 40 010 5401 | metal 09 40 010 5411 | |  | |
| Mounting frames |  | | 09 40 000 9902[1] | |  Panel cut out | |

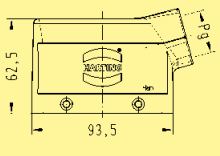
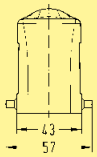
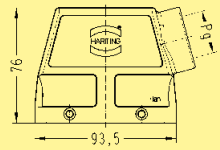
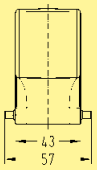
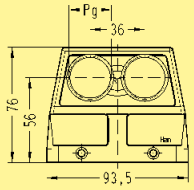
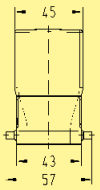
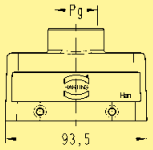
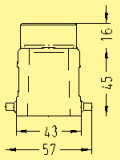
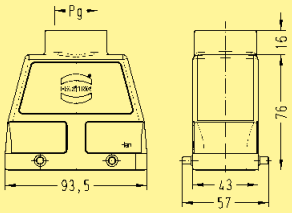
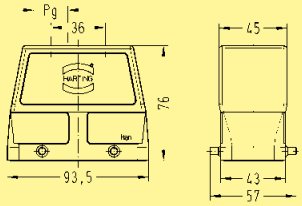
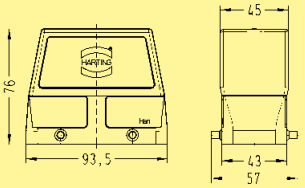
[1] not applicable for using Han® HC 650

Han Hoods Housings



Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

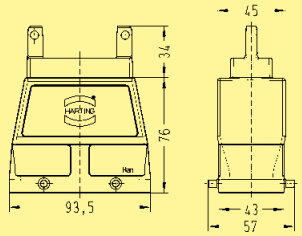
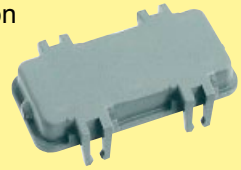
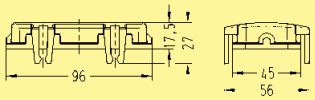
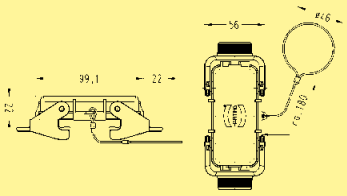
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **09 30 016 1520** | | 1 x 21 |  |  |
| side entry |  | | **09 30 016 0520**<br>**09 30 016 0521** | 1 x 21<br>1 x 29 |  |  |
| angled entry |  | | 09 30 016 0663 | 2 x 21 |  |  |
| Hoods<br>top entry |  | **09 30 016 1420** | | 1 x 21 |  |  |
| top entry |  | | **09 30 016 0420**<br>**09 30 016 0421** | 1 x 21<br>1 x 29 |  | |
| top entry |  | | 09 30 016 0459<br>09 30 016 0462 | 2 x 16<br>2 x 21 |  | |
| Hoods<br>without cable entry |  | | 09 30 016 0801 | – |  | |



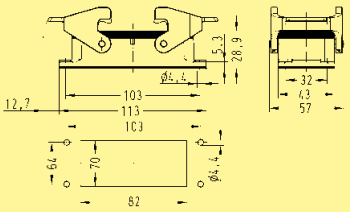


Stock items in bold type

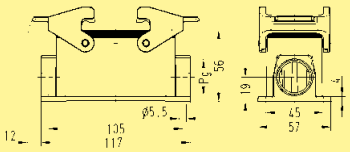
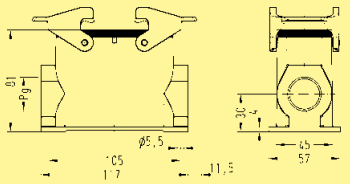
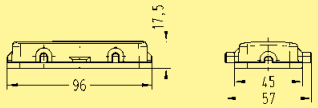
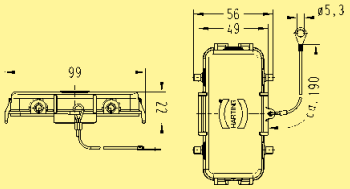
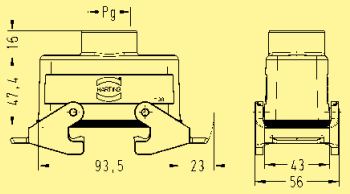
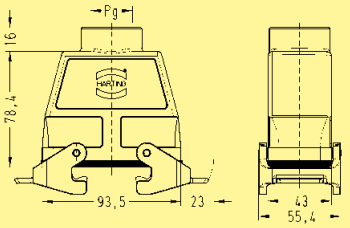
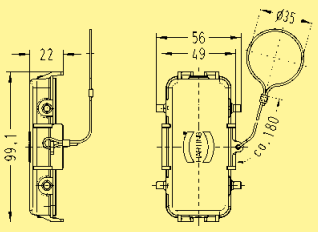
## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>flat cable entry<br>Set of seals see chapter 40  | | 09 30 016 4411 | |  | |
| Dust protection cover  | plastic<br>09 30 016 5401 | plastic<br>09 30 016 5401 | |  | |
| Protection covers  | metal<br>**09 30 016 5422** | metal<br>**09 30 016 5422** | |  | |

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 30 016 0301** | | | <br>Panel cut out | |

## Metal hoods/housings for industrial applications / 2 lever locking system

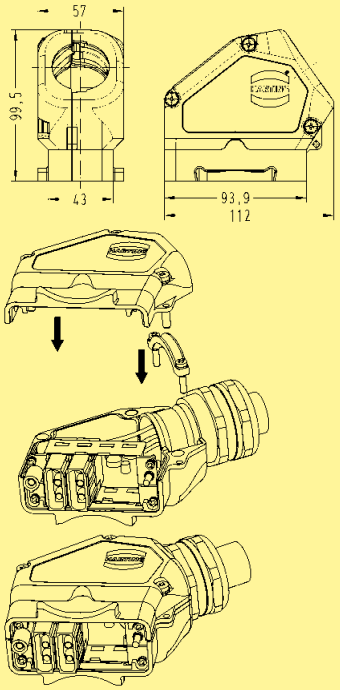
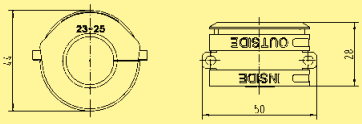
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | **09 30 016 1230**<br>**09 30 016 1270** | | 1 x 21<br>2 x 21 |  | |
| side entry |  | | 09 30 016 0230<br>09 30 016 0231<br>09 30 016 0270<br>09 30 016 0271 | 1 x 21<br>1 x 29<br>2 x 21<br>2 x 29 |  | |
| Protection covers |  | plastic<br>09 30 016 5405 | plastic<br>09 30 016 5405 | |  | |
| |  | metal<br>**09 30 016 5425** | metal<br>**09 30 016 5425** | |  | |
| Hoods, cable to cable<br>top entry |  | 09 30 016 1730 | | 1 x 21 |  | |
| top entry |  | | 09 30 016 0730<br>09 30 016 0731 | 1 x 21<br>1 x 29 |  | |
| Protection covers |  | metal<br>09 30 016 5426 | metal<br>09 30 016 5426 | |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

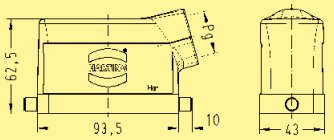
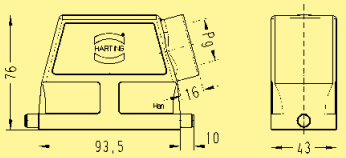
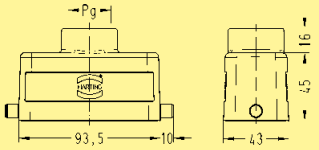
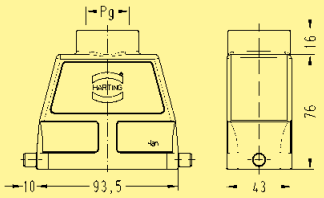
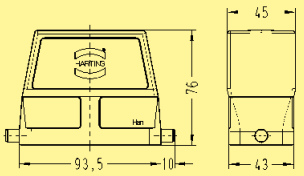
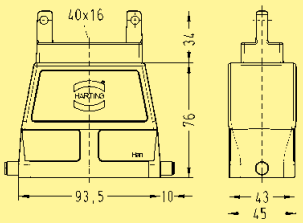
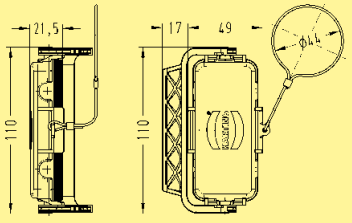
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Han® Easy Hood<br>side entry |  | 11 30 016 0520 | |  | |
| Cable seal |  | 20 ... 22 mm<br>11 30 000 9955<br>23 ... 25 mm<br>11 30 000 9956<br>26 ... 28 mm<br>11 30 000 9957<br>29 ... 31 mm<br>11 30 000 9958<br>32 ... 34 mm<br>11 30 000 9959 | |  | |





Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

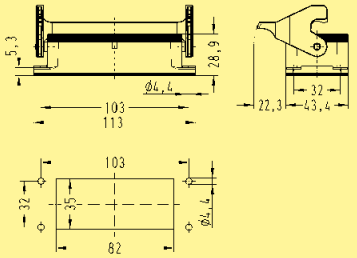
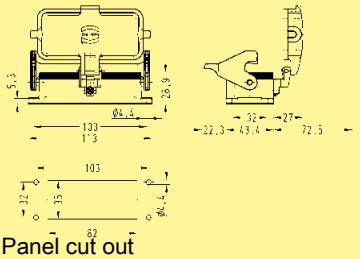
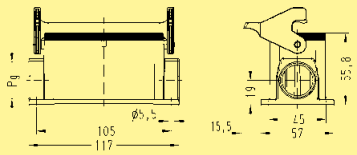
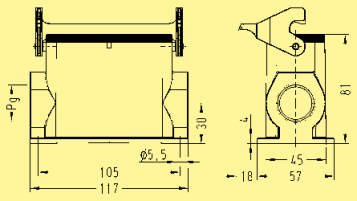
| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **09 30 016 1540** | | 1 x 21 |  | |
| side entry  | | **09 30 016 0540**<br>**09 30 016 0541** | 1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry  | **09 30 016 1440** | | 1 x 21 |  | |
| top entry  | | **09 30 016 0440**<br>**09 30 016 0441** | 1 x 21<br>1 x 29 |  | |
| Hoods<br>without cable entry  | | 09 30 016 0803 | – |  | |
| Hoods<br>flat cable entry<br>Set of seals see chapter 40  | | 09 30 016 4441 | |  | |
| Protection covers  | metal<br>**09 30 016 5432** | metal<br>**09 30 016 5432** | |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

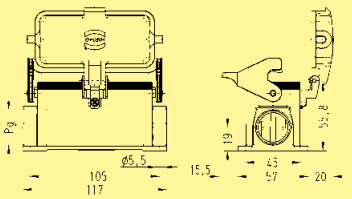
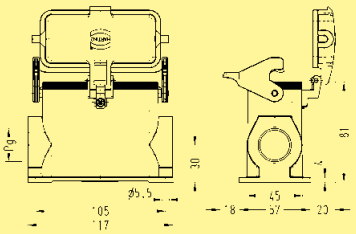
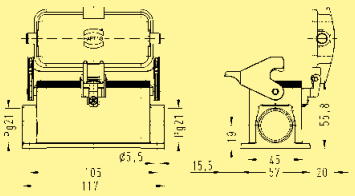
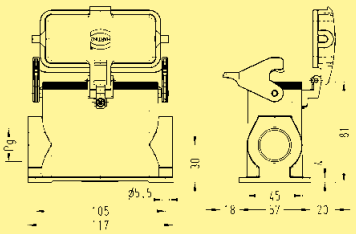
| Identification | | Part number Low construction | High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 30 016 0307** | | |  Panel cut out | |
| |  | with thermo-plastic cover **09 30 016 0306** with metal cover **09 30 016 0318** | | |  Panel cut out | |
| Housings, surface mounting side entry |  | **09 30 016 1250** 09 30 016 1290 | | 1 x 21 2 x 21 |  Blind way for one cable entry | |
| side entry |  | | 09 30 016 0250 09 30 016 0251 09 30 016 0290 09 30 016 0291 | 1 x 21 1 x 29 2 x 21 2 x 29 |  Blind way for one cable entry | |





Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

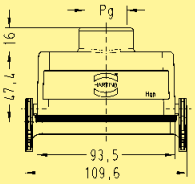
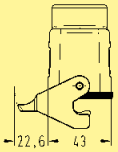
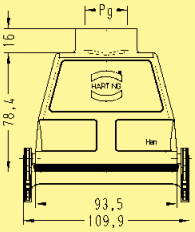
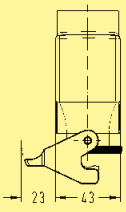
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | with thermo-plastic cover<br>09 30 016 1255<br>with thermo-plastic cover<br>09 30 016 1295 | | 1 x 21<br>2 x 21 |  | |
| side entry |  | | with thermo-plastic cover<br>09 30 016 0255<br>with thermo-plastic cover<br>09 30 016 0256<br>with thermo-plastic cover<br>09 30 016 0295<br>with thermo-plastic cover<br>09 30 016 0296 | 1 x 21<br>1 x 29<br>2 x 21<br>2 x 29 |  | |
| Housings, surface mounting<br>side entry |  | with metal cover<br>09 30 016 2295 | | 2 x 21 |  | |
| side entry |  | | with metal cover<br>09 30 016 2297<br>with metal cover<br>09 30 016 2298 | 2 x 21<br>2 x 29 |  | |

Han Hoods Housings



Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

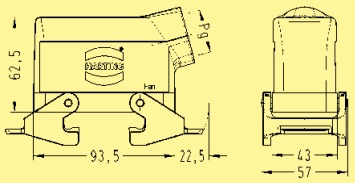
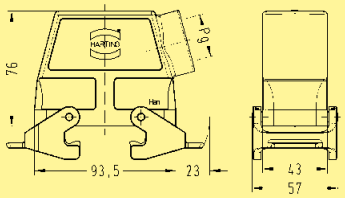
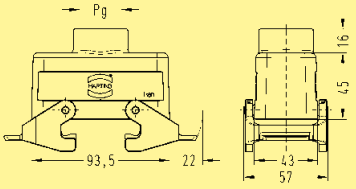
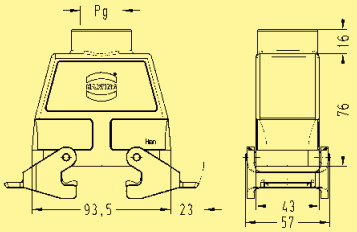
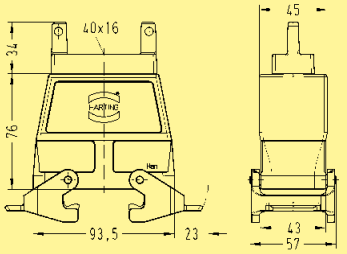
| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods, cable to cable<br>top entry  | 09 30 016 1750 | | 1 x 21 |  |  |
| top entry  | | 09 30 016 0750<br>09 30 016 0751 | 1 x 21<br>1 x 29 |  |  |





Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

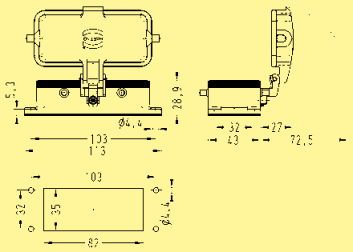
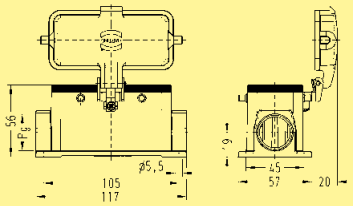
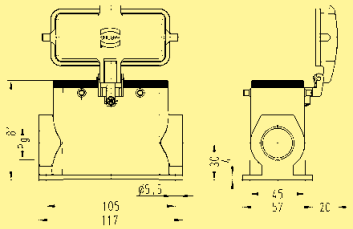
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **09 30 016 1530** | | 1 x 21 |  | |
| side entry |  | | **09 30 016 0530**<br>09 30 016 0531 | 1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry |  | 09 30 016 1430 | | 1 x 21 |  | |
| top entry |  | | 09 30 016 0430<br>09 30 016 0431 | 1 x 21<br>1 x 29 |  | |
| Hoods<br>flat cable entry<br>Set of seals see chapter 40 |  | | 09 30 016 4431 | |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

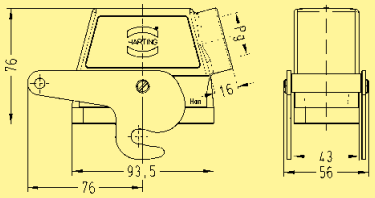
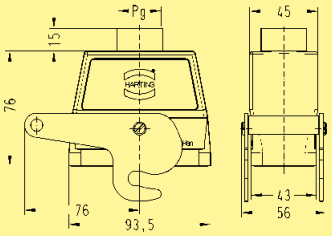
| Identification | | Part number Low construction | High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | with thermo-plastic cover **09 30 016 0302** with metal cover 09 30 016 0317 | | |  Panel cut out | |
| Housings, surface mounting<br>side entry |  | with thermo-plastic cover **09 30 016 1220** with thermo-plastic cover **09 30 016 1260** with metal cover 09 30 016 2260 | | 1 x 21<br>2 x 21<br>2 x 21 |  Blind way for one cable entry | |
| side entry |  | | with thermo-plastic cover 09 30 016 0220 with thermo -plastic cover 09 30 016 0221 with thermo-plastic cover 09 30 016 0260 with thermo-plastic cover 09 30 016 0261 | 1 x 21<br>1 x 29<br>2 x 21<br>2 x 29 |  Blind way for one cable entry | |



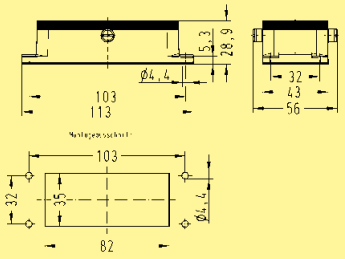
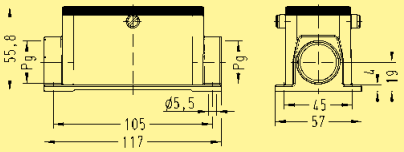
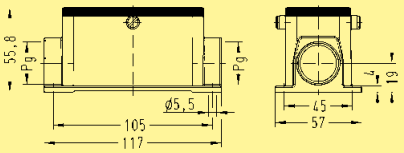


Stock items in bold type

## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 30 016 0580<br>09 30 016 0581 | 1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry |  | 09 30 016 0480<br>09 30 016 0481 | 1 x 21<br>1 x 29 |  | |

## Metal hoods/housings for industrial applications / 1 central locking lever locking system

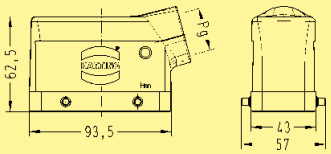
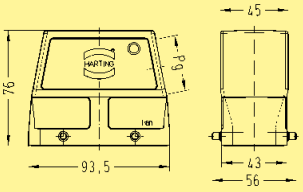
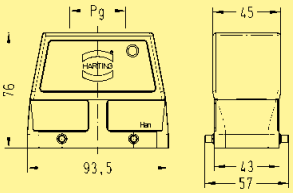
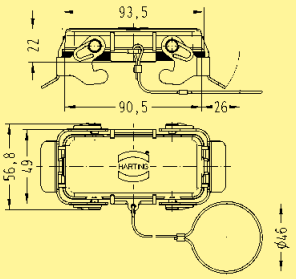
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 30 016 0381 | |  | |
| Housings, surface mounting<br>side entry |  | 09 30 016 1280 | 2 x 21 |  | |
| side entry |  | 09 30 016 0281 | 2 x 29 |  | |

Han Hoods Housings

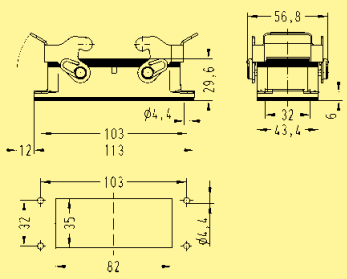


**Stock items in bold type**

## Hoods/Housings for higher environmental requirements / 2 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | **09 37 016 1520** | 1 x 21 |  | |
| side entry |  | **09 37 016 0521** | 1 x 29 |  | |
| Hoods<br>top entry |  | 09 37 016 0421 | 1 x 29 |  | |
| Protection covers |  | metal<br>09 37 016 5402 | |  | |

## Hoods/Housings for higher environmental requirements / 2 lever locking system

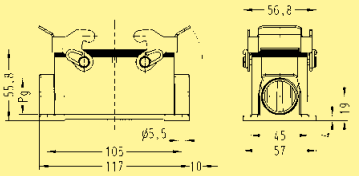
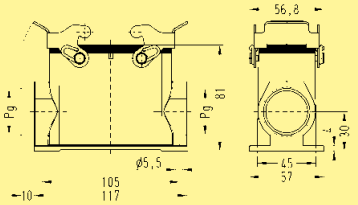
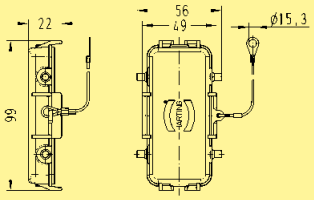
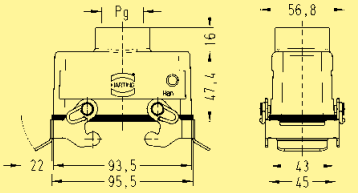
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 37 016 0301** | |  | |





Stock items in bold type

## Hoods/Housings for higher environmental requirements / 2 lever locking system

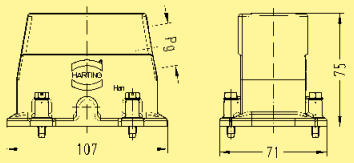
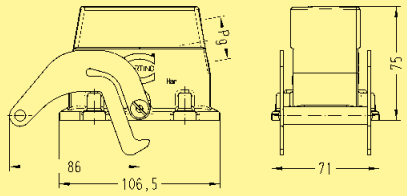
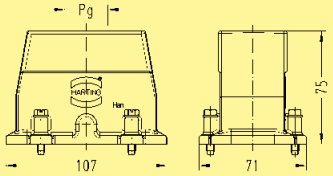
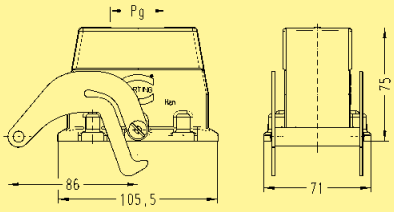
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | **09 37 016 1230** | 1 x 21 |  | |
| side entry |  | 09 37 016 0271 | 2 x 29 |  | |
| Protection covers |  | metal<br>09 37 016 5405 | |  | |
| Hoods, cable to cable<br>top entry |  | 09 37 016 1730 | 1 x 21 |  | |



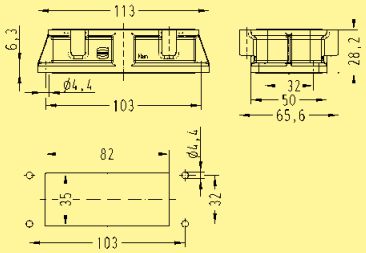
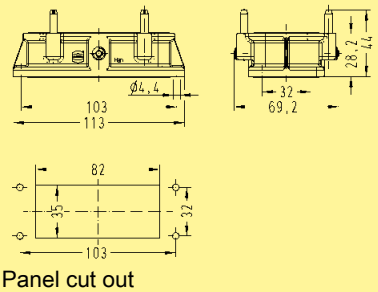


**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / Screw/1 central locking lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 62 040 0540<br>09 62 040 0541 | 1 x 21<br>1 x 29 |  | |
| Hoods<br>side entry |  | with central locking lever<br>09 62 040 0580<br>with central locking lever<br>09 62 040 0581 | 1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry |  | 09 62 040 0440<br>09 62 040 0441 | 1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry |  | with central locking lever<br>09 62 040 0481 | 1 x 29 |  | |

## Hoods/Housings for higher EMC requirements / Screw/1 central locking lever locking system

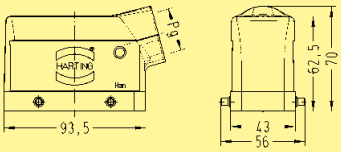
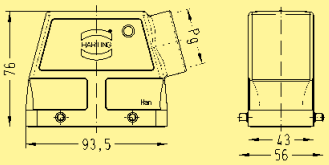
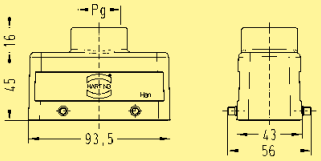
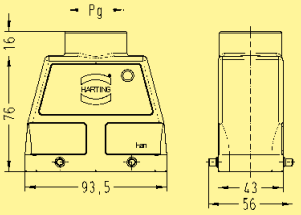
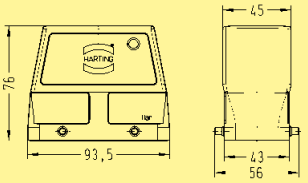
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 62 040 0301 | | <br>Panel cut out | |
| Housings, bulkhead mounting |  | with central locking lever<br>09 62 040 0381 | | <br>Panel cut out | |





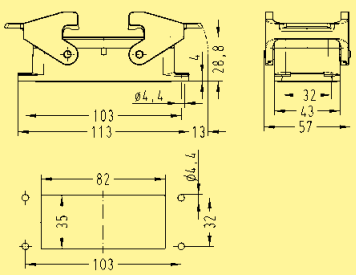
Stock items in bold type

## Hoods/Housings for higher EMC requirements / 2 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 62 816 1520 | 1 x 21 |  | |
| side entry |  | 09 62 816 0521 | 1 x 29 |  | |
| Hoods<br>top entry |  | 09 62 816 1420 | 1 x 21 |  | |
| top entry |  | 09 62 816 0421 | 1 x 29 |  | |
| Hoods<br>without cable entry |  | 09 62 816 0801 | – |  | |



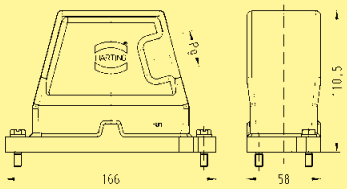
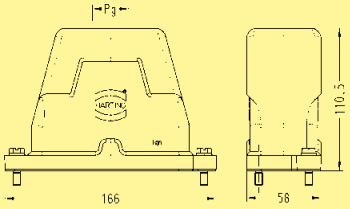
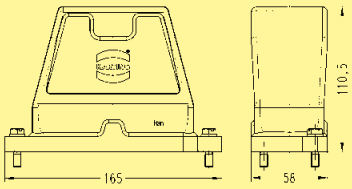
## Hoods/Housings for higher EMC requirements / 2 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 62 816 0301** | | <br>Panel cut out | |



**Stock items in bold type**

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

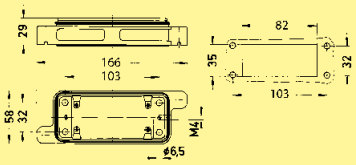
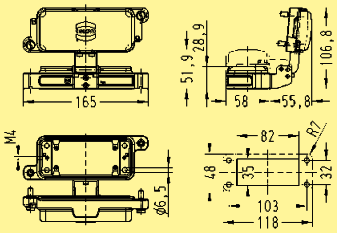
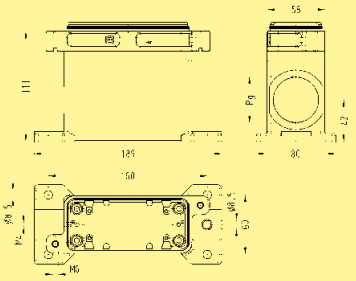
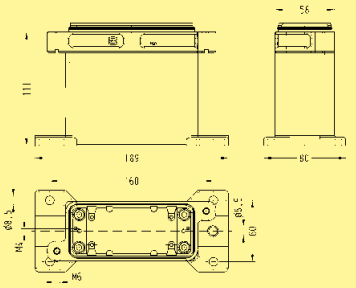
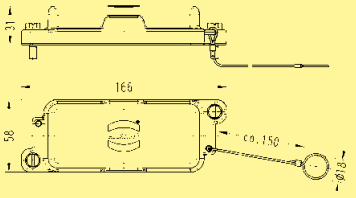
| Identification | Part number Toggle locking | screw | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 09 40 016 0502<br>09 40 016 0503<br>09 40 016 0504 | 09 40 016 0512<br>09 40 016 0513<br>09 40 016 0514 | 1 x 21<br>1 x 29<br>1 x 36<br>1 x 21<br>1 x 29<br>1 x 36 |  | |
| Hoods<br>top entry  | 09 40 016 0402<br>09 40 016 0403<br>09 40 016 0404 | 09 40 016 0412<br>09 40 016 0413<br>09 40 016 0414<br>09 40 016 0432 | 1 x 21<br>1 x 29<br>1 x 36<br>1 x 21<br>1 x 29<br>1 x 36<br>2 x 21 |  | |
| Hoods<br>without cable entry  | | 09 40 016 0811 | – |  | |





Stock items in bold type

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | Part number Toggle locking | screw | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | 09 40 016 0301 | **09 40 016 0311** | |  Panel cut out | |
| Housings, bulkhead mounting  | | with metal cover **09 40 016 0317** | |  Panel cut out | |
| Housings, surface mounting side entry  | | 09 40 016 1263 | 1 x 36 |  | |
| Housings, surface mounting without cable entry  | | 09 40 016 1201 | – |  | |
| Protection covers  | metal 09 40 016 5401 | metal 09 40 016 5411 | |  | |

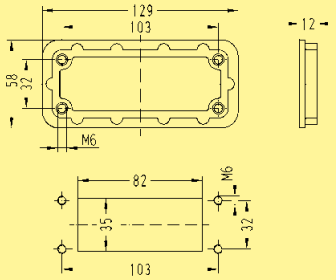
Han Hoods Housings



[1] not applicable for using Han® HC 650

**Stock items in bold type**

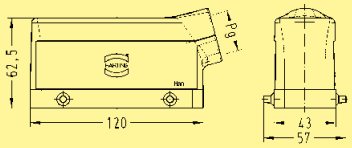
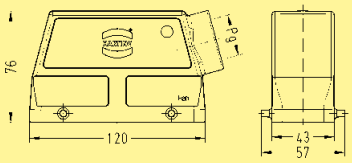
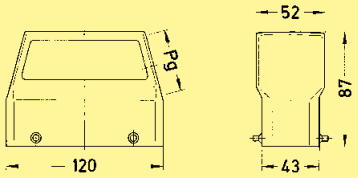
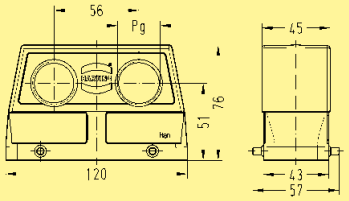
## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | Part number Toggle locking | screw | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Mounting frames  | | 09 40 000 9903[1)] | |   Panel cut out | |

[1)] not applicable for using Han® HC 650

Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

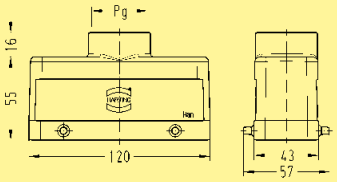
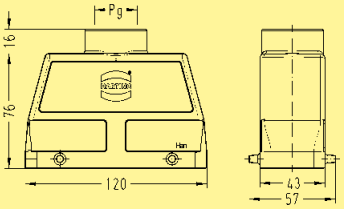
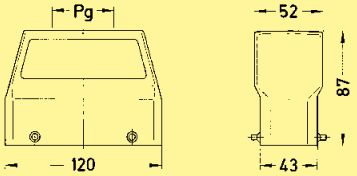
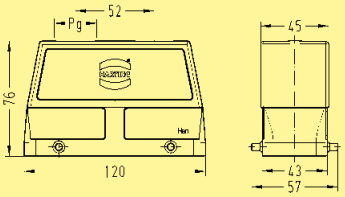
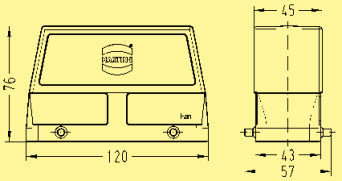
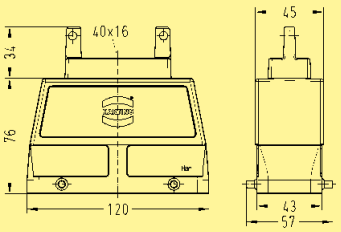
| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **09 30 024 1520** | | 1 x 21 |  | |
| side entry  | | **09 30 024 0520**<br>**09 30 024 0521** | 1 x 21<br>1 x 29 |  | |
| side entry  | | 09 30 024 0525 | 1 x 36 |  | |
| angled entry  | | 09 30 024 0663 | 2 x 21 |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

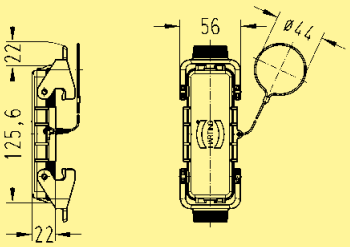
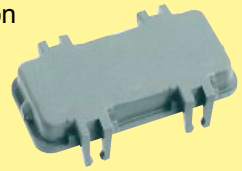
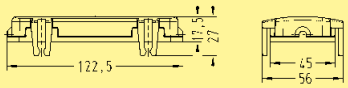
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>top entry |  | **09 30 024 1421** | | 1 x 29 |  | |
| top entry |  | | **09 30 024 0420**<br>**09 30 024 0421** | 1 x 21<br>1 x 29 |  | |
| top entry |  | | 09 30 024 0425 | 1 x 36 |  | |
| top entry |  | | 09 30 024 0462<br>**09 30 024 0461** | 2 x 21<br>2 x 29 |  | |
| Hoods<br>without<br>cable entry |  | | 09 30 024 0801 | – |  | |
| Hoods<br>flat cable entry<br>Set of seals see<br>chapter 40 |  | | 09 30 024 4411 | |  | |



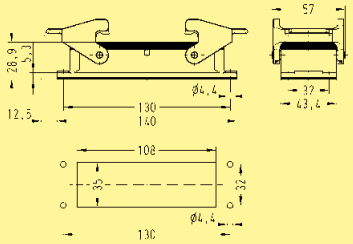
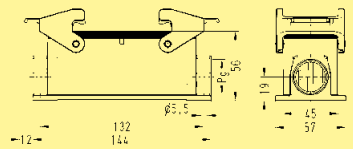
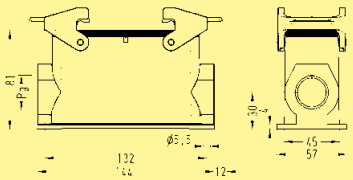


Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Protection covers  | metal **09 30 024 5422** | metal **09 30 024 5422** | |   | |
| Dust protection cover  | plastic 09 30 024 5401 | plastic 09 30 024 5401 | |   | |

## Metal hoods/housings for industrial applications / 2 lever locking system

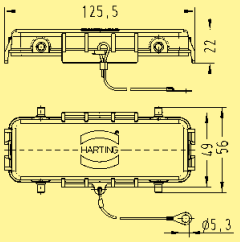
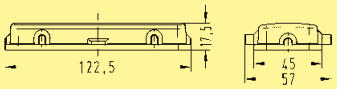
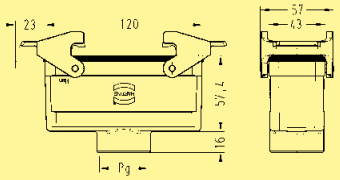
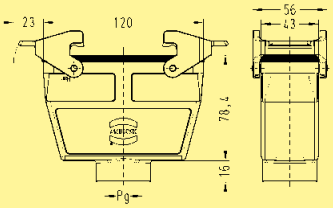
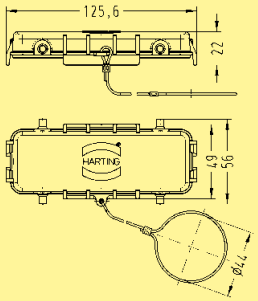
| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 30 024 0301** | | |   Panel cut out | |
| Housings, surface mounting side entry  | **09 30 024 1230** **09 30 024 1270** | | 1 x 21 2 x 21 |   Blind way for one cable entry | |
| side entry  | | 09 30 024 0230 09 30 024 0231 09 30 024 0270 **09 30 024 0271** | 1 x 21 1 x 29 2 x 21 2 x 29 |   Blind way for one cable entry | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

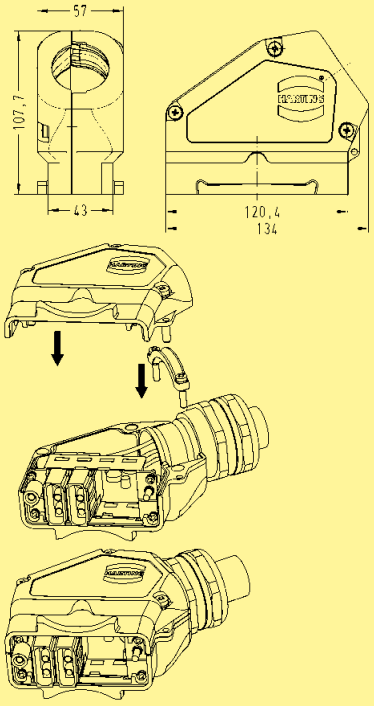
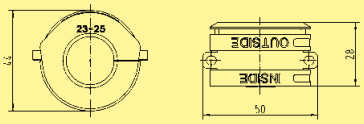
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Protection covers |  | metal **09 30 024 5425** | metal **09 30 024 5425** | |  | |
| Protection covers |  | plastic 09 30 024 5405 | plastic 09 30 024 5405 | |  | |
| Hoods, cable to cable<br>top entry |  | 09 30 024 1731 | | 1 x 29 |  | |
| top entry |  | | 09 30 024 0730<br>09 30 024 0731 | 1 x 21<br>1 x 29 |  | |
| Protection covers |  | metal 09 30 024 5426 | metal 09 30 024 5426 | |  | |





Stock items in bold type

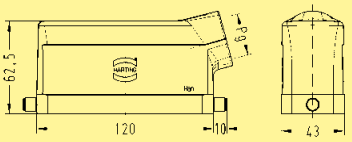
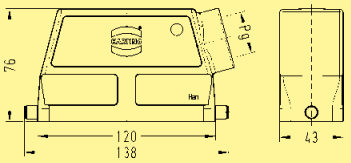
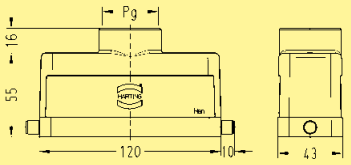
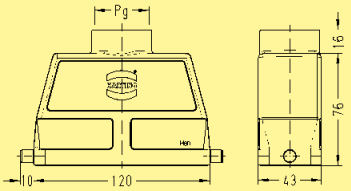
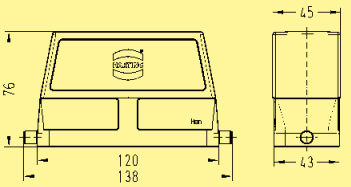
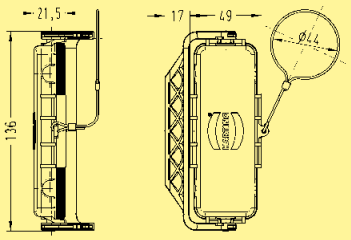
## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 11 30 024 0520 | |  | |
| Cable seal |  | 20 ... 22 mm<br>11 30 000 9955<br>23 ... 25 mm<br>11 30 000 9956<br>26 ... 28 mm<br>11 30 000 9957<br>29 ... 31 mm<br>11 30 000 9958<br>32 ... 34 mm<br>11 30 000 9959 | |  | |



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

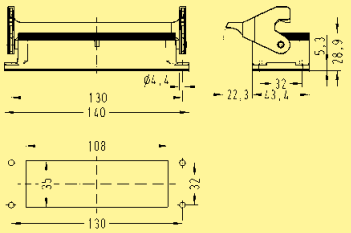
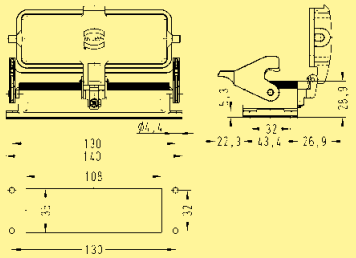
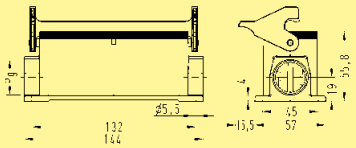
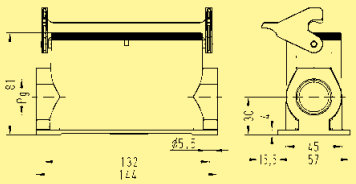
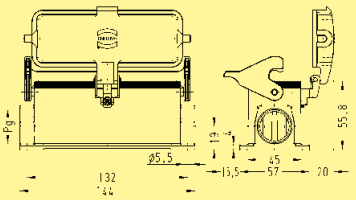
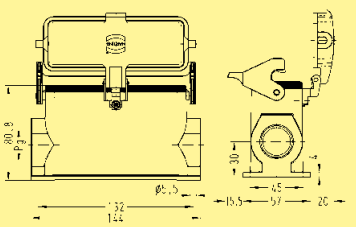
| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **09 30 024 1540** | | 1 x 21 |  | |
| side entry  | | 09 30 024 0540<br>**09 30 024 0541**<br>09 30 024 0546 | 1 x 21<br>1 x 29<br>1 x 36 |  | |
| Hoods<br>top entry  | **09 30 024 1441** | | 1 x 29 |  | |
| top entry  | | 09 30 024 0440<br>**09 30 024 0441**<br>09 30 024 0446 | 1 x 21<br>1 x 29<br>1 x 36 |  | |
| Hoods<br>without cable entry  | | 09 30 024 0803 | – |  | |
| Protection covers  | metal<br>**09 30 024 5432** | metal<br>**09 30 024 5432** | |  | |





Stock items in bold type

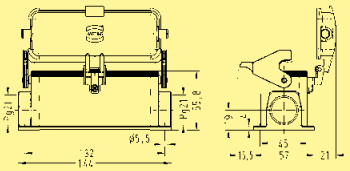
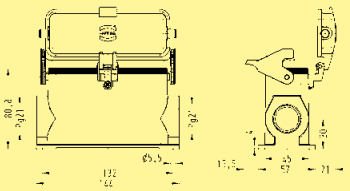
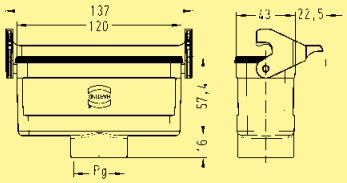
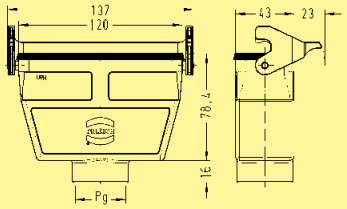
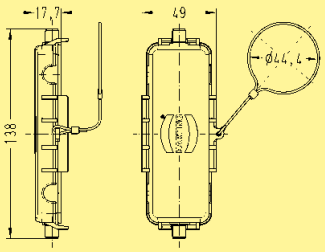
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 30 024 0307** | | |  Panel cut out | |
| |  | with thermo-plastic cover **09 30 024 0304** with metal cover **09 30 024 0318** | | |  Panel cut out | |
| Housings, surface mounting side entry |  | 09 30 024 1250<br>09 30 024 1290 | | 1 x 21<br>2 x 21 |  Blind way for one cable entry | |
| side entry |  | | 09 30 024 0250<br>09 30 024 0251<br>09 30 024 0290<br>09 30 024 0291 | 1 x 21<br>1 x 29<br>2 x 21<br>2 x 29 |  Blind way for one cable entry | |
| Housings, surface mounting side entry |  | with thermo-plastic cover 09 30 024 1255<br>with thermo-plastic cover 09 30 024 1295 | | 1 x 21<br>2 x 21 |  | |
| side entry |  | | with thermo-plastic cover **09 30 024 0255**<br>with thermo-plastic cover **09 30 024 0256**<br>with thermo-plastic cover **09 30 024 0295**<br>with thermo-plastic cover **09 30 024 0296** | 1 x 21<br>1 x 29<br>2 x 21<br>2 x 29 |  | |



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

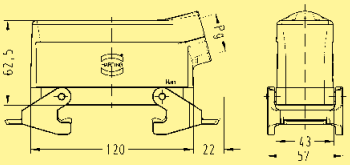
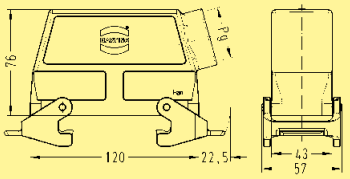
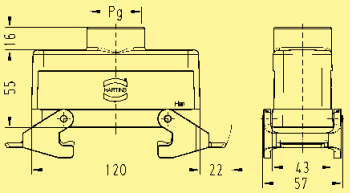
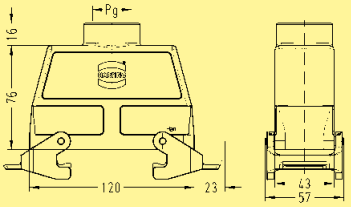
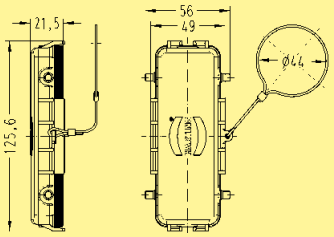
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | with m etal cover<br>09 30 024 2295 | | 2 x 21 |  | |
| side entry |  | | with metal cover<br>09 30 024 2297<br>with metal cover<br>09 30 024 2298 | 2 x 21<br>2 x 29 |  | |
| Hoods, cable to cable<br>top entry |  | 09 30 024 1751 | | 1 x 29 |  | |
| top entry |  | | 09 30 024 0751 | 1 x 29 |  | |
| Protection covers |  | metal<br>**09 30 024 5436** | metal<br>**09 30 024 5436** | |  | |





Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

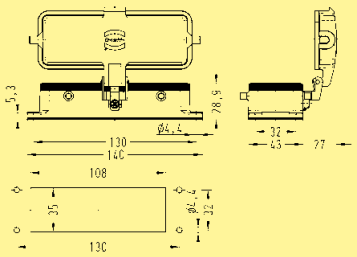
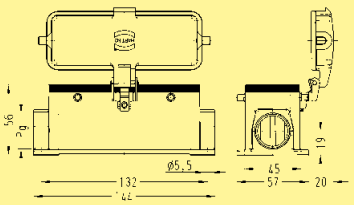
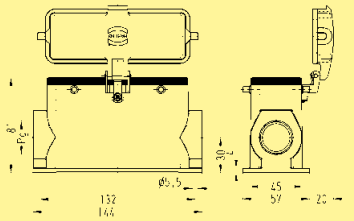
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **09 30 024 1530** | | 1 x 21 |  | |
| side entry |  | | 09 30 024 0530<br>**09 30 024 0531** | 1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry |  | 09 30 024 1431 | | 1 x 29 |  | |
| top entry |  | | 09 30 024 0430<br>**09 30 024 0431** | 1 x 21<br>1 x 29 |  | |
| Protection covers |  | metal<br>**09 30 024 5442** | metal<br>**09 30 024 5442** | |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

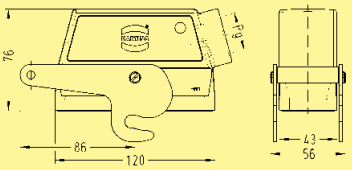
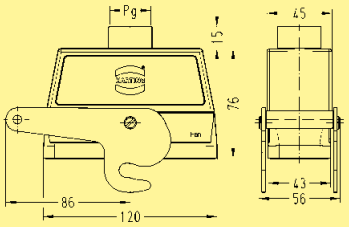
| Identification | | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | with thermo-plastic cover **09 30 024 0302** with metal cover 09 30 024 0317 | | |  Panel cut out | |
| Housings, surface mounting<br>side entry |  | with thermo-plastic cover **09 30 024 1220** with thermo-plastic cover 09 30 024 1260 with metal cover 09 30 024 2260 | | 1 x 21<br>2 x 21<br>2 x 21 |  Blind way for one cable entry | |
| side entry |  | | with thermo-plastic cover 09 30 024 0220 with thermo-plastic cover 09 30 024 0221 with thermo-plastic cover 09 30 024 0260 with thermo-plastic cover 09 30 024 0261 with metal cover 09 30 024 2262 with metal cover 09 30 024 2263 | 1 x 21<br>1 x 29<br>2 x 21<br>2 x 29<br>2 x 21<br>2 x 29 |  Blind way for one cable entry | |



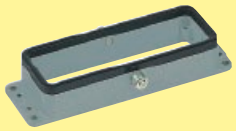
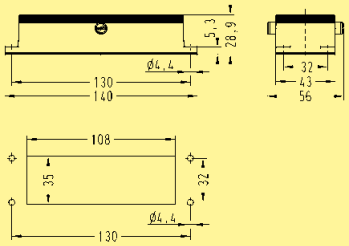
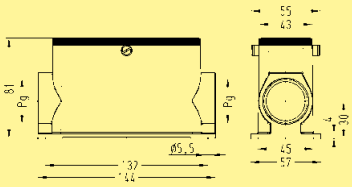


Stock items in bold type

## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | | 09 30 024 0580<br>09 30 024 0581 | 1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry  | | 09 30 024 0480<br>09 30 024 0481 | 1 x 21<br>1 x 29 |  | |

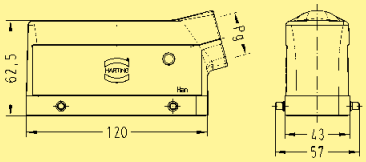
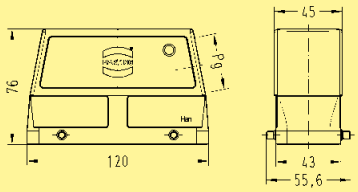
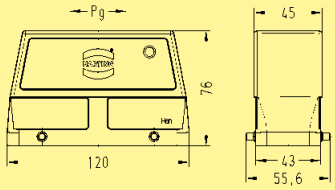
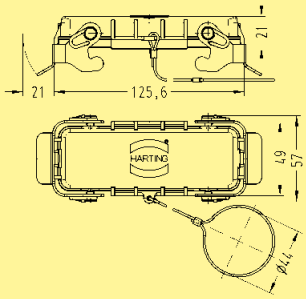
## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 30 024 0381** | | | <br>Panel cut out | |
| Housings, surface mounting<br>side entry  | | 09 30 024 0281 | 2 x 29 |  | |

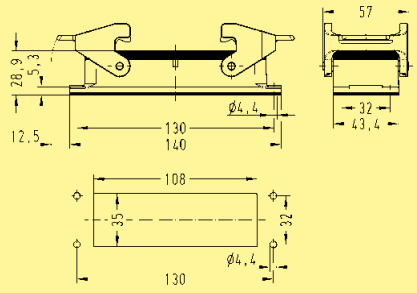
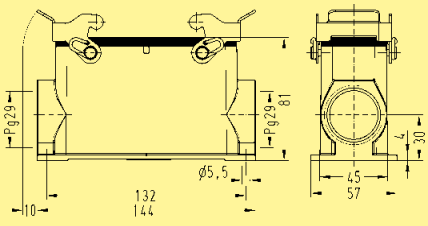


**Stock items in bold type**

## Hoods/Housings for higher environmental requirements / 2 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 37 024 1520 | 1 x 21 |  | |
| side entry |  | **09 37 024 0521** | 1 x 29 |  | |
| Hoods<br>top entry |  | 09 37 024 0421 | 1 x 29 |  | |
| Protection covers |  | metal<br>09 37 024 5402 | |  | |

## Hoods/Housings for higher environmental requirements / 2 lever locking system

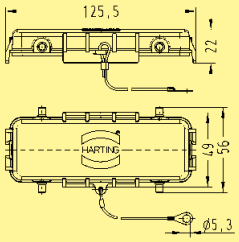
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 37 024 0301** | | <br>Panel cut out | |
| Housings, surface mounting<br>side entry |  | 09 37 024 0271 | 2 x 29 |  | |

Han Hoods Housings



**Stock items in bold type**

## Hoods/Housings for higher environmental requirements / 2 lever locking system

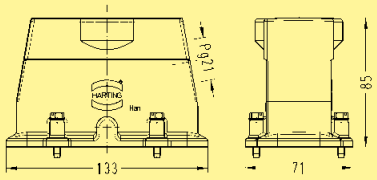
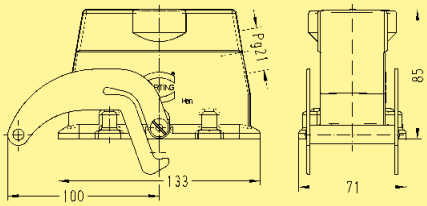
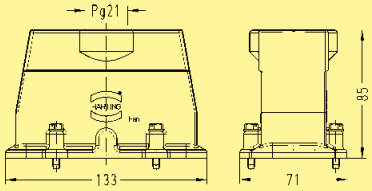
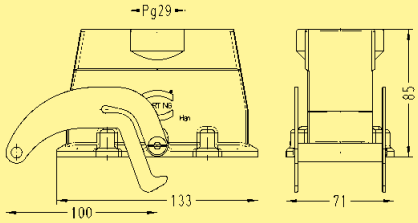
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Protection covers |  | metal<br>09 37 024 5405 | |  | |



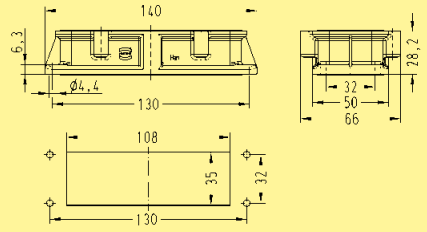
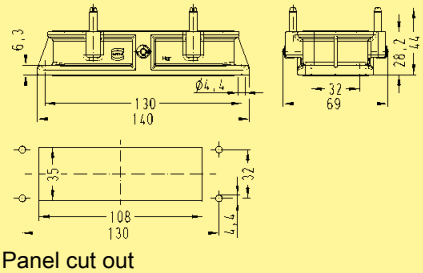


**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / Screw/1 central locking lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 62 064 0540<br>09 62 064 0541 | 1 x 21<br>1 x 29 |  | |
| Hoods<br>side entry |  | with central locking lever<br>09 62 064 0580<br>with central locking lever<br>09 62 064 0581 | 1 x 21<br>1 x 29 |  | |
| Hoods<br>top entry |  | 09 62 064 0440<br>09 62 064 0441<br>09 62 064 0442 | 1 x 21<br>1 x 29<br>1 x 36 |  | |
| Hoods<br>top entry |  | with central locking lever<br>09 62 064 0481 | 1 x 29 |  | |

## Hoods/Housings for higher EMC requirements / Screw/1 central locking lever locking system

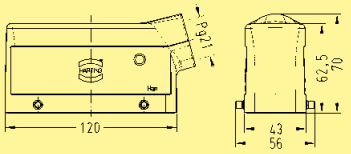
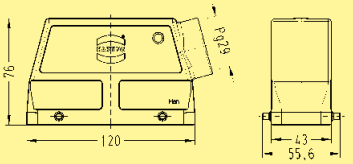
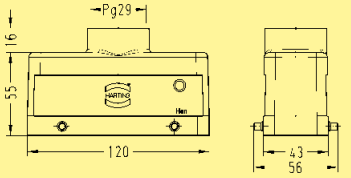
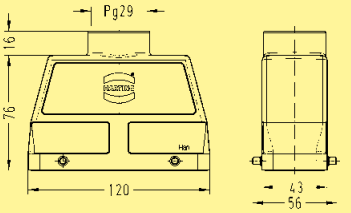
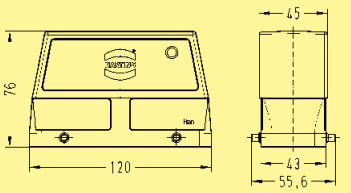
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 62 064 0301 | | <br>Panel cut out | |
| Housings, bulkhead mounting |  | with central locking lever<br>09 62 064 0381 | | <br>Panel cut out | |



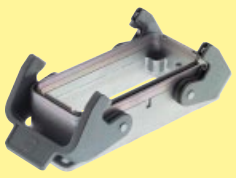
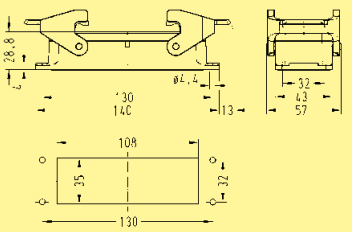


Stock items in bold type

## Hoods/Housings for higher EMC requirements / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 09 62 824 1520 | | 1 x 21 |  | |
| side entry  | | 09 62 824 0521 | 1 x 29 |  | |
| Hoods<br>top entry  | 09 62 824 1421 | | 1 x 29 |  | |
| top entry  | | 09 62 824 0421 | 1 x 29 |  | |
| Hoods<br>without cable entry  | | 09 62 824 0801 | – |  | |

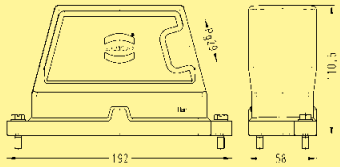
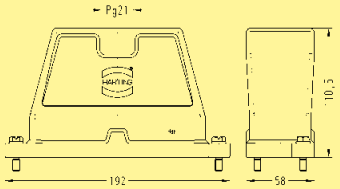
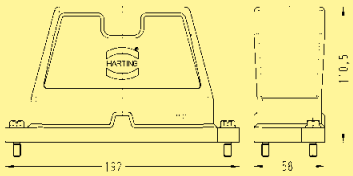
## Hoods/Housings for higher EMC requirements / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 62 824 0301** | | |  Panel cut out | |



**Stock items in bold type**

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

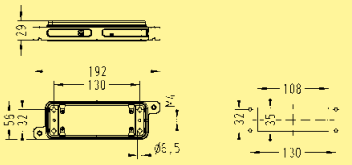
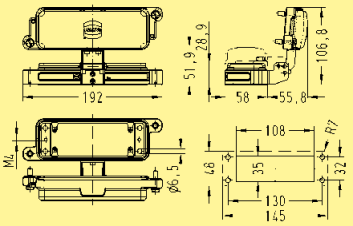
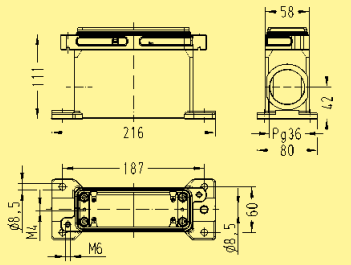
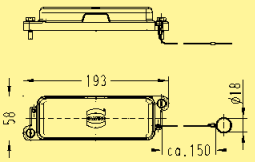
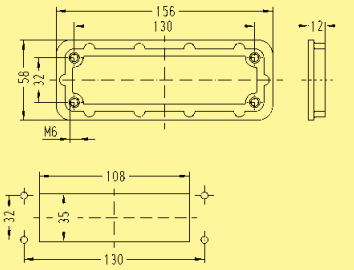
| Identification | Part number Toggle locking | screw | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 09 40 024 0503<br>09 40 024 0504 | 09 40 024 0513<br>09 40 024 0514 | 1 x 29<br>1 x 36<br>1 x 29<br>1 x 36 |  | |
| Hoods<br>top entry  | 09 40 024 0403<br>09 40 024 0404 | 09 40 024 0412<br>09 40 024 0413<br>09 40 024 0414<br>09 40 024 0433 | 1 x 29<br>1 x 36<br>1 x 21<br>1 x 29<br>1 x 36<br>2 x 29 |  | |
| Hoods<br>without cable entry  | | 09 40 024 0811 | – |  | |

Han Hoods Housings



Stock items in bold type

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | | Part number Toggle locking | screw | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 40 024 0301 | **09 40 024 0311** | |  Panel cut out | |
| Housings, bulkhead mounting |  | | with metal cover **09 40 024 0317** | |  Panel cut out | |
| Housings, surface mounting side entry |  | | 09 40 024 1263 | 1 x 36 |  | |
| Protection covers |  | metal 09 40 024 5401 | metal 09 40 024 5411 | |  | |
| Mounting frames |  | | **09 40 000 9904**[1)] | |  Panel cut out | |

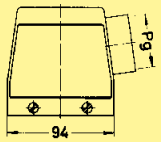
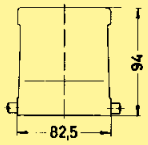
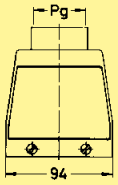
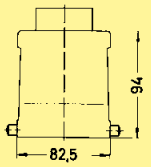
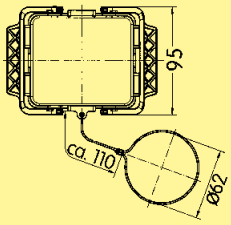




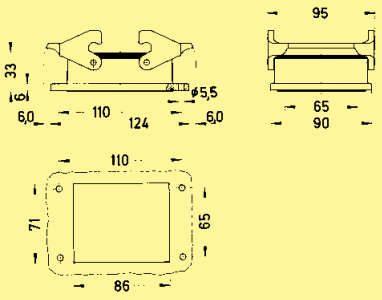
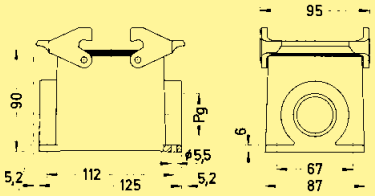
[1)] not applicable for using Han® HC 650

**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | **09 30 032 0521**<br>09 30 032 0522<br>**09 30 032 0523** | 1 x 29<br>1 x 36<br>1 x 42 |  |  |
| Hoods<br>top entry |  | 09 30 032 0421<br>09 30 032 0422<br>**09 30 032 0423** | 1 x 29<br>1 x 36<br>1 x 42 |  |  |
| Protection covers | | metal<br>09 30 032 5420 | |  | |

## Metal hoods/housings for industrial applications / 2 lever locking system

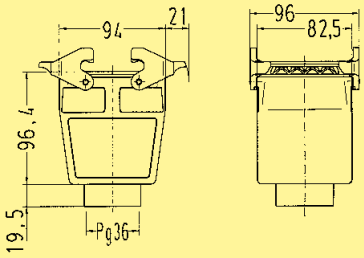
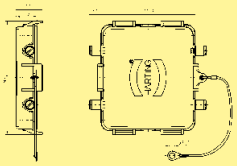
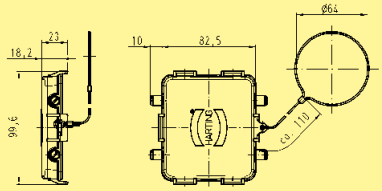
| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 30 032 0301** | | <br>Panel cut out | |
| Housings, surface mounting<br>side entry |  | 09 30 032 0231<br>09 30 032 0232<br>09 30 032 0271<br>09 30 032 0272<br>09 30 032 0273 | 1 x 29<br>1 x 36<br>2 x 29<br>2 x 36<br>2 x 42 | <br>Blind way for one cable entry | |





* usable for two inserts of size 16 B
Stock items in bold type

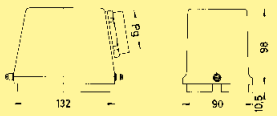
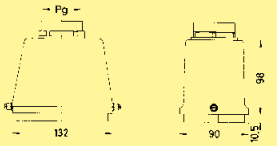
## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods, cable to cable<br>top entry |  | 09 30 032 0731<br>09 30 032 0732<br>09 30 032 0733 | 1 x 29<br>1 x 36<br>1 x 42 |  | |
| Protection covers |  | metal<br>**09 30 032 5425** | |  | |
| Protection covers for hoods cable to cable |  | metal<br>09 30 032 5426<br>metal<br>09 30 032 5427 | |  | |

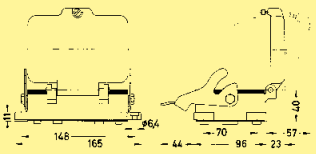
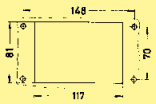
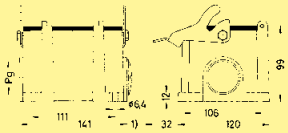
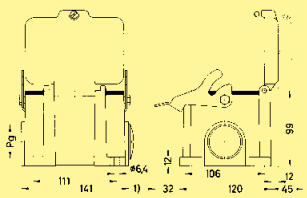


* usable for two inserts of size 16 B
Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 09 30 048 0540<br>**09 30 048 0541**<br>09 30 048 0542 | 1 x 29<br>1 x 36<br>1 x 42 |  | |
| Hoods<br>top entry |  | 09 30 048 0440<br>09 30 048 0441<br>09 30 048 0442 | 1 x 29<br>1 x 36<br>1 x 42 |  | |

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | | Part number | Pg | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | with thermo-plastic cover<br>**09 30 048 0301**<br>with metal cover<br>**09 30 048 0317** | | <br><br>Panel cut out | |
| Housings, surface mounting<br>side entry |  | 09 30 048 0290<br>09 30 048 0291 | 2 x 29<br>2 x 36 | <br>1) Blind way | |
| side entry |  | 09 30 048 0295<br>09 30 048 0296<br>09 30 048 2295<br>09 30 048 2296 | 2 x 29<br>2 x 36<br>2 x 29<br>2 x 36 | <br>1) Blind way | |





* usable for two inserts of size 24 B
Stock items in bold type

## Contents


| | | Page |
|---|---|---|
| Technical characteristics | | **31.02** |
| **Size Han® 3 A** | Standard Hoods/Housings | **31.04** |
| | Han® M | **31.08** |
| | Han® EMC | **31.10** |
| | Han® HPR | **31.12** |
| | Han-INOX® | **31.14** |
| **Size Han® 10 A** | Standard-Gehäuse | **31.15** |
| | Han® EMC | **31.17** |
| **Size Han® 16 A** | Standard Hoods/Housings | **31.18** |
| | Han® EMC | **31.20** |
| **Size Han® 32 A** | Standard Hoods/Housings | **31.21** |
| **Size Han® 6 B** | Standard Hoods/Housings | **31.25** |
| | Han® M | **31.30** |
| | Han® EMC | **31.32** |
| | Han® EMC/B | **31.33** |
| | Han® HPR | **31.35** |
| **Size Han® 10 B** | Standard Hoods/Housings | **31.37** |
| | Han-Drive® | **31.44** |
| | Han® M | **31.49** |
| | Han® EMC | **31.52** |
| | Han® EMC/B | **31.53** |
| | Han® HPR | **31.56** |
| | Han-INOX® | **31.58** |
| **Size Han® 16 B** | Standard Hoods/Housings | **31.59** |
| | Han® Easy Hood | **31.62** |
| | Han® M | **31.70** |
| | Han® EMC | **31.73** |
| | Han® EMC/B | **31.74** |
| | Han® HPR | **31.76** |
| **Size Han® 24 B** | Standard Hoods/Housings | **31.78** |
| | Han® Easy Hood | **31.81** |
| | Han® M | **31.89** |
| | Han® EMC | **31.92** |
| | Han® EMC/B | **31.93** |
| | Han® HPR | **31.94** |
| **Size Han® 32 B** | Standard Hoods/Housings | **31.96** |
| **Size Han® 48 B** | Standard Hoods/Housings | **31.98** |
| | Han® M | **31.99** |


Note: Han® hoods and housings with NPT-thread also available by HARTING Inc. of North America, USA

## Han® 3 A Standard Hoods/Housings
### Metal hoods/housings for industrial applications

| | |
|---|---|
| Material | zinc die-cast |
| Colour | RAL 7037 (grey) |
| Surface | powder-coated |
| Locking element | steel, zinc-plated |
| Lever type | lever, metal |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

## Han® 3 A Hoods/Housings
### Plastic hoods/housings for industrial applications

| | |
|---|---|
| Material | polycarbonate |
| Colour | RAL 7032 (light grey) / RAL 9005 (black) |
| Locking element | Polyamide |
| Lever type | lever, plastic |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Flammability acc. to UL 94 | V 0 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 67 |

## Han® Standard Hoods/Housings
### Metal hoods/housings for industrial applications

| | |
|---|---|
| Material | aluminium die-cast |
| Colour | RAL 7037 (grey) |
| Surface | powder-coated |
| Locking element | Stainless steel |
| Lever type | Han-Easy Lock® |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

## Han-Drive® Housings for motor applications

| | |
|---|---|
| Material | aluminium die-cast |
| Colour | non coloured / RAL 7037 (grey) |
| Surface | electrical conductive / powder-coated / unpainted |
| Locking element | Stainless steel |
| Lever type | Han-Easy Lock® |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

## Han® 3 M Hoods/Housings
### Hoods/Housings for higher environmental requirements

| | |
|---|---|
| Material | zinc die-cast |
| Colour | RAL 9005 (black) |
| Surface | |
| - Top coat | Epoxy powder paint |
| Locking element | Stainless steel |
| Lever type | lever, metal |
| Hoods/Housings seal | FPM |
| Limiting temperatures | -40 °C ... +125 °C |
| Corrosion resistance | ASTM B117-09 (500 h) |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

## Han® M Hoods/Housings
### Hoods/Housings for higher environmental requirements

| | |
|---|---|
| Material | aluminium die-cast |
| Colour | RAL 9005 (black) |
| Surface | |
| - Top coat | Epoxy powder paint |
| Locking element | Stainless steel |
| Lever type | lever, metal |
| Hoods/Housings seal | FPM |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Corrosion resistance | ASTM B117-09 (500 h) |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

## Han® 3 EMC Hoods/Housings
### Hoods/Housings for higher EMC requirements

| | |
|---|---|
| Material | zinc die-cast |
| Colour | non coloured |
| Surface | electrical conductive |
| Locking element | steel, zinc-plated |
| Lever type | lever, metal |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

## Han-INOX® Hoods/Housings
### for higher corrosion requirements

| | |
|---|---|
| Material | stainless steel |
| Colour | non coloured |
| Surface | electrical conductive |
| Locking element | Stainless steel |
| Lever type | lever, metal |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |
| - Size Han® 3 A | IP 44<br>IP 67 is achieved with seal screw 09 20 000 9918 |

## Han® EMC Hoods/Housings
### Hoods/Housings for higher EMC requirements

| | |
|---|---|
| Material | aluminium die-cast |
| Colour | non coloured |
| Surface | electrical conductive |
| Locking element | |
| - Screw locking | M5 |
| - Material | Stainless steel |
| - Tightening torque | 3 Nm |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

## Han® 3 HPR Hoods/Housings
### Hoods/Housings for harsh environmental requirements

| | |
|---|---|
| Material | zinc die-cast |
| Colour | RAL 9005 (black) |
| Surface | |
| - Top coat | Epoxy powder paint / chromated |
| Locking element | |
| - Screw locking | M4 |
| - Material | Stainless steel |
| - Tightening torque | 2 Nm |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Corrosion resistance | ASTM B117-09 (500 h) |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 68 / IP 69K |

Attention
The sealing on the insert has to be removed.

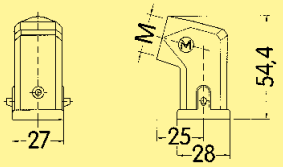
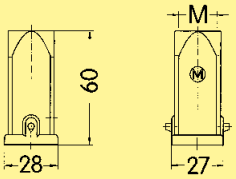
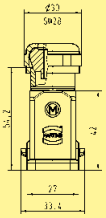
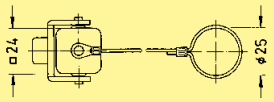
## Han® EMC/B Hoods/Housings
### Hoods/Housings for higher EMC requirements

| | |
|---|---|
| Material | |
| - Hoods/Housings | aluminium die-cast |
| - shielded frames | zinc die-cast alloy |
| Colour | non coloured |
| Surface | |
| - Hoods/Housings | electrical conductive |
| - shielded frames | electrical conductive |
| Locking element | Stainless steel |
| Lever type | Han-Easy Lock® |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

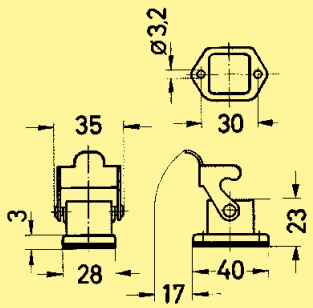
## Han® HPR Hoods/Housings
### Hoods/Housings for harsh environmental requirements

| | |
|---|---|
| Material | aluminium die-cast, corrosion resistant |
| Colour | RAL 9005 (black) |
| Surface | |
| - Top coat | Epoxy powder paint |
| Locking element | |
| - Screw locking | M6 |
| - Material | Stainless steel |
| - Tightening torque | 4 Nm |
| - Toggle locking | |
| - Material | Stainless steel |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Approval acc. to UL 50 | NEMA Type 4/4X/12 |
| Corrosion resistance | ASTM B117-09 (500 h) |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 68 / IP 69K (does not apply to Han® 48 HPR) |

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | **19 20 003 1640** | 1 x 20 |  | |
| Hoods<br>top entry |  | **19 20 003 1440**<br>with<br>glued sealing<br>**19 20 003 1425** | 1 x 20<br><br>1 x 20 |  | |
| Hoods<br>top entry |  | 6 ... 12 mm<br>19 20 003 1421<br>11 ... 17 mm<br>**19 20 003 1422** | |  | |
| Protection covers for hoods |  | **09 20 003 5422**[2]<br>**09 20 003 5421**[1] | |  | |

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 20 003 0301** | | <br>Panel cut out 22 x 22 mm | |

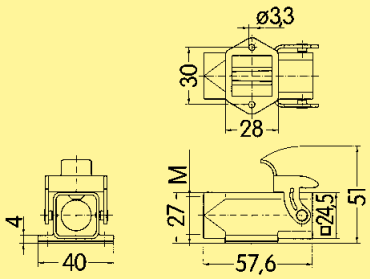
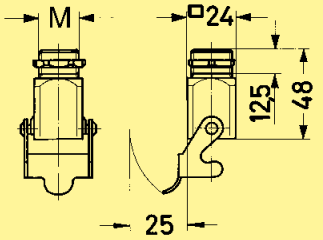
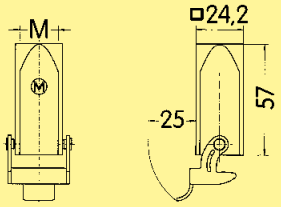
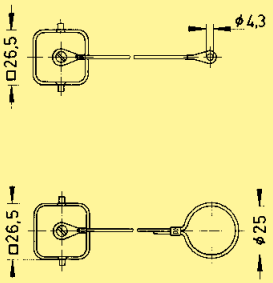




[1] for mounted female insert
[2] for mounted male insert

**Stock items in bold type**

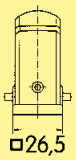
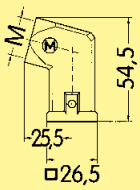
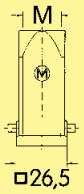
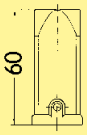
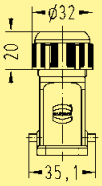
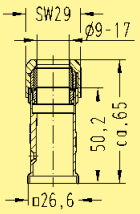
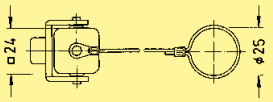
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, surface mounting<br><br>top entry | **19 20 003 1250** | 1 x 20 |  | Panel cut out 22 x 22 mm |
| | bottom closed<br>**19 20 003 1252** | 1 x 20 | | |
| Housings, screw mounting<br><br>top entry | **19 20 003 1150** | 1 x 20 |  | |
| Hoods, cable to cable<br><br>top entry | **19 20 003 1750** | 1 x 20 |  | |
| Protection covers<br><br> | for housings **09 20 003 5426**[2)]<br>for housings **09 20 003 5425**[1)]<br>for hoods cable to cable 09 20 003 5428[2)]<br>for hoods cable to cable 09 20 003 5427[1)] | |  | |

[1)] for mounted female insert
[2)] for mounted male insert

Stock items in bold type

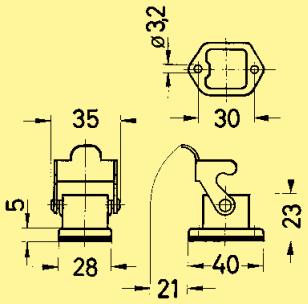
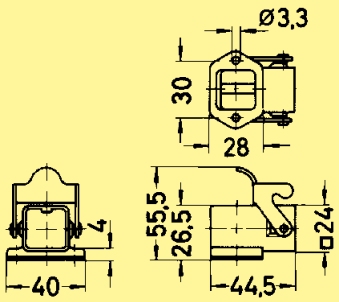
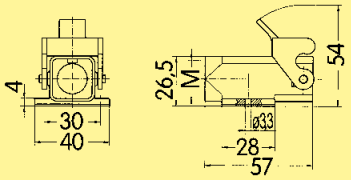
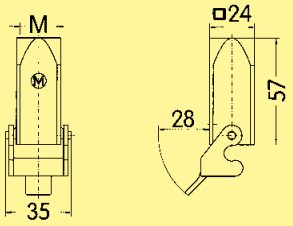
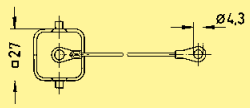
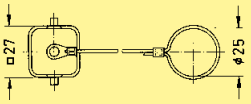
## Plastic hoods/housings for industrial applications / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | light grey<br>19 20 003 0620<br>black<br>19 20 003 0627 | 1 x 20<br>1 x 20 |  |  |
| Hoods<br>top entry |  | light grey<br>**19 20 003 0420**<br>black<br>19 20 003 0427 | 1 x 20<br>1 x 20 |  |  |
| Hoods<br>top entry |  | light grey<br>9 ... 17 mm<br>**19 20 003 0410** | |  |  |
| Protection covers<br>for hoods |  | light grey<br>09 20 003 5442[3]<br>light grey<br>09 20 003 5441[2] | |  | |

[1] for metal housings and cable to cable hoods also
[2] for mounted female insert or for mounted Han-Brid® insert
[3] for mounted male insert

**Stock items in bold type**

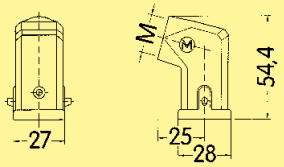
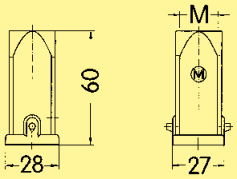
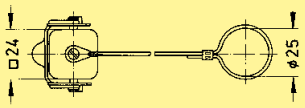
## Plastic hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, bulkhead mounting  | light grey **09 20 003 0320** black **09 20 003 0327** | |   Panel cut out 22 x 22 mm | |
|  | light grey **09 20 003 0820** black 09 20 003 0827 | |   Panel cut out 22 x 22 mm | |
| Housings, surface mounting top entry  | light grey **19 20 003 0220** black 19 20 003 0227 | 1 x 20 1 x 20 |   Panel cut out 22 x 22 mm | |
| Hoods, cable to cable top entry  | light grey **19 20 003 0720** black 19 20 003 0727 | 1 x 20 1 x 20 |   | |
| Protection covers  | light grey 09 20 003 5407[1] light grey 09 20 003 5408[1)2)] | |   | |
| Protection cover with lanyard  | light grey **09 20 003 5445**[2)] light grey 09 20 003 5446[3)] black 09 20 003 5449[2)] black 09 20 003 5450[3)] | |   | |
| Protection covers for hoods cable to cable | light grey 09 20 003 5447[2)] light grey 09 20 003 5448[3)] | |   | |

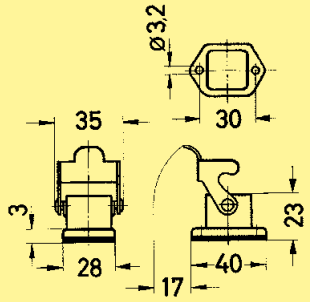
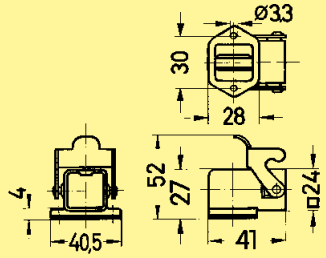
[1)] for metal housings and cable to cable hoods also
[2)] for mounted female insert or for mounted Han-Brid® insert
[3)] for mounted male insert

**Stock items in bold type**

## Hoods/Housings for higher environmental requirements / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 37 003 1640 | 1 x 20 |   | |
| Hoods<br>top entry |  | **19 37 003 1440** | 1 x 20 |   | |
| Protection covers |  | 09 37 003 5402[2]<br>09 37 003 5401[1] | |   | |

## Hoods/Housings for higher environmental requirements / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 37 003 0301** | |   Panel cut out 22 x 22 mm | |
| |  | **09 37 003 0801** | |   Panel cut out 22 x 22 mm | |

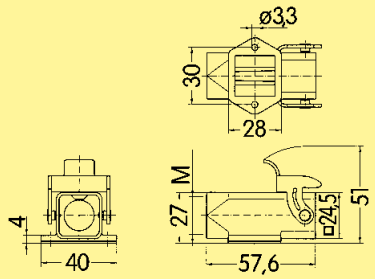
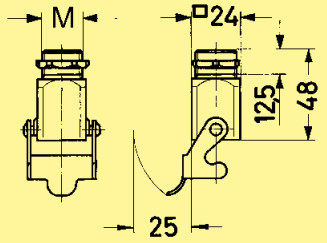
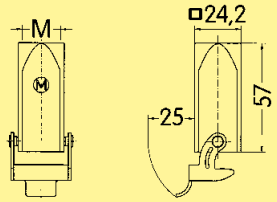
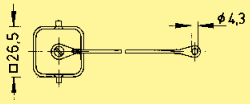




[1] for mounted female insert
[2] for mounted male insert

**Stock items in bold type**

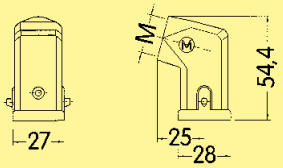
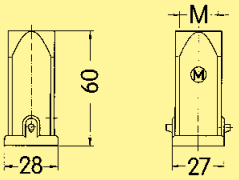
## Hoods/Housings for higher environmental requirements / 1 lever locking system

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, surface mounting<br>top entry  | **19 37 003 1250** | 1 x 20 |  Panel cut out 22 x 22 mm | |
| Housings, screw mounting<br>top entry  | 19 37 003 1150 | 1 x 20 |  | |
| Hoods, cable to cable<br>top entry  | 19 37 003 1750 | 1 x 20 |  | |
| Protection covers for housings  | **09 37 003 5405**[1)]<br>09 37 003 5406[2)] | |  | |

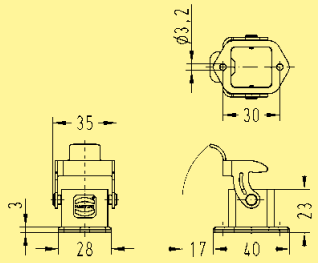
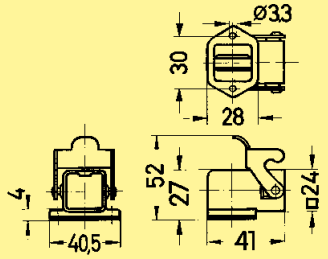
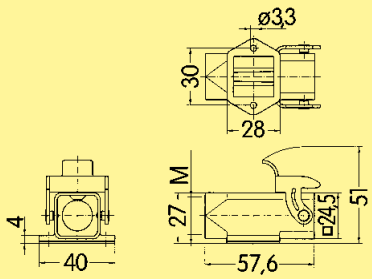
[1)] for mounted female insert
[2)] for mounted male insert

Stock items in bold type

## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 62 003 1640 | 1 x 20 |  | |
| Hoods<br>top entry |  | 19 62 003 1440 | 1 x 20 |  | |

## Hoods/Housings for higher EMC requirements / 1 lever locking system

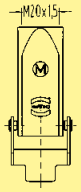
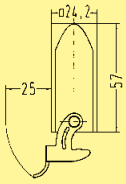
| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 62 003 0301** | | <br>Panel cut out 22 x 22 mm | |
| |  | **09 62 003 0801** | | <br>Panel cut out 22 x 22 mm | |
| Housings, surface mounting<br>top entry |  | 19 62 003 1250 | 1 x 20 | <br>Panel cut out 22 x 22 mm | |



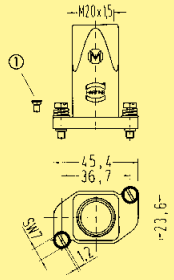
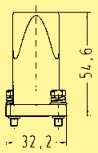
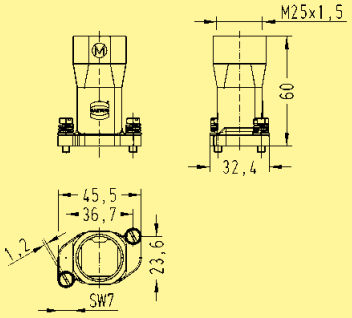
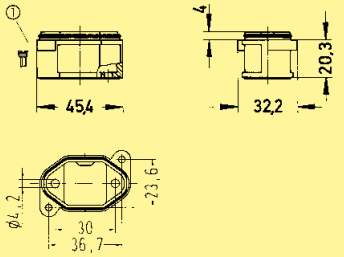
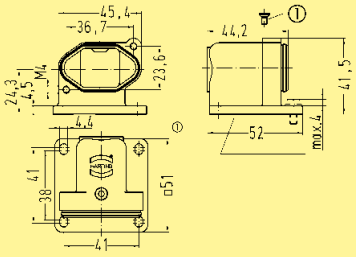
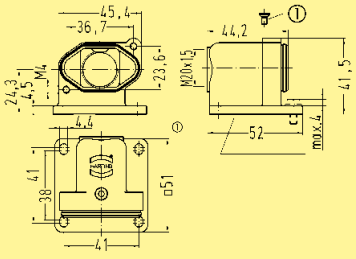


Stock items in bold type

## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods, cable to cable<br>top entry |  | 19 62 003 1750 | 1 x 20 |  |  |

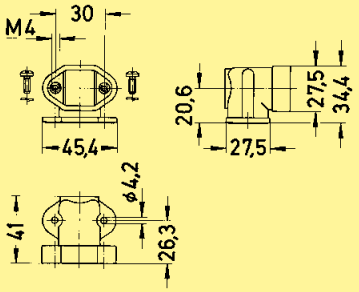
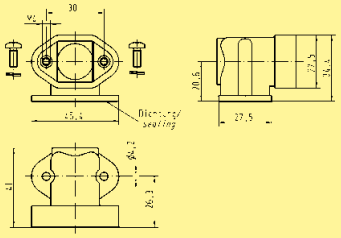
## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | | Part number Toggle locking | Part number screw | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>top entry |  | chromated<br>19 40 003 0400[1]<br>Epoxy powder paint<br>19 40 703 0400[1] | chromated<br>**19 40 003 0410**[1]<br>Epoxy powder paint<br>**19 40 703 0410**[1] | 1 x 20<br>1 x 20<br>1 x 20<br>1 x 20 | <br>① Sealing screw |  |
| Hoods<br>top entry |  | | chromated<br>**19 40 003 0411**[1]<br>Epoxy powder paint<br>**19 40 703 0411**[1] | 1 x 25<br>1 x 25 |  | |
| Housings, bulkhead mounting |  | chromated<br>**09 40 003 0301**[1]<br>Epoxy powder paint<br>09 40 703 0301[1] | chromated<br>**09 40 003 0311**[1]<br>Epoxy powder paint<br>09 40 703 0311[1] | | <br>Panel cut out 21.3 x 21.3 mm<br>① Sealing screw | |
| |  | | chromated<br>**09 40 003 0950**[1]<br>Epoxy powder paint<br>09 40 703 0950[1] | | <br>Panel cut out 21.3 x 21.3 mm<br>① Sealing screw | |
| Housings, surface mounting<br>top entry<br>bottom closed |  | | chromated<br>**19 40 003 0950**[1]<br>Epoxy powder paint<br>19 40 703 0950[1] | 1 x 20<br>1 x 20 | <br>① Sealing screw | |

[1] with sealing screw; sealing on the insert has to be removed

**Stock items in bold type**

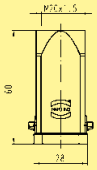
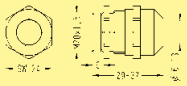
## Accessories

| Identification | Part number Toggle locking | Part number screw | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Adapter**<br>for assembly of bulkhead mounted housings in angled position<br> | chromated<br>09 40 003 0902<br>Epoxy powder paint<br>09 40 703 0902 | chromated<br>09 40 003 0902<br>Epoxy powder paint<br>09 40 703 0902 | –<br>– |  | |
| **Adapter**<br>for assembly of bulkhead mounted housings in angled position, with metric entry<br> | chromated<br>19 40 003 0900<br>Epoxy powder paint<br>19 40 703 0900 | chromated<br>19 40 003 0900<br>Epoxy powder paint<br>19 40 703 0900 | 1 x 20<br>1 x 20 |  | |

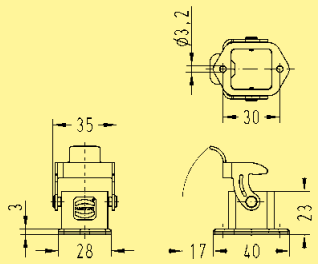
[1] with sealing screw; sealing on the insert has to be removed

Stock items in bold type

## Hoods/Housings made of stainless steel / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>top entry |  | **19 44 003 1440** | 1 x 20 |  | |
| Cable gland |  | 6 ... 13 mm<br>19 44 000 5082 | 1 x 20 |  | |

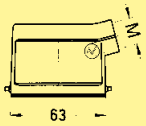
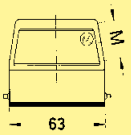
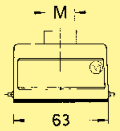
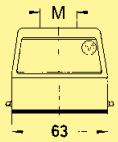
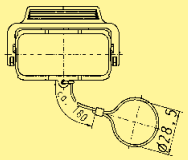
## Hoods/Housings made of stainless steel / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **19 44 003 0301** | |  Panel cut out 22 x 22 mm | |



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

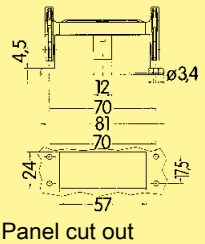
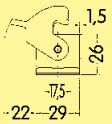
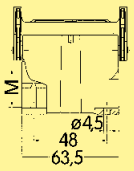
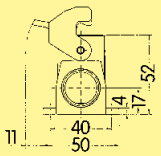
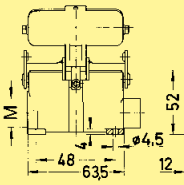
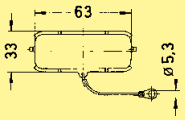
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **19 20 010 1540** | | 1 x 20 |  | |
| side entry  | | **19 20 010 0546** | 1 x 25 |  | |
| Hoods<br>top entry  | **19 20 010 1440** | | 1 x 20 |  | |
| top entry  | | **19 20 010 0446** | 1 x 25 |  | |
| Protection covers  | metal<br>**09 20 010 5423** | metal<br>**09 20 010 5423** | |  | |





Stock items in bold type

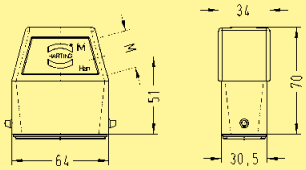
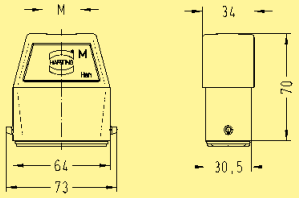
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 20 010 0301** with thermo-plastic cover **09 20 010 0321** | | |  Panel cut out |  |
| Housings, surface mounting side entry  | **19 20 010 0251**[1] **19 20 010 0290** | | 1 x 25 2 x 20 |  |  |
| side entry  | with thermo-plastic cover **19 20 010 0295** | | 2 x 20 |  | |
| Protection covers  | metal **09 20 010 5425** | | |  | |

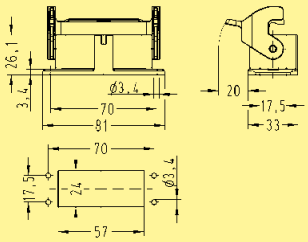
[1] only metal glands

**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 62 015 0546 | 1 x 25 |  | |
| Hoods<br>top entry |  | 19 62 015 0446 | 1 x 25 |  | |

## Hoods/Housings for higher EMC requirements / 1 lever locking system

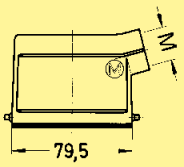
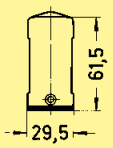
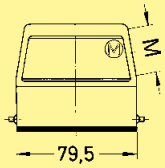
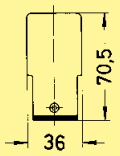
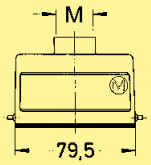
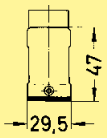
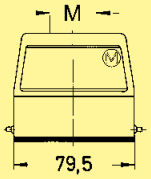
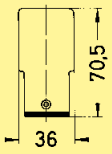
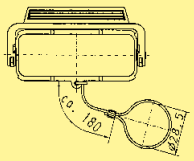
| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 62 015 0301 | |  Panel cut out | |





Stock items in bold type

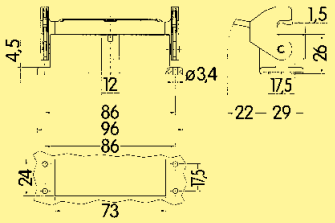
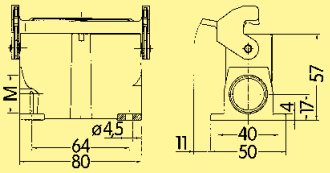
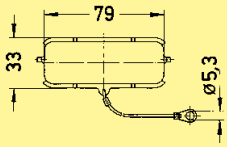
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **19 20 016 1540** | | 1 x 20 |  |  |
| side entry  | | **19 20 016 0546** | 1 x 25 |  |  |
| Hoods<br>top entry  | **19 20 016 1440** | | 1 x 20 |  |  |
| top entry  | | **19 20 016 0446** | 1 x 25 |  |  |
| Protection covers  | metal<br>09 20 016 5423 | metal<br>09 20 016 5423 | |  | |



**Stock items in bold type**

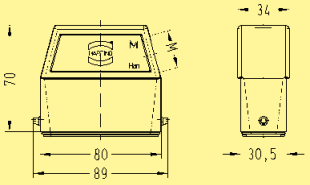
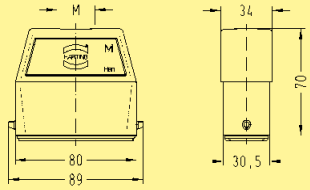
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 20 016 0301** with thermo-plastic cover **09 20 016 0321** | | |  Panel cut out | |
| Housings, surface mounting side entry  | **19 20 016 0251**[1] **19 20 016 0290** **19 20 016 0291** with thermo-plastic cover 19 20 016 0295 | | 1 x 25 2 x 20 2 x 25 2 x 20 |  | |
| Protection covers  | metal **09 20 016 5425** | | |  | |

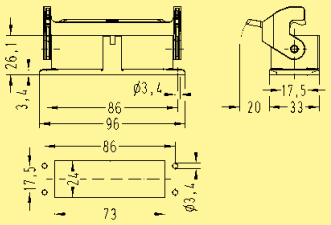
[1] only metal glands

Stock items in bold type

## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 62 025 0546 | 1 x 25 |  | |
| Hoods<br>top entry |  | 19 62 025 0446 | 1 x 25 |  | |

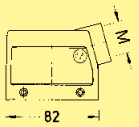
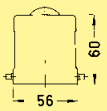
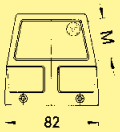
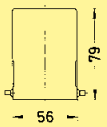
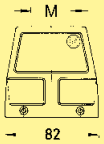
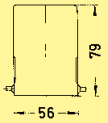
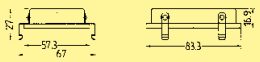
## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 62 025 0301 | | <br>Panel cut out | |

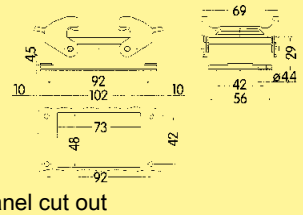
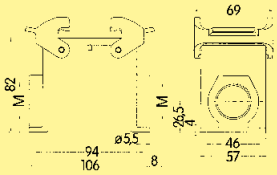


**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **19 20 032 1521** | | 1 x 25 |  |  |
| side entry  | | **19 20 032 0527** | 1 x 32 |  |  |
| Hoods<br>top entry  | | 19 20 032 0426<br>**19 20 032 0427** | 1 x 25<br>1 x 32 |  |  |
| Dust protection cover  | 09 20 032 5401 | 09 20 032 5401 | |  | |

## Metal hoods/housings for industrial applications / 2 lever locking system

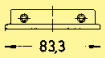
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 20 032 0301** | | | <br>Panel cut out | |
| Housings, surface mounting<br>side entry  | | 19 20 032 0231<br>19 20 032 0232<br>**19 20 032 0272** | 1 x 25<br>1 x 32<br>2 x 32 | <br>Blind way for one cable entry | |





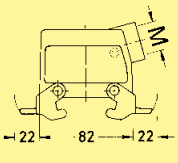
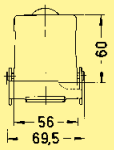
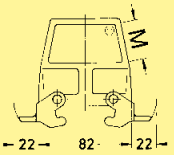
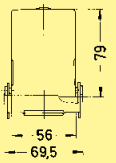
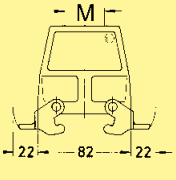
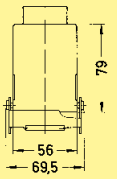
* usable for two inserts of size 16 A
Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

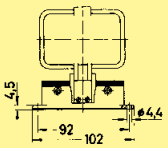
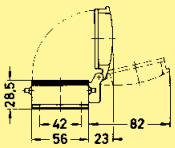
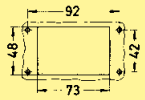
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Dust protection cover  | 09 20 032 5405 | 09 20 032 5405 | |   |   |

* usable for two inserts of size 16 A
**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 19 20 032 1531 | | 1 x 25 |  |  |
| side entry  | | 19 20 032 0537 | 1 x 32 |  |  |
| Hoods<br>top entry  | | 19 20 032 0437 | 1 x 32 |  |  |

## Metal hoods/housings for industrial applications / 2 lever locking system

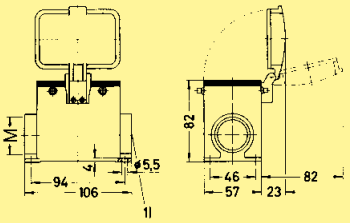
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | with thermo-plastic cover 09 20 032 0302 | | |    Panel cut out | |





* usable for two inserts of size 16 A
Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

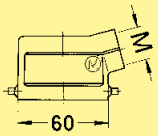
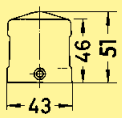
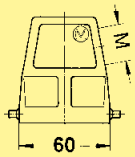
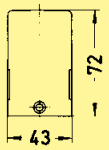
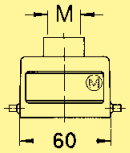
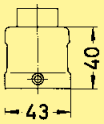
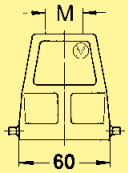
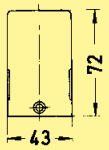
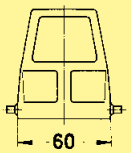
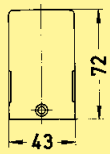
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, surface mounting<br>top entry  | | with thermo-plastic cover<br>19 20 032 0226 | **1 x 25** |  | |

[1] Blind way for one cable entry



*** usable for two inserts of size 16 A**
**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

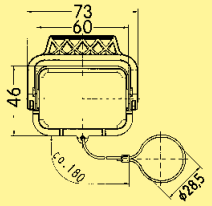
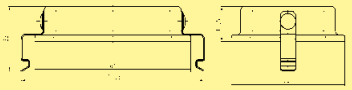
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **19 30 006 1540**<br>**19 30 006 1541** | | 1 x 20<br>1 x 25 |  |  |
| side entry |  | | **19 30 006 0546**<br>**19 30 006 0547** | 1 x 25<br>1 x 32 |  |  |
| Hoods<br>top entry |  | **19 30 006 1440** | | 1 x 20 |  |  |
| top entry |  | | **19 30 006 0446**<br>**19 30 006 0447** | 1 x 25<br>1 x 32 |  |  |
| Hoods<br>without cable entry |  | | 09 30 006 0801 | – |  |  |



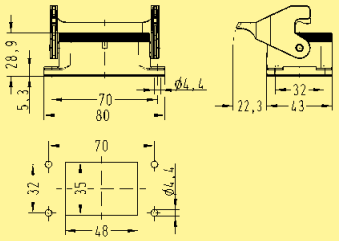
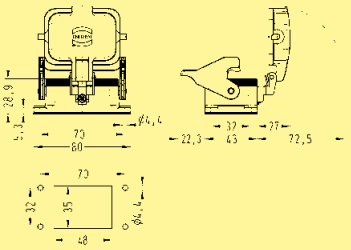


Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Protection covers  | metal **09 30 006 5423** | metal **09 30 006 5423** | |   | |
| Dust protection cover  | 09 30 006 5401 | 09 30 006 5401 | |  | |

## Metal hoods/housings for industrial applications / 1 lever locking system

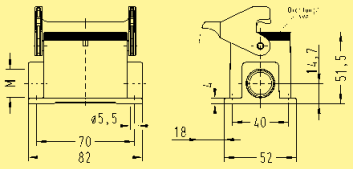
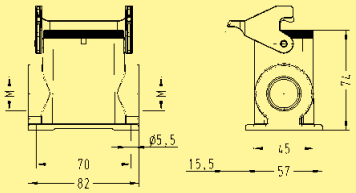
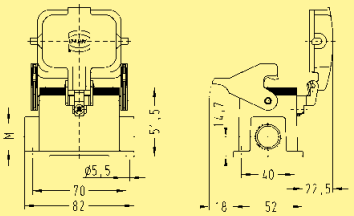
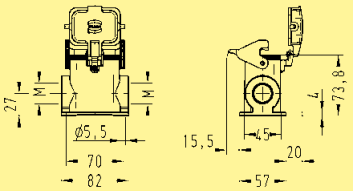
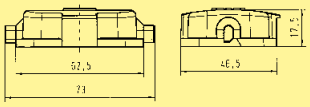
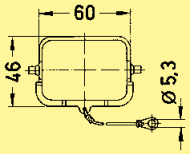
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 30 006 0301** | | |   Panel cut out | |
|  | with thermo-plastic cover **09 30 006 0302** with metal cover **09 30 006 0318** | | |   Panel cut out | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

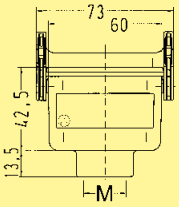
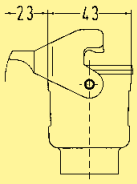
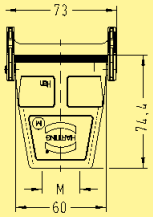
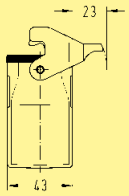
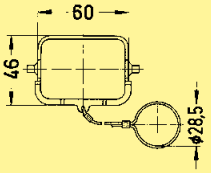
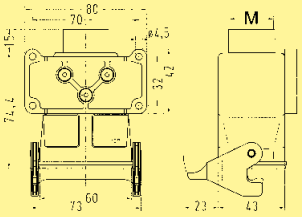
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | **19 30 006 1250**<br>**19 30 006 1290** | | 1 x 20<br>2 x 20 |  | |
| | | | | | Blind way for one cable entry | |
| side entry |  | | **19 30 006 0291**<br>**19 30 006 0292** | 2 x 25<br>2 x 32 |  | |
| | | | | | Blind way for one cable entry | |
| side entry |  | with thermo-plastic cover<br>**19 30 006 1255**<br>with thermo-plastic cover<br>**19 30 006 1295**<br>with metal cover<br>19 30 006 2255<br>with metal cover<br>19 30 006 2295 | | 1 x 20<br>2 x 20<br>1 x 20<br>2 x 20 |  | |
| | | | | | Blind way for one cable entry | |
| side entry |  | | with thermo-plastic cover<br>19 30 006 0296<br>with thermo-plastic cover<br>19 30 006 0297<br>with metal cover<br>19 30 006 7296 | 2 x 25<br>2 x 32<br>2 x 25 |  | |
| | | | | | Blind way for one cable entry | |
| Protection covers<br>Plastic |  | plastic<br>**09 30 006 5404** | plastic<br>**09 30 006 5404** | |  | |
| metal |  | metal<br>**09 30 006 5425** | metal<br>**09 30 006 5425** | |  | |





Stock items in bold type

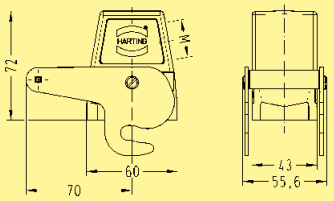
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods, cable to cable<br>top entry |  | **19 30 006 1750** | | 1 x 20 |  |  |
| top entry |  | | **19 30 006 0756** | 1 x 25 |  |  |
| Protection covers |  | metal<br>09 30 006 5427 | metal<br>09 30 006 5427 | |  | |
| Flange housings<br>top entry |  | | 19 30 006 0716 | 1 x 25 |  | |

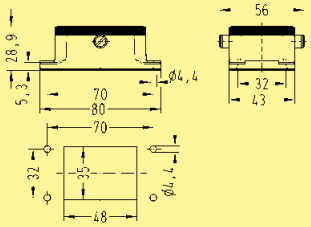


**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 30 006 0586 | 1 x 25 |  | |

## Metal hoods/housings for industrial applications / 1 central locking lever locking system

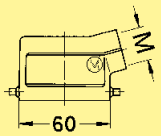
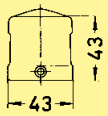
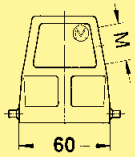
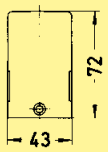
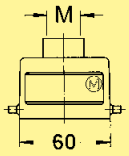
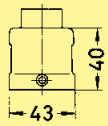
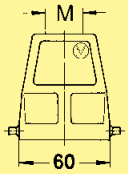
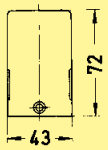
| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 30 006 0381 | | <br>Panel cut out | |





Stock items in bold type

## Hoods/Housings for higher environmental requirements / 1 lever locking system

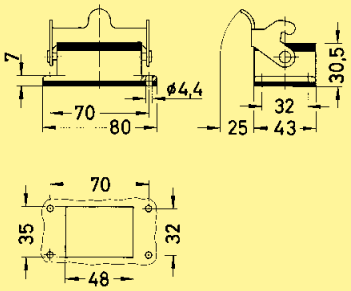
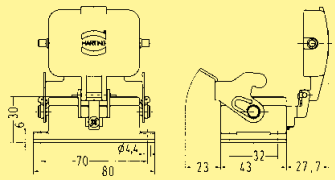
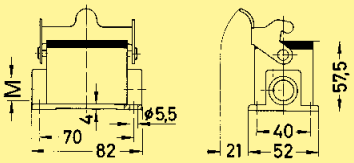
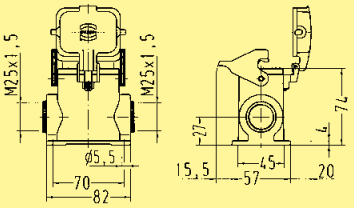
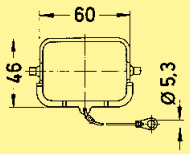
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **19 37 006 1540** | | 1 x 20 |  |  |
| side entry |  | | 19 37 006 0545<br>19 37 006 0546 | 1 x 20<br>1 x 25 |  |  |
| Hoods<br>top entry |  | 19 37 006 1440 | | 1 x 20 |  |  |
| top entry |  | | 19 37 006 0445<br>19 37 006 0446 | 1 x 20<br>1 x 25 |  |  |





**Stock items in bold type**

## Hoods/Housings for higher environmental requirements / 1 lever locking system

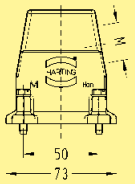
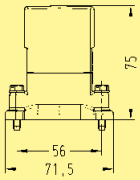
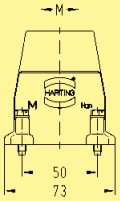
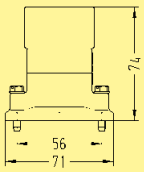
| Identification | | Part number Low construction | High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 37 006 0301** | | |  | |
| |  | with metal cover 09 37 006 0318 | | | Panel cut out  | |
| Housings, surface mounting side entry |  | 19 37 006 1290 | | 2 x 20 |  | |
| side entry |  | | with thermo-plastic cover 19 37 006 0296 | 2 x 25 |  | |
| Protection covers |  | metal 09 37 006 5405 | metal 09 37 006 5405 | |  | |



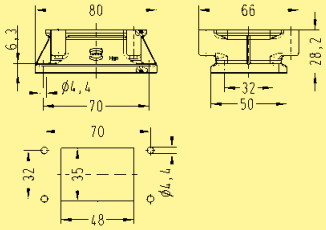


Stock items in bold type

## Hoods/Housings for higher EMC requirements / Screw locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 62 006 0541 | 1 x 25 |   | |
| Hoods<br>top entry |  | 19 62 006 0441<br>19 62 006 0442 | 1 x 25<br>1 x 32 |   | |

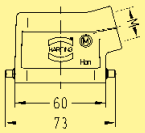
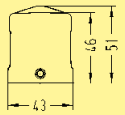
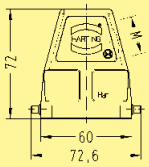
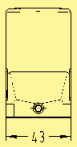
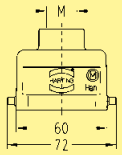
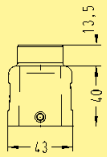
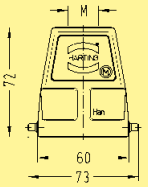
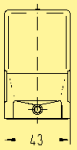
## Hoods/Housings for higher EMC requirements / Screw locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 62 006 0301 | |  Panel cut out | |

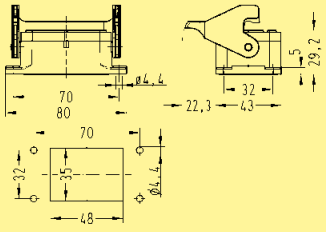


**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **19 62 806 1540** | | 1 x 20 |  |  |
| side entry |  | | **19 62 806 0546**<br>19 62 806 0547 | 1 x 25<br>1 x 32 |  |  |
| Hoods<br>top entry |  | 19 62 806 1440 | | 1 x 20 |  |  |
| top entry |  | | **19 62 806 0446**<br>19 62 806 0447 | 1 x 25<br>1 x 32 |  |  |

## Hoods/Housings for higher EMC requirements / 1 lever locking system

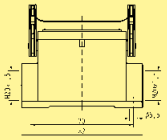
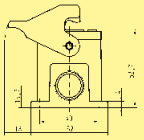
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 62 806 0301** | | | <br>Panel cut out | |





Stock items in bold type

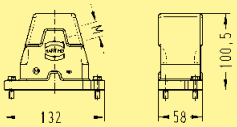
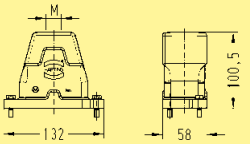
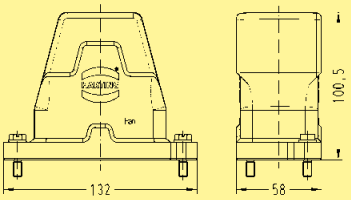
## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | **19 62 806 1290** | | 2 x 20 |  |  |



**Stock items in bold type**

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

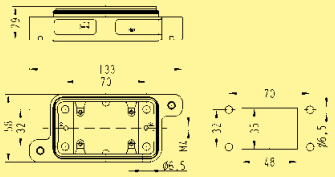
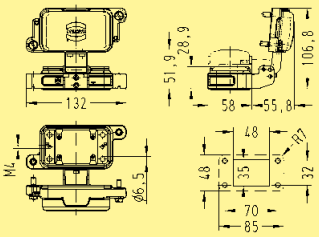
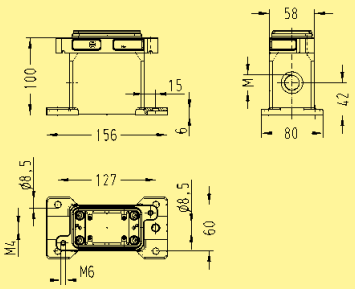
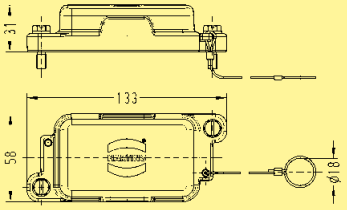
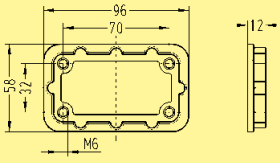
| Identification | Part number Toggle locking | Part number screw | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 19 40 006 0501 | 19 40 006 0510<br>**19 40 006 0511**<br>19 40 006 0512<br>19 40 006 0513 | 1 x 20<br>1 x 25<br>1 x 25<br>1 x 32<br>1 x 40 |  | |
| Hoods<br>top entry  | 19 40 006 0401 | 19 40 006 0410<br>**19 40 006 0411**<br>19 40 006 0412<br>19 40 006 0413 | 1 x 20<br>1 x 25<br>1 x 25<br>1 x 32<br>1 x 40 |  | |
| Hoods<br>without cable entry  | | 09 40 006 0811 | – |  | |





Stock items in bold type

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | | Part number Toggle locking | screw | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 40 006 0301 | **09 40 006 0311** | |  Panel cut out | |
| Housings, bulkhead mounting |  | | with metal cover **09 40 006 0317** | |  Panel cut out | |
| Housings, surface mounting<br>side entry |  | | 19 40 006 1260<br>19 40 006 1261<br>19 40 006 1262 | 1 x 20<br>1 x 25<br>1 x 32 |  | |
| Protection covers |  | metal 09 40 006 5401 | metal 09 40 006 5411 | |  | |
| Mounting frames |  | | 09 40 000 9901[1)] | |  | |

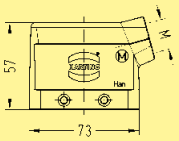
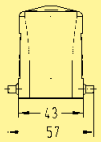
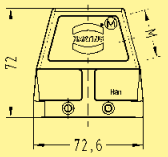
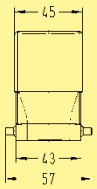
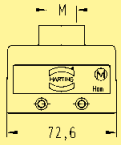
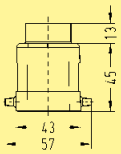
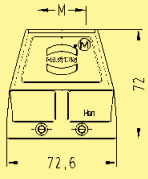
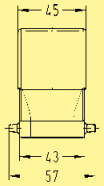
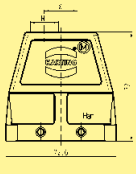
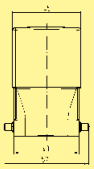
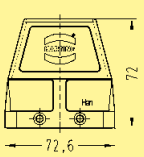
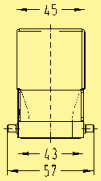
Han Hoods Housings



[1)] not applicable for using Han® HC 650

**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

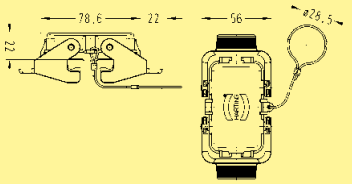
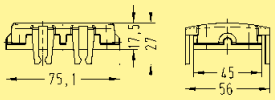
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **19 30 010 1520**<br>**19 30 010 1521** | | 1 x 20<br>1 x 25 |  |  |
| side entry |  | | **19 30 010 0527** | 1 x 32 |  |  |
| Hoods<br>top entry |  | **19 30 010 1420**<br>**19 30 010 1421** | | 1 x 20<br>1 x 25 |  |  |
| top entry |  | | **19 30 010 0427** | 1 x 32 |  |  |
| top entry |  | | **19 30 010 0465** | 2 x 20 |  |  |
| Hoods<br>without cable entry |  | | 09 30 010 0801 | – |  |  |



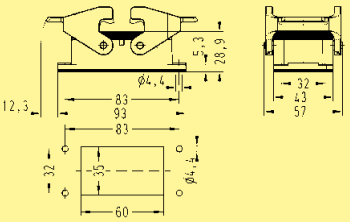
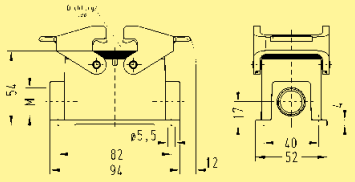
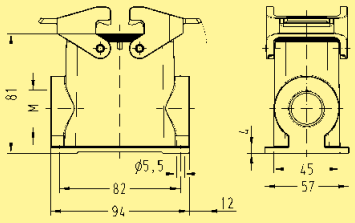


Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Protection covers |  | metal **09 30 010 5423** | metal **09 30 010 5423** | |  | |
| Protection covers |  | plastic 09 30 010 5401 | plastic 09 30 010 5401 | |  | |

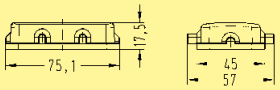
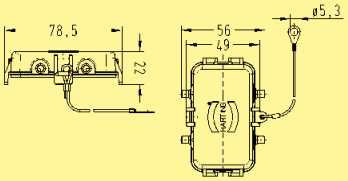
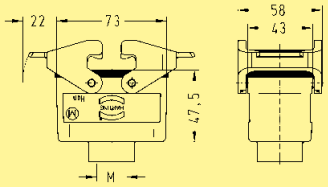
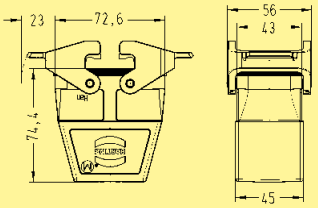
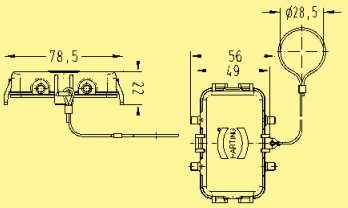
## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 30 010 0301** | | |  Panel cut out | |
| Housings, surface mounting<br>side entry |  | **19 30 010 1230**<br>**19 30 010 1231**<br>**19 30 010 1270** | | 1 x 20<br>1 x 25<br>2 x 20 |  Blind way for one cable entry | |
| side entry |  | | 19 30 010 0231<br>**19 30 010 0271**<br>**19 30 010 0272** | 1 x 25<br>2 x 25<br>2 x 32 |  Blind way for one cable entry | |



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

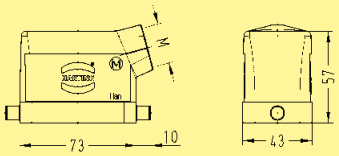
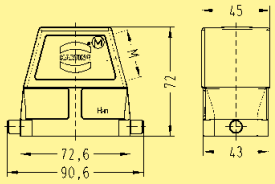
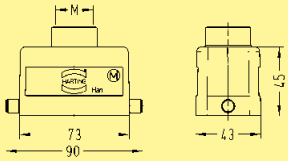
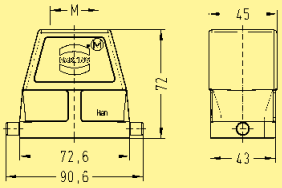
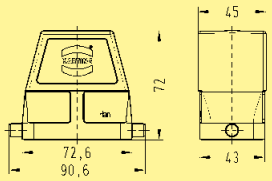
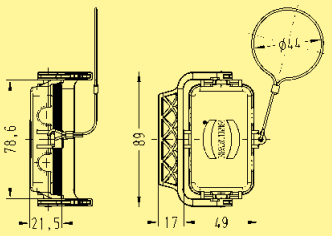
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Protection covers for housings |  | plastic 09 30 010 5407 | plastic 09 30 010 5407 | |  | |
| |  | metal **09 30 010 5425** | metal **09 30 010 5425** | |  | |
| Hoods, cable to cable<br>top entry |  | 19 30 010 1730 | | 1 x 20 |  | |
| top entry |  | | 19 30 010 0736<br>19 30 010 0737 | 1 x 25<br>1 x 32 |  | |
| Protection covers for hoods cable to cable |  | metal **09 30 010 5427** | metal **09 30 010 5427** | |  | |





Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

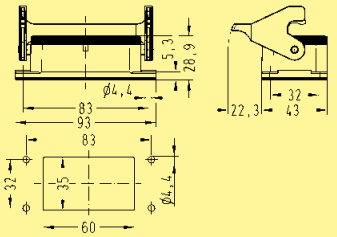
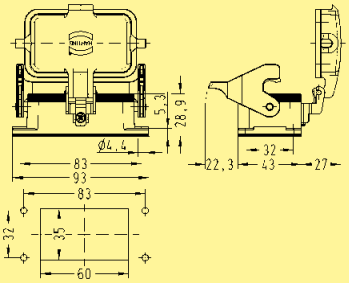
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **19 30 010 1540**<br>**19 30 010 1541** | | 1 x 20<br>1 x 25 |  | |
| side entry  | | **19 30 010 0547** | 1 x 32 |  | |
| Hoods<br>top entry  | **19 30 010 1440**<br>**19 30 010 1441** | | 1 x 20<br>1 x 25 |  | |
| top entry  | | **19 30 010 0447** | 1 x 32 |  | |
| Hoods<br>without cable entry  | | 09 30 010 0803 | – |  | |
| Protection covers  | metal<br>**09 30 010 5432** | metal<br>**09 30 010 5432** | |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

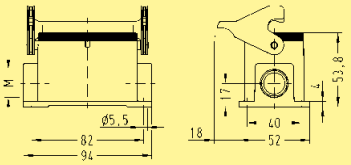
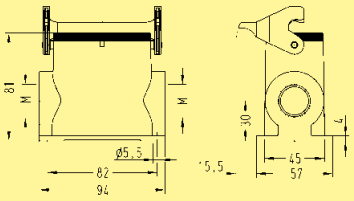
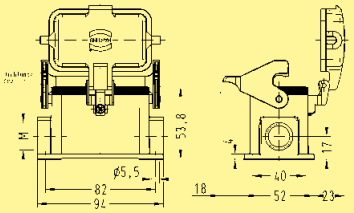
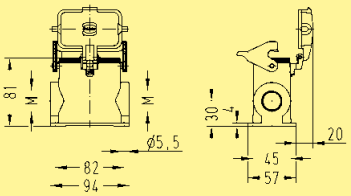
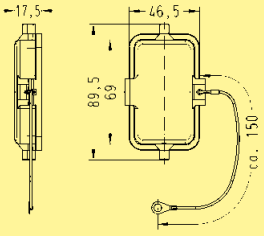
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 30 010 0305** | | |  Panel cut out | |
|  | with thermo-plastic cover **09 30 010 0303** with metal cover **09 30 010 0318** | | |  Panel cut out | |





Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

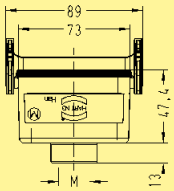
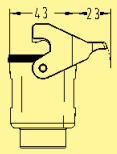
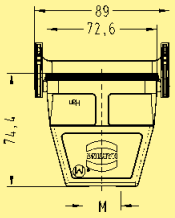
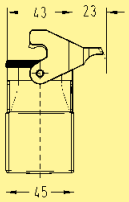
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry  | **19 30 010 1250**<br>**19 30 010 1290** | | 1 x 20<br>2 x 20 |  | Blind way for one cable entry |
| side entry  | | 19 30 010 0291<br>19 30 010 0292 | 1 x 25<br>1 x 32 |  | Blind way for one cable entry |
| side entry  | with thermo-plastic cover<br>19 30 010 1255<br>with thermo-plastic cover<br>**19 30 010 1295**<br>with metal cover<br>19 30 010 2295 | | 1 x 20<br>2 x 20<br>2 x 20 |  | Blind way for one cable entry |
| side entry  | | with thermo-plastic cover<br>19 30 010 0296<br>with thermo-plastic cover<br>19 30 010 0297<br>with metal cover<br>19 30 010 7296 | 2 x 25<br>2 x 32<br>2 x 25 |  | Blind way for one cable entry |
| Protection covers  | plastic<br>**09 30 010 5412** | plastic<br>**09 30 010 5412** | |  | |

Han Hoods Housings



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

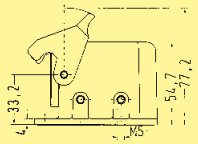
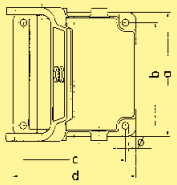
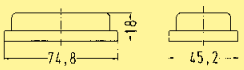
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods, cable to cable<br>top entry  | **19 30 010 1750** | | 1 x 20 |  |  |
| top entry  | | 19 30 010 0756 | 1 x 25 |  |  |





Stock items in bold type



| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **Housings for motor termination** | | | |
| powder-coated RAL 7037 | **09 30 010 0901**<br>09 30 010 0902 |  | |
| powder-coated, with protection cover | 09 30 010 0961 | | |
| unpainted | 09 30 410 0901<br>09 30 410 0909<br>09 30 410 0921 |  | |
| unpainted, with protection cover | 09 30 410 0951<br>09 30 410 0960<br>09 30 410 0970<br>09 30 410 0971<br>09 30 410 0974<br>09 30 410 0983 | | |
| highly EMI resistant | 09 62 810 0901 | | |
| highly EMI resistant, with protection cover | 09 62 810 0974 | | |
| **Dust protection cover**  | 09 30 010 5406 |  | |

| | a | b | c | d | Ø |
|---|---|---|---|---|---|
| 09 30 010 0901 | 82 | 68 | 68 | 82 | 4.5 |
| 09 30 010 0902 | 98 | | | 98 | |
| 09 30 010 0961 | 82 | 70 | 70 | 82 | |
| 09 30 410 0901 | 82 | 68 | 68 | 82 | 4.5 |
| 09 30 410 0909 | 98 | | | 98 | |
| 09 30 410 0921 | 85 | 73 | 73 | 85 | |
| 09 30 410 0951 | 82 | 68 | 68 | 82 | 4.5 |
| 09 30 410 0960 | 98 | 70 | 70 | 98 | 4.3 |
| 09 30 410 0970 | 92 | 77 | 77 | 92 | 4.3 |
| 09 30 410 0971 | 85 | 73 | 73 | 85 | 5.5 |
| 09 30 410 0974 | 92 | 70 | 70 | 92 | 4.3 |
| 09 30 410 0983 | 92 | 80 | 80 | 92 | 5.1 |
| 09 62 810 0901 | 82 | 68 | 68 | 82 | 4.5 |
| 09 62 810 0974 | 92 | 70 | 70 | 92 | 4.1 |

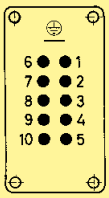
Other dimensions (a + d) on request (98 x 98 mm)



**Stock items in bold type**

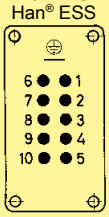
## Compatible connector inserts

Screw terminal
500 V
16 A
Han E®



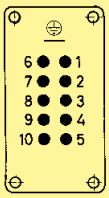

10 + ⏚

Cage-clamp terminal
500 V
16 A
Han® ES
Han® ESS



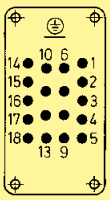

10 + ⏚

Crimp terminal
500 V
16 A
Han E®



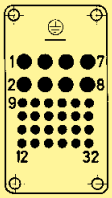

10 + ⏚

Crimp terminal
500 V
16 A
Han® EE



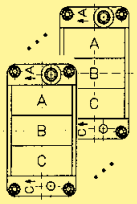

18 + ⏚

Crimp terminal
400/160 V
16/10 A
Han-Com®




8/24 + ⏚

Crimp terminal/
Screw terminal
50 V - 830 V
10 A - 40 A

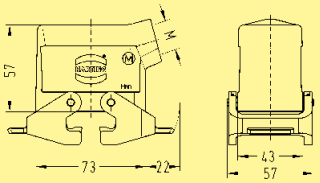
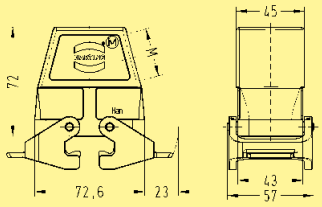
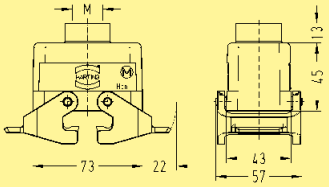
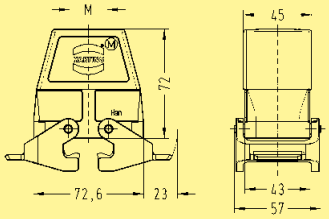
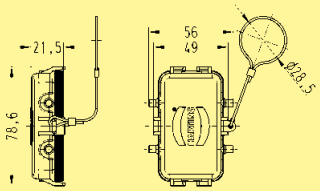



Han-Modular + ⏚

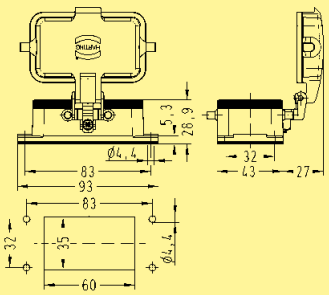
## Features

- Angled housing replaces the terminal box
- Space saving and compact design
- The position of the terminal housing can be switched by 90°
- Compatible with standard hoods for single lever
- Locking element Han-Easy Lock®
- Star and delta circuits can be realized in the female connector Han® ESS
- Suitable for standard inserts (see compatible connector inserts)

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **19 30 010 1530** | | 1 x 20 |  | |
| side entry  | | 19 30 010 0537 | 1 x 32 |  | |
| Hoods<br>top entry  | 19 30 010 1430 | | 1 x 20 |  | |
| top entry  | | 19 30 010 0436 | 1 x 25 |  | |
| Protection covers  | metal **09 30 010 5457** | metal **09 30 010 5457** | |  | |

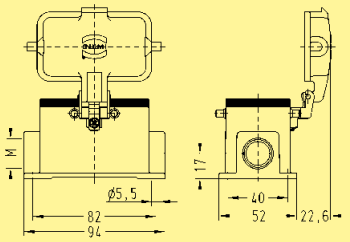
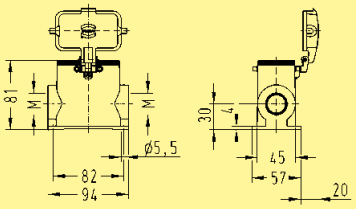
## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | with thermo-plastic cover **09 30 010 0302** with metal cover 09 30 010 0317 | | |  Panel cut out | |



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

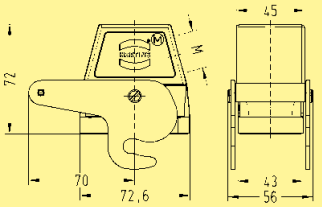
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | with thermo-plastic cover **19 30 010 1225**<br>with thermo-plastic cover 19 30 010 1265 | | 1 x 20<br>2 x 20 |  | Blind way for one cable entry |
| side entry |  | | with thermo-plastic cover 19 30 010 0266 | 2 x 25 |  | Blind way for one cable entry |



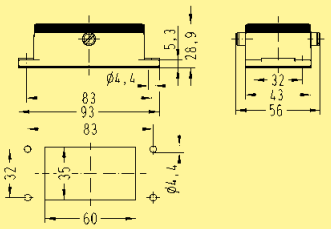


Stock items in bold type

## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 30 010 0586 | 1 x 25 |  | |

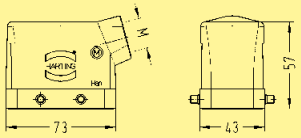
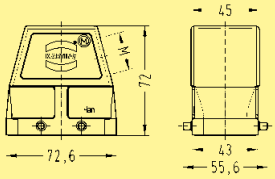
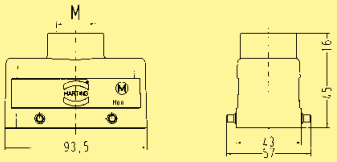
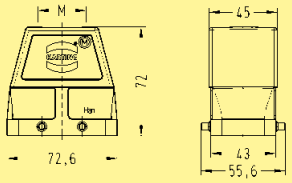
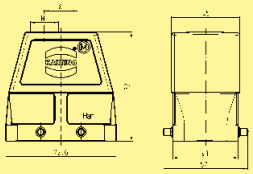
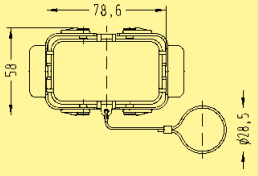
## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 30 010 0381 | | <br>Panel cut out | |



**Stock items in bold type**

## Hoods/Housings for higher environmental requirements / 2 lever locking system

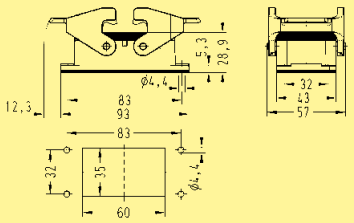
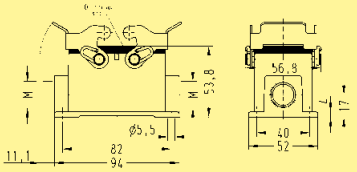
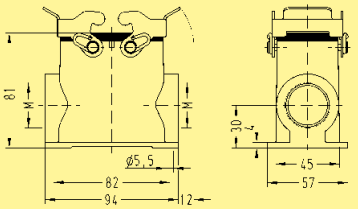
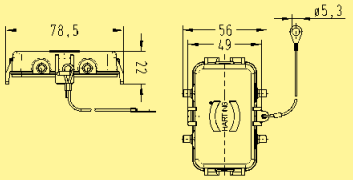
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **19 37 010 1520** | | 1 x 20 |  | |
| side entry |  | | 19 37 010 0526 | 1 x 25 |  | |
| Hoods<br>top entry |  | 19 37 010 1420 | | 1 x 20 |  | |
| top entry |  | | 19 37 010 0427 | 1 x 32 |  | |
| top entry |  | | 19 37 010 0465 | 2 x 20 |  | |
| Protection covers |  | metal<br>09 37 010 5403 | metal<br>09 37 010 5403 | |  | |





Stock items in bold type

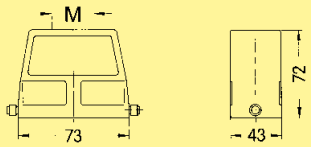
## Hoods/Housings for higher environmental requirements / 2 lever locking system

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 37 010 0301** | | |  Panel cut out | |
| Housings, surface mounting<br>side entry |  | 19 37 010 1270 | | 2 x 20 |  | |
| side entry |  | | 19 37 010 0272 | 2 x 32 |  | |
| Protection covers |  | metal<br>09 37 010 5405 | metal<br>09 37 010 5405 | |  | |

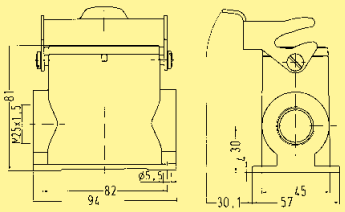


Stock items in bold type

## Hoods/Housings for higher environmental requirements / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>top entry |  | 19 37 010 0447 | 1 x 32 |  | |

## Hoods/Housings for higher environmental requirements / 1 lever locking system

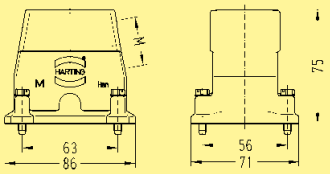
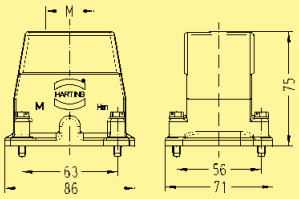
| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | 19 37 010 0291 | 1 x 25 |  | |



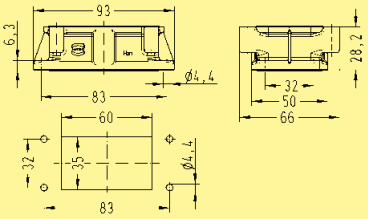


Stock items in bold type

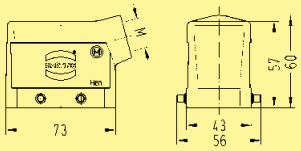
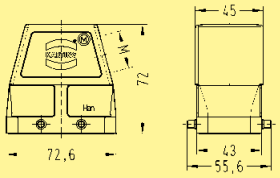
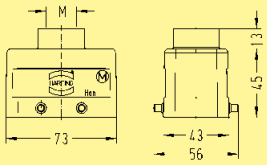
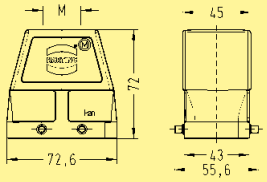
## Hoods/Housings for higher EMC requirements / Screw locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 62 010 0542<br>19 62 010 0543 | 1 x 32<br>1 x 40 |  | |
| Hoods<br>top entry |  | 19 62 010 0442 | 1 x 32 |  | |

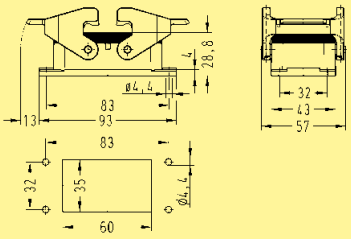
## Hoods/Housings for higher environmental requirements / Screw locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 62 010 0301 | | <br>Panel cut out | |

## Hoods/Housings for higher EMC requirements / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 19 62 810 1520 | | 1 x 20 |  | |
| side entry  | | 19 62 810 0526<br>19 62 810 0527 | 1 x 25<br>1 x 32 |  | |
| Hoods<br>top entry  | 19 62 810 1420<br>19 62 810 1421 | | 1 x 20<br>1 x 25 |  | |
| top entry  | | 19 62 810 0426<br>**19 62 810 0427** | 1 x 25<br>1 x 32 |  | |

## Hoods/Housings for higher EMC requirements / 2 lever locking system

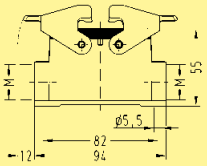
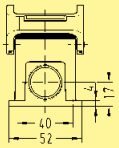
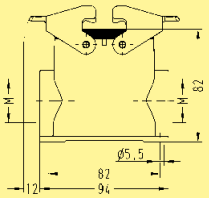
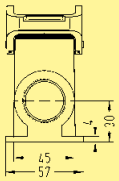
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | 09 62 810 0301 | | |  Panel cut out | |





Stock items in bold type

## Hoods/Housings for higher EMC requirements / 2 lever locking system

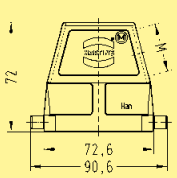
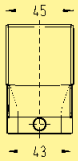
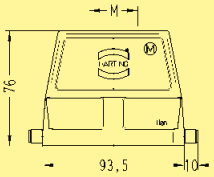
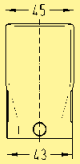
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | 19 62 810 1271 | | 2 x 25 |  |  |
| side entry |  | | 19 62 810 0272 | 2 x 32 |  |  |



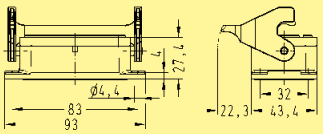
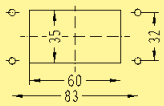
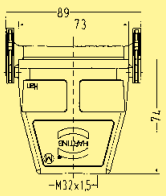
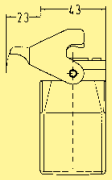


**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | | 19 62 810 0547 | 1 x 32 |  |  |
| Hoods<br>top entry  | | 19 62 810 0446<br>19 62 810 0447 | 1 x 25<br>1 x 32 |  |  |

## Hoods/Housings for higher EMC requirements / 1 lever locking system

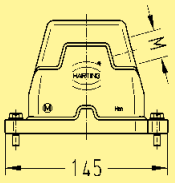
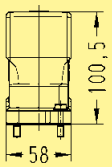
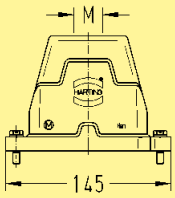
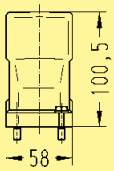
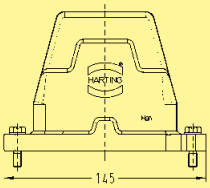
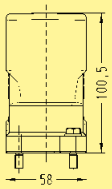
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | with 2 locking levers and 1 adapter frame 09 62 810 0305 | | |   Panel cut out | |
| Hoods, cable to cable<br>top entry  | | 19 62 810 0757 | 1 x 32 |  |  |





Stock items in bold type

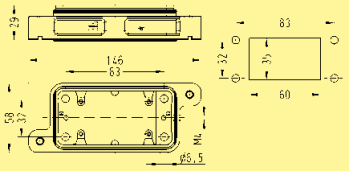
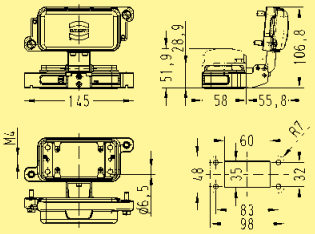
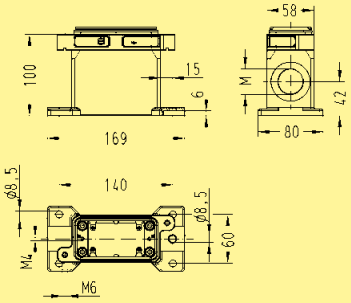
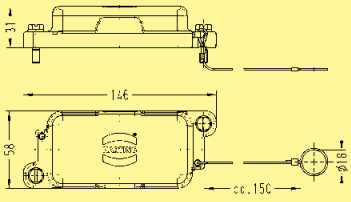
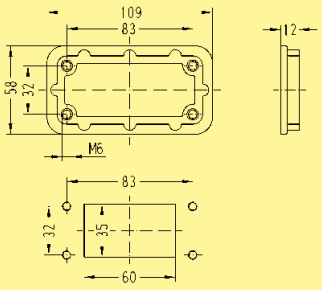
## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | Part number Toggle locking | Part number screw | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 19 40 010 0501 | 19 40 010 0511<br>19 40 010 0512<br>19 40 010 0513 | 1 x 25<br>1 x 25<br>1 x 32<br>1 x 40 |  |  |
| Hoods<br>top entry  | 19 40 010 0401 | 19 40 010 0411<br>19 40 010 0412<br>19 40 010 0413<br>19 40 010 0430 | 1 x 25<br>1 x 25<br>1 x 32<br>1 x 40<br>2 x 20 |  |  |
| Hoods<br>without cable entry  | | 09 40 010 0811 | – |  |  |



**Stock items in bold type**

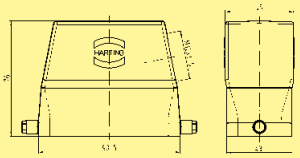
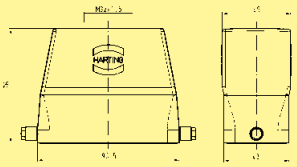
## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | | Part number Toggle locking | screw | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 40 010 0301 | **09 40 010 0311** | |  Panel cut out | |
| Housings, bulkhead mounting |  | | with metal cover **09 40 010 0317** | |  Panel cut out | |
| Housings, surface mounting side entry |  | | 19 40 010 1260<br>**19 40 010 1262**<br>**19 40 010 1263**<br>19 40 010 1271<br>19 40 010 1272 | 1 x 20<br>1 x 32<br>1 x 40<br>2 x 25<br>2 x 32 |  | |
| Protection covers |  | metal 09 40 010 5401 | metal 09 40 010 5411 | |  | |
| Mounting frames |  | | 09 40 000 9902[1] | |  Panel cut out | |

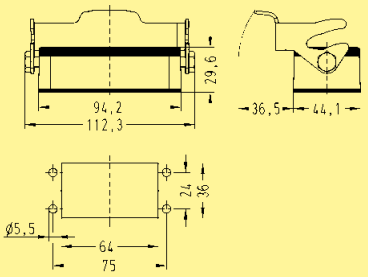
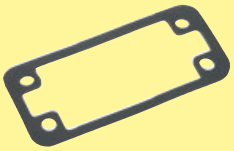
[1] not applicable for using Han® HC 650

Stock items in bold type

## Hoods/Housings made of stainless steel / 1 lever locking system

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Hoods<br>side entry  | **19 44 310 0547** | 1 x 32 |  | |
| Hoods<br>top entry  | **19 44 310 0447** | 1 x 32 |  | |

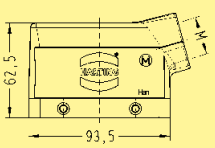
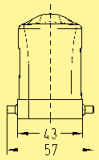
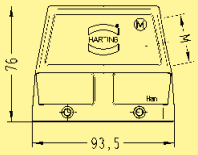
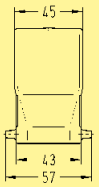
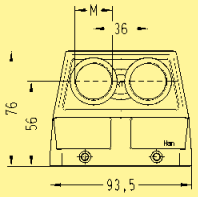
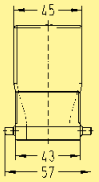
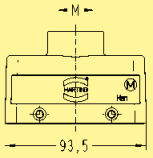
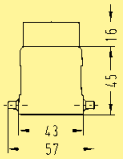
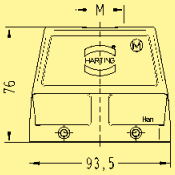
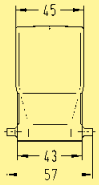
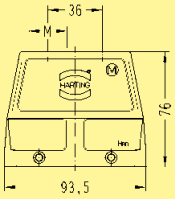
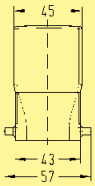
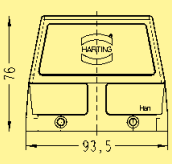
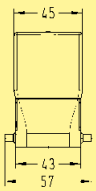
## Hoods/Housings made of stainless steel / 1 lever locking system

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, bulkhead mounting  | **19 44 310 0305** | |  Panel cut out | |
| Gasket  | **19 44 000 9902** | | | |



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

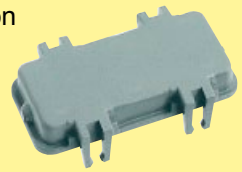
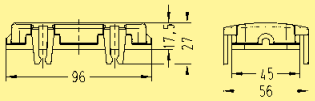
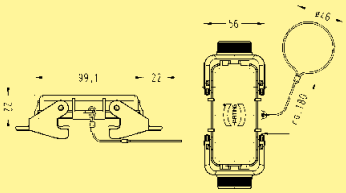
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **19 30 016 1521**<br>**19 30 016 1522** | | 1 x 25<br>1 x 32 |  |  |
| side entry  | | **19 30 016 0527**<br>**19 30 016 0528** | 1 x 32<br>1 x 40 |  |  |
| Hoods<br>angled entry  | | 19 30 016 0666 | 2 x 25 |  |  |
| Hoods<br>top entry  | **19 30 016 1421**<br>**19 30 016 1422** | | 1 x 25<br>1 x 32 |  |  |
| top entry  | | **19 30 016 0427**<br>**19 30 016 0428** | 1 x 32<br>1 x 40 |  |  |
| top entry  | | **19 30 016 0466** | 2 x 25 |  |  |
| Hoods<br>without cable entry  | | 09 30 016 0801 | – |  |  |



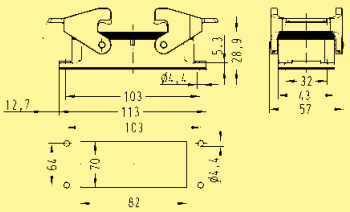
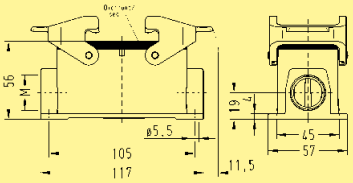
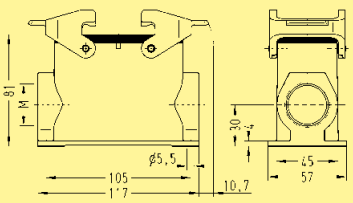


Stock items in bold type

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Dust protection cover  | plastic 09 30 016 5401 | plastic 09 30 016 5401 | |  | |
| Protection covers  | metal **09 30 016 5422** | metal **09 30 016 5422** | |  | |

## Metal hoods/housings for industrial applications / 2 lever locking system

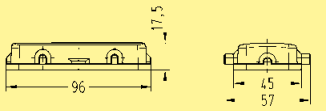
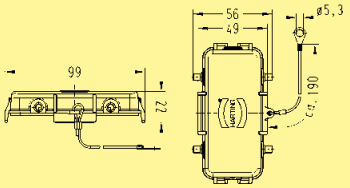
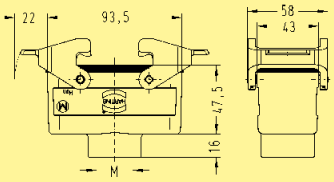
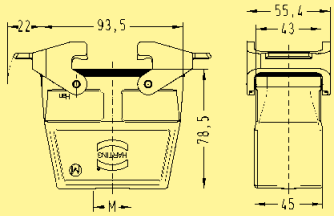
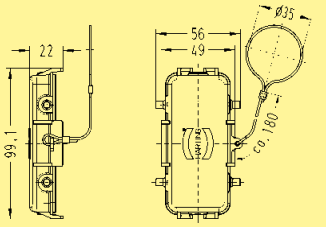
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 30 016 0301** | | |  Panel cut out | |
| Housings, surface mounting side entry  | **19 30 016 1231** **19 30 016 1271** | | 1 x 25 2 x 25 |  | |
| side entry  | | **19 30 016 0232** **19 30 016 0271** **19 30 016 0272** 19 30 016 0273 | 1 x 32 2 x 25 2 x 32 2 x 40 |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

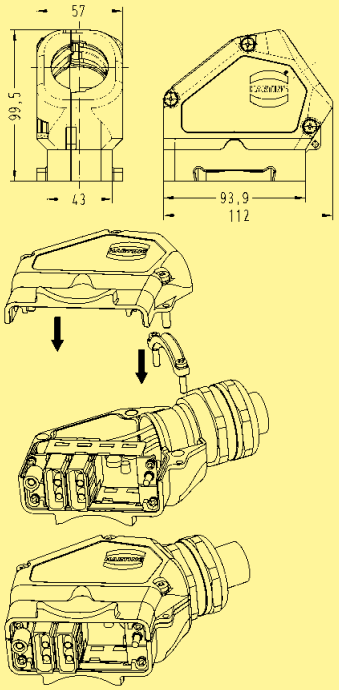
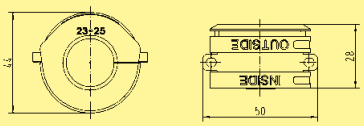
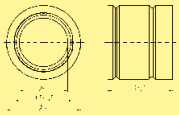
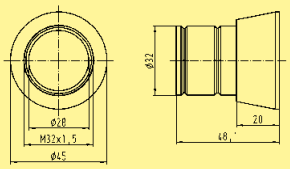
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Protection covers  | plastic 09 30 016 5405 | plastic 09 30 016 5405 | |  | |
|  | metal **09 30 016 5425** | metal **09 30 016 5425** | |  | |
| Hoods, cable to cable top entry  | 19 30 016 1731 19 30 016 1732 | | 1 x 25 1 x 32 |  | |
| top entry  | | 19 30 016 0736 19 30 016 0737 | 1 x 25 1 x 32 |  | |
| Protection covers  | metal 09 30 016 5426 | metal 09 30 016 5426 | |  | |





Stock items in bold type

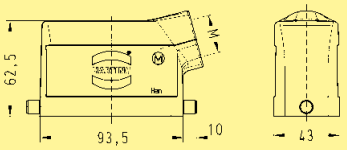
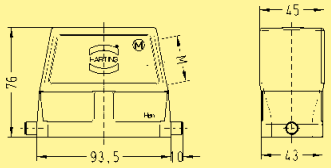
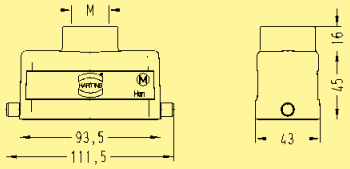
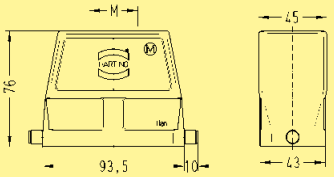
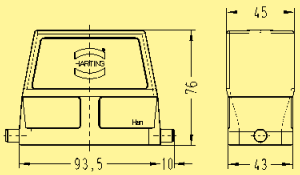
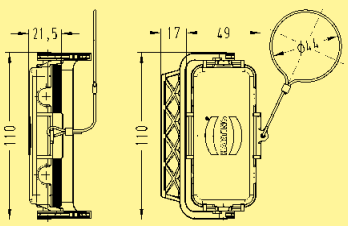
## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Han® Easy Hood<br>side entry |  | 11 30 016 0520 | |  | |
| Cable seal |  | 20 ... 22 mm<br>11 30 000 9955<br>23 ... 25 mm<br>11 30 000 9956<br>26 ... 28 mm<br>11 30 000 9957<br>29 ... 31 mm<br>11 30 000 9958<br>32 ... 34 mm<br>11 30 000 9959 | |  | |
| Thread adaptor |  | 11 30 000 9961 | 1 x 25 |  | |
| |  | 11 30 000 9962 | 1 x 32 |  | |



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

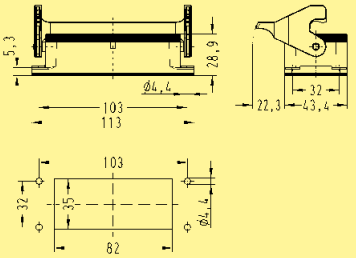
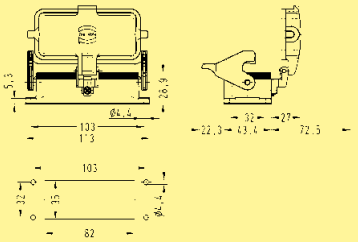
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **19 30 016 1541**<br>**19 30 016 1542** | | 1 x 25<br>1 x 32 |  | |
| side entry  | | **19 30 016 0547**<br>**19 30 016 0548** | 1 x 32<br>1 x 40 |  | |
| Hoods<br>top entry  | **19 30 016 1441**<br>19 30 016 1442 | | 1 x 25<br>1 x 32 |  | |
| top entry  | | **19 30 016 0447**<br>**19 30 016 0448** | 1 x 32<br>1 x 40 |  | |
| Hoods<br>without cable entry  | | 09 30 016 0803 | – |  | |
| Protection covers  | metal<br>**09 30 016 5432** | metal<br>**09 30 016 5432** | |  | |





**Stock items in bold type**

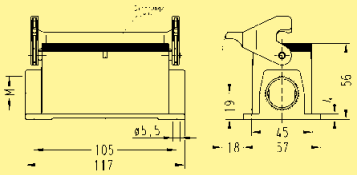
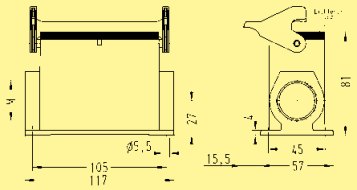
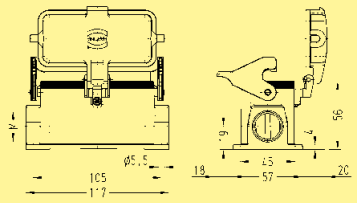
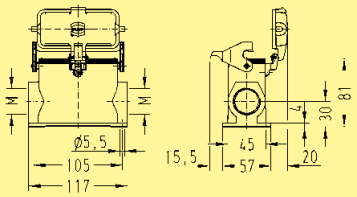
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 30 016 0307** | | |  Panel cut out | |
|  | with thermo-plastic cover **09 30 016 0306** with metal cover **09 30 016 0318** | | |  Panel cut out | |



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

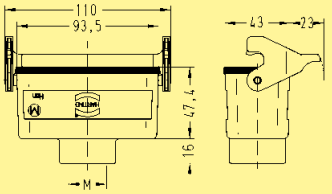
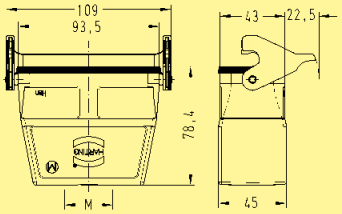
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | **19 30 016 1251**<br>**19 30 016 1291** | | 1 x 25<br>2 x 25 |  | Blind way for one cable entry |
| side entry |  | | 19 30 016 0252<br>19 30 016 0291<br>19 30 016 0292 | 1 x 32<br>2 x 25<br>2 x 32 |  | Blind way for one cable entry |
| side entry |  | with thermo-plastic cover<br>19 30 016 1256<br>with thermo-plastic cover<br>**19 30 016 1296**<br>with metal cover<br>19 30 016 2296 | | 1 x 25<br>2 x 25<br>2 x 25 |  | Blind way for one cable entry |
| side entry |  | | with thermo-plastic cover<br>19 30 016 0297<br>with metal cover<br>19 30 016 7297 | 2 x 32<br>2 x 32 |  | Blind way for one cable entry |



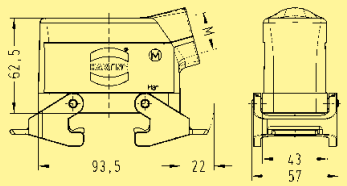
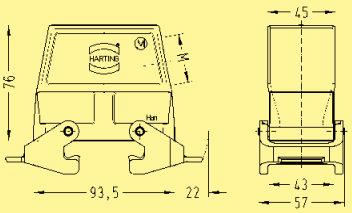
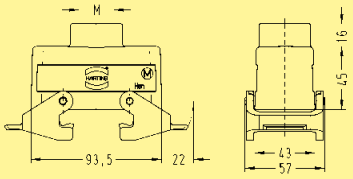
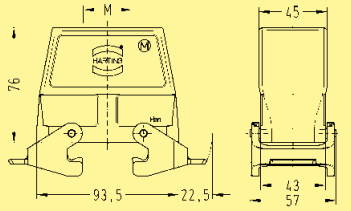
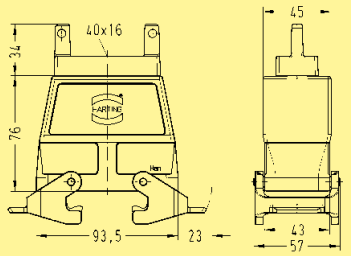


Stock items in bold type

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods, cable to cable<br>top entry  | 19 30 016 1751<br>19 30 016 1752 | | 1 x 25<br>1 x 32 |  | |
| top entry  | | 19 30 016 0757 | 1 x 32 |  | |

## Metal hoods/housings for industrial applications / 2 lever locking system

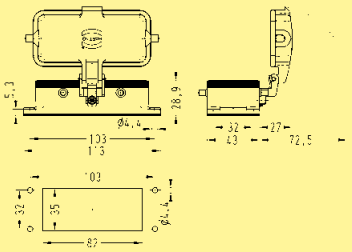
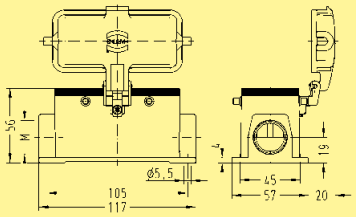
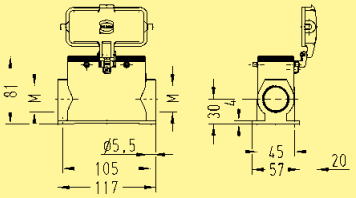
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **19 30 016 1531** | | 1 x 25 |  | |
| side entry  | | **19 30 016 0537**<br>**19 30 016 0538** | 1 x 32<br>1 x 40 |  | |
| Hoods<br>top entry  | 19 30 016 1431<br>19 30 016 1432 | | 1 x 25<br>1 x 32 |  | |
| top entry  | | 19 30 016 0437<br>19 30 016 0438 | 1 x 32<br>1 x 40 |  | |
| Hoods<br>flat cable entry<br>Set of seals see chapter 40  | | 09 30 016 4431 | |  | |





Stock items in bold type

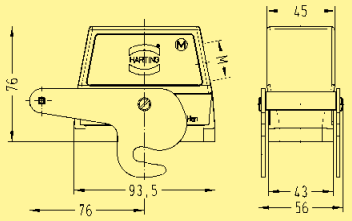
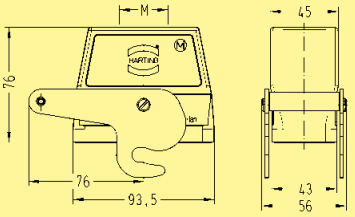
## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | with thermo-plastic cover **09 30 016 0302** with metal cover 09 30 016 0317 | | |  Panel cut out | |
| Housings, surface mounting<br>side entry |  | with thermo-plastic cover **19 30 016 1226** with thermo-plastic cover 19 30 016 1266 | | 1 x 25<br>2 x 25 |  Blind way for one cable entry | |
| side entry |  | | with thermo-plastic cover 19 30 016 0267 | 2 x 32 |  Blind way for one cable entry | |

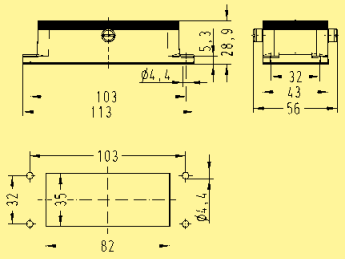
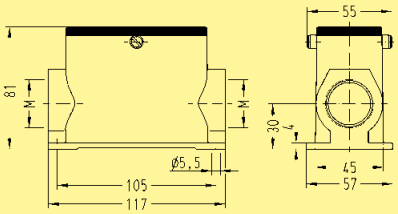


**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 30 016 0586<br>19 30 016 0587 | 1 x 25<br>1 x 32 |  | |
| Hoods<br>top entry |  | 19 30 016 0487 | 1 x 32 |  | |

## Metal hoods/housings for industrial applications / 1 central locking lever locking system

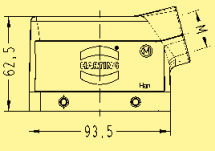
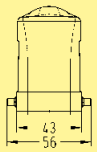
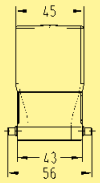
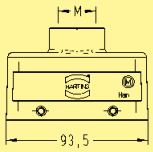
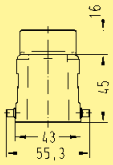
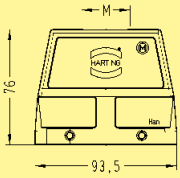
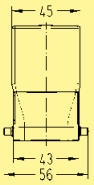
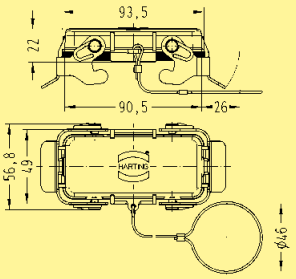
| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 30 016 0381 | | <br>Panel cut out | |
| Housings, surface mounting<br>side entry |  | 19 30 016 0282 | 2 x 32 |  | |





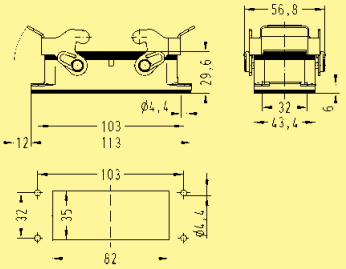
Stock items in bold type

## Hoods/Housings for higher environmental requirements / 2 lever locking system

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **19 37 016 1521** | | 1 x 25 |  |  |
| side entry |  | | **19 37 016 0527**<br>19 37 016 0528 | 1 x 32<br>1 x 40 |  |  |
| Hoods<br>top entry |  | 19 37 016 1421 | | 1 x 25 |  |  |
| top entry |  | | **19 37 016 0427** | 1 x 32 |  |  |
| Protection covers |  | metal<br>09 37 016 5402 | metal<br>09 37 016 5402 | |  | |



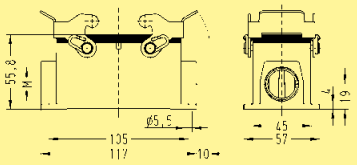
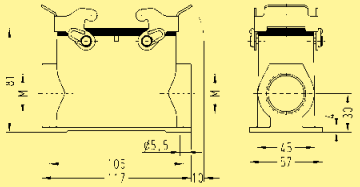
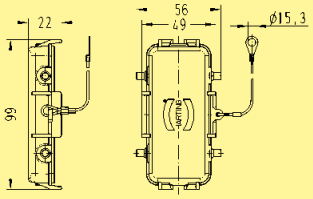
## Hoods/Housings for higher environmental requirements / 2 lever locking system

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 37 016 0301** | | | <br>Panel cut out | |



**Stock items in bold type**

## Hoods/Housings for higher environmental requirements / 2 lever locking system

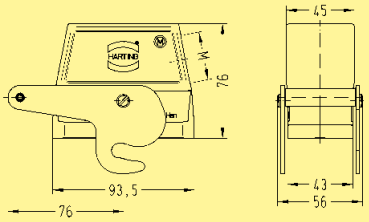
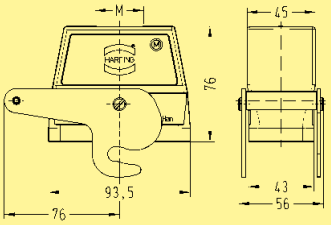
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | 19 37 016 1231 | | 1 x 25 |  | |
| side entry |  | | **19 37 016 0272**<br>19 37 016 0273 | 2 x 32<br>2 x 40 |  | |
| Protection covers |  | metal<br>09 37 016 5405 | metal<br>09 37 016 5405 | |  | |



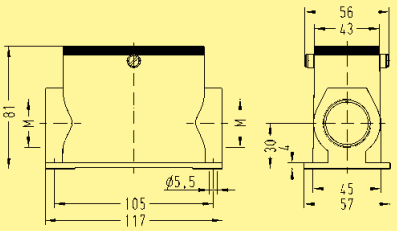


Stock items in bold type

## Hoods/Housings for higher environmental requirements / 1 central locking lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 37 016 0587 | 1 x 32 |  | |
| Hoods<br>top entry |  | 19 37 016 0487 | 1 x 32 |  | |

## Hoods/Housings for higher environmental requirements / 1 central locking lever locking system

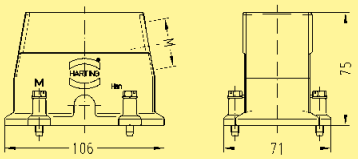
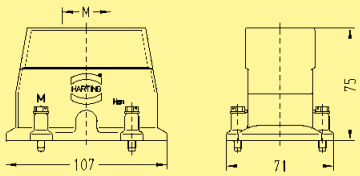
| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | 19 37 016 0282 | 2 x 32 |  | |

Han Hoods Housings

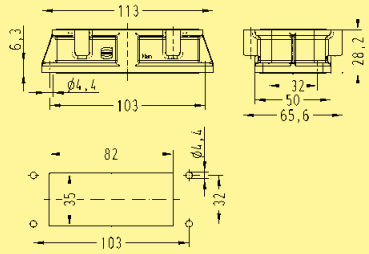


**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / Screw locking system

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Hoods<br>side entry  | 19 62 040 0542 | 1 x 32 |  | |
| Hoods<br>top entry  | 19 62 040 0442 | 1 x 32 |  | |

## Hoods/Housings for higher EMC requirements / Screw locking system

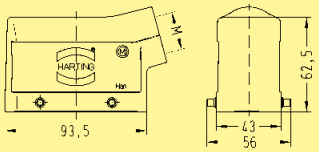
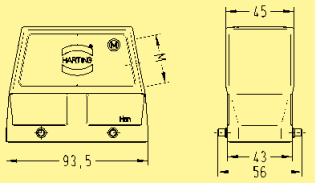
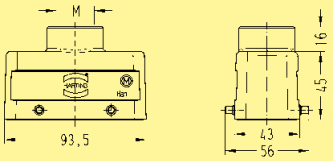
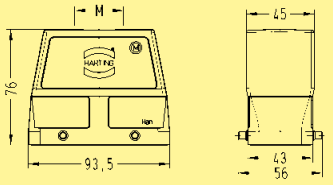
| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, bulkhead mounting  | 09 62 040 0301 | |  Panel cut out | |



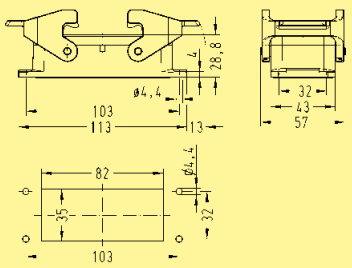


Stock items in bold type

## Hoods/Housings for higher EMC requirements / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 19 62 816 1521 | | 1 x 20 |  | |
| side entry  | | **19 62 816 0527** | 1 x 32 |  | |
| Hoods<br>top entry  | 19 62 816 1421 | | 1 x 25 |  | |
| top entry  | | 19 62 816 0427 | 1 x 32 |  | |

## Hoods/Housings for higher EMC requirements / 2 lever locking system

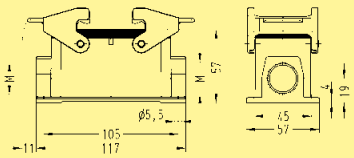
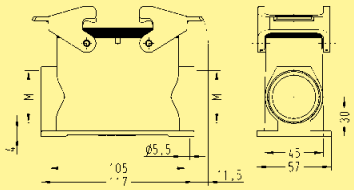
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 62 816 0301** | | |  Panel cut out | |





**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / 2 lever locking system

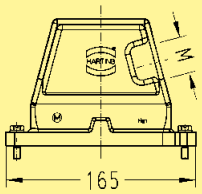
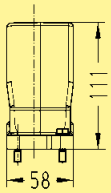
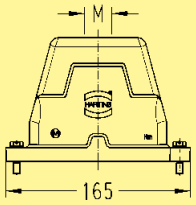
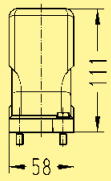
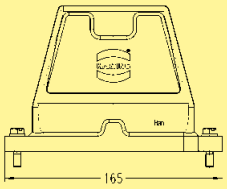
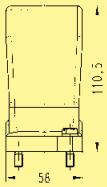
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | 19 62 816 1271 | | 2 x 25 |  | |
| side entry |  | | 19 62 816 0273 | 2 x 40 |  | |





Stock items in bold type

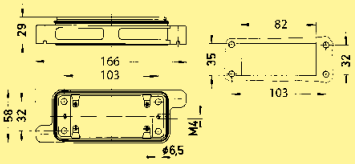
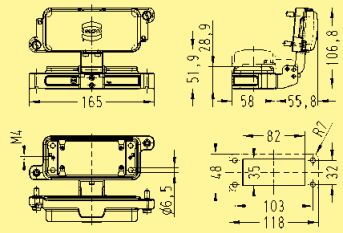
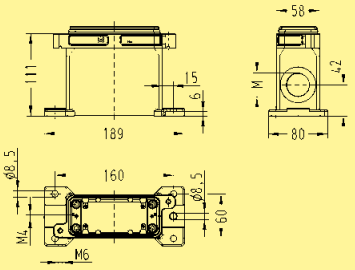
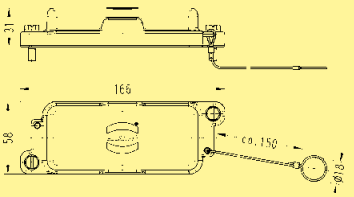
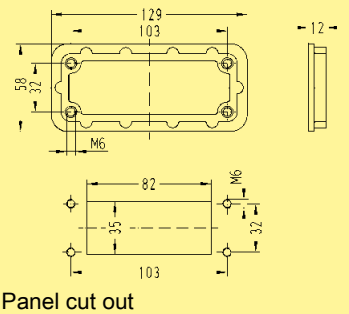
## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | Part number Toggle locking | Part number screw | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 19 40 016 0502 | 19 40 016 0511<br>**19 40 016 0512**<br>**19 40 016 0513**<br>19 40 016 0514 | 1 x 32<br>1 x 25<br>1 x 32<br>1 x 40<br>1 x 50 |  |  |
| Hoods<br>top entry  | 19 40 016 0402 | 19 40 016 0411<br>19 40 016 0412<br>19 40 016 0413<br>19 40 016 0414<br>19 40 016 0431 | 1 x 32<br>1 x 25<br>1 x 32<br>1 x 40<br>1 x 50<br>2 x 25 |  |  |
| Hoods<br>without cable entry  | | 09 40 016 0811 | – |  |  |



**Stock items in bold type**

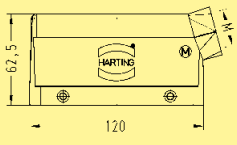
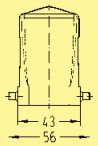
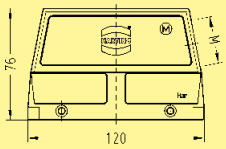
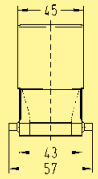
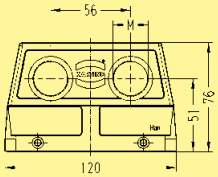
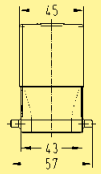
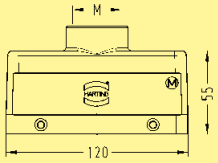
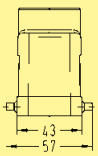
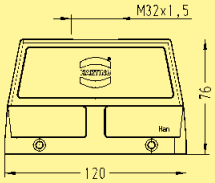
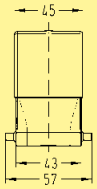
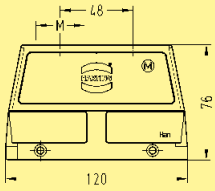
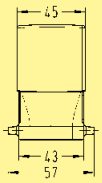
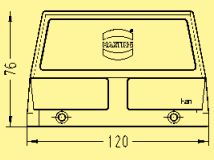
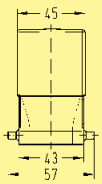
## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | | Part number Toggle locking | screw | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 40 016 0301 | **09 40 016 0311** | |  | Panel cut out |
| Housings, bulkhead mounting |  | | with metal cover **09 40 016 0317** | |  | Panel cut out |
| Housings, surface mounting<br>side entry |  | | 19 40 016 1261<br>19 40 016 1262<br>19 40 016 1263<br>19 40 016 1273<br>09 40 016 1201 | 1 x 25<br>1 x 32<br>1 x 40<br>2 x 40<br>– |  | |
| Protection covers |  | metal 09 40 016 5401 | metal 09 40 016 5411 | |  | |
| Mounting frames |  | | 09 40 000 9903[1] | |  | Panel cut out |

[1] not applicable for using Han® HC 650

**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

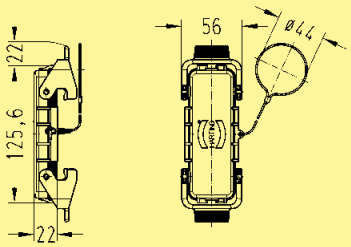
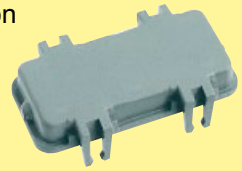
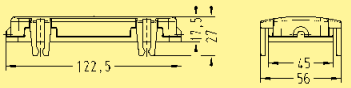
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| **Hoods**<br>side entry  | **19 30 024 1521**<br>**19 30 024 1522** | | 1 x 25<br>1 x 32 |  |  |
| side entry  | | **19 30 024 0527**<br>**19 30 024 0528** | 1 x 32<br>1 x 40 |  |  |
| angled entry  | | 19 30 024 0666 | 2 x 25 |  |  |
| **Hoods**<br>top entry  | **19 30 024 1422** | | 1 x 32 |  |  |
| top entry  | | **19 30 024 0427**<br>**19 30 024 0428** | 1 x 32<br>1 x 40 |  |  |
| top entry  | | **19 30 024 0467** | 2 x 32 |  |  |
| **Hoods**<br>without cable entry  | | 09 30 024 0801 | – |  |  |

Han Hoods Housings

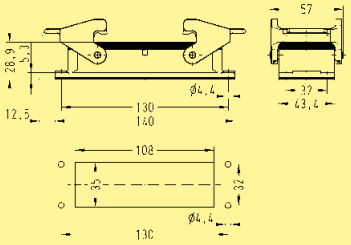
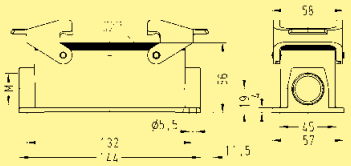
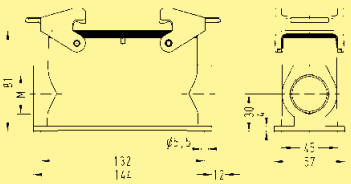


**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Protection covers  | metal **09 30 024 5422** | metal **09 30 024 5422** | |   | |
| Dust protection cover  | plastic 09 30 024 5401 | plastic 09 30 024 5401 | |   | |

## Metal hoods/housings for industrial applications / 2 lever locking system

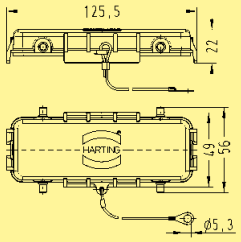
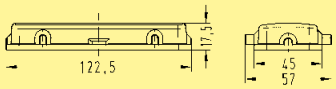
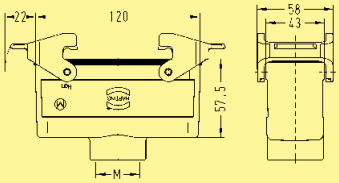
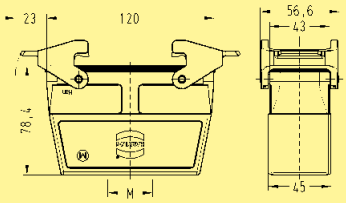
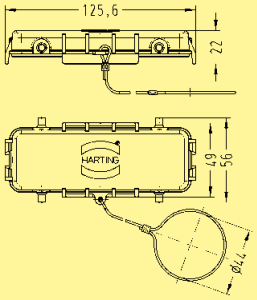
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 30 024 0301** | | |   Panel cut out | |
| Housings, surface mounting side entry  | **19 30 024 1231** **19 30 024 1271** | | 1 x 25 2 x 25 |   Blind way for one cable entry | |
| side entry  | | **19 30 024 0232** **19 30 024 0272** 19 30 024 0273 | 1 x 32 2 x 32 2 x 40 |   Blind way for one cable entry | |

Han Hoods Housings



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

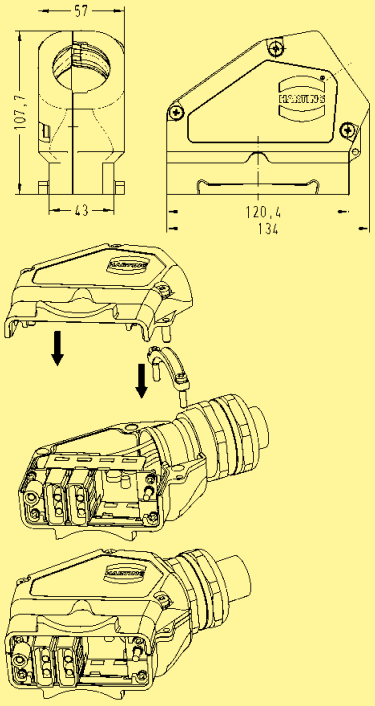
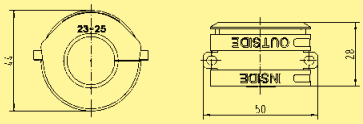
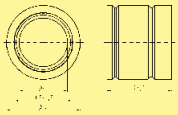
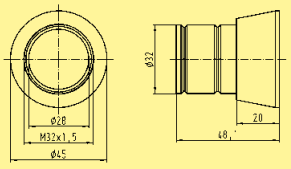
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Protection covers |  | metal **09 30 024 5425** | metal **09 30 024 5425** | |  | |
| Protection covers |  | plastic 09 30 024 5405 | plastic 09 30 024 5405 | |  | |
| Hoods, cable to cable<br>top entry |  | 19 30 024 1732 | | 1 x 32 |  | |
| top entry |  | | 19 30 024 0737<br>19 30 024 0738 | 1 x 32<br>1 x 40 |  | |
| Protection covers |  | metal 09 30 024 5426 | metal 09 30 024 5426 | |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

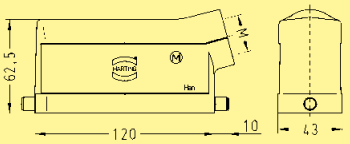
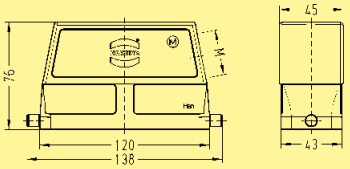
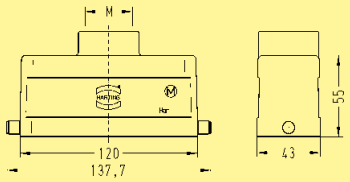
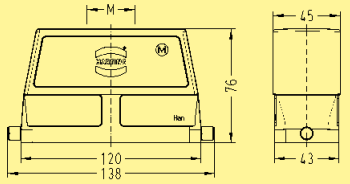
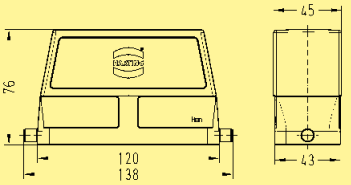
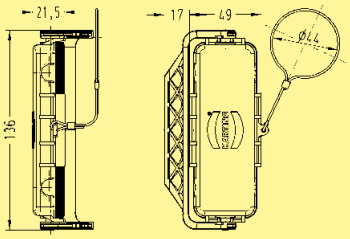
| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 11 30 024 0520 | |  | |
| Cable seal |  | 20 ... 22 mm<br>11 30 000 9955<br>23 ... 25 mm<br>11 30 000 9956<br>26 ... 28 mm<br>11 30 000 9957<br>29 ... 31 mm<br>11 30 000 9958<br>32 ... 34 mm<br>11 30 000 9959 | |  | |
| Thread adaptor |  | 11 30 000 9961 | 1 x 25 |  | |
| |  | 11 30 000 9962 | 1 x 32 |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

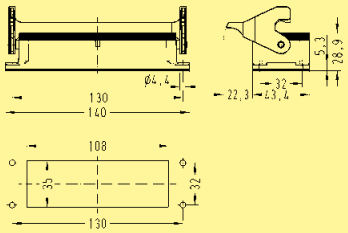
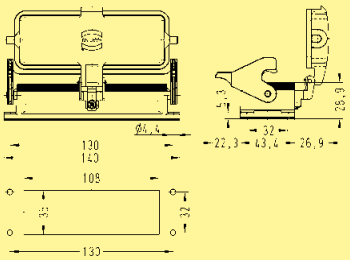
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | **19 30 024 1541**<br>**19 30 024 1542** | | 1 x 25<br>1 x 32 |  | |
| side entry  | | **19 30 024 0547**<br>**19 30 024 0548** | 1 x 32<br>1 x 40 |  | |
| Hoods<br>top entry  | **19 30 024 1442** | | 1 x 32 |  | |
| top entry  | | **19 30 024 0447**<br>**19 30 024 0448** | 1 x 32<br>1 x 40 |  | |
| Hoods<br>without cable entry  | | 09 30 024 0803 | – |  | |
| Protection covers  | metal<br>**09 30 024 5432** | metal<br>**09 30 024 5432** | |  | |



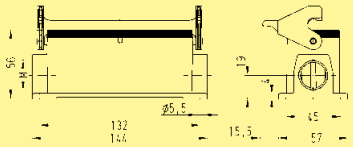
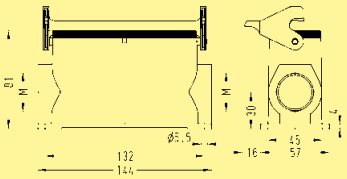
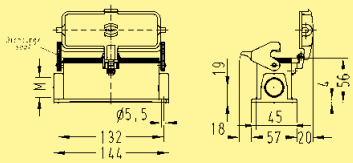
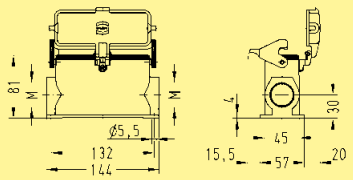


**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 30 024 0307** | | |  Panel cut out | |
|  | with thermo-plastic cover **09 30 024 0304** with metal cover **09 30 024 0318** | | |  Panel cut out | |

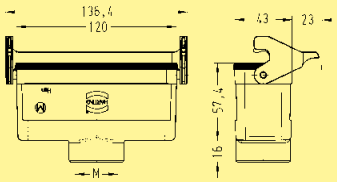
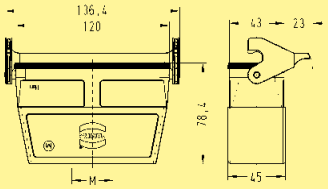
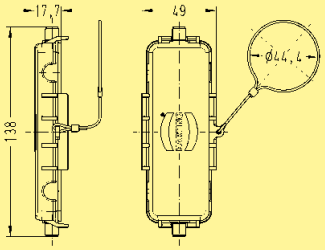
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | **19 30 024 1251**<br>19 30 024 1291 | | 1 x 25<br>2 x 25 |  | Blind way for one cable entry |
| side entry |  | | 19 30 024 0292 | 2 x 32 |  | Blind way for one cable entry |
| side entry |  | with thermo-plastic cover<br>19 30 024 1256<br>with thermo-plastic cover<br>**19 30 024 1296**<br>with metal cover<br>19 30 024 2296 | | 1 x 25<br>2 x 25<br>2 x 25 |  | Blind way for one cable entry |
| side entry |  | | with thermo-plastic cover<br>19 30 024 0297<br>with metal cover<br>19 30 024 7297 | 2 x 32<br>2 x 32 |  | Blind way for one cable entry |



**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

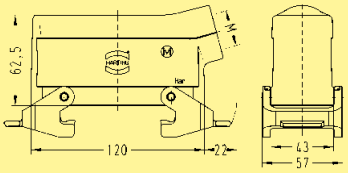
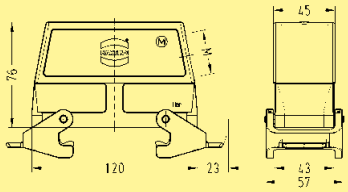
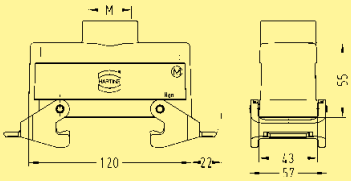
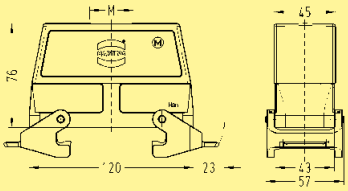
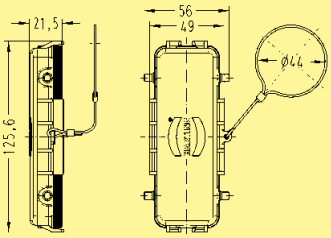
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods, cable to cable<br>top entry  | 19 30 024 1752 | | 1 x 32 |  | |
| top entry  | | 19 30 024 0757 | 1 x 32 |  | |
| Protection covers  | metal<br>**09 30 024 5436** | metal<br>**09 30 024 5436** | |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

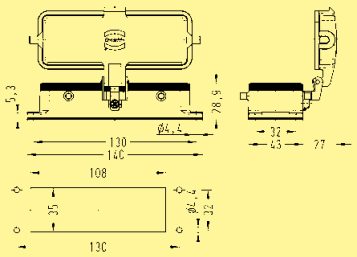
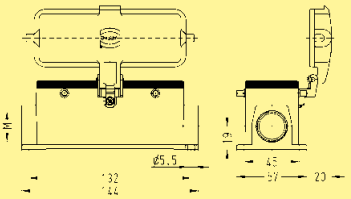
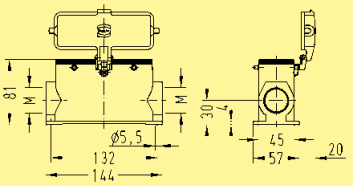
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | **19 30 024 1531** | | 1 x 25 |  | |
| side entry |  | | 19 30 024 0537<br>**19 30 024 0538** | 1 x 32<br>1 x 40 |  | |
| Hoods<br>top entry |  | 19 30 024 1432 | | 1 x 32 |  | |
| top entry |  | | 19 30 024 0437<br>19 30 024 0438 | 1 x 32<br>1 x 40 |  | |
| Protection covers |  | metal<br>**09 30 024 5442** | metal<br>**09 30 024 5442** | |  | |





**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

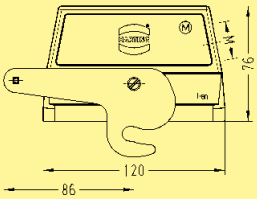
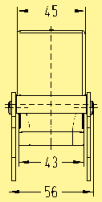
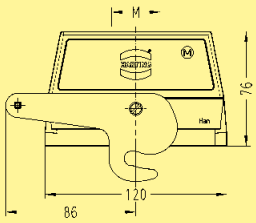
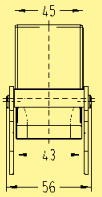
| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | with thermo-plastic cover **09 30 024 0302** with metal cover 09 30 024 0317 | | |  Panel cut out | |
| Housings, surface mounting<br>side entry |  | with thermo-plastic cover 19 30 024 1226 with thermo-plastic cover 19 30 024 1266 | | 1 x 25<br>2 x 25 |  Blind way for one cable entry | |
| side entry |  | | with thermo-plastic cover 19 30 024 0267 | 2 x 32 |  Blind way for one cable entry | |



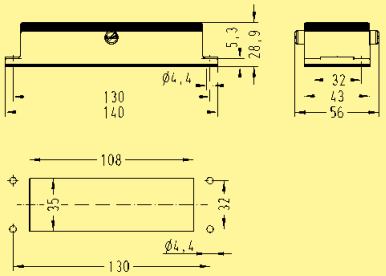
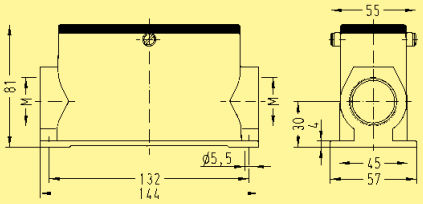


Stock items in bold type

## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 30 024 0586<br>**19 30 024 0587**<br>19 30 024 0588 | 1 x 25<br>1 x 32<br>1 x 40 |  |  |
| Hoods<br>top entry |  | 19 30 024 0487 | 1 x 32 |  |  |

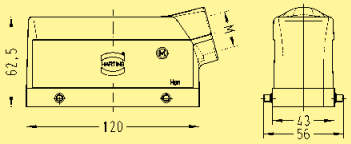
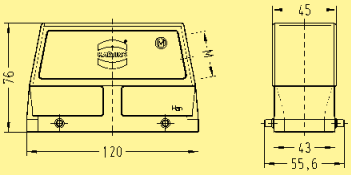
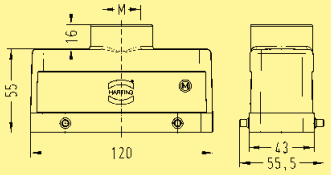
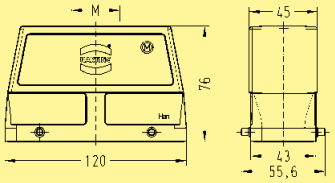
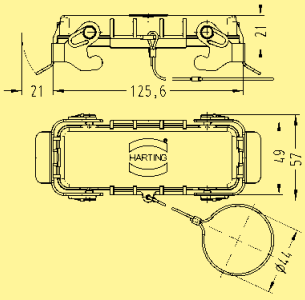
## Metal hoods/housings for industrial applications / 1 central locking lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 30 024 0381** | | <br>Panel cut out | |
| Housings, surface mounting<br>side entry |  | 19 30 024 0282 | 2 x 32 |  | |



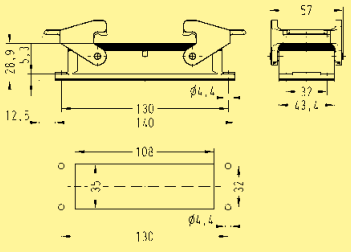
**Stock items in bold type**

## Hoods/Housings for higher environmental requirements / 2 lever locking system

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 37 024 1521 | | 1 x 25 |  | |
| side entry |  | | 19 37 024 0527<br>**19 37 024 0528** | 1 x 32<br>1 x 40 |  | |
| Hoods<br>top entry |  | 19 37 024 1421 | | 1 x 25 |  | |
| top entry |  | | 19 37 024 0427<br>19 37 024 0428 | 1 x 32<br>1 x 40 |  | |
| Protection covers |  | metal<br>09 37 024 5402 | metal<br>09 37 024 5402 | |  | |

## Hoods/Housings for higher environmental requirements / 2 lever locking system

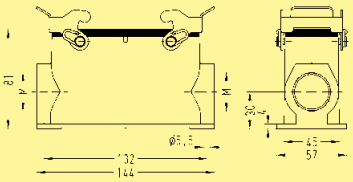
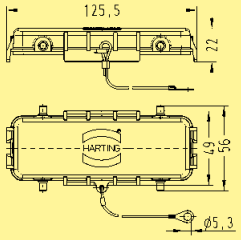
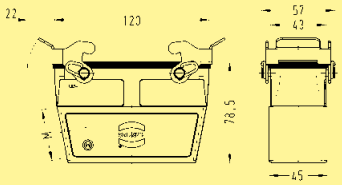
Han Hoods Housings

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 37 024 0301** | | | <br>Panel cut out | |



**Stock items in bold type**

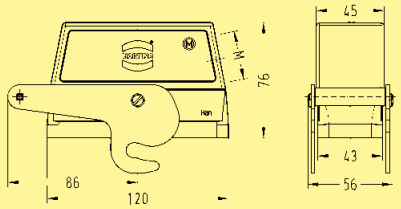
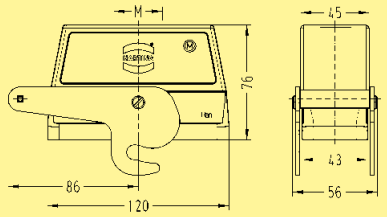
## Hoods/Housings for higher environmental requirements / 2 lever locking system

| Identification | | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, surface mounting<br>side entry |  | | 19 37 024 0272 | 2 x 32 |  | |
| Protection covers |  | metal<br>09 37 024 5405 | metal<br>09 37 024 5405 | |  | |
| Hoods, cable to cable<br>side entry |  | | 19 37 024 0733 | 1 x 40 |  | |

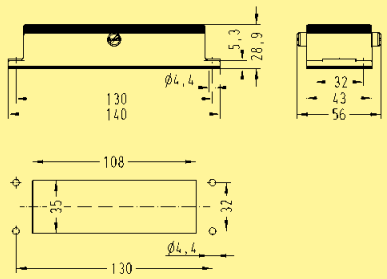
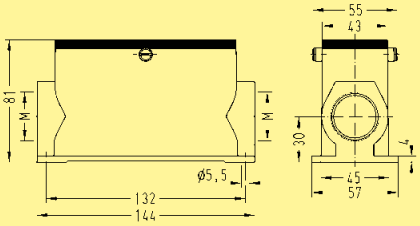


**Stock items in bold type**

## Hoods/Housings for higher environmental requirements / 1 central locking lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 37 024 0587 | 1 x 32 |  | |
| Hoods<br>top entry |  | 19 37 024 0487 | 1 x 32 |  | |

## Hoods/Housings for higher environmental requirements / 1 central locking lever locking system

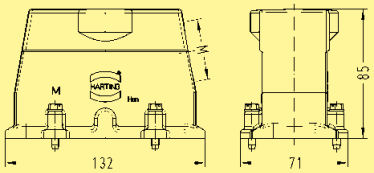
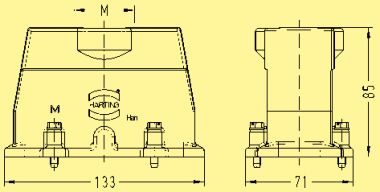
| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 37 024 0381 | | <br>Panel cut out | |
| Housings, surface mounting<br>side entry |  | 19 37 024 0282 | 2 x 32 |  | |



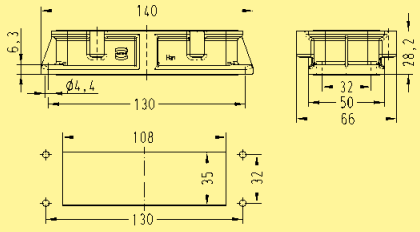


Stock items in bold type

## Hoods/Housings for higher EMC requirements / Screw locking system

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Hoods<br>side entry  | 19 62 064 0543 | 1 x 40 |  | |
| Hoods<br>top entry  | 19 62 064 0443 | 1 x 40 |  | |

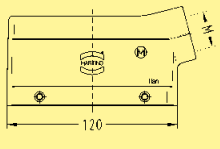
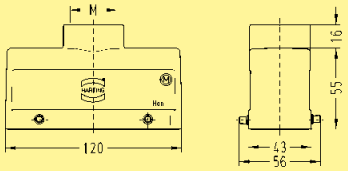
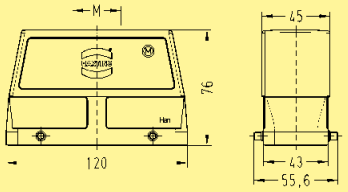
## Hoods/Housings for higher EMC requirements / Screw locking system

| Identification | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|
| Housings, bulkhead mounting  | 09 62 064 0301 | | <br>Panel cut out | |

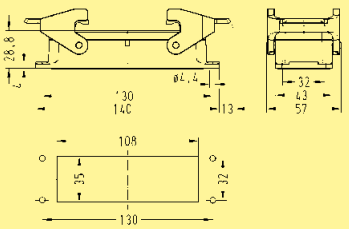
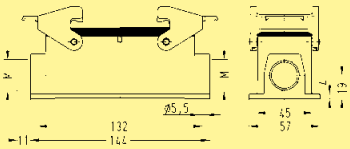
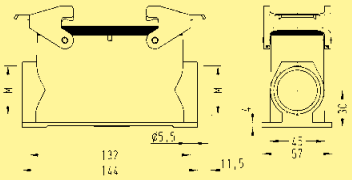


**Stock items in bold type**

## Hoods/Housings for higher EMC requirements / 2 lever locking system

| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 19 62 824 1521 | 19 62 824 0527<br>19 62 824 0528 | 1 x 25<br>1 x 32<br>1 x 40 |  | |
| Hoods<br>top entry  | 19 62 824 1422 | | 1 x 32 |  | |
| top entry  | | 19 62 824 0427 | 1 x 32 |  | |

## Hoods/Housings for higher EMC requirements / 2 lever locking system

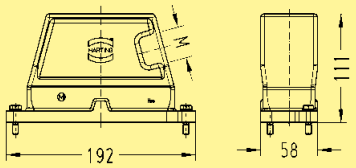
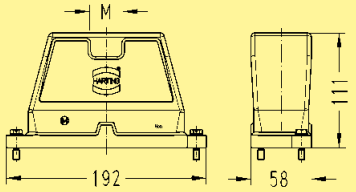
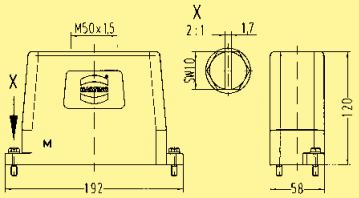
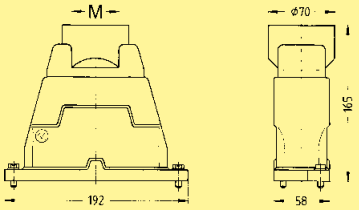
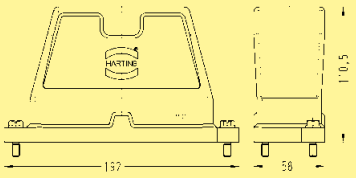
| Identification | Part number Low construction | Part number High construction | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting  | **09 62 824 0301** | | | <br>Panel cut out | |
| Housings, surface mounting<br>side entry  | 19 62 824 1271 | | 2 x 25 |  | |
| side entry  | | 19 62 824 0273 | 2 x 40 |  | |





Stock items in bold type

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

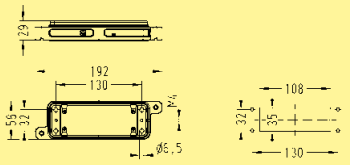
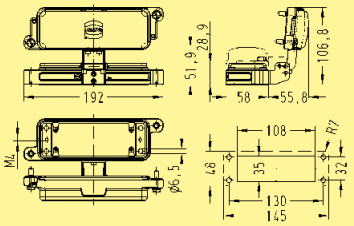
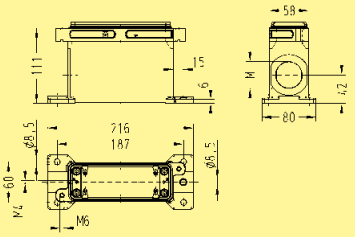
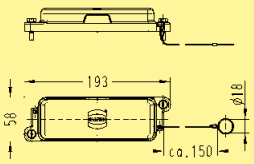
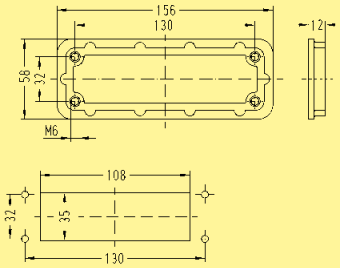
| Identification | Part number Toggle locking | Part number screw | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry  | 19 40 024 0503 | **19 40 024 0512**<br>**19 40 024 0513**<br>19 40 024 0514<br>19 40 024 0537 | 1 x 40<br>1 x 32<br>1 x 40<br>1 x 50<br>2 x 32 |  | |
| Hoods<br>top entry  | 19 40 024 0402 | 19 40 024 0412<br>**19 40 024 0413**<br>19 40 024 0414<br>19 40 024 0431<br>19 40 024 0432<br>**19 40 024 0433**<br>19 40 024 0461 | 1 x 32<br>1 x 32<br>1 x 40<br>1 x 50<br>2 x 25<br>2 x 32<br>2 x 40<br>3 x 25 |  | |
| top entry  | | 19 40 024 0419<br>19 40 024 0467 | 1 x 50<br>3 x 32 |  | |
| top entry  | 19 40 024 0410 | 19 40 024 0420 | 1 x 63<br>1 x 63 |  | |
| Hoods<br>without cable entry  | | 09 40 024 0811 | – |  | |





**Stock items in bold type**

## Hoods/Housings for harsh environmental requirements / Screw/toggle locking system

| Identification | | Part number Toggle locking | Part number screw | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 40 024 0301 | **09 40 024 0311** | |  Panel cut out | |
| Housings, bulkhead mounting |  | | with metal cover **09 40 024 0317** | |  Panel cut out | |
| Housings, surface mounting side entry |  | | 19 40 024 1263 19 40 024 1273 | 1 x 40 2 x 40 |  | |
| Protection covers |  | metal 09 40 024 5401 | metal 09 40 024 5411 | |  | |
| Mounting frames |  | | **09 40 000 9904**[1] | |  Panel cut out | |

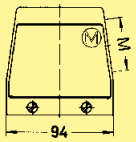
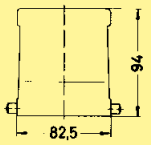
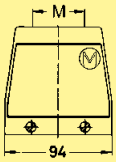
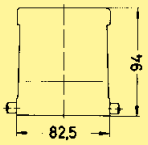
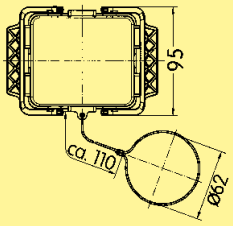
[1] not applicable for using Han® HC 650

Han Hoods Housings

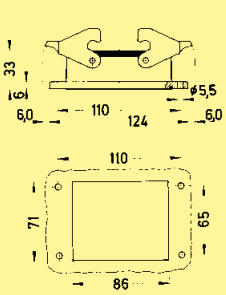
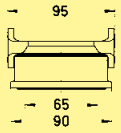
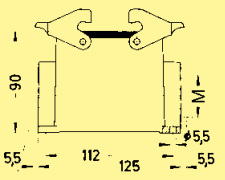
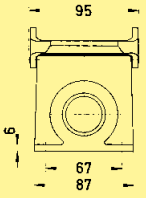
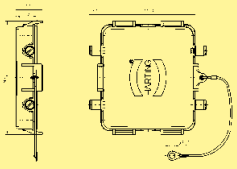


**Stock items in bold type**

## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | **19 30 032 0527**<br>**19 30 032 0528**<br>19 30 032 0529 | 1 x 32<br>1 x 40<br>1 x 50 |  |  |
| Hoods<br>top entry |  | 19 30 032 0427<br>19 30 032 0428<br>19 30 032 0429 | 1 x 32<br>1 x 40<br>1 x 50 |  |  |
| Protection covers | | metal<br>09 30 032 5420 | |  | |

## Metal hoods/housings for industrial applications / 2 lever locking system

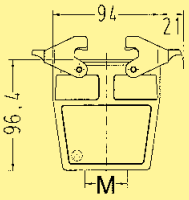
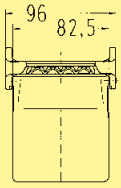
| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | **09 30 032 0301** | | <br>Panel cut out |  |
| Housings, surface mounting<br>side entry |  | 19 30 032 0232<br>19 30 032 0272<br>**19 30 032 0273** | 1 x 32<br>2 x 32<br>2 x 40 |  |  |
| Protection covers |  | metal<br>**09 30 032 5425** | |  | |





*** usable for two inserts of size 16 B**
**Stock items in bold type**

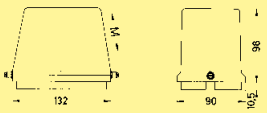
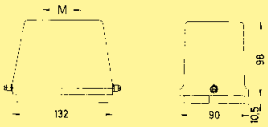
## Metal hoods/housings for industrial applications / 2 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods, cable to cable<br>top entry |  | 19 30 032 0738 | 1 x 40 |  |  |

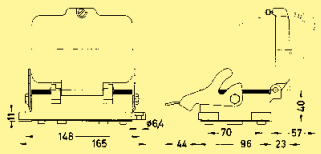
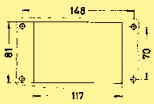
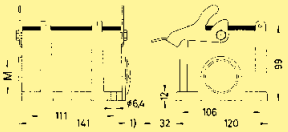
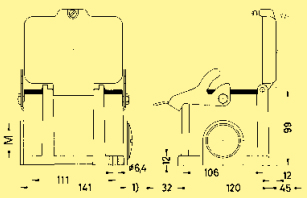


*** usable for two inserts of size 16 B**
**Stock items in bold type**

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | **19 30 048 0548**<br>19 30 048 0549 | 1 x 40<br>1 x 50 |  | |
| Hoods<br>top entry |  | 19 30 048 0448<br>19 30 048 0449 | 1 x 40<br>1 x 50 |  | |

## Metal hoods/housings for industrial applications / 1 lever locking system

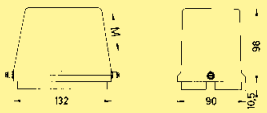
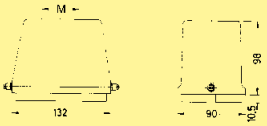
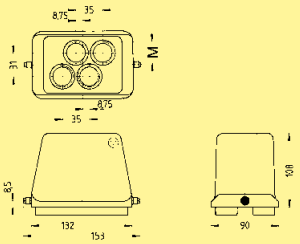
| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | with thermo-plastic cover **09 30 048 0301**<br>with metal cover **09 30 048 0317** | | <br><br>Panel cut out | |
| Housings, surface mounting<br>side entry |  | 19 30 048 0292<br>19 30 048 0293 | 2 x 32<br>2 x 40 | <br>Blind way | |
| side entry |  | with thermo-plastic cover **19 30 048 0298** | 2 x 40 | <br>Blind way | |



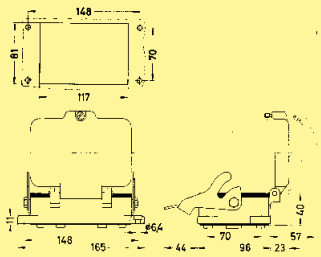


* usable for two inserts of size 24 B
Stock items in bold type

## Hoods/Housings for higher environmental requirements / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Hoods<br>side entry |  | 19 37 048 0548 | 1 x 40 |  | |
| Hoods<br>top entry |  | 19 37 048 0448<br>19 37 048 0449 | 1 x 40<br>1 x 50 |  | |
| Hoods<br>top entry |  | 19 37 048 0401 | 4 x 25 |  | |

## Hoods/Housings for higher environmental requirements / 1 lever locking system

| Identification | | Part number | Cable entry metric | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Housings, bulkhead mounting |  | 09 37 048 0301 | |  | |





* usable for two inserts of size 24 B
Stock items in bold type

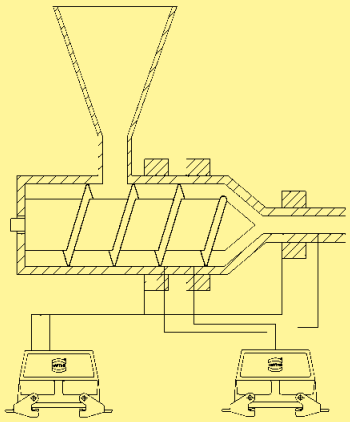
## Contents


| | Page |
|---|---|
| Technical characteristics | **41.02** |
| Screw terminal | **41.03** |
| Crimp termination Han E® | **41.04** |
| Crimp termination Han D® | **41.05** |

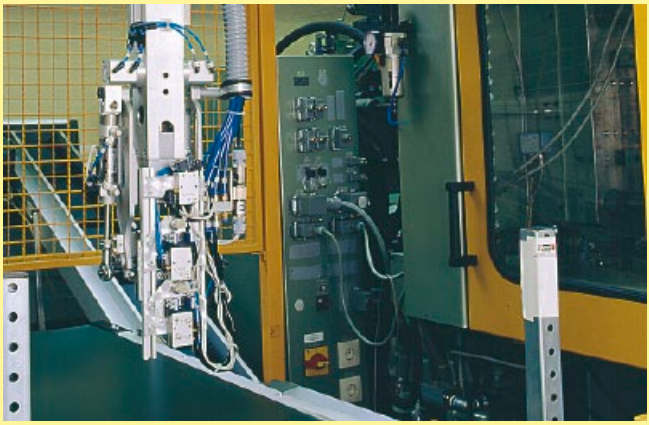
## Features

- Connector for temperature measurement conductors - Suitable for injection moulding machines
- Iron and constantan contacts according to DIN IEC 584 type J, screw and crimpterminals
- Mixed loading of thermocouple crimp contacts and standard contacts within one insert possible
- Thermocouple crimp contacts can be combined within Han-Modular®
- According to EUROMAP 14, Part 1

## Application



Overview of a heating circuit



Connector at an injection moulding machine

## Technical characteristics

| | |
|---|---|
| Specifications | DIN EN 60 664-1<br>DIN EN 61 984 |

### Inserts

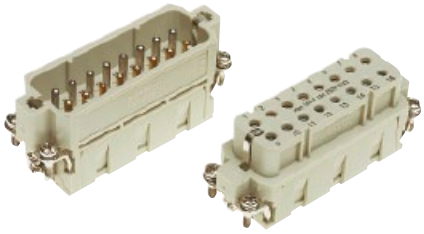
| | |
|---|---|
| Electrical data acc. to EN 61 984 | |
| - Han A® | **16 A 250 V 4 kV 3** |
| Rated current | 16 A |
| Rated voltage | 250 V |
| Rated impulse voltage | 4 kV |
| Pollution degree | 3 |
| - Han E® crimp | **16 A 500 V 6 kV 3** |
| - Han E® screw | **16 A 400 V 6 kV 3** |
| - Han® Q | **16 A 230/400 V 4 kV 3** |
| - Han D® | **10 A 50 V 4 kV 3** |
| - Han DD® | **10 A 250 V 4 kV 3** |
| Insulation resistance | ≥ $10^{10}$ Ω |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Mechanical working life | |
| - mating cycles | ≥ 500 |
| Flammability acc. to UL 94 | V 0 |

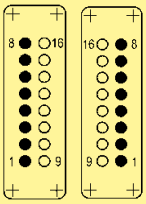
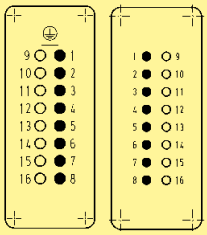
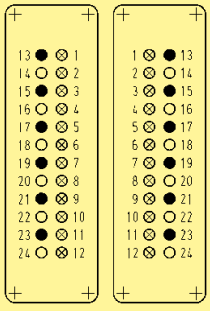
### Contacts

| | |
|---|---|
| Material | constantan |
| Identification acc. to IEC 584 | type J |
| Surface | not coated |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal Han E® | 0.14 ... 0.5 mm²<br>AWG 24 ... 20 |
| Crimp terminal Han D® | 0.14 ... 0.37 mm²<br>AWG 24 ... 22 |
| Screw terminal | 1 ... 2.5 mm²<br>AWG 17 ... 14 |
| - Tightening/test torque | 0.5 Nm |
| Material | iron |
| Identification acc. to IEC 584 | type J |
| Surface | gold |
| Contact resistance | ≤ 1 mΩ |
| Crimp terminal Han E® | 0.14 ... 0.5 mm²<br>AWG 24 ... 20 |
| Crimp terminal Han D® | 0.14 ... 0.37 mm²<br>AWG 24 ... 22 |
| Screw terminal | 1 ... 2.5 mm²<br>AWG 17 ... 14 |
| - Tightening/test torque | 0.5 Nm |

### Hoods/Housings (see chapter 30 / 31)

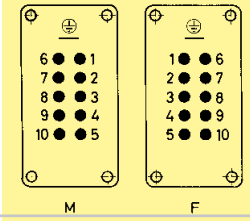
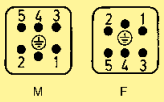
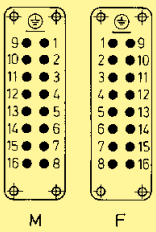
| | |
|---|---|
| Material Hoods/Housings | aluminium die-cast |
| Surface | powder-coated, grey |
| Locking | Stainless steel |
| Hoods/Housings sealing | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN 40 050 | IP 65 |

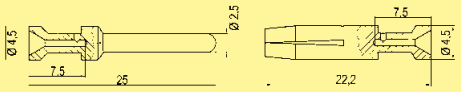
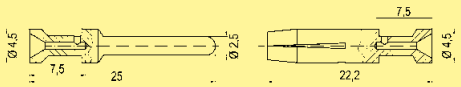
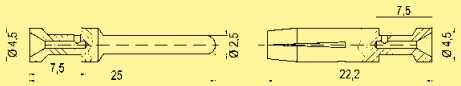


| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Contact arrangement view termination side | Dimensions in mm |
|---|---|---|---|---|---|
| Screw terminal | Han A®<br>16 A | 09 20 016 2691 | 09 20 016 2891 | <br>● Contacts Fe<br>○ Contacts CuNi | |
| Screw terminal<br>with wire protection | Han E®<br>10 E<br>16 E<br>24 E | 09 33 010 2691<br>09 33 016 2691<br>09 33 024 2691 | 09 33 010 2791<br>09 33 016 2791<br>09 33 024 2791 | <br>● Contacts Fe<br>○ Contacts CuNi | |
| Screw terminal<br>with wire protection | Han E®<br>24 E | 09 33 024 2689 | 09 33 024 2789 | <br>⊗ Standard contacts<br>● Contacts Fe<br>○ Contacts CuNi | |

Dimensions for inserts see chapter of corresponding series

Stock items in bold type

| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Contact arrangement view termination side | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately | Han E®<br>6 E<br>10 E<br>16 E<br>24 E | **09 33 006 2602**<br>**09 33 010 2602**<br>**09 33 016 2602**<br>**09 33 024 2602** | **09 33 006 2702**<br>**09 33 010 2702**<br>**09 33 016 2702**<br>**09 33 024 2702** |  | |
| Crimp terminal<br>Order crimp contacts separately | Han® Q | **09 12 005 3001** | **09 12 005 3101** |  | |
| Crimp terminal<br>Order crimp contacts separately | Han A®<br>10 A<br>16 A | 09 20 010 3001<br>**09 20 016 3001** | **09 20 010 3101**<br>09 20 016 3101 |  | |

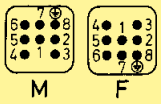
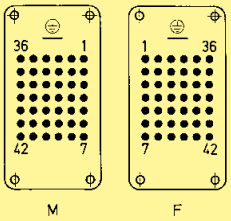
| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp contacts<br>Han E® | | | | | |
| Constantan<br> | 0.14-0.37<br>0.5 | **09 33 000 6163**<br>**09 33 000 6162** | **09 33 000 6263**<br>09 33 000 6262 |  | |
| Iron; gold plated<br> | 0.14-0.37<br>0.5 | **09 33 000 6173**<br>09 33 000 6172 | **09 33 000 6273**<br>09 33 000 6272 |  | |
| Standard contacts; silver plated<br> | 0.5<br>0.75<br>1<br>1.5<br>2.5<br>4 | **09 33 000 6121**<br>**09 33 000 6114**<br>**09 33 000 6105**<br>**09 33 000 6104**<br>**09 33 000 6102**<br>**09 33 000 6107** | **09 33 000 6220**<br>**09 33 000 6214**<br>**09 33 000 6205**<br>**09 33 000 6204**<br>**09 33 000 6202**<br>**09 33 000 6207** |  | |

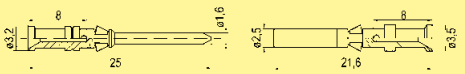
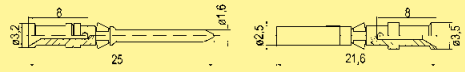
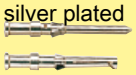
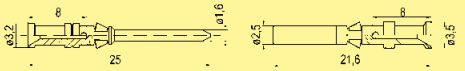
Thermo-couple



Dimensions for inserts see chapter of corresponding series

**Stock items in bold type**

| Identification | Series | Part number Male insert (M) | Part number Female insert (F) | Contact arrangement view termination side | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp terminal<br>Order crimp contacts separately | Han D®<br>8 D | **09 36 008 3001** | **09 36 008 3101** |  | |
| Crimp terminal<br>Order crimp contacts separately | Han DD®<br>24 DD<br>42 DD<br>72 DD<br>108 DD | <br>**09 16 024 3001**<br>**09 16 042 3001**<br>**09 16 072 3001**<br>**09 16 108 3001** | <br>**09 16 024 3101**<br>**09 16 042 3101**<br>**09 16 072 3101**<br>**09 16 108 3101** |  | |

| Identification | Wire gauge (mm²) | Part number Male contact | Part number Female contact | Drawing | Dimensions in mm |
|---|---|---|---|---|---|
| Crimp contacts<br>Han D®<br>Constantan<br> | 0.14-0.37 | **09 15 000 6161** | **09 15 000 6261** |  | |
| Iron; gold plated<br> | 0.14-0.37 | **09 15 000 6171** | **09 15 000 6271** |  | |
| Standard contacts; silver plated<br> | 0.14-0.37<br>0.5<br>0.75<br>1<br>1.5<br>2.5 | **09 15 000 6104**<br>**09 15 000 6103**<br>**09 15 000 6105**<br>**09 15 000 6102**<br>**09 15 000 6101**<br>**09 15 000 6106** | **09 15 000 6204**<br>**09 15 000 6203**<br>**09 15 000 6205**<br>**09 15 000 6202**<br>**09 15 000 6201**<br>**09 15 000 6206** |  | |





Dimensions for inserts see chapter of corresponding series

**Stock items in bold type**

## Contents


| | Page |
|---|---|
| Tools for contacts Han D® | **99.02** |
| Tools for contacts Han E® | **99.04** |
| Tools for contacts Han® C | **99.06** |
| Tools for other contacts | **99.08** |
| Tools for FOC contacts | **99.10** |
| Tools for Han® high current contacts | **99.12** |
| Summary Han® Crimping tools | **99.14** |
| Crimping machine TK | **99.16** |
| Crimping machine TC-C01 | **99.18** |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| HARTING Service crimping tool<br>with locator<br>set for Han D®, Han E® | **09 99 000 0021** | Wire gauge Han D®<br>0.14 ... 1.5 mm² |  |
| BUCHANAN crimping tool | **09 99 000 0001** | Wire gauge<br>0.14 ... 2.5 mm² |  |
| Locator Han D® | 09 99 000 0311 | |  |
| Multiple crimping tool<br>depth adjustment gauge | **09 99 000 0379** | Wire gauge<br>0.14 mm² Ø 1.00[1)]<br>0.25 mm² Ø 1.00[1)]<br>0.37 mm² Ø 1.30<br>0.5 ... 1.0 mm² Ø 1.55<br>1.5 mm² Ø 1.80<br>2.5 mm² Ø 1.55 |  |
| HARTING crimping tool<br>with locator<br>for Han D®, Han E®, Han® C | **09 99 000 0110** | Wire gauge Han D®<br>0.14 ... 1.5 mm² |  |
| HARTING Pneumatic crimping tool<br>CP 600 | **09 99 000 0810** | |  |
| Crimp die Han D®, Han E®, Han® C | **09 99 000 0813** | Wire gauge Han D®<br>0.14 ... 1.5 mm² |  |
| Footswitch | **09 99 000 0811** | |  |
| Table fixing | **09 99 000 0812** | |  |

[1)]For wire gauge 0.14 and 0.25 mm² use only male contact 09 15 000 6107 or female contact 09 15 000 6207.

**Stock items in bold type**

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Insertion tool for crimp contacts | **09 99 000 0059** |  For crimp contacts with wires of less than 0.75 mm² it is recommended that an insertion tool is used. Contacts should be inserted from the wiring side and pushed down until a positive locking is achieved. | |
| Removal tool for crimp contacts | | | |
| Removal tool | **09 99 000 0012** |  | |
| Replacement-tip for removal tool | **09 99 000 0004** |  | |
| Removal tool | **09 99 000 0052** |  A removal tool is necessary if contacts are to be replaced in the insert. It is inserted from the mating face and pushed over the contact until a stop is noticeable. Additional pressure unlocks the contact and pushes it out of the wiring side. In case of the removal tool (. . 0052) the unlocking process is achieved by pressure on the central rod. | |



Stock items in bold type

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| HARTING Service crimping tool<br>with locator<br>set for Han D®, Han E® | **09 99 000 0021** | Wire gauge Han E®<br>0.5 ... 2.5 mm² |  |
| BUCHANAN crimping tool | **09 99 000 0001** | Wire gauge<br>0.14 ... 4 mm² |  |
| Locator Han E® | 09 99 000 0310 | |  |
| Multiple crimping tool<br>depth adjustment gauge | **09 99 000 0379** | Wire gauge<br>0.14 ... 0.37 mm² Ø 1.00<br>0.5 ... 1.0 mm² Ø 1.55<br>1.5 ... 2.5 mm² Ø 1.80<br>3.0 ... 4.0 mm² Ø 2.00 |  |
| HARTING crimping tool<br>with locator<br>for Han D®, Han E®, Han® C | **09 99 000 0110** | Wire gauge Han E®<br>0.5 ... 4 mm² |  |
| HARTING Pneumatic crimping tool<br>CP 600 | **09 99 000 0810** | |  |
| Crimp die Han D®, Han E®, Han® C | **09 99 000 0813** | Wire gauge Han E®<br>0.5 ... 4 mm² |  |
| Footswitch | **09 99 000 0811** | |  |
| Table fixing | **09 99 000 0812** | |  |



Stock items in bold type

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Insertion tool for crimp contacts | **09 99 000 0059** |  For crimp contacts with wires of less than 0.75 mm² it is recommended that an insertion tool is used. Contacts should be inserted from the wiring side and pushed down until a positive locking is achieved. | |
| Insertion tool for Han® ES inserts | 09 99 000 0367 |  | |
| Removal tool for crimp contacts<br>for Han® EE, Han® Q 5/0, Han® Q 8/0, Han E® and Han A® | **09 99 000 0319** |  A removal tool is necessary if contacts are to be replaced in the insert. The tool is inserted from the wiring side until a stop is noticeable. The wire with the crimp contact can then be pulled out from the same side of the insert. | |



Stock items in bold type

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| BUCHANAN crimping tool | **09 99 000 0001** | Wire gauge<br>0.14 ... 4 mm² |  |
| Locator Han® C | 09 99 000 0308 | |  |
| Multiple crimping tool<br>depth adjustment gauge | **09 99 000 0379** | Wire gauge<br>1.5 mm² Ø 1.80<br>2.5 mm² Ø 1.80<br>4 mm² Ø 2.00 |  |
| HARTING crimping tool<br>with locator<br>for Han D®, Han E®, Han® C | **09 99 000 0110** | Wire gauge Han® C<br>1.5 ... 4 mm² |  |
| HARTING crimping tool<br>with locator<br>for Han® C | 09 99 000 0303 | Wire gauge<br>4 ... 6 mm² |  |
| Locator as spare part | 09 99 000 0304 | | |
| HARTING crimping tool<br>for Han® C | 09 99 000 0377 | Wire gauge<br>6 ... 10 mm² |  |
| HARTING Pneumatic crimping tool<br>CP 600 | **09 99 000 0810** | |  |
| Crimp die Han® C | **09 99 000 0814** | Wire gauge Han® C<br>6 ... 10 mm² |  |
| Footswitch | **09 99 000 0811** | |  |
| Table fixing | **09 99 000 0812** | |  |

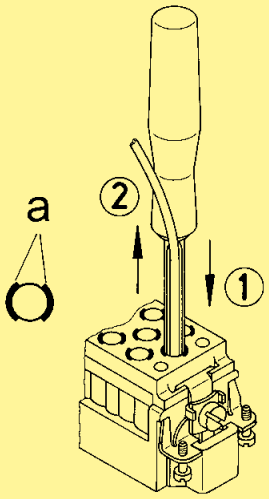


Stock items in bold type

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **Removal tool for crimp contacts** | | | |
| Removal tool | | | |
| 1.5 ... 6 mm² | **09 99 000 0305** | | |
| 10 mm² | **09 99 000 0381** | | |



A removal tool is necessary to remove the contacts. For each „C“ contact cavity, the location of the internal locking levers are marked on the wiring side with two black arcs. The sides of the tool must be first properly aligned so that the edges of the tool engage both levers simultaneously and then inserted until a stop is noticeable ①. Once it has been inserted, the tool must not be turned. The wire together with the tool can then be pulled out from the wiring side of the insert ②.




a ... lever marking



Stock items in bold type

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| HARTING crimping tool<br>for coaxial contacts | 09 99 000 0194 | <br>Use the middle crimping position. | |
| HARTING crimping tool<br>for wire end ferrules 10 mm² | 09 99 000 0374 |  | |
| Removal tools<br>for contacts<br>in the multi-contact module | 09 99 000 0328 |  | |
| Insertion / removal tool<br>for D-Sub crimp contacts | 09 99 000 0368 |  | |
| Removal tools<br>for locking sleeves<br>in the HV module | 09 99 000 0327 |  | |
| Removal tools<br>for Quintax contact | 09 99 000 0323 |  | |
| Stripping tool | 09 99 000 0159 | <br>For stranded fine wires and solid wires 0.08 up to 10 mm² | |

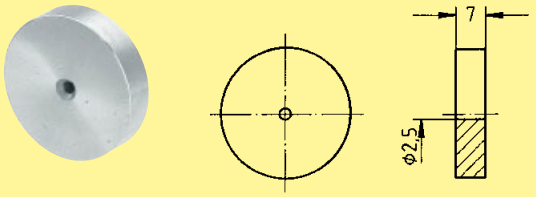
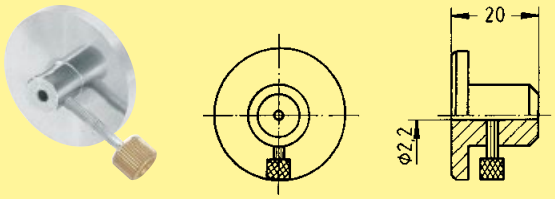


**Stock items in bold type**

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **Hexagonal driver** for axial screw | | | |
| with grip | | | |
| 40 A contacts (SW 2) | 09 99 000 0313 |  | |
| 100 A contacts (SW 4) | 09 99 000 0363 | | |
| 200 + 350 A contacts (SW 5) | 09 99 000 0364 | | |
| 650 A contacts (SW 8) | 09 99 000 0365 | | |
| Bit 1/4“ | | | |
| 40 A contacts (SW 2) | 09 99 000 0369 |  | |
| 70 A contacts (SW 2.5) | 09 99 000 0375 | | |
| adapter 3/8“ | | | |
| 100 A contacts (SW 4) | 09 99 000 0370 |  | |
| 200 + 350 A contacts (SW 5) | 09 99 000 0371 | | |
| 650 A contacts (SW 8) | 09 99 000 0372 | | |



Stock items in bold type

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **Polishing tool** | | | |
| DIN 41 626 | 20 99 000 1092 |   | |
| POF[1] cable ∅ 2.2 | **20 99 000 1093** |   | |
| **Fibre stripper** | | | |
| 0.3 mm | 20 99 000 1041 |   | |
| 1 mm | **20 99 000 1045** | | |
| 0.18 / 0.3 mm | **20 99 000 1046** | | |
| **Crimping tool**<br>for following 1 mm POF[1] contacts<br>Han D®, Han E®<br>DIN 41 626<br>Ferrule<br>F-SMA, -ST | 20 99 000 1035 |  | |
| **HARTING crimping tool**<br>for F.O. connector (glass fibre)<br>SW 4.3 mm<br>SW 3.8 mm<br>SW 4.95 mm | 20 99 000 1033 |  for crimping the strain relief to the connector<br>F.O. cable for glass fibre | |
| **HARTING crimping tool**<br>for F.O. connector (plastic fibre)<br>SW 6.95 mm<br>SW 4.95 mm<br>SW 3.0 mm | 20 99 000 1031 |  for crimping the strain relief to the connector<br>F.O. cable for glass fibre | |
| **Epoxy adhesive**<br>glass fibre | 20 80 001 9902 | 2 ml EPO-TEK 360 with hardener (10:1), 4 g foil pack | |



[1]POF = Polymer optical fibre

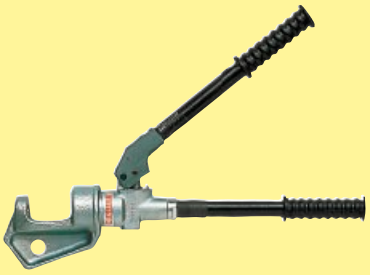
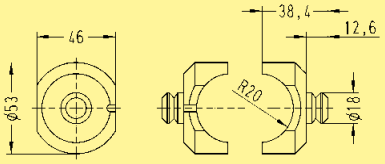
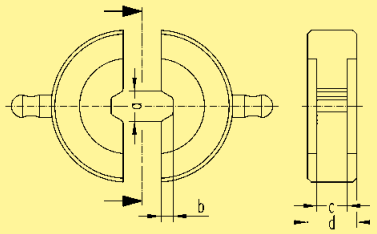
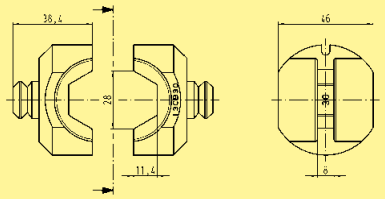
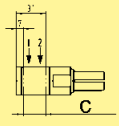
**Stock items in bold type**

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **Polishing paper** | | Range of delivery<br>Each part number means 5 pieces. | |
| for POF[1)] grain size 1000 | **20 80 001 9911** | | |
| for GI 9 µ-grain size | 20 80 001 9912 | | |
| for GI 1 µ-grain size | 20 80 001 9913 | | |

[1)]POF = Polymer optical fibre



Stock items in bold type

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| **HARTING crimping tool**<br>Hydraulic handtool; Pressing force: 130 kN<br>• fast forward action<br>• storage box<br>• weight: 6.4 kg<br>• Length: 620 mm | **09 99 000 0385** |  | |
| **Die holder** | 09 99 000 0389 |    | |
| **Crimp dies**<br>DIN 46 235 (supplied as apair) use in combination with die holder | 09 99 000 0398<br>09 99 000 0386<br>09 99 000 0387<br>09 99 000 0388<br>09 99 000 0391<br>09 99 000 0392<br>09 99 000 0393<br>09 99 000 0394 |    | |
| **Crimp die**<br>Wire gauge 240 mm² | **09 99 000 0801** |    | C ... Crimp zone acc. to EN 46 235<br>2 crimps |

| Part number | Wire gauge | acc. to DIN 46 235 | a | b | c | d |
|---|---|---|---|---|---|---|
| 09 99 000 0398 | 10 mm² | B6 DIN | 5.5 | 2.1 | 8 | 13 |
| 09 99 000 0386 | 16 mm² | B8 DIN | 8 | 3.2 | 8 | 13 |
| 09 99 000 0387 | 25 mm² | B10 DIN | 10 | 3.8 | 10 | 13 |
| 09 99 000 0388 | 35 mm² | B12 DIN | 12 | 4.7 | 10 | 13 |
| 09 99 000 0391 | 50 mm² | B14 DIN | 14 | 5.5 | 10 | 13 |
| 09 99 000 0392 | 70 mm² | B16 DIN | 16 | 6 | 13 | 13 |
| 09 99 000 0393 | 95 mm² | B18 DIN | 18 | 7.3 | 15 | 15 |
| 09 99 000 0394 | 120 mm² | B20 DIN | 20 | 8 | 15 | 15 |



**Stock items in bold type**

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Removal tool for crimp contacts<br>100 A | **09 99 000 0383** |  | |



Stock items in bold type

# Overview Han® crimping tools

| Crimp contacts Series | Part number | | | | mm² | AWG | Crimping tools | | | | | | Crimping machines | | | | | | | Tools | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | male contact silver plated | female contact silver plated | male contact silver plated | female contact gold plated | | | 09 99 000 0001 | 09 99 000 0110 | 09 99 000 0021 | 09 99 000 0303 | 09 99 000 0377 | 20 99 000 1035 | 09 99 000 0813 3) | 09 99 000 0814 3) | 09 98 000 6001 1) | 09 98 000 6002 1) | 09 98 000 9001 | 09 98 000 9002 | 09 98 000 9003 | adjustment gauge 09 99 000 0379 2) | removal tools |
| Han® C Power contacts 09 32 000 .... | 6104 | 6204 | | | 1.5 | 16 | x | x | | | | | x | | | | | | x | 1.80 | 09 99 000 0305 / 09 99 000 0381 |
| | 6105 | 6205 | | | 2.5 | 14 | x | x | | | | | x | | | | | | x | 1.80 | |
| | 6107 | 6207 | | | 4.0 | 12 | x | x | | x | | | x | | | | | | x | 2.00 | |
| | 6108 | 6208 | | | 6.0 | 10 | | | | x | x | | | x | | | | | x | | |
| | 6109 | 6209 | | | 10.0 | 8 | | | | | x | | | x | | | | | x | | |
| Han D® Signal contacts 09 15 000 .... | 6107 | 6207 | 6127 | 6227 | 0.14 - 0.25 | 26 - 24 | x | | | | | | | | | | x | | | 1.00 | 09 99 000 0012 / 09 99 000 0052 |
| | 6104 | 6204 | 6124 | 6224 | | | | x | x | | | | x | | | | | | | | |
| | 6107 | 6207 | 6127 | 6227 | 0.37 | 22 | x | | | | | | x | | | | x | | | 1.00 | |
| | 6104 | 6204 | 6124 | 6224 | | | x | x | x | | | | x | | x | | x | | | 1.30 | |
| | 6103 | 6203 | 6123 | 6223 | 0.5 | 20 | x | x | x | | | | x | | x | | x | | | 1.55 | |
| | 6105 | 6205 | 6125 | 6225 | 0.75 | 18 | x | x | x | | | | x | | x | | x | | | 1.55 | |
| | 6102 | 6202 | 6122 | 6222 | 1.0 | 18 | x | x | x | | | | x | | x | | x | | | 1.55 | |
| | 6101 | 6201 | 6121 | 6221 | 1.5 | 16 | x | x | x | | | | x | | x | | x | | | 1.80 | |
| | 6106 | 6206 | 6126 | 6226 | 2.5 | 14 | x | | | | | | x | | x | | x | | | 1.55 | |
| Han D® F.O. contacts 20 10 001 .... | Male contact 3211 3212 / 3213 | | Female contact 3221 3222 | | 1 mm POF | | | | | | | x | | | | | | | | | |
| Han E® Power contacts 09 33 000 .... | 6127 | 6227 | 6117 | 6217 | 0.14 - 0.37 | 26 - 22 | x | | | | | | x | | | | | x | | 1.00 | 09 99 000 0319 |
| | 6121 | 6220 | 6122 | 6222 | 0.5 | 20 | x | x | x | | | | x | | | x | | x | | 1.55 | |
| | 6114 | 6214 | 6115 | 6215 | 0.75 | 18 | x | x | x | | | | x | | | x | | x | | 1.55 | |
| | 6105 | 6205 | 6118 | 6218 | 1.0 | 18 | x | x | x | | | | x | | | x | | x | | 1.55 | |
| | 6104 | 6204 | 6116 | 6216 | 1.5 | 16 | x | x | x | | | | x | | | x | | x | | 1.80 | |
| | 6102 | 6202 | 6123 | 6223 | 2.5 | 14 | x | x | x | | | | x | | | x | | x | | 1.80 | |
| | 6106 | 6206 | | | 3.0 | 12 | x | x | | | | | x | | | x | | x | | 2.00 | |
| | 6107 | 6207 | 6119 | 6221 | 4.0 | 12 | x | x | | | | | x | | | x | | x | | 2.00 | |
| Han E® F.O. contacts 20 10 001 .... | Male contact 3311 | | Female contact 3321 | | 1 mm POF | | | | | | | x | | | | | | | | | |
| Description | | | | | | | | | | | | | | | | | | | | | |
| Locator Han® C | 09 99 000 0308 | | | | | | x | | | | | | x | | | | | | | | |
| | 09 99 000 0304 | | | | | | | | | x | | | | | | | | | | | |
| Locator Han D® | 09 99 000 0311 | | | | | | x | | | | | | x | | | | | | | | |
| | 09 99 000 0022 | | | | | | | | x | | | | | | | | | | | | |
| Locator Han E® | 09 99 000 0310 | | | | | | x | | | | | | x | | | | | | | | |
| | 09 99 000 0022 | | | | | | | | x | | | | | | | | | | | | |

1) For using changeable units 09 99 000 6001 / 6002 basic unit 09 99 000 6000 is required.
2) Adjustment gauge with Ø 1.00 mm; 1.30 mm; 1.55 mm; 1.80 mm; 2.00 mm
3) For using of tool head the basic unit CP 600 (09 99 000 0810) is required.

# Crimping machine TK

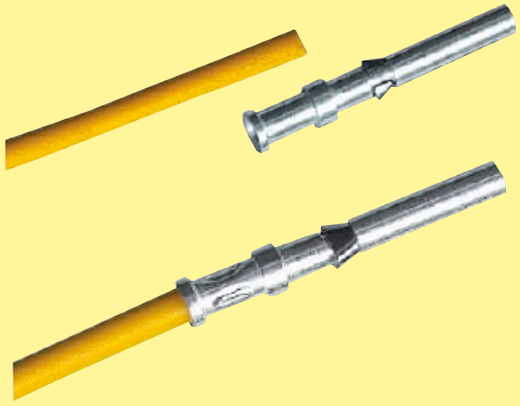


## Features

- ❏ Fast stripping and crimping in one operation
- ❏ Basic unit in compact construction
- ❏ Simple handling due to ergonomic design
- ❏ For individual, turned male and female contacts
  (for the HARTING series Han D®, Han E®)
- ❏ Selective processing of male and female contacts
  (Wire gauge from 0.34 mm² to 4.0 mm², AWG 22 to AWG 12)
- ❏ Contact magazine with filling control
- ❏ Reproducible, top quality gas-tight crimp connections
- ❏ Infinitely variable adjustment parameters
  – Stripping depth
  – Stripping length
  – Crimping depth
  – Crimp contact feed rate
- ❏ Magazine empties automatically
- ❏ Low noise level
- ❏ For oil-free compressed air
- ❏ Air servicing unit with water separator and pressure reducer
- ❏ Very low setup effort
- ❏ Low maintenance costs

## Technical characteristics

| | |
|---|---|
| Dimensions: | |
| Height | 400 mm |
| Width | 555 mm |
| Depth | 440 mm |
| Total weight: | Approx. 60 kg |
| Local noise level: | < 70 dB (A) |
| Drive: | Electro-pneumatic |
| Electrical connection: | 230 V, 50 Hz |
| Power rating: | 0.75 kW |
| Pneumatic pressure: | 6 bar |
| Compressed air connection: | 3 dm³ / work cycle |
| Control system: | PLC |
| Work cycle trigger: | Sensor |
| Machine work cycle: | 2 seconds (stripping and crimping) |
| Crimp type: | Four-notch crimping |
| Contact feed: | Vibratory bowl feed |
| Stroke counters: | Resettable daily counter and permanent counter |



# Crimping machine TK

| Identification | Part No. |
|---|---|
| Crimping machine TK<br>(Basic machine<br>without interchangeable unit) | 09 98 000 6000 |
| interchangeable units for Han D®<br>Han E® | 09 98 000 6001<br>09 98 000 6002 |



## Pack contents

- ❑ Crimping machine TK
  - – with one mounted interchangeable unit
  - – with 2.0 m connection cable and grounding plug
  - – with 2.0 m pneumatic hose with plug-in nipple N9
- ❑ Plug gauge for setting the crimping depth
- ❑ Centering bushing for positioning the plug gauges
- ❑ Drawer for insulation pieces
- ❑ Drawer for holding contacts when the magazine is emptied
- ❑ Tool set for adjustments
- ❑ 1 set of stripping blades
- ❑ Operating instructions
- ❑ Declaration of conformity

## Options

Interchangeable unit
with plug gauges



Forming blades
with feeding funnel









**Stock items in bold type**

# Crimping machine TC-C01



## Features

- ❏ Basic unit in compact construction for pre-stripped wire
- ❏ Simple handling due to ergonomic design
- ❏ For individual, turned male and female contacts
- ❏ Selective processing of male and female HARTING contacts (wire gauge from 0.14 mm² to 10.0 mm², AWG 26 to AWG 8)
- ❏ Automatic contact feed
- ❏ Reproducible, top quality gas-tight crimp connections
- ❏ Non-slip, anti-vibration adjustable feet for setting the height
- ❏ Low noise level
- ❏ Can be transported with carrying handle
- ❏ Removable electric and pneumatic supply connections
- ❏ Maintenance interval counter
- ❏ Minimal setup effort
- ❏ Crimping depth can be set without tools
- ❏ Low maintenance costs
- ❏ Low follow-up costs for maintenance and repair
- ❏ Easy replacement of wearing components

## Technical characteristics

| | |
|---|---|
| Dimensions: | |
| Height | 345 mm |
| Width | 230 mm |
| Depth | 400 mm |
| Total weight: | app. 24 kg |
| Local noise level: | 62 dB (A) |
| Electrical connection: | 230 V, 50 Hz |
| Power rating: | 0.20 kW |
| Compressed air connection: | 6 bar |
| Control system: | PLC |
| Work cycle trigger: | Footswitch |
| Machine work cycle: | 1 second |
| Crimp type: | Four-point crimping |
| Contact feed: | Vibratory bowl feed |
| Stroke counters: | Resettable daily counter and permanent counter |



# Crimping machine TC-C01

| Identification | Part No. |
|---|---|
| Crimping machine TC-C01 | |
| for Han D® contacts | 09 98 000 9001 |
| Han E® contacts | 09 98 000 9002 |
| Han® C contacts | 09 98 000 9003 |
| Other | On request |



## Included in the delivery

- ❏ Crimping machine TC-C01
  - – with 2.5 m connection cable and grounding plug
  - – with 2.5 m pneumatic hose, quick-release coupling and N6 plug-in nipple
- ❏ Footswitch
- ❏ Carrying handle
- ❏ Operating instructions
- ❏ Declaration of conformity

## Options

Pneumatic maintenance unit



Wire guide



Working light







**Stock items in bold type**