



Pushing Performance



People | Power | Partnership

## HARTING News 2013

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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 36 subsidiary companies and worldwide distributors employing a total of approximately 3,500 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.

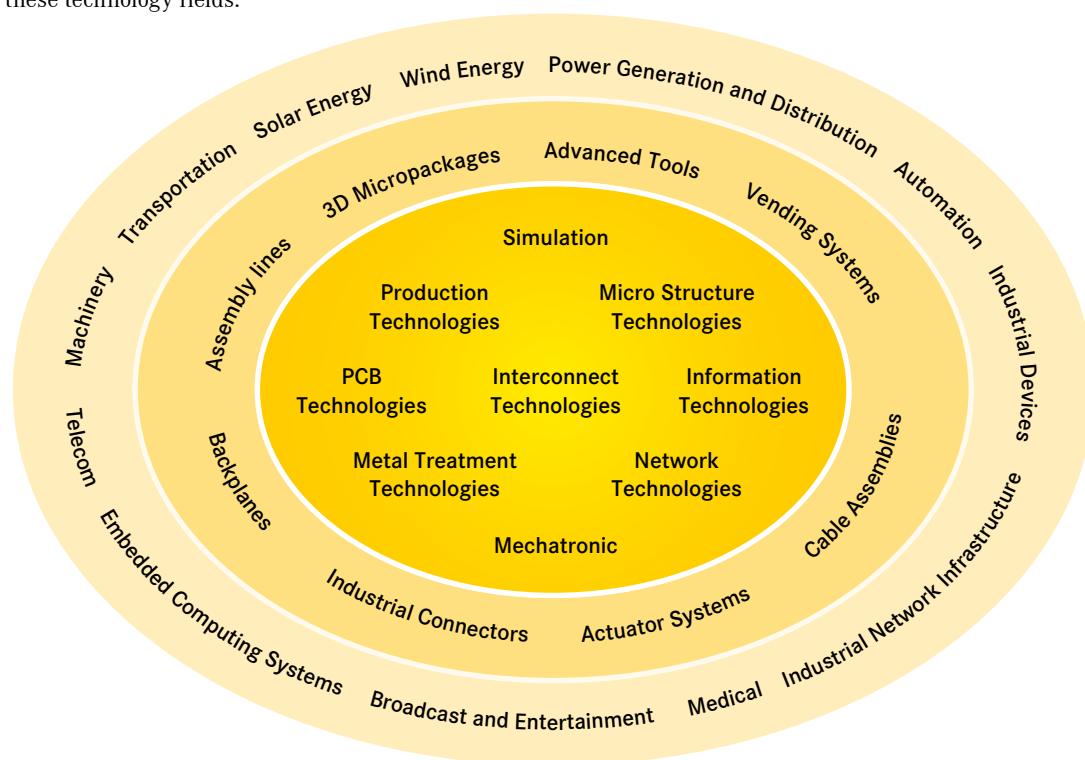
In order to ensure the future proof design of RF- and EMC-compatible interface solutions, the central **HARTING** laboratory (certified to EN 45001) provides simulation tools, as well as experimental, testing and diagnostics facilities all the way through to scanning electron microscopes. In the selection 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.



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## Description

Han® High Temp is a new product series that is based on our well-established Han® B and Han® E series. We used high-quality materials with wide temperature ranges to produce connectors that are uniquely suited for a wide variety of applications.

These connectors can withstand temperatures up to 200 °C – so they can be used directly in machines and facilities that would otherwise require cumbersome and complex constructions.

For our users, this delivers direct advantages:

- The electro-mechanical design process is optimized.  
Machine parts which are exposed to high temperatures can be designed modularly.
- The work process is optimized  
since lower wiring complexity results in reduced maintenance costs.
- The after-sales phase is optimized  
because this more service-friendly approach results in less outages and down times.

## Design overview

The basic structure of the Han® High Temp connector consists of a bulkhead mounted housing and a cable-side hood.

Hoods and housings:

The aluminium die-cast hoods and housings feature a highly compressed surface with excellent non-stick properties. It also has a special non-stick coating on the bulkhead-side seal which allows easy handling without significant sticking.

Inserts:

The Han® High Temp series features very rugged contact inserts, which are really the heart of any connector. The LCP injection-moulded insert delivers outstanding temperature resistance coupled with excellent mechanical stability.

Contacts:

Our new temperature resistant contacts, for either screw or crimp terminations, ensure reliable connections with minimal contact resistance even at extreme temperatures.



**Han® High Temp connectors  
remain robust and reliable for their entire lifespan!**

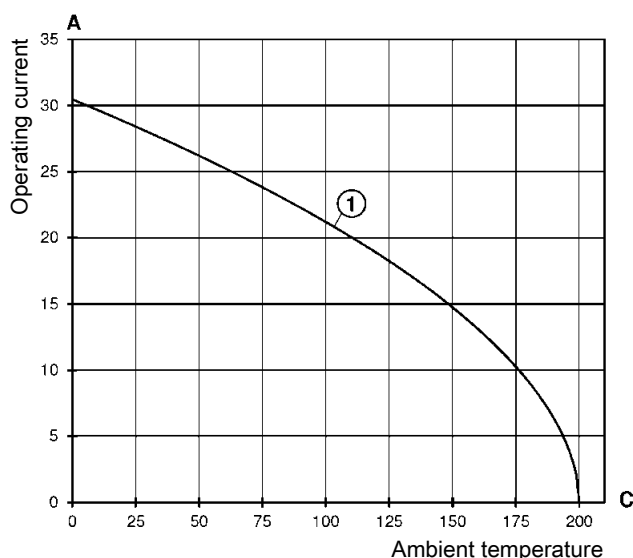
## Features

- Reliable also at extreme temperatures up to 200 °C
- All piece parts (contacts, insert material, hoods and housings, seals and grounding elements) are designed in a temperature resistant way
- Developed on the basis of the proven Han® E series for 6, 10, 16 or 24 contacts
- Electrical data for 16 A and 400 V

## 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

## Technical characteristics

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

### Inserts

|                                         |                          |
|-----------------------------------------|--------------------------|
| Number of contacts                      | 6, 10, 16, 24 + PE       |
| Electrical data acc. to EN 61 984       | <b>16 A 400 V 6 kV 3</b> |
| Rated current                           | 16 A                     |
| Rated voltage                           | 400 V                    |
| Rated impulse voltage                   | 6 kV                     |
| Pollution degree                        | 3                        |
| Insulation resistance                   | ≥ 10 <sup>10</sup> Ω     |
| Material                                | LCP                      |
| Limiting temperatures                   | -40 °C ... +200 °C       |
| Flammability acc. to UL 94              | V 0                      |
| Mechanical working life - mating cycles | ≥ 500                    |

### Contacts

|                            |                 |
|----------------------------|-----------------|
| Material                   | copper alloy    |
| Contact resistance         | ≤ 1 mΩ          |
| Crimp termination - min.   | 0.5 mm²/ AWG 20 |
| Crimp termination - max.   | 2.5 mm²/ AWG 14 |
| Screw termination - min.   | 0.5 mm²/ AWG 20 |
| Screw termination - max.   | 2.5 mm²/ AWG 14 |
| Tightening-/Testing torque | 0.5 Nm          |
| Stripping length           | 7 mm            |

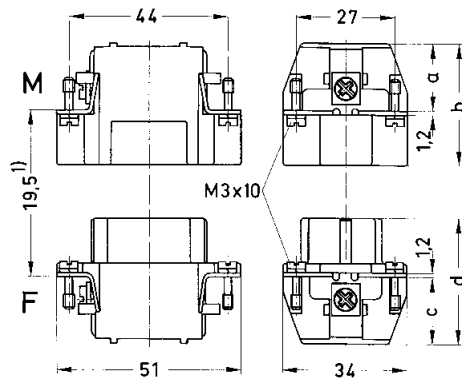
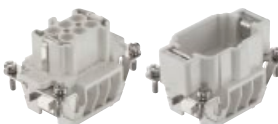
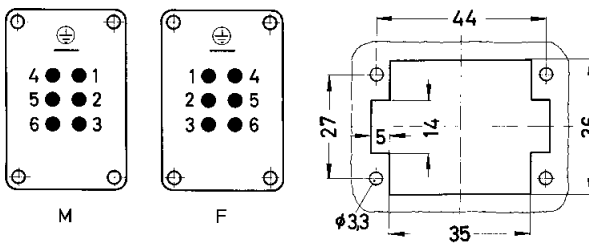
### Hoods/housings

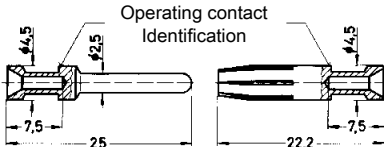
|                                                                  |                    |
|------------------------------------------------------------------|--------------------|
| Material                                                         | aluminium die cast |
| Surface                                                          | unpainted          |
| Locking element                                                  | stainless steel    |
| Hoods/housings seal                                              | FPM, red           |
| Limiting temperatures                                            | -40 °C ... +200 °C |
| Degree of protection acc. to DIN EN 60 528 for coupled connector | IP 65              |

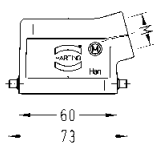
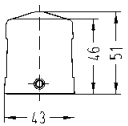
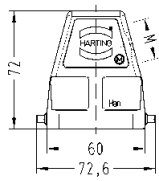
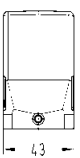
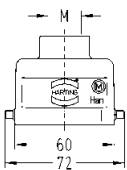
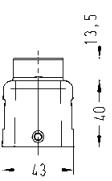
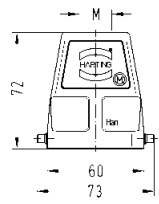
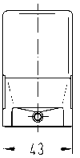
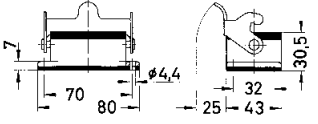
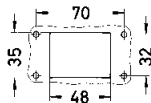
Number of contacts

6 +

Available September 2013

| Identification                                                                                                                                        | Part number     |                   | Drawing                                                                                                                                                                                                           | Dimensions in mm |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                                                                       | Male insert (M) | Female insert (F) |                                                                                                                                                                                                                   |                  |
| <b>Screw termination</b><br>with wire protection<br>                 | 09 33 806 2601  | 09 33 806 2701    |  <p>a = 19.7 mm<br/>b = 34.7 mm<br/>c = 21.0 mm<br/>d = 37.0 mm</p>                                                             |                  |
| <b>Crimp termination</b><br>Crimp contacts<br>order separately<br> | 09 33 806 2602  | 09 33 806 2702    |  <p>1) Distance for contact max. 21 mm</p> <p>Contact arrangement<br/>view from<br/>termination side</p> <p>Panel cut out</p> |                  |

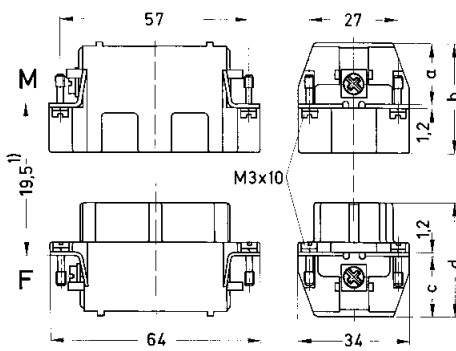
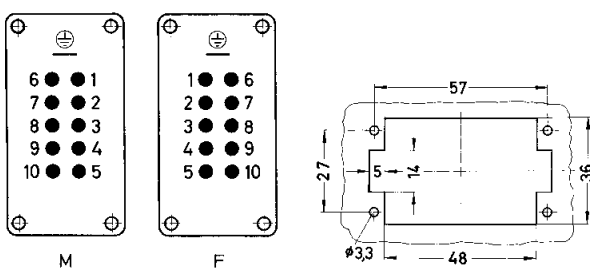
| Identification          |                | Wire gauge<br>(mm <sup>2</sup> ) | Part number  |                     | Drawing                                                                               | Dimensions in mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
|-------------------------|----------------|----------------------------------|--------------|---------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--|---------------------|---------------------|---------------------|--------|-----------|--------|----------------------|--------|-----------|--------|---------------------|--------|----------|--------|---------------------|--------|-----------|--------|---------------------|--------|-----------|--------|
|                         |                |                                  | Male contact | Female contact      |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| Han® High Temp contacts |                |                                  |              |                     |  | <table><tr><th colspan="2">Wire gauge</th><th>Identifica-<br/>tion</th><th>Stripping<br/>length</th></tr><tr><td>0.5 mm<sup>2</sup></td><td>AWG 20</td><td>no groove</td><td>7.5 mm</td></tr><tr><td>0.75 mm<sup>2</sup></td><td>AWG 18</td><td>1 groove*</td><td>7.5 mm</td></tr><tr><td>1.0 mm<sup>2</sup></td><td>AWG 18</td><td>1 groove</td><td>7.5 mm</td></tr><tr><td>1.5 mm<sup>2</sup></td><td>AWG 16</td><td>2 grooves</td><td>7.5 mm</td></tr><tr><td>2.5 mm<sup>2</sup></td><td>AWG 14</td><td>3 grooves</td><td>7.5 mm</td></tr></table> <p>* on the back crimp collar</p> | Wire gauge          |  | Identifica-<br>tion | Stripping<br>length | 0.5 mm <sup>2</sup> | AWG 20 | no groove | 7.5 mm | 0.75 mm <sup>2</sup> | AWG 18 | 1 groove* | 7.5 mm | 1.0 mm <sup>2</sup> | AWG 18 | 1 groove | 7.5 mm | 1.5 mm <sup>2</sup> | AWG 16 | 2 grooves | 7.5 mm | 2.5 mm <sup>2</sup> | AWG 14 | 3 grooves | 7.5 mm |
|                         |                | Wire gauge                       |              | Identifica-<br>tion |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Stripping<br>length |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
|                         |                | 0.5 mm <sup>2</sup>              | AWG 20       | no groove           |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7.5 mm              |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
|                         |                | 0.75 mm <sup>2</sup>             | AWG 18       | 1 groove*           |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7.5 mm              |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
|                         |                | 1.0 mm <sup>2</sup>              | AWG 18       | 1 groove            |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7.5 mm              |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
|                         |                | 1.5 mm <sup>2</sup>              | AWG 16       | 2 grooves           |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7.5 mm              |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| 2.5 mm <sup>2</sup>     | AWG 14         | 3 grooves                        | 7.5 mm       |                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| 0.5                     | 09 33 800 6121 | 09 33 800 6220                   |              |                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| 0.75                    | 09 33 800 6114 | 09 33 800 6214                   |              |                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| 1.0                     | 09 33 800 6105 | 09 33 800 6205                   |              |                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| 1.5                     | 09 33 800 6104 | 09 33 800 6204                   |              |                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| 2.5                     | 09 33 800 6102 | 09 33 800 6202                   |              |                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |

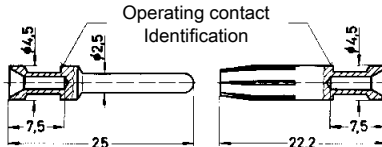
| Identification           | Part number      |                                  | Cable entry<br>metric | Drawing                                                                                                                                                                        | Dimensions in mm                                                                      |
|--------------------------|------------------|----------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                          | Low construction | High construction                |                       |                                                                                                                                                                                |                                                                                       |
| Hood<br>side entry       | 19 62 806 1540   |                                  | 1 x 20                |                                                                                             |    |
| Hood<br>side entry       |                  | 19 62 806 0546<br>19 62 806 0547 | 1 x 25<br>1 x 32      |                                                                                             |    |
| Hood<br>top entry        | 19 62 806 1440   |                                  | 1 x 20                |                                                                                            |   |
| Hood<br>top entry        |                  | 19 62 806 0446<br>19 62 806 0447 | 1 x 25<br>1 x 32      |                                                                                           |  |
| Identification           | Part number      |                                  | Cable entry<br>metric | Drawing                                                                                                                                                                        | Dimensions in mm                                                                      |
|                          | Low construction | High construction                |                       |                                                                                                                                                                                |                                                                                       |
| Bulkhead mounted housing | 09 62 806 0391   |                                  |                       | <br> | Panel cut out                                                                         |

Number of contacts

10 +

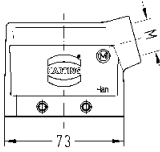
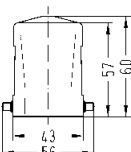
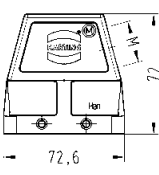
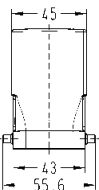
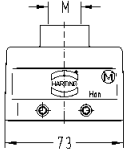
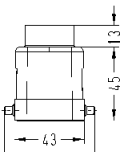
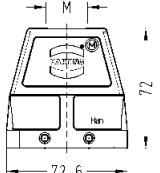
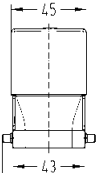
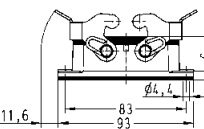
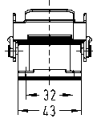
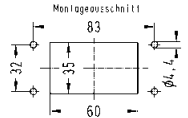
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| Identification                                                                      |  | Part number     |                   | Drawing                                                                                                                                                                                         | Dimensions in mm |
|-------------------------------------------------------------------------------------|--|-----------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                     |  | Male insert (M) | Female insert (F) |                                                                                                                                                                                                 |                  |
| Screw termination<br>with wire protection                                           |  | 09 33 810 2601  | 09 33 810 2701    |  <p>a = 19.7 mm<br/>b = 34.7 mm<br/>c = 21.0 mm<br/>d = 37.0 mm</p> <p>1) Distance for contact max. 21 mm</p> |                  |
|    |  |                 |                   |                                                                                                                                                                                                 |                  |
| Crimp termination<br>Crimp contacts<br>order separately                             |  | 09 33 810 2602  | 09 33 810 2702    |  <p>Contact arrangement<br/>view from<br/>termination side</p> <p>Panel cut out</p>                         |                  |
|  |  |                 |                   |                                                                                                                                                                                                 |                  |

| Identification                                                                      |  | Wire gauge<br>(mm <sup>2</sup> ) | Part number                                                                            |                                                                                        | Drawing                                                                               | Dimensions in mm |
|-------------------------------------------------------------------------------------|--|----------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------|
|                                                                                     |  |                                  | Male contact                                                                           | Female contact                                                                         |                                                                                       |                  |
| Han® High Temp contacts                                                             |  |                                  |                                                                                        |                                                                                        |  |                  |
|  |  | 0.5<br>0.75<br>1.0<br>1.5<br>2.5 | 09 33 800 6121<br>09 33 800 6114<br>09 33 800 6105<br>09 33 800 6104<br>09 33 800 6102 | 09 33 800 6220<br>09 33 800 6214<br>09 33 800 6205<br>09 33 800 6204<br>09 33 800 6202 |                                                                                       |                  |

| Wire gauge           |        | Identifica-<br>tion | Stripping<br>length |
|----------------------|--------|---------------------|---------------------|
| 0.5 mm <sup>2</sup>  | AWG 20 | no groove           | 7.5 mm              |
| 0.75 mm <sup>2</sup> | AWG 18 | 1 groove*           | 7.5 mm              |
| 1.0 mm <sup>2</sup>  | AWG 18 | 1 groove            | 7.5 mm              |
| 1.5 mm <sup>2</sup>  | AWG 16 | 2 grooves           | 7.5 mm              |
| 2.5 mm <sup>2</sup>  | AWG 14 | 3 grooves           | 7.5 mm              |

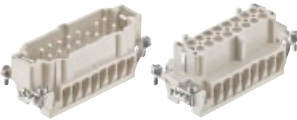
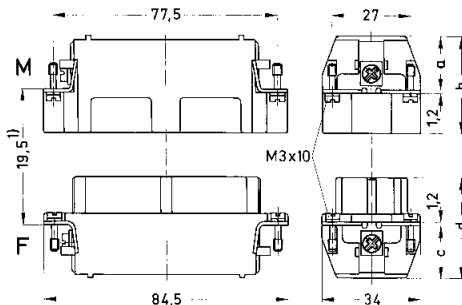
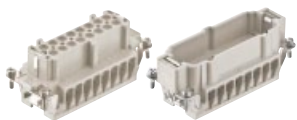
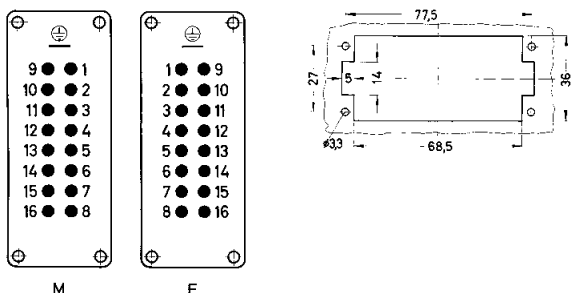
\* on the back crimp collar

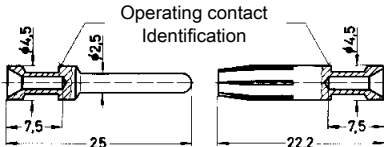
| Identification           | Part number                      |                                  | Cable entry<br>metric | Drawing                                                                               | Dimensions in mm                                                                      |
|--------------------------|----------------------------------|----------------------------------|-----------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                          | Low construction                 | High construction                |                       |                                                                                       |                                                                                       |
| Hood<br>side entry       | 19 62 810 1520                   |                                  | 1 x 20                |    |    |
| Hood<br>side entry       |                                  | 19 62 810 0526<br>19 62 810 0527 | 1 x 25<br>1 x 32      |    |    |
| Hood<br>top entry        | 19 62 810 1420<br>19 62 810 1421 |                                  | 1 x 20<br>1 x 25      |   |   |
| Hood<br>top entry        |                                  | 19 62 810 0426<br>19 62 810 0427 | 1 x 25<br>1 x 32      |  |  |
| Identification           | Part number                      |                                  | Cable entry<br>metric | Drawing                                                                               | Dimensions in mm                                                                      |
|                          | Low construction                 | High construction                |                       |                                                                                       |                                                                                       |
| Bulkhead mounted housing | 09 62 810 0391                   |                                  |                       |  |  |
|                          |                                  |                                  |                       |  | Panel<br>cut out                                                                      |

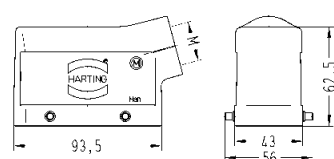
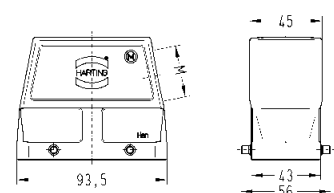
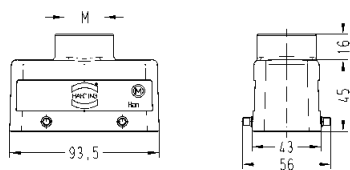
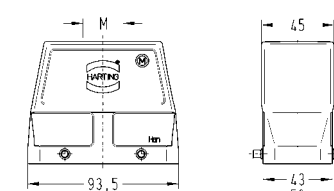
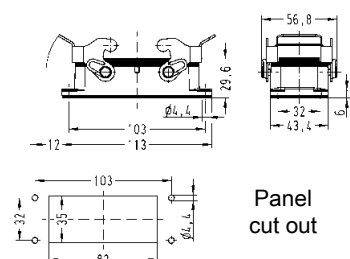
Number of contacts

16 +

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| Identification                                                                                                                                        | Part number     |                   | Drawing                                                                                                                                                                                                                                 | Dimensions in mm |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                                                                       | Male insert (M) | Female insert (F) |                                                                                                                                                                                                                                         |                  |
| <b>Screw termination</b><br>with wire protection<br>                 | 09 33 816 2601  | 09 33 816 2701    |  <p>a = 19.7 mm<br/>b = 34.7 mm<br/>c = 21.0 mm<br/>d = 37.0 mm</p> <p>1) Distance for contact max. 21 mm</p>                                         |                  |
| <b>Crimp termination</b><br>Crimp contacts<br>order separately<br> | 09 33 816 2602  | 09 33 816 2702    |  <p>9 10 11 12 13 14 15 16</p> <p>1 2 3 4 5 6 7 8</p> <p>M F</p> <p>Contact arrangement<br/>view from<br/>termination side</p> <p>Panel cut out</p> |                  |

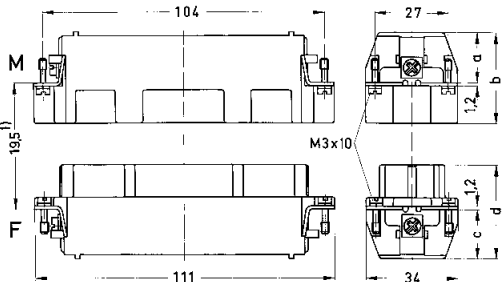
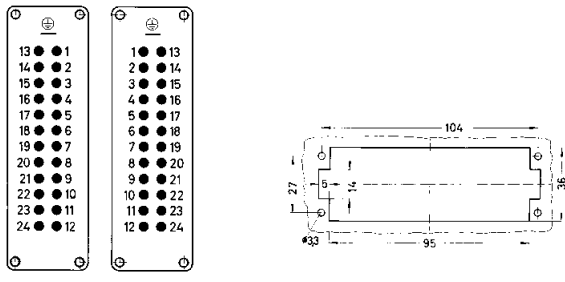
| Identification          |                | Wire gauge<br>(mm <sup>2</sup> ) | Part number  |                     | Drawing                                                                               | Dimensions in mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
|-------------------------|----------------|----------------------------------|--------------|---------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--|---------------------|---------------------|---------------------|--------|-----------|--------|----------------------|--------|-----------|--------|---------------------|--------|----------|--------|---------------------|--------|-----------|--------|---------------------|--------|-----------|--------|
|                         |                |                                  | Male contact | Female contact      |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| Han® High Temp contacts |                |                                  |              |                     |  | <table><tr><th colspan="2">Wire gauge</th><th>Identifica-<br/>tion</th><th>Stripping<br/>length</th></tr><tr><td>0.5 mm<sup>2</sup></td><td>AWG 20</td><td>no groove</td><td>7.5 mm</td></tr><tr><td>0.75 mm<sup>2</sup></td><td>AWG 18</td><td>1 groove*</td><td>7.5 mm</td></tr><tr><td>1.0 mm<sup>2</sup></td><td>AWG 18</td><td>1 groove</td><td>7.5 mm</td></tr><tr><td>1.5 mm<sup>2</sup></td><td>AWG 16</td><td>2 grooves</td><td>7.5 mm</td></tr><tr><td>2.5 mm<sup>2</sup></td><td>AWG 14</td><td>3 grooves</td><td>7.5 mm</td></tr></table> <p>* on the back crimp collar</p> | Wire gauge          |  | Identifica-<br>tion | Stripping<br>length | 0.5 mm <sup>2</sup> | AWG 20 | no groove | 7.5 mm | 0.75 mm <sup>2</sup> | AWG 18 | 1 groove* | 7.5 mm | 1.0 mm <sup>2</sup> | AWG 18 | 1 groove | 7.5 mm | 1.5 mm <sup>2</sup> | AWG 16 | 2 grooves | 7.5 mm | 2.5 mm <sup>2</sup> | AWG 14 | 3 grooves | 7.5 mm |
|                         |                | Wire gauge                       |              | Identifica-<br>tion |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Stripping<br>length |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
|                         |                | 0.5 mm <sup>2</sup>              | AWG 20       | no groove           |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7.5 mm              |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
|                         |                | 0.75 mm <sup>2</sup>             | AWG 18       | 1 groove*           |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7.5 mm              |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
|                         |                | 1.0 mm <sup>2</sup>              | AWG 18       | 1 groove            |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7.5 mm              |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
|                         |                | 1.5 mm <sup>2</sup>              | AWG 16       | 2 grooves           |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7.5 mm              |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| 2.5 mm <sup>2</sup>     | AWG 14         | 3 grooves                        | 7.5 mm       |                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| 0.5                     | 09 33 800 6121 | 09 33 800 6220                   |              |                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| 0.75                    | 09 33 800 6114 | 09 33 800 6214                   |              |                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| 1.0                     | 09 33 800 6105 | 09 33 800 6205                   |              |                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| 1.5                     | 09 33 800 6104 | 09 33 800 6204                   |              |                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |
| 2.5                     | 09 33 800 6102 | 09 33 800 6202                   |              |                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |

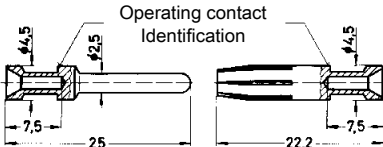
| Identification           | Part number      |                   | Cable entry<br>metric | Drawing                                                                                                | Dimensions in mm |
|--------------------------|------------------|-------------------|-----------------------|--------------------------------------------------------------------------------------------------------|------------------|
|                          | Low construction | High construction |                       |                                                                                                        |                  |
| Hood<br>side entry       | 19 62 816 1521   |                   | 1 x 20                |                     |                  |
| Hood<br>side entry       |                  | 19 62 816 0527    | 1 x 32                |                     |                  |
| Hood<br>top entry        | 19 62 816 1421   |                   | 1 x 25                |                    |                  |
| Hood<br>top entry        |                  | 19 62 816 0427    | 1 x 32                |                   |                  |
| Identification           | Part number      |                   | Cable entry<br>metric | Drawing                                                                                                | Dimensions in mm |
|                          | Low construction | High construction |                       |                                                                                                        |                  |
| Bulkhead mounted housing | 09 62 816 0391   |                   |                       | <br>Panel cut out |                  |

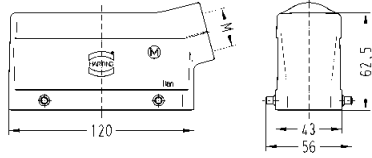
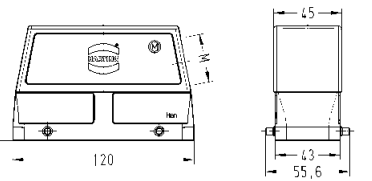
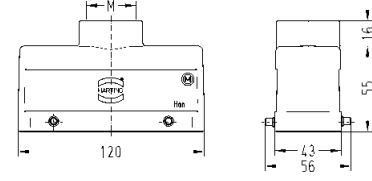
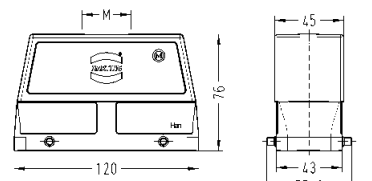
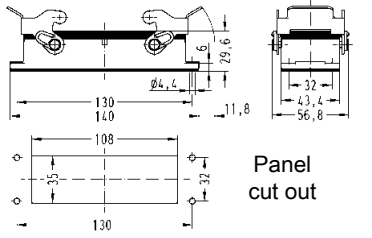
Number of contacts

24 +

Available September 2013

| Identification                                                                                                                                        | Part number     |                   | Drawing                                                                                                                                                                                         | Dimensions in mm |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                                                                       | Male insert (M) | Female insert (F) |                                                                                                                                                                                                 |                  |
| <b>Crimp termination</b><br>with wire protection<br>                 | 09 33 824 2601  | 09 33 824 2701    |  <p>1) Distance for contact max. 21 mm</p> <p>a = 19.7 mm<br/>b = 34.7 mm<br/>c = 21.0 mm<br/>d = 37.0 mm</p> |                  |
| <b>Screw termination</b><br>Crimp contacts<br>order separately<br> | 09 33 824 2602  | 09 33 824 2702    |  <p>Panel cut out</p>                                                                                       |                  |

| Identification          | Wire gauge<br>(mm <sup>2</sup> ) | Part number         |                     | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Dimensions in mm |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
|-------------------------|----------------------------------|---------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--|---------------------|---------------------|---------------------|--------|-----------|--------|----------------------|--------|-----------|--------|---------------------|--------|----------|--------|---------------------|--------|-----------|--------|---------------------|--------|-----------|--------|--|
|                         |                                  | Male contact        | Female contact      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
| Han® High Temp contacts |                                  |                     |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
|                         | 0.5                              | 09 33 800 6121      | 09 33 800 6220      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
|                         | 0.75                             | 09 33 800 6114      | 09 33 800 6214      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
|                         | 1.0                              | 09 33 800 6105      | 09 33 800 6205      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
|                         | 1.5                              | 09 33 800 6104      | 09 33 800 6204      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
|                         | 2.5                              | 09 33 800 6102      | 09 33 800 6202      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
|                         |                                  |                     |                     | <table><tr><th colspan="2">Wire gauge</th><th>Identifica-<br/>tion</th><th>Stripping<br/>length</th></tr><tr><td>0.5 mm<sup>2</sup></td><td>AWG 20</td><td>no groove</td><td>7.5 mm</td></tr><tr><td>0.75 mm<sup>2</sup></td><td>AWG 18</td><td>1 groove*</td><td>7.5 mm</td></tr><tr><td>1.0 mm<sup>2</sup></td><td>AWG 18</td><td>1 groove</td><td>7.5 mm</td></tr><tr><td>1.5 mm<sup>2</sup></td><td>AWG 16</td><td>2 grooves</td><td>7.5 mm</td></tr><tr><td>2.5 mm<sup>2</sup></td><td>AWG 14</td><td>3 grooves</td><td>7.5 mm</td></tr></table> | Wire gauge       |  | Identifica-<br>tion | Stripping<br>length | 0.5 mm <sup>2</sup> | AWG 20 | no groove | 7.5 mm | 0.75 mm <sup>2</sup> | AWG 18 | 1 groove* | 7.5 mm | 1.0 mm <sup>2</sup> | AWG 18 | 1 groove | 7.5 mm | 1.5 mm <sup>2</sup> | AWG 16 | 2 grooves | 7.5 mm | 2.5 mm <sup>2</sup> | AWG 14 | 3 grooves | 7.5 mm |  |
| Wire gauge              |                                  | Identifica-<br>tion | Stripping<br>length |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
| 0.5 mm <sup>2</sup>     | AWG 20                           | no groove           | 7.5 mm              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
| 0.75 mm <sup>2</sup>    | AWG 18                           | 1 groove*           | 7.5 mm              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
| 1.0 mm <sup>2</sup>     | AWG 18                           | 1 groove            | 7.5 mm              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
| 1.5 mm <sup>2</sup>     | AWG 16                           | 2 grooves           | 7.5 mm              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
| 2.5 mm <sup>2</sup>     | AWG 14                           | 3 grooves           | 7.5 mm              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |
|                         |                                  |                     |                     | * on the back crimp collar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                  |  |                     |                     |                     |        |           |        |                      |        |           |        |                     |        |          |        |                     |        |           |        |                     |        |           |        |  |

| Identification           | Part number      |                                  | Cable entry<br>metric | Drawing                                                                                                    | Dimensions in mm |
|--------------------------|------------------|----------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------|------------------|
|                          | Low construction | High construction                |                       |                                                                                                            |                  |
| Hood<br>side entry       | 19 62 824 1521   |                                  | 1 x 25                |                         |                  |
| Hood<br>side entry       |                  | 19 62 824 0527<br>19 62 824 0528 | 1 x 32<br>1 x 40      |                         |                  |
| Hood<br>top entry        | 19 62 824 1422   |                                  | 1 x 32                |                       |                  |
| Hood<br>top entry        |                  | 19 62 824 0427                   | 1 x 32                |                       |                  |
| Identification           | Part number      |                                  | Cable entry<br>metric | Drawing                                                                                                    | Dimensions in mm |
|                          | Low construction | High construction                |                       |                                                                                                            |                  |
| Bulkhead mounted housing | 09 62 824 0391   |                                  |                       |  <p>Panel cut out</p> |                  |

## Features

- High construction
- Large cabling space
- Cable entry with optimised 30° angle
- Compatible to all standard hoods and housings

## Technical characteristics

|                                              |                    |
|----------------------------------------------|--------------------|
| Material hood/housing                        | aluminium die cast |
| Colour                                       | RAL 7037 (grey)    |
| Surface                                      | powder coated      |
| Locking lever                                | Han-Easy Lock®     |
| Material Locking lever                       | stainless steel    |
| Seal hood/housing                            | NBR                |
| Limiting temperatures                        | -40 °C ... +125 °C |
| Approval acc. to UL 50<br>in locked position | IP 65              |



Han® 16 B hood with M50 cable entry

| Identification                                                                                                      | Part-Number    | M  | Drawing | Dimensions in mm |
|---------------------------------------------------------------------------------------------------------------------|----------------|----|---------|------------------|
| <div>Hood</div> <div>side entry M40<br/>with 2 locking levers on the<br/>bulkhead mounted housing</div> <div></div> | 19 30 016 0523 | 40 |         |                  |
| <div>Hood</div> <div>side entry M50<br/>with 2 locking levers on the<br/>bulkhead mounted housing</div> <div></div> | 19 30 016 0529 | 50 |         |                  |

Available Juli 2013



## Features

- Compatible to all standard hoods/housings
- Approved lever locking system with Han-Easy Lock®
- Standard panel cut out
- Degree of protection IP 66 and IP 67
- No sliding off the seal due to the protective flange

## Technical Characteristics

### Han® Standard Hoods/Housings Metal hoods/housings for industrial applications

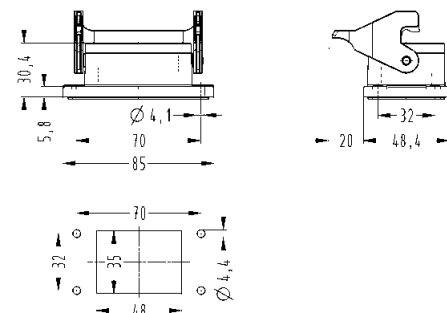
|                                                                        |                    |
|------------------------------------------------------------------------|--------------------|
| Material                                                               | aluminium die-cast |
| Colour                                                                 | 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 |
| Degree of protection acc.<br>to DIN EN 60 529<br>for coupled connector | IP 66 and IP 67    |

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

Housings, bulkhead mounting 6 B



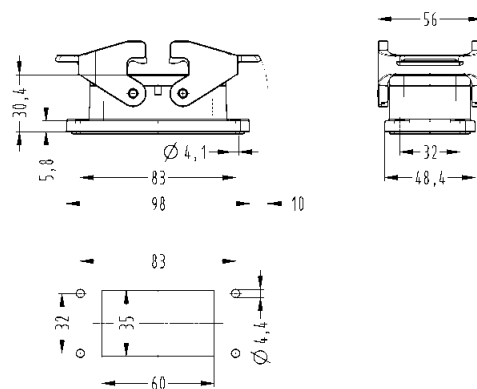
09 30 006 1301



Housings, bulkhead mounting 10 B



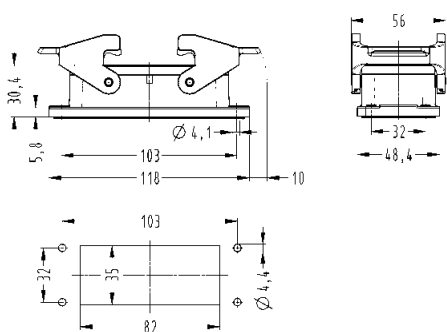
09 30 010 1301



Housings, bulkhead mounting 16 B



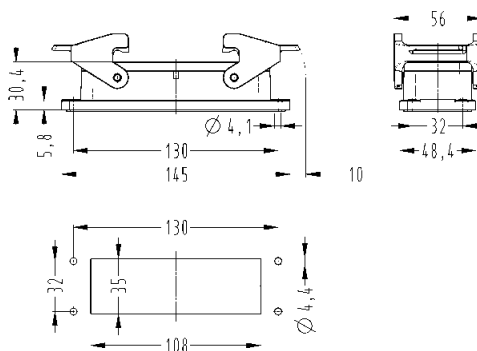
09 30 016 1301



Housings, bulkhead mounting 24 B



09 30 024 1301





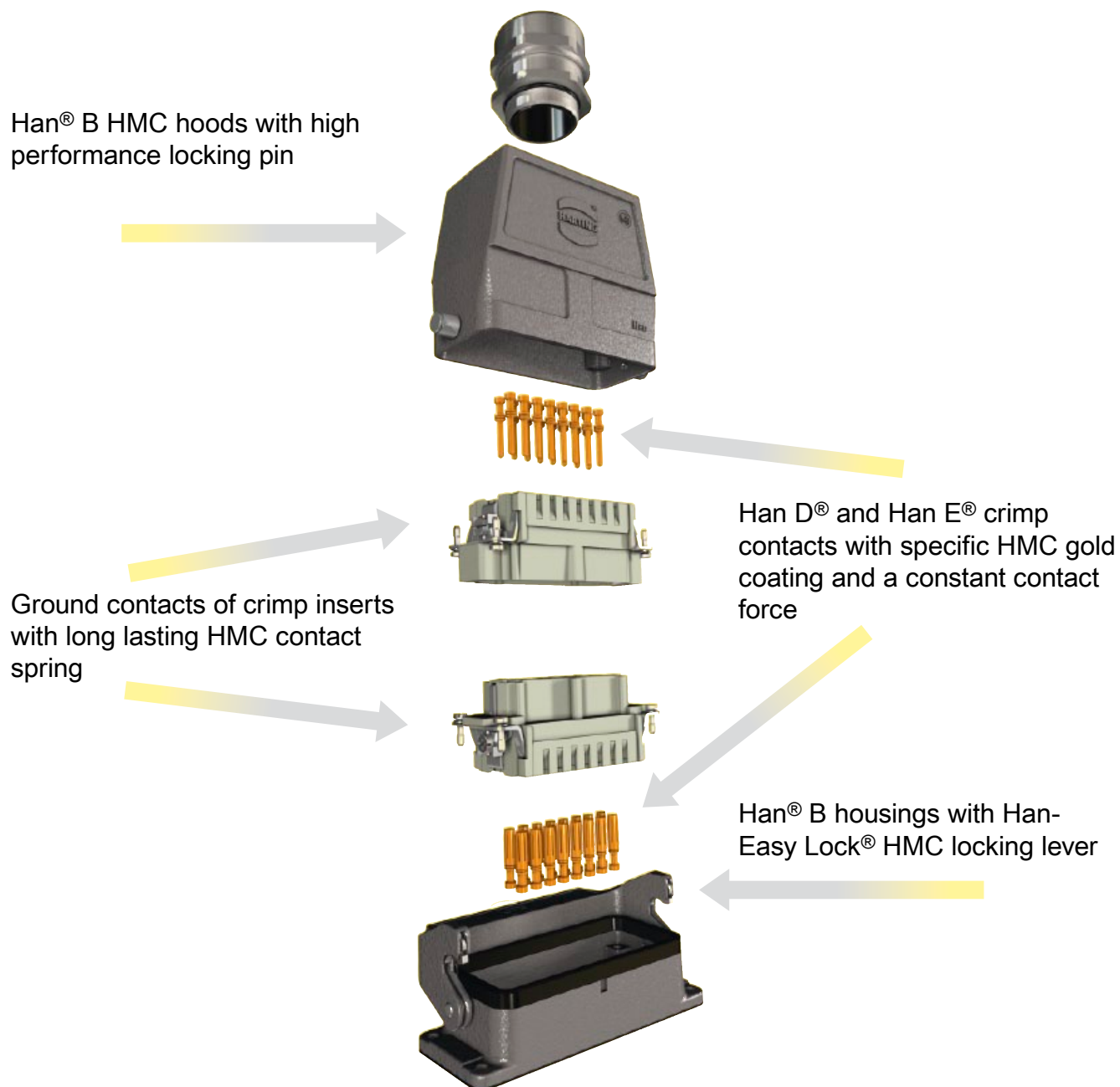
## Features

This series Han® HMC (**H**igh **M**ating **C**ycles) is a connector series specifically aiming at industrial applications for 10,000 mating cycles.

Benefits:

- High mechanical robustness
- Simple and easy understandable design
- Optimized concept for signal and power transmission
- Low mating and unmating forces
- High contact density

## General Description



## Technical characteristics

### Hoods/Housings Han B® HMC

|                                                                     |                                  |
|---------------------------------------------------------------------|----------------------------------|
| Material                                                            | aluminium die-cast               |
| Surface                                                             | powder coated<br>RAL 7037 (grey) |
| Locking element                                                     | Han-Easy Lock® HMC               |
| 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                            |

Selection of hoods housings see page 53

### Specifications

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

### Inserts

|                                                     |                                            |
|-----------------------------------------------------|--------------------------------------------|
| Number of contacts                                  | 40, 64 + PE                                |
| Electrical data<br>acc. to EN 61 984                | <b>10 A 250 V 4 kV 3</b>                   |
| Rated current                                       | 10 A                                       |
| Rated voltage                                       | 250 V                                      |
| Rated impulse voltage                               | 4 kV                                       |
| Pollution degree                                    | 3                                          |
| Pollution degree 2 also<br>– for wrap terminal only | 10 A 230/400 V 4 kV 2<br>10 A 250 V 4 kV 2 |
| Rated voltage<br>acc. to UL/CSA                     | 600 V                                      |
| Insulation resistance                               | $\geq 10^{10} \Omega$                      |
| Material                                            | polycarbonate                              |
| Limiting temperatures                               | -40 °C ... +125 °C                         |
| Flammability acc. to UL 94                          | V 0                                        |
| Mechanical working life<br>- mating cycles          | $\geq 10,000$                              |

### Contacts Han D® HMC

|                      |                          |
|----------------------|--------------------------|
| Material             | copper alloy             |
| Surface              | HMC gold plating         |
| Contact resistance   | $\leq 3 \text{ m}\Omega$ |
| Crimp terminal - min | 0.14 mm² / AWG 26        |
| Crimp terminal - max | 2.5 mm² / AWG 14         |

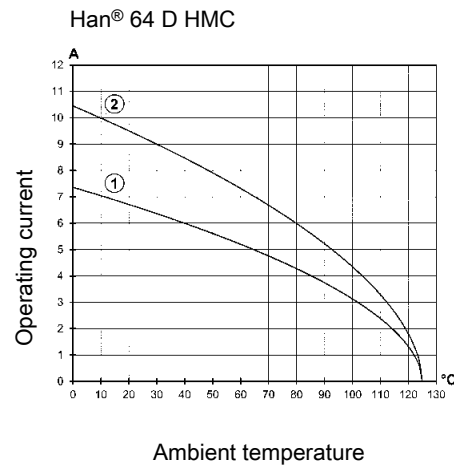
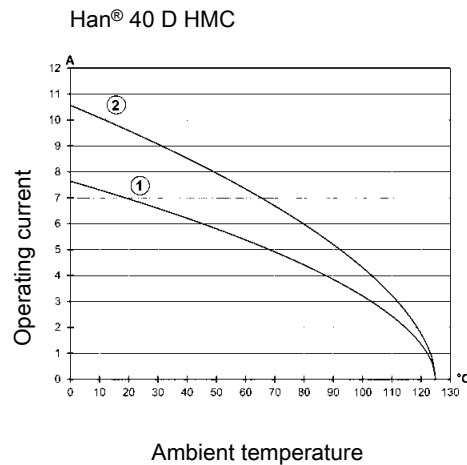
## Features

- High density contacts / connector
- For requirements up to 250 V / 10 A
- Time saving rapid termination by use of crimping contacts
- Suitable for hoods/housings of series Han® B HMC
- Han D® HMC contacts available with special HMC gold plating for 10,000 mating cycles

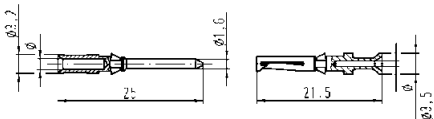
## Current carrying capacity

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 0.75 mm<sup>2</sup>  
② 1.5 mm<sup>2</sup>

| Identification                        |                | Wire gauge<br>(mm²) | Part number    |                | Male contact     | Female contact | Drawing                                                                              | Dimensions in mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|---------------------------------------|----------------|---------------------|----------------|----------------|------------------|----------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|---|------------------|---------------|-----------|--------|------|---------|--------|--------|------|----------|--------|--------|------|-------|--------|---------|------|---------|--------|---------|------|---------|--------|---------|------|
| Crimp contacts<br><br>HMC gold plated |                | 0.14-0.37           | 09 15 200 6124 | 09 15 200 6224 |                  |                |  | <table><tr><th colspan="2">Wire gauge</th><th>D</th><th>Stripping length</th></tr><tr><td>0.14-0.37 mm²</td><td>AWG 26-22</td><td>0.9 mm</td><td>8 mm</td></tr><tr><td>0.5 mm²</td><td>AWG 20</td><td>1.1 mm</td><td>8 mm</td></tr><tr><td>0.75 mm²</td><td>AWG 18</td><td>1.3 mm</td><td>8 mm</td></tr><tr><td>1 mm²</td><td>AWG 18</td><td>1.45 mm</td><td>8 mm</td></tr><tr><td>1.5 mm²</td><td>AWG 16</td><td>1.75 mm</td><td>8 mm</td></tr><tr><td>2.5 mm²</td><td>AWG 14</td><td>2.25 mm</td><td>6 mm</td></tr></table> | 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 |
|                                       |                | 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           |                |                  |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
| 0.5                                   | 09 15 200 6123 | 09 15 200 6223      |                |                |                  |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
| 0.75                                  | 09 15 200 6125 | 09 15 200 6225      |                |                |                  |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
| 1                                     | 09 15 200 6122 | 09 15 200 6222      |                |                |                  |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
| 1.5                                   | 09 15 200 6121 | 09 15 200 6221      |                |                |                  |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
| 2.5                                   | 09 15 200 6126 | 09 15 200 6226      |                |                |                  |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                |                     |                |                |                  |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                |                     |                |                |                  |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |

## Technical characteristics

### Hoods/Housings Han® B HMC

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

Selection of hoods housings see page 53

### Specifications

DIN EN 60 664-1  
DIN EN 61 984

### Inserts

|                                            |                          |
|--------------------------------------------|--------------------------|
| Number of contacts                         | 24, 42, 72, 108, + PE    |
| Electrical data<br>acc. to EN 61 984       | <b>10 A 250 V 4 kV 3</b> |
| 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<br>acc. to UL/CSA            | 600 V                    |
| Insulation resistance                      | $\geq 10^{10} \Omega$    |
| Material                                   | polycarbonate            |
| Limiting temperatures                      | -40 °C ... +125 °C       |
| Flammability acc. to UL 94                 | V 0                      |
| Mechanical working life<br>- mating cycles | $\geq 10,000$            |

### Contacts Han D® HMC

|                            |                               |
|----------------------------|-------------------------------|
| Material                   | copper alloy                  |
| Surface - hard-gold plated | HMC gold plated               |
| Contact resistance         | $\leq 3 \text{ m}\Omega$      |
| Crimp terminal - min       | 0.14 mm <sup>2</sup> / AWG 26 |
| Crimp terminal - max       | 2.5 mm <sup>2</sup> / AWG 14  |

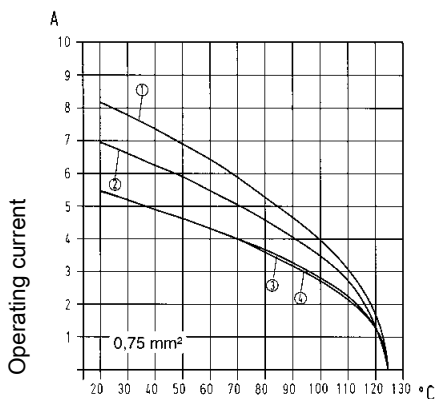
## Features

- High density of crimping contacts, up to 108 contacts/connector
- Time saving rapid termination by use of crimping contacts
- For requirements up to 250 V / 10 A
- Han D® HMC contacts available with special HMC gold plating for 10,000 mating cycles
- Suitable for hoods/housings of series Han® B HMC

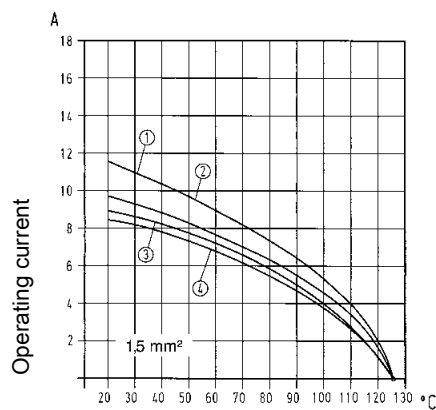
## Current carrying capacity

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

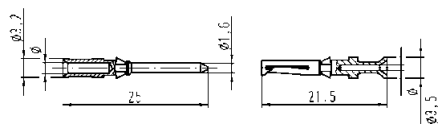


Ambient temperature



Ambient temperature

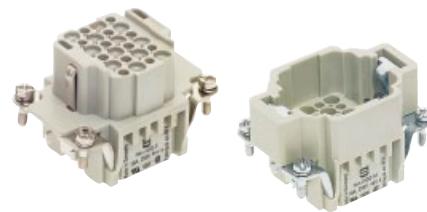
- ① Han<sup>®</sup> 24 DD HMC
- ② Han<sup>®</sup> 42 DD HMC
- ③ Han<sup>®</sup> 72 DD HMC
- ④ Han<sup>®</sup> 108 DD HMC

| Identification                        | Wire gauge<br>(mm²) | Male contact   | Female contact | Drawing                                                                              | Dimensions in mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|---------------------------------------|---------------------|----------------|----------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--|---|------------------|---------------|-----------|--------|------|---------|--------|--------|------|----------|--------|--------|------|-------|--------|---------|------|---------|--------|---------|------|---------|--------|---------|------|
| Crimp contacts<br><br>HMC gold plated | 0.14-0.37           | 09 15 200 6124 | 09 15 200 6224 |  | <table><tr><th colspan="2">Wire gauge</th><th>D</th><th>Stripping length</th></tr><tr><td>0.14-0.37 mm²</td><td>AWG 26-22</td><td>0.9 mm</td><td>8 mm</td></tr><tr><td>0.5 mm²</td><td>AWG 20</td><td>1.1 mm</td><td>8 mm</td></tr><tr><td>0.75 mm²</td><td>AWG 18</td><td>1.3 mm</td><td>8 mm</td></tr><tr><td>1 mm²</td><td>AWG 18</td><td>1.45 mm</td><td>8 mm</td></tr><tr><td>1.5 mm²</td><td>AWG 16</td><td>1.75 mm</td><td>8 mm</td></tr><tr><td>2.5 mm²</td><td>AWG 14</td><td>2.25 mm</td><td>6 mm</td></tr></table> | 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 |
|                                       | 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           |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
| 0.5                                   | 09 15 200 6123      | 09 15 200 6223 |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
| 0.75                                  | 09 15 200 6125      | 09 15 200 6225 |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
| 1                                     | 09 15 200 6122      | 09 15 200 6222 |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
| 1.5                                   | 09 15 200 6121      | 09 15 200 6221 |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
| 2.5                                   | 09 15 200 6126      | 09 15 200 6226 |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
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|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
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|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
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|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |
|                                       |                     |                |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |   |                  |               |           |        |      |         |        |        |      |          |        |        |      |       |        |         |      |         |        |         |      |         |        |         |      |

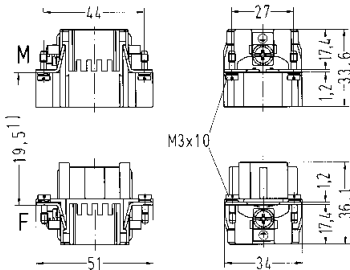
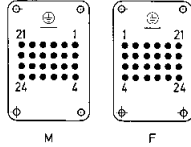
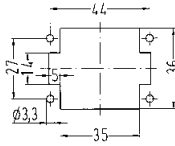
Number of contacts

24 +

Available May 2013



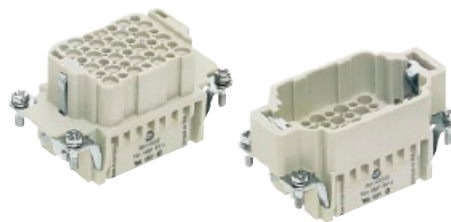
Inserts

| Identification                                                                                                                                                                                                                        | Series      | Part number     |                   | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                              | Dimensions in mm |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                                                                                                                                                       |             | Male insert (M) | Female insert (F) |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                  |
| <b>Crimp terminal</b><br>Order crimp contacts separately (see Technical characteristics on page 19)<br><br>Only with Han Docking Frame (see page 61) | Han DD® HMC | 09 16 224 3001  | 09 16 224 3101    | <br>1) Distance for contact max. 21 mm<br><b>Contact arrangement view from termination side</b><br><br><b>Panel cut out for inserts for use without hoods/housings</b><br> |                  |
| <b>Coding pin</b><br>                                                                                                                              |             |                 | 09 33 000 9915    | <b>Coding pin</b><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.                                                                                                                                                       |                  |

Number of contacts

42 +

Available May 2013



Inserts

Part number

Identification

Series

Male insert (M)

Female insert (F)

Drawing

Dimensions in mm

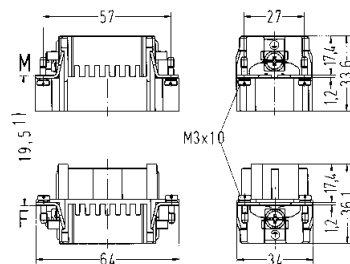
**Crimp terminal**

Order crimp contacts separately (see Technical characteristics on page 19)

Han  
DD®  
HMC

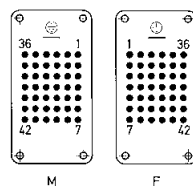
09 16 242 3001

09 16 242 3101

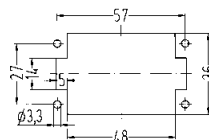


1) Distance for contact max. 21 mm

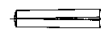
Contact arrangement  
view from termination side



Panel cut out for inserts  
for use without hoods/housings

**Coding pin**

09 33 000 9915

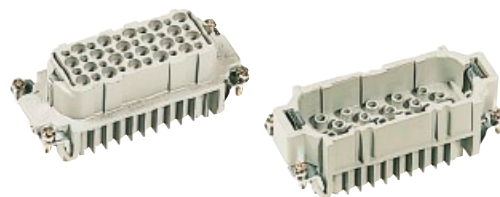
**Coding pin**

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.

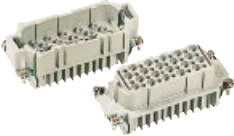
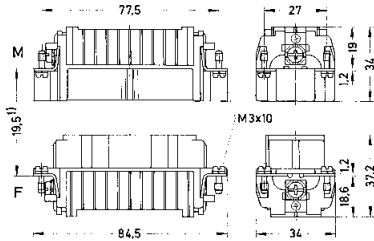
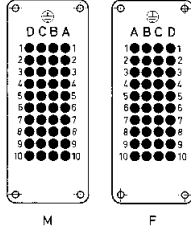
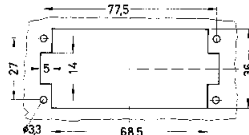
Number of contacts

40 +

Available May 2013



Inserts

| Identification                                                                                                                                                                           | Series           | Part number     |                   | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                             | Dimensions in mm |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                                                                                                          |                  | Male insert (M) | Female insert (F) |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |
| <b>Crimp terminal</b><br>Order crimp contacts separately (see Technical characteristics on page 17)<br> | Han<br>D®<br>HMC | 09 21 240 3001  | 09 21 240 3101    |  <p>1) Distance for contact max. 21 mm</p> <p>Contact arrangement<br/>view from termination side</p>  <p>Panel cut out for inserts<br/>for use without hoods/housings</p>  |                  |
| <b>Coding pin</b><br>                                                                                 |                  |                 |                   | <b>Coding pin</b><br> <p>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.</p>                                                                                                                                                  |                  |

Number of contacts

72 +

Available May 2013



Inserts

| Identification                                                                                          | Series      | Part number     |                   | Drawing                                                                                                                                                                                       | Dimensions in mm |
|---------------------------------------------------------------------------------------------------------|-------------|-----------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                         |             | Male insert (M) | Female insert (F) |                                                                                                                                                                                               |                  |
| <b>Crimp terminal</b><br>Order crimp contacts separately (see Technical characteristics on page 19)<br> | Han DD® HMC | 09 16 272 3001  | 09 16 272 3101    | <p>1) Distance for contact max. 21 mm</p> <p>Contact arrangement<br/>view from termination side</p> <p>Panel cut out for inserts<br/>for use without hoods/housings</p>                       |                  |
| <b>Coding pin</b><br>                                                                                   |             |                 | 09 33 000 9915    | <b>Coding pin</b><br><p>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.</p> |                  |

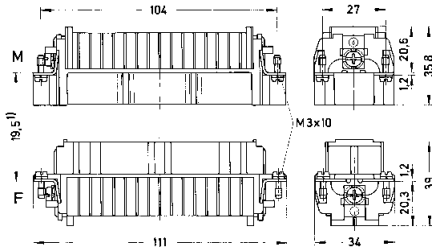
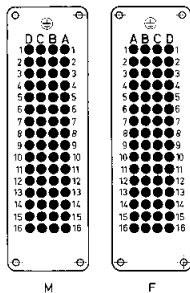
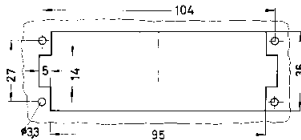
Number of contacts

64 +

Available May 2013



Inserts

| Identification                                                                                                                                                                           | Series     | Part number     |                   | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                             | Dimensions in mm |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                                                                                                          |            | Male insert (M) | Female insert (F) |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |
| <b>Crimp terminal</b><br>Order crimp contacts separately (see Technical characteristics on page 17)<br> | Han D® HMC | 09 21 264 3001  | 09 21 264 3101    |  <p>1) Distance for contact max. 21 mm</p> <p>Contact arrangement<br/>view from termination side</p>  <p>Panel cut out for inserts<br/>for use without hoods/housings</p>  |                  |
| <b>Coding pin</b><br>                                                                                 |            |                 |                   | <b>Coding pin</b><br><br>09 33 000 9915<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.                                                                                                                                    |                  |

Number of contacts

108 +

Available May 2013



Inserts

| Identification                                                                                          | Series      | Part number     |                   | Drawing                                                                                                                                                                                    | Dimensions in mm |
|---------------------------------------------------------------------------------------------------------|-------------|-----------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                         |             | Male insert (M) | Female insert (F) |                                                                                                                                                                                            |                  |
| <b>Crimp terminal</b><br>Order crimp contacts separately (see Technical characteristics on page 19)<br> | Han DD® HMC | 09 16 208 3001  | 09 16 208 3101    | <p>1) Distance for contact max. 21 mm</p> <p>Contact arrangement<br/>view from termination side</p> <p>Panel cut out for inserts<br/>for use without hoods/housings</p>                    |                  |
| <b>Coding pin</b><br>                                                                                   |             |                 |                   | <b>Coding pin</b><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. |                  |

## Technical characteristics

### Hoods/Housings Han<sup>®</sup> B HMC

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

selection of hoods/housings see page 53

### Specifications

DIN EN 60 664-1  
DIN EN 61 984

### Inserts

|                                            |                          |
|--------------------------------------------|--------------------------|
| Number of contacts                         | 6, 10, 16, 24, + PE      |
| Electrical data<br>acc. to EN 61 984       | <b>16 A 500 V 6 kV 3</b> |
| 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                      | $\geq 10^{10} \Omega$    |
| Material                                   | polycarbonate            |
| Limiting temperatures                      | -40 °C ... +125 °C       |
| Flammability acc. to UL 94                 | V 0                      |
| Mechanical working life<br>- mating cycles | $\geq 10,000$            |

### Contacts Han E<sup>®</sup> HMC

|                      |                               |
|----------------------|-------------------------------|
| Material             | copper alloy                  |
| Surface              | HMC gold plated               |
| Contact resistance   | $\leq 1 \text{ m}\Omega$      |
| Crimp terminal - min | 0.14 mm <sup>2</sup> / AWG 26 |
| Crimp terminal - max | 4 mm <sup>2</sup> / AWG 12    |

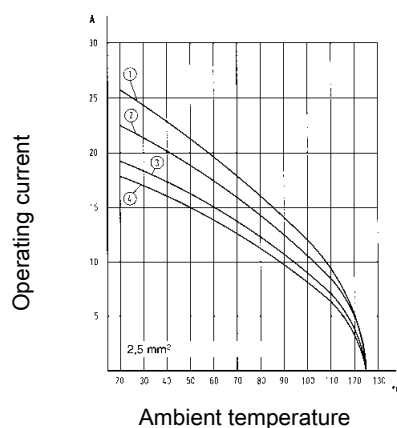
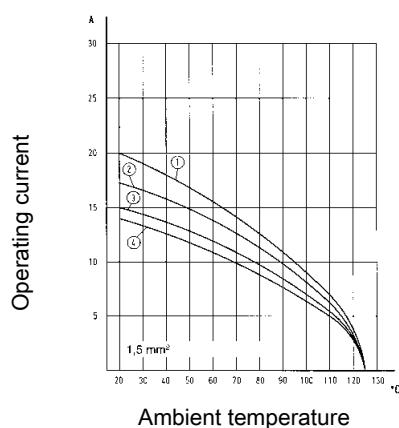
## Features

- Han E<sup>®</sup> HMC contacts with crimp termination
- Suitable for hoods/housings of series Han<sup>®</sup> B HMC
- Han E<sup>®</sup> HMC contacts available with special HMC gold plating for 10,000 mating cycles

## 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 HMC
- ② Han® 10 E HMC
- ③ Han® 16 E HMC
- ④ Han® 24 E HMC

| Identification                              | Wire gauge<br>(mm²) | Part number    |                  | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Dimensions in mm                                                                                                                                                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
|---------------------------------------------|---------------------|----------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|------------------|-----------|---------------|-----------|--------|-----------|---------|--------|--------|-----------|----------|--------|--------|----------|-------|--------|--------|-----------|---------|--------|--------|-----------|---------|--------|--------|-------------|-------|--------|--------|-----------|-------|--------|--------|--|
|                                             |                     | Male contact   | Female contact   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
| <b>Crimp contacts</b><br>HMC gold plated    |                     |                |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
|                                             | 0.14-0.37           | 09 33 200 6117 | 09 33 200 6217   | <table><tr><th>Identification</th><th colspan="2">Wire gauge</th><th>Stripping length</th></tr><tr><td>no groove</td><td>0.14-0.37 mm²</td><td>AWG 26-22</td><td>7.5 mm</td></tr><tr><td>no groove</td><td>0.5 mm²</td><td>AWG 20</td><td>7.5 mm</td></tr><tr><td>1 groove*</td><td>0.75 mm²</td><td>AWG 18</td><td>7.5 mm</td></tr><tr><td>1 groove</td><td>1 mm²</td><td>AWG 18</td><td>7.5 mm</td></tr><tr><td>2 grooves</td><td>1.5 mm²</td><td>AWG 16</td><td>7.5 mm</td></tr><tr><td>3 grooves</td><td>2.5 mm²</td><td>AWG 14</td><td>7.5 mm</td></tr><tr><td>wide groove</td><td>3 mm²</td><td>AWG 12</td><td>7.5 mm</td></tr><tr><td>no groove</td><td>4 mm²</td><td>AWG 12</td><td>7.5 mm</td></tr></table> <p>* on the back crimp collar</p> | 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 |  |
| 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           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
|                                             | 0.5                 | 09 33 200 6122 | 09 33 200 6222   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
|                                             | 0.75                | 09 33 200 6115 | 09 33 200 6215   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
|                                             | 1                   | 09 33 200 6118 | 09 33 200 6218   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
|                                             | 1.5                 | 09 33 200 6116 | 09 33 200 6216   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
|                                             | 2.5                 | 09 33 200 6123 | 09 33 200 6223   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
|                                             | 4                   | 09 33 200 6119 | 09 33 200 6221   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
| <b>Coding pin</b><br>for crimp inserts only |                     |                | 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. |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
|                                             |                     |                |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |

## Technical characteristics

### Hoods/Housings Han® B HMC

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

Selection of hoods/housings see page 53

### Specifications

DIN EN 60 664-1  
DIN EN 61 984

### Inserts

|                                            |                          |
|--------------------------------------------|--------------------------|
| Number of contacts                         | 40, 64 + PE              |
| Electrical data<br>acc. to EN 61 984       | <b>16 A 500 V 6 kV 3</b> |
| Rated current                              | 16 A                     |
| Rated voltage                              | 500 V                    |
| Rated impulse voltage                      | 6 kV                     |
| Pollution degree                           | 3                        |
| Insulation resistance                      | $\geq 10^{10} \Omega$    |
| Material                                   | polycarbonate            |
| Limiting temperatures                      | -40 °C ... +125 °C       |
| Flammability acc. to UL 94                 | V 0                      |
| Mechanical working life<br>- mating cycles | $\geq 10,000$            |

### Contacts Han® E HMC

|                      |                               |
|----------------------|-------------------------------|
| Material             | copper alloy                  |
| Surface              | HMC gold plated               |
| Contact resistance   | $\leq 1 \text{ m}\Omega$      |
| Crimp terminal - min | 0.14 mm <sup>2</sup> / AWG 26 |
| Crimp terminal - max | 4 mm <sup>2</sup> / AWG 12    |

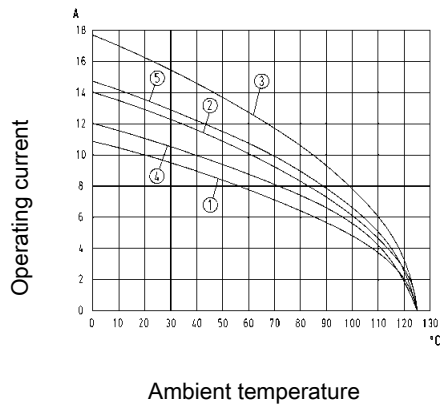
## Features

- Han E® HMC contacts with crimp termination
- Polarised insert
- Suitable for hoods/housings of series Han® B HMC
- Han E® HMC contacts available with special HMC gold plating for 10,000 mating cycles

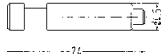
## Current carrying capacity

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

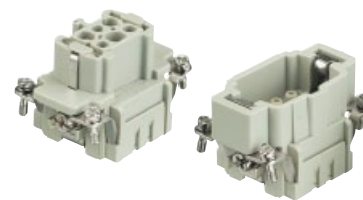


- ① Han® 64 EEE HMC / 1.5 mm<sup>2</sup>
- ② Han® 64 EEE HMC / 2.5 mm<sup>2</sup>
- ③ Han® 64 EEE HMC / 4.0 mm<sup>2</sup>
- ④ Han® 40 EEE HMC / 1.5 mm<sup>2</sup>
- ⑤ Han® 40 EEE HMC / 2.5 mm<sup>2</sup>

| Identification                                                                      |                           | Wire gauge<br>(mm <sup>2</sup> ) | Part number      |                | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Dimensions in mm                                                                                                                                                  |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
|-------------------------------------------------------------------------------------|---------------------------|----------------------------------|------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|------------------|-----------|---------------------------|-----------|--------|-----------|---------------------|--------|--------|-----------|----------------------|--------|--------|----------|-------------------|--------|--------|-----------|---------------------|--------|--------|-----------|---------------------|--------|--------|-------------|-------------------|--------|--------|-----------|-------------------|--------|--------|--|
|                                                                                     |                           |                                  | Male contact     | Female contact |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
| <b>Crimp contacts</b><br>HMC gold plated                                            |                           |                                  |                  |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
|  |                           | 0.14-0.37                        | 09 33 200 6117   | 09 33 200 6217 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
|                                                                                     |                           | 0.5                              | 09 33 200 6122   | 09 33 200 6222 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
|                                                                                     |                           | 0.75                             | 09 33 200 6115   | 09 33 200 6215 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
|                                                                                     |                           | 1                                | 09 33 200 6118   | 09 33 200 6218 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
|                                                                                     |                           | 1.5                              | 09 33 200 6116   | 09 33 200 6216 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
|                                                                                     |                           | 2.5                              | 09 33 200 6123   | 09 33 200 6223 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
|                                                                                     |                           | 4                                | 09 33 200 6119   | 09 33 200 6221 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
|                                                                                     |                           |                                  |                  |                | <table><tr><th>Identification</th><th colspan="2">Wire gauge</th><th>Stripping length</th></tr><tr><td>no groove</td><td>0.14-0.37 mm<sup>2</sup></td><td>AWG 26-22</td><td>7.5 mm</td></tr><tr><td>no groove</td><td>0.5 mm<sup>2</sup></td><td>AWG 20</td><td>7.5 mm</td></tr><tr><td>1 groove*</td><td>0.75 mm<sup>2</sup></td><td>AWG 18</td><td>7.5 mm</td></tr><tr><td>1 groove</td><td>1 mm<sup>2</sup></td><td>AWG 18</td><td>7.5 mm</td></tr><tr><td>2 grooves</td><td>1.5 mm<sup>2</sup></td><td>AWG 16</td><td>7.5 mm</td></tr><tr><td>3 grooves</td><td>2.5 mm<sup>2</sup></td><td>AWG 14</td><td>7.5 mm</td></tr><tr><td>wide groove</td><td>3 mm<sup>2</sup></td><td>AWG 12</td><td>7.5 mm</td></tr><tr><td>no groove</td><td>4 mm<sup>2</sup></td><td>AWG 12</td><td>7.5 mm</td></tr></table> | Identification                                                                                                                                                    | Wire gauge |  | Stripping length | no groove | 0.14-0.37 mm <sup>2</sup> | AWG 26-22 | 7.5 mm | no groove | 0.5 mm <sup>2</sup> | AWG 20 | 7.5 mm | 1 groove* | 0.75 mm <sup>2</sup> | AWG 18 | 7.5 mm | 1 groove | 1 mm <sup>2</sup> | AWG 18 | 7.5 mm | 2 grooves | 1.5 mm <sup>2</sup> | AWG 16 | 7.5 mm | 3 grooves | 2.5 mm <sup>2</sup> | AWG 14 | 7.5 mm | wide groove | 3 mm <sup>2</sup> | AWG 12 | 7.5 mm | no groove | 4 mm <sup>2</sup> | AWG 12 | 7.5 mm |  |
| Identification                                                                      | Wire gauge                |                                  | Stripping length |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
| no groove                                                                           | 0.14-0.37 mm <sup>2</sup> | AWG 26-22                        | 7.5 mm           |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
| no groove                                                                           | 0.5 mm <sup>2</sup>       | AWG 20                           | 7.5 mm           |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
| 1 groove*                                                                           | 0.75 mm <sup>2</sup>      | AWG 18                           | 7.5 mm           |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
| 1 groove                                                                            | 1 mm <sup>2</sup>         | AWG 18                           | 7.5 mm           |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
| 2 grooves                                                                           | 1.5 mm <sup>2</sup>       | AWG 16                           | 7.5 mm           |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
| 3 grooves                                                                           | 2.5 mm <sup>2</sup>       | AWG 14                           | 7.5 mm           |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
| wide groove                                                                         | 3 mm <sup>2</sup>         | AWG 12                           | 7.5 mm           |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
| no groove                                                                           | 4 mm <sup>2</sup>         | AWG 12                           | 7.5 mm           |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
|                                                                                     |                           |                                  |                  |                | * on the back crimp collar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
| <b>Coding pin</b><br>for crimp inserts only                                         |                           |                                  |                  | 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. |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |
|  |                           |                                  |                  |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                   |            |  |                  |           |                           |           |        |           |                     |        |        |           |                      |        |        |          |                   |        |        |           |                     |        |        |           |                     |        |        |             |                   |        |        |           |                   |        |        |  |

Number of contacts

6 +



Inserts

| Identification | Series | Part number     |                   | Drawing | Dimensions in mm |
|----------------|--------|-----------------|-------------------|---------|------------------|
|                |        | Male insert (M) | Female insert (F) |         |                  |

**Crimp terminal**

Order crimp contacts separately (see Technical characteristics on page 27)

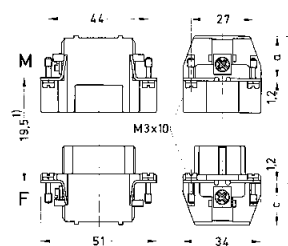


Only with Han® Docking frame (page 61)

Han E®  
HMC

09 33 206 2602

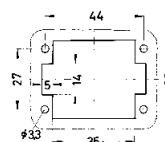
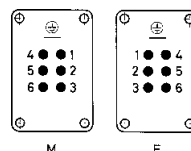
09 33 206 2702



1) Distance for contact max. 21 mm

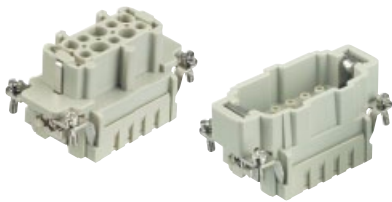
|            | a  | b  | c  | d  |
|------------|----|----|----|----|
| Han E® HMC | 19 | 34 | 19 | 36 |

Contact arrangement  
view from termination side

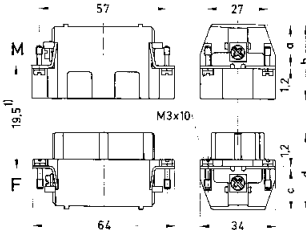
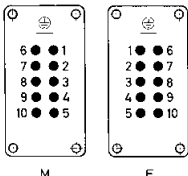
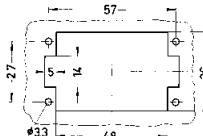


Number of contacts

10 +

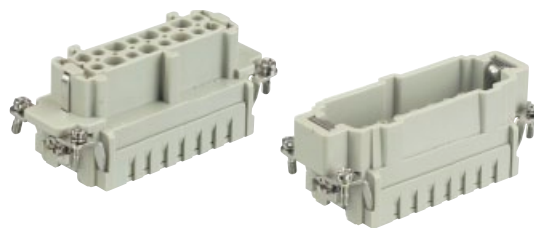


Inserts

| Identification                                                                                                                                                                                              | Series        | Part number     |                   | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Dimensions in mm |   |   |   |   |            |    |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---|---|---|---|------------|----|----|----|----|
|                                                                                                                                                                                                             |               | Male insert (M) | Female insert (F) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                  |   |   |   |   |            |    |    |    |    |
| <div>Crimp terminal</div> <div>Order crimp contacts separately (see Technical characteristics on page 27)</div> <div></div> | Han E®<br>HMC | 09 33 210 2602  | 09 33 210 2702    | <div></div> <div>1) Distance for contact max. 21 mm</div> <table><tr><td></td><td>a</td><td>b</td><td>c</td><td>d</td></tr><tr><td>Han E® HMC</td><td>19</td><td>34</td><td>19</td><td>36</td></tr></table> <div>Contact arrangement<br/>view from termination side</div> <div></div> <div>Panel cut out</div> <div></div> |                  | a | b | c | d | Han E® HMC | 19 | 34 | 19 | 36 |
|                                                                                                                                                                                                             | a             | b               | c                 | d                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |   |   |   |   |            |    |    |    |    |
| Han E® HMC                                                                                                                                                                                                  | 19            | 34              | 19                | 36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |   |   |   |   |            |    |    |    |    |

Number of contacts

16 +



Inserts

| Identification | Series | Part number     |                   | Drawing | Dimensions in mm |
|----------------|--------|-----------------|-------------------|---------|------------------|
|                |        | Male insert (M) | Female insert (F) |         |                  |

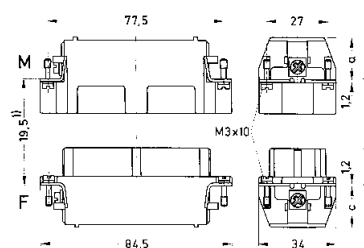
**Crimp terminal**

Order crimp contacts separately (see Technical characteristics on page 27)

Han E®  
HMC

09 33 216 2602

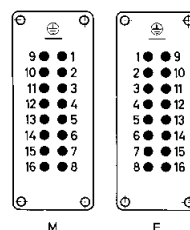
09 33 216 2702



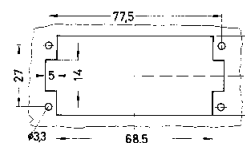
1) Distance for contact max. 21 mm

|            | a  | b  | c  | d  |
|------------|----|----|----|----|
| Han E® HMC | 19 | 34 | 19 | 36 |

Contact arrangement  
view from termination side



Panel cut out



Number of contacts

40
+

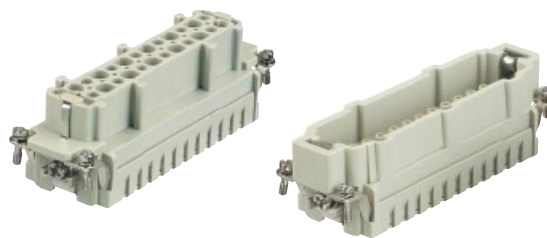


Inserts

| Identification                                                                                                                      | Series                            | Part number                 |                             | Drawing                                                                                                                                                                                                     | Dimensions in mm |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                                                     |                                   | Male insert (M)             | Female insert (F)           |                                                                                                                                                                                                             |                  |
| <div> Crimp termination <div> Order crimp contacts separately (see Technical characteristics on page 29) <div> </div> </div> </div> | <div> Han®<br/>EEE<br/>HMC </div> | <div> 09 32 240 3001 </div> | <div> 09 32 240 3101 </div> | <div> <div> </div> <div> 1) Distance for contact max. 21 mm </div> <div> Contact arrangement<br/>view from termination side <div> <div> </div> </div> <div> Panel cut out <div> </div> </div> </div> </div> |                  |

Number of contacts

24 +

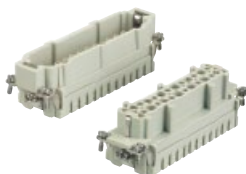


Inserts

| Identification | Series | Part number     |                   | Drawing | Dimensions in mm |
|----------------|--------|-----------------|-------------------|---------|------------------|
|                |        | Male insert (M) | Female insert (F) |         |                  |

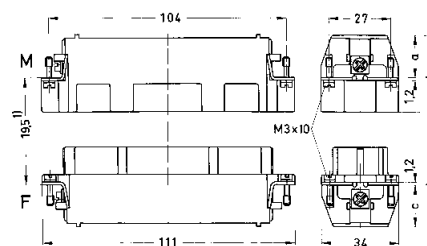
**Crimp terminal**

Order crimp contacts separately (see Technical characteristics on page 27)

Han E®  
HMC

09 33 224 2602

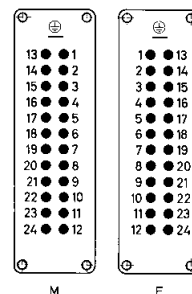
09 33 224 2702



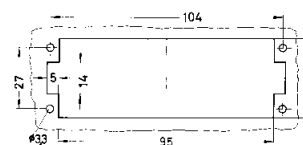
1) Distance for contact max. 21 mm

|            | a  | b  | c  | d  |
|------------|----|----|----|----|
| Han E® HMC | 19 | 34 | 19 | 36 |

Contact arrangement  
view from termination side

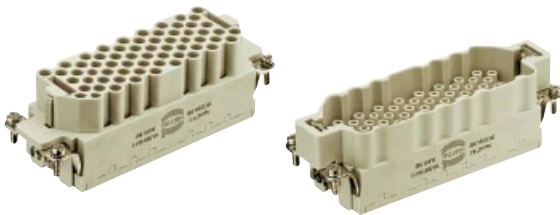


Panel cut out



Number of contacts

64
+

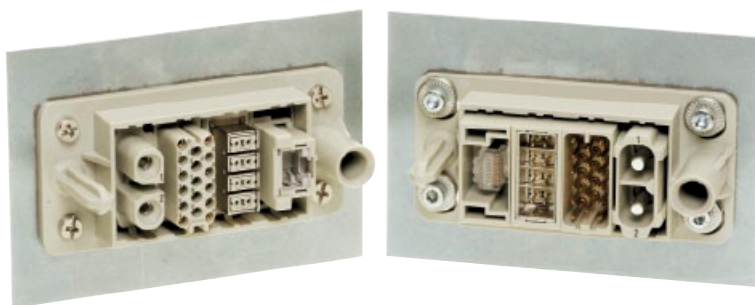


Inserts

| Identification                                                                                                                      | Series                            | Part number                 |                             | Drawing                                                                                                                                                                           | Dimensions in mm |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                                                     |                                   | Male insert (M)             | Female insert (F)           |                                                                                                                                                                                   |                  |
| <div> Crimp termination <div> Order crimp contacts separately (see Technical characteristics on page 29) <div> </div> </div> </div> | <div> Han®<br/>EEE<br/>HMC </div> | <div> 09 32 264 3001 </div> | <div> 09 32 264 3101 </div> | <div> <div> 1) Distance for contact max. 21 mm </div> <div> Contact arrangement<br/>view from termination side <div> </div> </div> <div> Panel cut out <div> </div> </div> </div> |                  |

| Series             | Han E® module                                                                     | Han® EE module                                                                    | Han E® Protected module                                                            | Han® EEE module                                                                     |
|--------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Number of contacts | 6                                                                                 | 8                                                                                 | 6                                                                                  | 20                                                                                  |
| Modules            | Crimp terminal                                                                    | Crimp terminal                                                                    | Crimp terminal                                                                     | Crimp terminal                                                                      |
|                    |  |  |  |  |
| Rated current      | 16 A                                                                              | 16 A                                                                              | 16 A                                                                               | 16 A                                                                                |
| Rated voltage      | 500 V                                                                             | 400 V                                                                             | 830 V                                                                              | 500 V                                                                               |
| Wire gauge         | 0.14 ... 4 mm <sup>2</sup>                                                        | 0.14 ... 4 mm <sup>2</sup>                                                        | 0.14 ... 4 mm <sup>2</sup>                                                         | 0.14 ... 4 mm <sup>2</sup>                                                          |
| Page               | 36                                                                                | 38                                                                                | 40                                                                                 | 42                                                                                  |

| Series             | Han DD® module                                                                    | Han® DDD module                                                                   |  |  |
|--------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|--|
| Number of contacts | 12                                                                                | 17                                                                                |  |  |
| Modules            | Crimp terminal                                                                    | Crimp terminal                                                                    |  |  |
|                    |  |  |  |  |
| Rated current      | 10 A                                                                              | 10 A                                                                              |  |  |
| Rated voltage      | 250 V                                                                             | 160 V                                                                             |  |  |
| Wire gauge         | 0.14 ... 2.5 mm <sup>2</sup>                                                      | 0.14 ... 2.5 mm <sup>2</sup>                                                      |  |  |
| Page               | 44                                                                                | 46                                                                                |  |  |



## 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
- Designed for 10,000 mating cycles

### Notice:

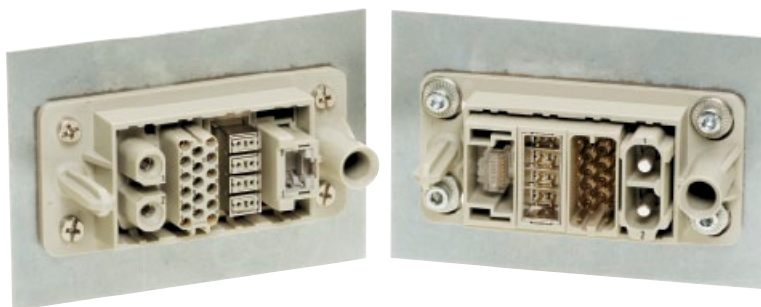
Due the plastic material used in the docking frame without PE, the panel will need to be grounded separately

## Technical characteristics

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

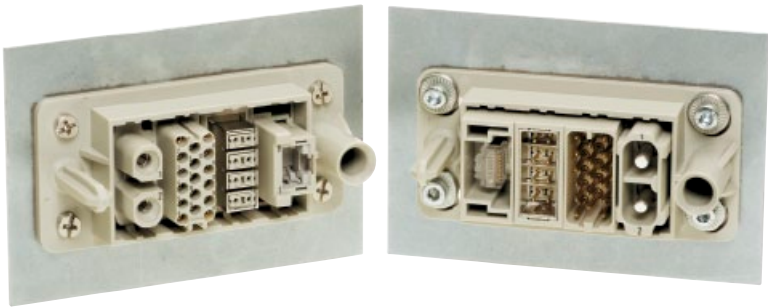
### Docking frames

|                            |                    |
|----------------------------|--------------------|
| Number of modules          | 2, 4, 6            |
| Material                   |                    |
| - Docking frames           | polycarbonate      |
| - Float washer             | zinc die-cast      |
| Floating tolerance         | ± 2 mm             |
| Aligning tolerance         | ± 4 mm             |
| Limiting temperatures      | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0                |
| Mechanical working life    |                    |
| - mating cycles            | ≥ 10,000           |



| Identification                         | Part number                   |                               | Drawing | Dimensions in mm                                                       |
|----------------------------------------|-------------------------------|-------------------------------|---------|------------------------------------------------------------------------|
|                                        | Marking A ... F <sup>1)</sup> | Marking a ... f <sup>2)</sup> |         |                                                                        |
| <b>Docking frame for 2 modules</b><br> | 09 14 006 1701                |                               |         | <p>① floating tolerance <math>\pm 2</math> mm</p> <p>Panel cut out</p> |
| <b>Docking frame for 2 modules</b><br> |                               | 09 14 006 1711                |         | <p>Panel cut out</p>                                                   |
| <b>Docking frame for 4 modules</b><br> | 09 14 016 1701                |                               |         | <p>① floating tolerance <math>\pm 2</math> mm</p>                      |
| <b>Docking frame for 4 modules</b><br> |                               | 09 14 016 1711                |         | <p>Panel cut out</p>                                                   |

1) Float mount  
2) Fixed



| Identification                                                                                          |                               | Part number    |  | Drawing                           | Dimensions in mm |
|---------------------------------------------------------------------------------------------------------|-------------------------------|----------------|--|-----------------------------------|------------------|
| Marking A ... F <sup>1)</sup>                                                                           | Marking a ... f <sup>2)</sup> |                |  |                                   |                  |
| Docking frame for 6 modules<br>                                                                         | 09 14 024 1701                |                |  | <p>① floating tolerance ±2 mm</p> |                  |
| Docking frame for 6 modules<br>                                                                         |                               | 09 14 024 1711 |  | <p>Panel cut out</p>              |                  |
| Float washer<br>to enable the<br>frame to be float<br>mounted using<br>standard M4<br>fixing screws<br> | 09 14 000 9936                |                |  |                                   |                  |

## Features

- Suitable for Han E® HMC crimp contacts
- Standard module for power up to 40 A
- Designed for 10,000 mating cycles with Han E® HMC crimp contacts and only with Han-Modular® Docking frame

## Technical characteristics

Specifications DIN EN 60 664-1  
DIN EN 61 984

Approvals 

### Inserts

|                                   |                          |
|-----------------------------------|--------------------------|
| Number of contacts                | 6                        |
| Electrical data acc. to EN 61 984 | <b>16 A 500 V 6 kV 3</b> |
| 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                   | $\geq 10^{10} \Omega$ |
| Material                                | polycarbonate         |
| Limiting temperatures                   | -40 °C ... +125 °C    |
| Flammability acc. to UL 94              | V 0                   |
| Mechanical working life - mating cycles | $\geq 10,000$         |

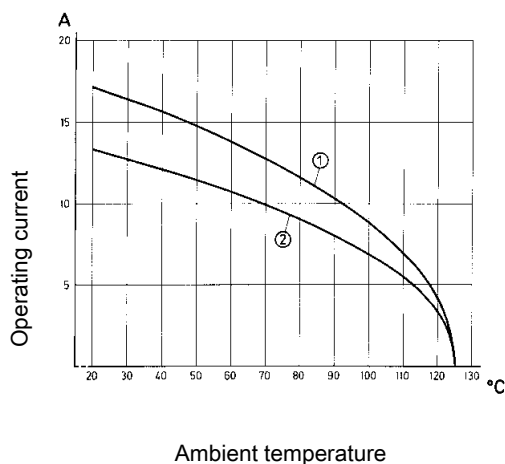
### Contacts Han E® HMC

|                    |                            |
|--------------------|----------------------------|
| Material           | copper alloy               |
| Surface            | HMC gold plated            |
| Contact resistance | $\leq 1 \text{ m}\Omega$   |
| Crimp terminal     |                            |
| - mm <sup>2</sup>  | 0.14 ... 4 mm <sup>2</sup> |
| - AWG              | 26 ... 12                  |

### 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



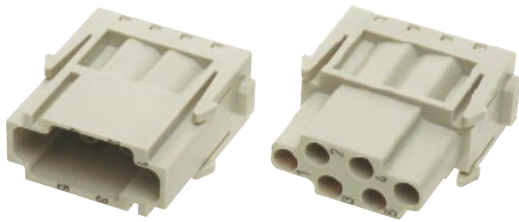
① 24 B HMC hoods/housings with 6 modules; wire gauge: 2.5 mm<sup>2</sup>

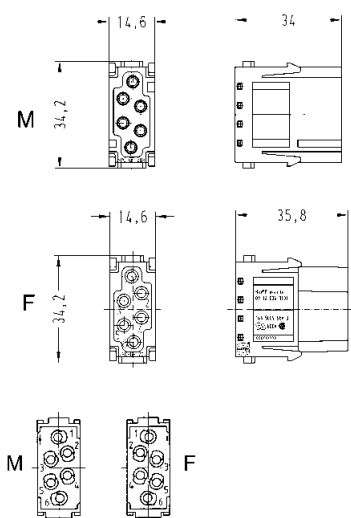
② 24 B HMC hoods/housings with 6 modules; wire gauge: 1.5 mm<sup>2</sup>

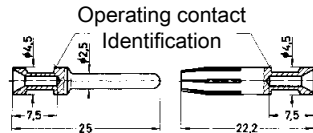


Number of contacts

6



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

| Identification                                                                      |               | Wire gauge<br>(mm²) | Part number      |                | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Dimensions in mm |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |
|-------------------------------------------------------------------------------------|---------------|---------------------|------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------|--|------------------|-----------|---------------|-----------|--------|-----------|---------|--------|--------|-----------|----------|--------|--------|----------|-------|--------|--------|-----------|---------|--------|--------|-----------|---------|--------|--------|-------------|-------|--------|--------|-----------|-------|--------|--------|----------------------------|--|--|--|--|
|                                                                                     |               |                     | Male contact     | Female contact |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |
| Crimp contacts<br>HMC gold plated                                                   |               |                     |                  |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |
|  |               | 0.14-0.37           | 09 33 200 6117   | 09 33 200 6217 | <table><tr><th>Identification</th><th colspan="2">Wire gauge</th><th>Stripping length</th></tr><tr><td>no groove</td><td>0.14-0.37 mm²</td><td>AWG 26-22</td><td>7.5 mm</td></tr><tr><td>no groove</td><td>0.5 mm²</td><td>AWG 20</td><td>7.5 mm</td></tr><tr><td>1 groove*</td><td>0.75 mm²</td><td>AWG 18</td><td>7.5 mm</td></tr><tr><td>1 groove</td><td>1 mm²</td><td>AWG 18</td><td>7.5 mm</td></tr><tr><td>2 grooves</td><td>1.5 mm²</td><td>AWG 16</td><td>7.5 mm</td></tr><tr><td>3 grooves</td><td>2.5 mm²</td><td>AWG 14</td><td>7.5 mm</td></tr><tr><td>wide groove</td><td>3 mm²</td><td>AWG 12</td><td>7.5 mm</td></tr><tr><td>no groove</td><td>4 mm²</td><td>AWG 12</td><td>7.5 mm</td></tr><tr><td colspan="4">* on the back crimp collar</td></tr></table> | 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 |  |  |  |  |
| 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                                                          |               |                     |                  |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |
|                                                                                     |               | 0.5                 | 09 33 200 6122   | 09 33 200 6222 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |
|                                                                                     |               | 0.75                | 09 33 200 6115   | 09 33 200 6215 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |
|                                                                                     |               | 1                   | 09 33 200 6118   | 09 33 200 6218 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |
|                                                                                     |               | 1.5                 | 09 33 200 6116   | 09 33 200 6216 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |
|                                                                                     |               | 2.5                 | 09 33 200 6123   | 09 33 200 6223 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |
|                                                                                     |               | 4                   | 09 33 200 6119   | 09 33 200 6221 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |
|                                                                                     |               |                     |                  |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |
|                                                                                     |               |                     |                  |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |
|                                                                                     |               |                     |                  |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |                            |  |  |  |  |

## Features

- Suitable for Han E® HMC crimp contacts
- High contact density
- Designed for 10,000 mating cycles with Han E® HMC crimp contacts and only with Han-Modular® Docking frame

## Technical characteristics

Specifications DIN EN 60 664-1  
DIN EN 61 984

Approvals



### Inserts

|                                   |                          |
|-----------------------------------|--------------------------|
| Number of contacts                | 8                        |
| Electrical data acc. to EN 61 984 | <b>16 A 400 V 6 kV 3</b> |
| 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                   | $\geq 10^{10} \Omega$ |
| Material                                | polycarbonate         |
| Limiting temperatures                   | -40 °C ... +125 °C    |
| Flammability acc. to UL 94              | V 0                   |
| Mechanical working life - mating cycles | $\geq 10,000$         |

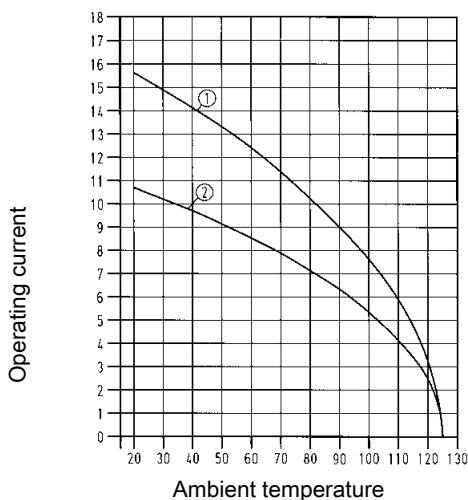
### Contacts Han E® HMC

|                    |                            |
|--------------------|----------------------------|
| Material           | copper alloy               |
| Surface            | HMC gold plated            |
| Contact resistance | $\leq 1 \text{ m}\Omega$   |
| Crimp terminal     |                            |
| - mm <sup>2</sup>  | 0.14 ... 4 mm <sup>2</sup> |
| - AWG              | 26 ... 12                  |

### 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

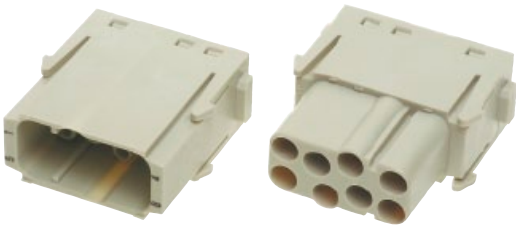


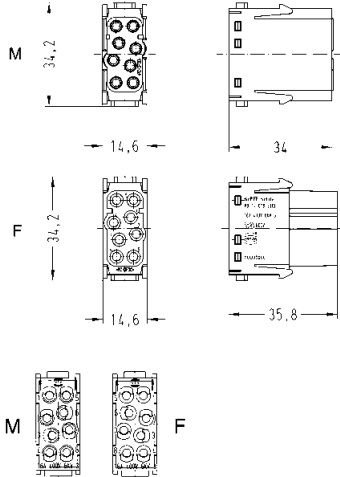
① 24 B HMC hoods/housings with 6 modules; wire gauge: 2.5 mm<sup>2</sup>

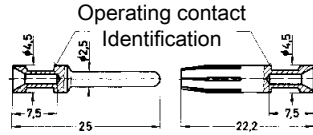
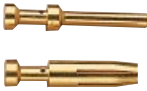
② 24 B HMC hoods/housings with 6 modules; wire gauge: 1.5 mm<sup>2</sup>

Number of contacts

8



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

| Identification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Wire gauge<br>(mm²) | Part number    |                  | Drawing                                                                              | Dimensions in mm |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------|------------------|--------------------------------------------------------------------------------------|------------------|----------------|------------|--|------------------|-----------|---------------|-----------|--------|-----------|---------|--------|--------|-----------|----------|--------|--------|----------|-------|--------|--------|-----------|---------|--------|--------|-----------|---------|--------|--------|-------------|-------|--------|--------|-----------|-------|--------|--------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     | Male contact   | Female contact   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
| Crimp contacts<br>HMC gold plated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                |                  |  |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.14-0.37           | 09 33 200 6117 | 09 33 200 6217   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.5                 | 09 33 200 6122 | 09 33 200 6222   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.75                | 09 33 200 6115 | 09 33 200 6215   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                   | 09 33 200 6118 | 09 33 200 6218   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1.5                 | 09 33 200 6116 | 09 33 200 6216   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2.5                 | 09 33 200 6123 | 09 33 200 6223   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4                   | 09 33 200 6119 | 09 33 200 6221   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
| <table><tr><th>Identification</th><th colspan="2">Wire gauge</th><th>Stripping length</th></tr><tr><td>no groove</td><td>0.14-0.37 mm²</td><td>AWG 26-22</td><td>7.5 mm</td></tr><tr><td>no groove</td><td>0.5 mm²</td><td>AWG 20</td><td>7.5 mm</td></tr><tr><td>1 groove*</td><td>0.75 mm²</td><td>AWG 18</td><td>7.5 mm</td></tr><tr><td>1 groove</td><td>1 mm²</td><td>AWG 18</td><td>7.5 mm</td></tr><tr><td>2 grooves</td><td>1.5 mm²</td><td>AWG 16</td><td>7.5 mm</td></tr><tr><td>3 grooves</td><td>2.5 mm²</td><td>AWG 14</td><td>7.5 mm</td></tr><tr><td>wide groove</td><td>3 mm²</td><td>AWG 12</td><td>7.5 mm</td></tr><tr><td>no groove</td><td>4 mm²</td><td>AWG 12</td><td>7.5 mm</td></tr></table> |                     |                |                  |                                                                                      |                  | 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 |
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                |                  |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |

## Features

- Suitable for Han E<sup>®</sup> HMC crimp contacts
- designed for a high working voltage up to 830 V
- finger safe male and female contacts
- Designed for 10,000 mating cycles with Han E<sup>®</sup> HMC crimp contacts and only with Han-Modular<sup>®</sup> Docking frame

## Technical characteristics

Specifications DIN EN 60 664-1  
DIN EN 61 984

Approvals

### Inserts

|                       |                          |
|-----------------------|--------------------------|
| Number of contacts    | 6                        |
| Electrical data       |                          |
| acc. to EN 61 984     | <b>16 A 830 V 8 kV 3</b> |
| Rated current         | 16 A                     |
| Rated voltage         | 830 V                    |
| Rated impulse voltage | 8 kV                     |
| Pollution degree      | 3                        |

|                            |                       |
|----------------------------|-----------------------|
| Rated voltage              | 600 V                 |
| acc. to UL                 |                       |
| Insulation resistance      | $\geq 10^{10} \Omega$ |
| Material                   | polycarbonate         |
| Limiting temperatures      | -40 °C ... +125 °C    |
| Flammability acc. to UL 94 | V 0                   |
| Mechanical working life    |                       |
| - mating cycles            | $\geq 10,000$         |

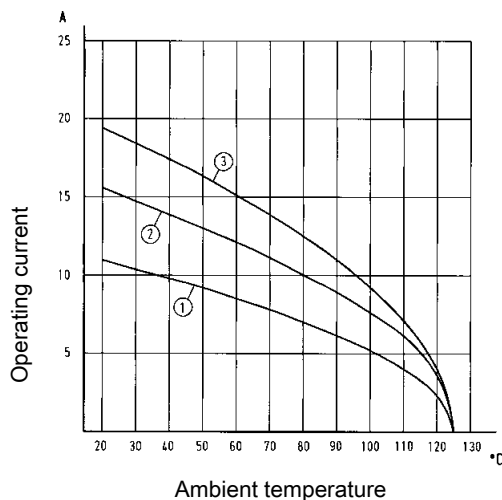
### Contacts Han E<sup>®</sup> HMC

|                    |                            |
|--------------------|----------------------------|
| Material           | copper alloy               |
| Surface            | HMC gold plated            |
| Contact resistance | $\leq 1 \text{ m}\Omega$   |
| Crimp terminal     |                            |
| - mm <sup>2</sup>  | 0.14 ... 4 mm <sup>2</sup> |
| - AWG              | 26 ... 12                  |

## 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

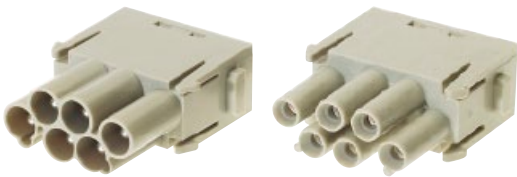


- ① 24 B HMC hoods/housings with 6 modules; wire gauge: 1.5 mm<sup>2</sup>
- ② 24 B HMC hoods/housings with 6 modules; wire gauge: 2.5 mm<sup>2</sup>
- ③ 24 B HMC hoods/housings with 6 modules; wire gauge: 4 mm<sup>2</sup>



Number of contacts

6



| Identification                                    | Part number     |                   | Drawing                                                                | Dimensions in mm |
|---------------------------------------------------|-----------------|-------------------|------------------------------------------------------------------------|------------------|
|                                                   | Male insert (M) | Female insert (F) |                                                                        |                  |
| Crimp terminal<br>Order crimp contacts separately | 09 14 006 3041  | 09 14 006 3141    | <br>M<br>F<br>M<br>F<br>Contact arrangement view from termination side |                  |

| Identification                           | Wire gauge<br>(mm²)                              | Male contact                                                                                                               | Female contact                                                                                                             | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Dimensions in mm |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
|------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------|--|------------------|-----------|---------------|-----------|--------|-----------|---------|--------|--------|-----------|----------|--------|--------|----------|-------|--------|--------|-----------|---------|--------|--------|-----------|---------|--------|--------|-------------|-------|--------|--------|-----------|-------|--------|--------|--|
| <b>Crimp contacts</b><br>HMC gold plated |                                                  |                                                                                                                            |                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |
|                                          | 0.14-0.37<br>0.5<br>0.75<br>1<br>1.5<br>2.5<br>4 | 09 33 200 6117<br>09 33 200 6122<br>09 33 200 6115<br>09 33 200 6118<br>09 33 200 6116<br>09 33 200 6123<br>09 33 200 6119 | 09 33 200 6217<br>09 33 200 6222<br>09 33 200 6215<br>09 33 200 6218<br>09 33 200 6216<br>09 33 200 6223<br>09 33 200 6221 | <table><tr><th>Identification</th><th colspan="2">Wire gauge</th><th>Stripping length</th></tr><tr><td>no groove</td><td>0.14-0.37 mm²</td><td>AWG 26-22</td><td>7.5 mm</td></tr><tr><td>no groove</td><td>0.5 mm²</td><td>AWG 20</td><td>7.5 mm</td></tr><tr><td>1 groove*</td><td>0.75 mm²</td><td>AWG 18</td><td>7.5 mm</td></tr><tr><td>1 groove</td><td>1 mm²</td><td>AWG 18</td><td>7.5 mm</td></tr><tr><td>2 grooves</td><td>1.5 mm²</td><td>AWG 16</td><td>7.5 mm</td></tr><tr><td>3 grooves</td><td>2.5 mm²</td><td>AWG 14</td><td>7.5 mm</td></tr><tr><td>wide groove</td><td>3 mm²</td><td>AWG 12</td><td>7.5 mm</td></tr><tr><td>no groove</td><td>4 mm²</td><td>AWG 12</td><td>7.5 mm</td></tr></table><br>* on the back crimp collar | 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 |  |
| 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                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |  |

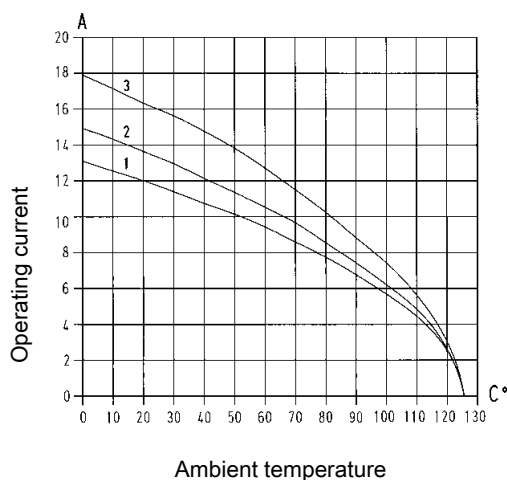
## Features

- Suitable for Han E® HMC crimp contacts
- High contact density
- Up to 16 A per contact
- Also suitable as a reliable signal connector
- Designed for 10,000 mating cycles with Han E® HMC crimp contacts and only with Han-Modular® Docking frame

## 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 HMC hoods/housings with 3 modules; wire gauge: 1.5 mm²  
 ② 24 B HMC hoods/housings with 3 modules; wire gauge: 2.5 mm²  
 ③ 24 B HMC hoods/housings with 3 modules; wire gauge: 4 mm²

## Technical characteristics

Specifications DIN EN 60 664-1  
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  $\geq 10^{10} \Omega$   
 Material polycarbonate  
 Limiting temperatures -40 °C ... +125 °C  
 Flammability acc. to UL 94 V 0  
 Mechanical working life - mating cycles  $\geq 10,000$

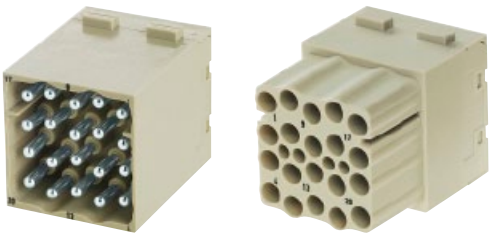
### Contacts Han E® HMC

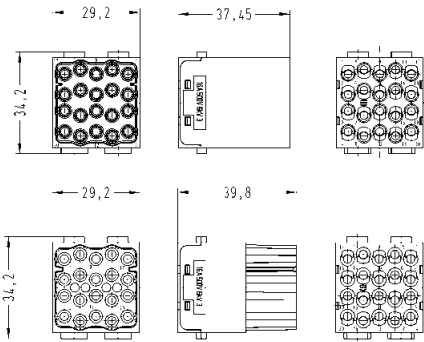
Material copper alloy  
 Surface HMC gold plated  
 Contact resistance  $\leq 1 \text{ m}\Omega$   
 Crimp terminal  
 - mm² 0.14 ... 4 mm²  
 - AWG 26 ... 12

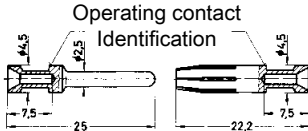


Number of contacts

20



| Identification                                    | Part number     |                   | Drawing                                                                            | Dimensions in mm                               |
|---------------------------------------------------|-----------------|-------------------|------------------------------------------------------------------------------------|------------------------------------------------|
|                                                   | Male insert (M) | Female insert (F) |                                                                                    |                                                |
| Crimp terminal<br>Order crimp contacts separately | 09 14 020 3001  | 09 14 020 3101    |  | Contact arrangement view from termination side |

| Identification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Wire gauge<br>(mm²) | Part number    |                  | Drawing                                                                              | Dimensions in mm |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------|------------------|--------------------------------------------------------------------------------------|------------------|----------------|------------|--|------------------|-----------|---------------|-----------|--------|-----------|---------|--------|--------|-----------|----------|--------|--------|----------|-------|--------|--------|-----------|---------|--------|--------|-----------|---------|--------|--------|-------------|-------|--------|--------|-----------|-------|--------|--------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     | Male contact   | Female contact   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
| Crimp contacts<br>HMC gold plated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                |                  |  |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.14-0.37           | 09 33 200 6117 | 09 33 200 6217   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.5                 | 09 33 200 6122 | 09 33 200 6222   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.75                | 09 33 200 6115 | 09 33 200 6215   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                   | 09 33 200 6118 | 09 33 200 6218   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1.5                 | 09 33 200 6116 | 09 33 200 6216   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2.5                 | 09 33 200 6123 | 09 33 200 6223   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4                   | 09 33 200 6119 | 09 33 200 6221   |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |
| <table><tr><th>Identification</th><th colspan="2">Wire gauge</th><th>Stripping length</th></tr><tr><td>no groove</td><td>0.14-0.37 mm²</td><td>AWG 26-22</td><td>7.5 mm</td></tr><tr><td>no groove</td><td>0.5 mm²</td><td>AWG 20</td><td>7.5 mm</td></tr><tr><td>1 groove*</td><td>0.75 mm²</td><td>AWG 18</td><td>7.5 mm</td></tr><tr><td>1 groove</td><td>1 mm²</td><td>AWG 18</td><td>7.5 mm</td></tr><tr><td>2 grooves</td><td>1.5 mm²</td><td>AWG 16</td><td>7.5 mm</td></tr><tr><td>3 grooves</td><td>2.5 mm²</td><td>AWG 14</td><td>7.5 mm</td></tr><tr><td>wide groove</td><td>3 mm²</td><td>AWG 12</td><td>7.5 mm</td></tr><tr><td>no groove</td><td>4 mm²</td><td>AWG 12</td><td>7.5 mm</td></tr></table> |                     |                |                  |                                                                                      |                  | 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 |
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                |                  |                                                                                      |                  |                |            |  |                  |           |               |           |        |           |         |        |        |           |          |        |        |          |       |        |        |           |         |        |        |           |         |        |        |             |       |        |        |           |       |        |        |

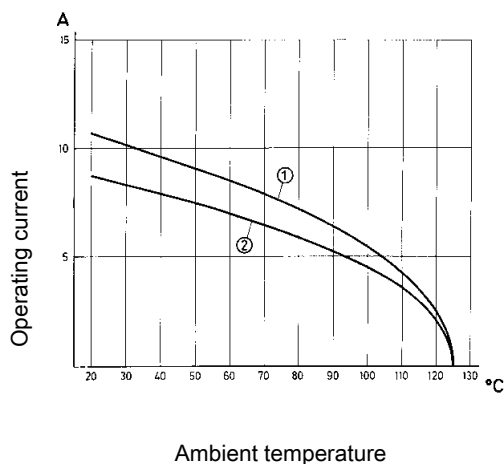
## Features

- Suitable for Han D<sup>®</sup> HMC crimp contacts
- Standard module for power up to 10 A
- Compatible to Han D<sup>®</sup> module with Quick Lock terminal
- Designed for 10,000 mating cycles with Han D<sup>®</sup> HMC crimp contacts and only with Han-Modular<sup>®</sup> Docking frame

## 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 HMC hoods/housings with 6 modules; wire gauge: 1.5 mm<sup>2</sup>

② 24 B HMC hoods/housings with 6 modules; wire gauge: 1.0 mm<sup>2</sup>

## Technical characteristics

Specifications DIN EN 60 664-1  
DIN EN 61 984

Approvals 

### Inserts

|                       |                          |
|-----------------------|--------------------------|
| Number of contacts    | 12                       |
| Electrical data       |                          |
| acc. to EN 61 984     | <b>10 A 250 V 4 kV 3</b> |
| Rated current         | 10 A                     |
| Rated voltage         | 250 V                    |
| Rated impulse voltage | 4 kV                     |
| Pollution degree      | 3                        |

|                            |                       |
|----------------------------|-----------------------|
| Rated voltage              | 600 V                 |
| acc. to UL/CSA             |                       |
| Insulation resistance      | $\geq 10^{10} \Omega$ |
| Material                   | polycarbonate         |
| Limiting temperatures      | -40 °C ... +125 °C    |
| Flammability acc. to UL 94 | V 0                   |
| Mechanical working life    |                       |
| - mating cycles            | $\geq 10,000$         |

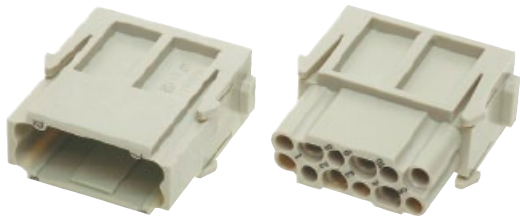
### Contacts Han D<sup>®</sup> HMC

|                    |                              |
|--------------------|------------------------------|
| Material           | copper alloy                 |
| Surface            | HMC gold plated              |
| Contact resistance | $\leq 3 \text{ m}\Omega$     |
| Crimp terminal     |                              |
| - mm <sup>2</sup>  | 0.14 ... 2.5 mm <sup>2</sup> |
| - AWG              | 26 ... 14                    |

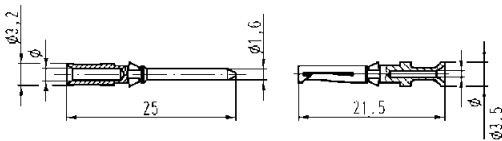


Number of contacts

12



| Identification                                    | Part number     |                   | Drawing                                               | Dimensions in mm |
|---------------------------------------------------|-----------------|-------------------|-------------------------------------------------------|------------------|
|                                                   | Male insert (M) | Female insert (F) |                                                       |                  |
| Crimp terminal<br>Order crimp contacts separately | 09 14 012 3001  | 09 14 012 3101    | <p>Contact arrangement view from termination side</p> |                  |

| Identification                                                                      | Wire gauge<br>(mm²) | Part number    |                | Drawing                                                                              | Dimensions in mm |
|-------------------------------------------------------------------------------------|---------------------|----------------|----------------|--------------------------------------------------------------------------------------|------------------|
|                                                                                     |                     | Male contact   | Female contact |                                                                                      |                  |
| Crimp contacts                                                                      |                     |                |                |                                                                                      |                  |
| HMC gold plated                                                                     |                     |                |                |                                                                                      |                  |
|  | 0.14-0.37           | 09 15 200 6124 | 09 15 200 6224 |  |                  |
|                                                                                     | 0.5                 | 09 15 200 6123 | 09 15 200 6223 |                                                                                      |                  |
|                                                                                     | 0.75                | 09 15 200 6125 | 09 15 200 6225 |                                                                                      |                  |
|                                                                                     | 1                   | 09 15 200 6122 | 09 15 200 6222 |                                                                                      |                  |
|                                                                                     | 1.5                 | 09 15 200 6121 | 09 15 200 6221 |                                                                                      |                  |
|                                                                                     | 2.5                 | 09 15 200 6126 | 09 15 200 6226 |                                                                                      |                  |
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## Features

- Suitable for Han D® HMC crimp contacts
- High contact density
- Designed for 10,000 mating cycles with Han® D HMC crimp contacts and only with Han-Modular® Docking frame

## Technical characteristics

Specifications DIN EN 60 664-1  
DIN EN 61 984

Approvals



### Inserts

|                       |                            |
|-----------------------|----------------------------|
| Number of contacts    | 17                         |
| Electrical data       |                            |
| acc. to EN 61 984     | <b>10 A 160 V 2.5 kV 3</b> |
| Rated current         | 10 A                       |
| Rated voltage         | 160 V                      |
| Rated impulse voltage | 2.5 kV                     |
| Pollution degree      | 3                          |

|                            |                       |
|----------------------------|-----------------------|
| Rated voltage              | 250 V                 |
| acc. to UL                 |                       |
| Insulation resistance      | $\geq 10^{10} \Omega$ |
| Material                   | polycarbonate         |
| Limiting temperatures      | -40 °C ... +125 °C    |
| Flammability acc. to UL 94 | V 0                   |
| Mechanical working life    |                       |
| - mating cycles            | $\geq 10,000$         |

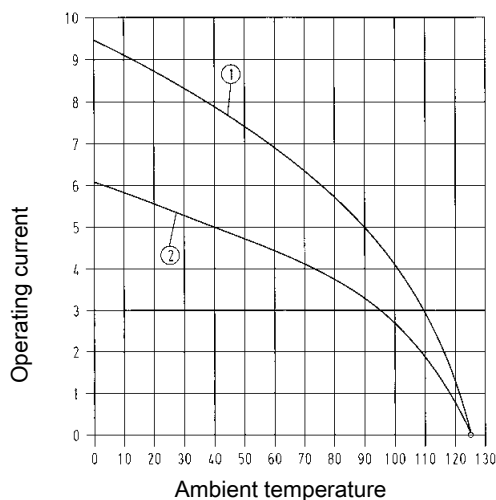
### Contacts Han D® HMC

|                    |                              |
|--------------------|------------------------------|
| Material           | copper alloy                 |
| Surface            | HMC gold plated              |
| Contact resistance | $\leq 3 \text{ m}\Omega$     |
| Crimp terminal     |                              |
| - mm <sup>2</sup>  | 0.14 ... 2.5 mm <sup>2</sup> |
| - AWG              | 26 ... 14                    |

### 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



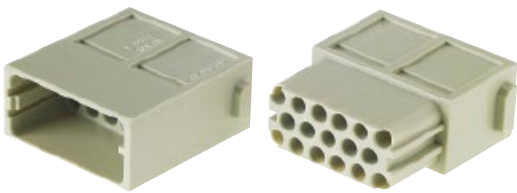
① 24 B HMC hoods/housings with 6 modules; wire gauge: 1.5 mm<sup>2</sup>

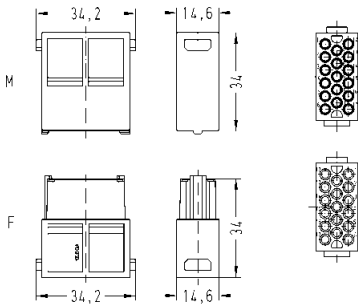
② 24 B HMC hoods/housings with 6 modules; wire gauge: 1.0 mm<sup>2</sup>

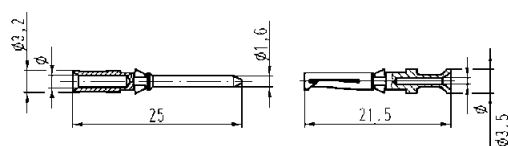


Number of contacts

17



| Identification                                    | Part number     |                   | Drawing                                                                            | Dimensions in mm                               |
|---------------------------------------------------|-----------------|-------------------|------------------------------------------------------------------------------------|------------------------------------------------|
|                                                   | Male insert (M) | Female insert (F) |                                                                                    |                                                |
| Crimp terminal<br>Order crimp contacts separately | 09 14 017 3001  | 09 14 017 3101    |  | Contact arrangement view from termination side |

| Identification                                                                      | Wire gauge<br>(mm²)                         | Part number                                                                                              |                                                                                                          | Male contact | Female contact | Drawing                                                                              | Dimensions in mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |  |   |                  |               |           |     |      |         |        |     |      |          |        |     |      |       |        |      |      |         |        |      |      |         |        |      |      |
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| Crimp contacts                                                                      |                                             |                                                                                                          |                                                                                                          |              |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |  |   |                  |               |           |     |      |         |        |     |      |          |        |     |      |       |        |      |      |         |        |      |      |         |        |      |      |
| HMC gold plated                                                                     |                                             |                                                                                                          |                                                                                                          |              |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |  |   |                  |               |           |     |      |         |        |     |      |          |        |     |      |       |        |      |      |         |        |      |      |         |        |      |      |
|  | 0,14-0,37<br>0,5<br>0,75<br>1<br>1,5<br>2,5 | 09 15 200 6124<br>09 15 200 6123<br>09 15 200 6125<br>09 15 200 6122<br>09 15 200 6121<br>09 15 200 6126 | 09 15 200 6224<br>09 15 200 6223<br>09 15 200 6225<br>09 15 200 6222<br>09 15 200 6221<br>09 15 200 6226 |              |                |  | <table><tr><th colspan="2">Wire gauge</th><th>Ø</th><th>Stripping length</th></tr><tr><td>0.14-0.37 mm²</td><td>AWG 26-22</td><td>0.9</td><td>8 mm</td></tr><tr><td>0.5 mm²</td><td>AWG 20</td><td>1.1</td><td>8 mm</td></tr><tr><td>0.75 mm²</td><td>AWG 18</td><td>1.3</td><td>8 mm</td></tr><tr><td>1 mm²</td><td>AWG 18</td><td>1.45</td><td>8 mm</td></tr><tr><td>1.5 mm²</td><td>AWG 16</td><td>1.75</td><td>8 mm</td></tr><tr><td>2.5 mm²</td><td>AWG 14</td><td>2.25</td><td>6 mm</td></tr></table> | 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 |
| 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                                                                                                     |              |                |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |  |   |                  |               |           |     |      |         |        |     |      |          |        |     |      |       |        |      |      |         |        |      |      |         |        |      |      |

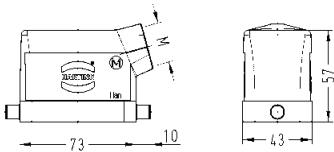
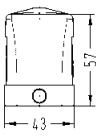
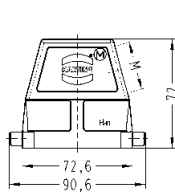
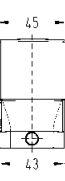
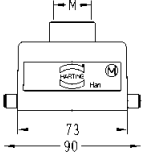
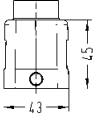
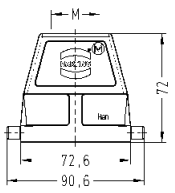
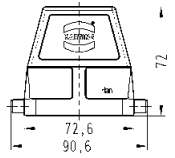
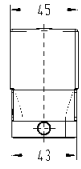
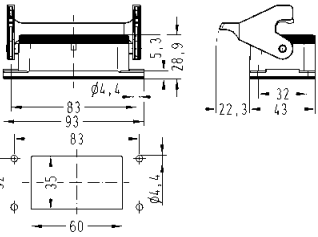
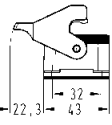
## Technical characteristics

## Han® B HMC

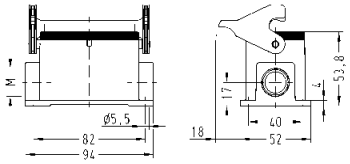
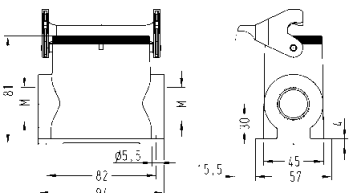
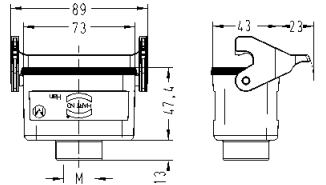
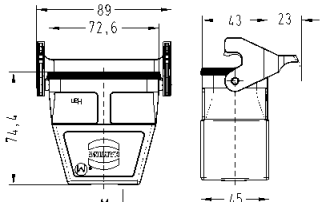
## Metal hoods/housings for industrial applications

|                                               |                    |
|-----------------------------------------------|--------------------|
| Material                                      | aluminium die-cast |
| Colour                                        | RAL 7037 (grey)    |
| Surface                                       | powder-coated      |
| Locking element                               | Stainless steel    |
| Lever type                                    | Han-Easy Lock® HMC |
| Hoods/Housings seal                           | NBR                |
| Limiting temperatures                         | -40 °C ... +125 °C |
| Approval acc. to UL 50                        | NEMA Type 4/4X/12  |
| Degree of protection acc.<br>to DIN EN 60 529 |                    |
| for coupled connector                         | IP 65              |
| Locking cycles                                | ≥ 10,000           |

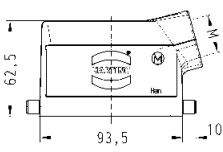
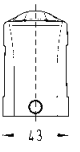
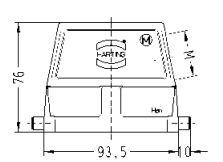
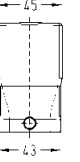
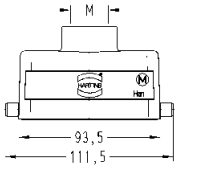
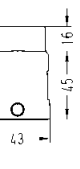
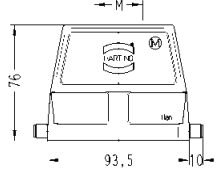
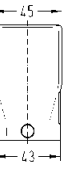
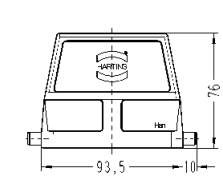
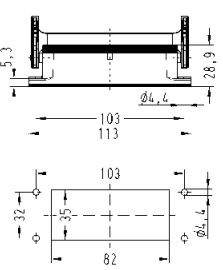
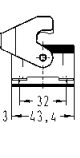
## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification                                                                                                                    | Part number                      |                   | Cable entry<br>metric | Drawing                                                                               | Dimensions in mm                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------|-----------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                                                                   | Low construction                 | High construction |                       |                                                                                       |                                                                                       |
| <b>Hoods</b><br>side entry<br>                   | 19 30 210 1540<br>19 30 210 1541 |                   | 1 x 20<br>1 x 25      |    |    |
| side entry<br>                                   |                                  | 19 30 210 0547    | 1 x 32                |    |    |
| <b>Hoods</b><br>top entry<br>                    | 19 30 210 1440<br>19 30 210 1441 |                   | 1 x 20<br>1 x 25      |    |    |
| top entry<br>                                   |                                  | 19 30 210 0447    | 1 x 32                |   |   |
| <b>Hoods</b><br>without cable entry<br>        |                                  | 09 30 210 0803    | —                     |  |  |
| <b>Housings,<br/>bulkhead<br/>mounting</b><br> | 09 30 210 0305                   |                   |                       |  |  |
|                                                                                                                                   |                                  |                   |                       | Panel cut out                                                                         |                                                                                       |

## Metal hoods/housings for industrial applications / 1 lever locking system

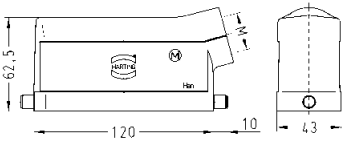
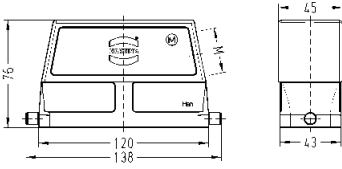
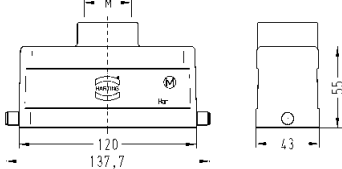
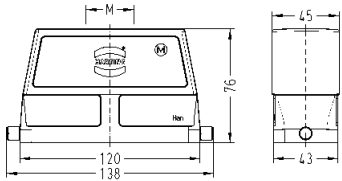
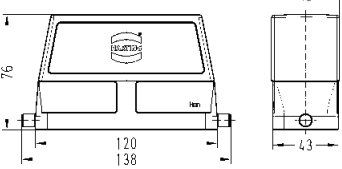
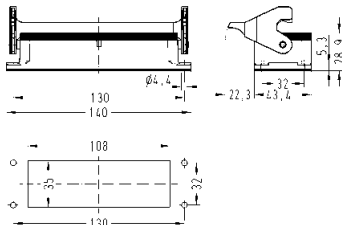
| Identification                                                                                                                       | Part number                      |                                  | Cable entry<br>metric | Drawing                                                                                                                  | Dimensions in mm |
|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                                                      | Low construction                 | High construction                |                       |                                                                                                                          |                  |
| Housings,<br>surface<br>mounting<br><br>side entry  | 19 30 210 1250<br>19 30 210 1290 |                                  | 1 x 20<br>2 x 20      |  <p>Blind way for one cable entry</p> |                  |
| side entry                                          |                                  | 19 30 210 0291<br>19 30 210 0292 | 2 x 25<br>2 x 32      |  <p>Blind way for one cable entry</p> |                  |
| Hoods,<br>cable to cable<br><br>top entry          | 19 30 210 1750                   |                                  | 1 x 20                |                                      |                  |
| top entry                                         |                                  | 19 30 210 0756                   | 1 x 25                |                                     |                  |
|                                                                                                                                      |                                  |                                  |                       |                                                                                                                          |                  |

## Metal hoods/housings for industrial applications / 1 lever locking system

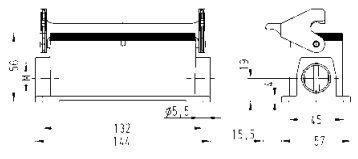
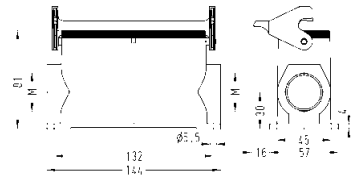
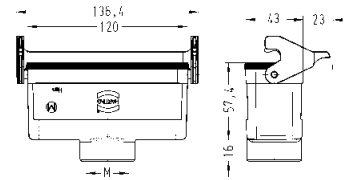
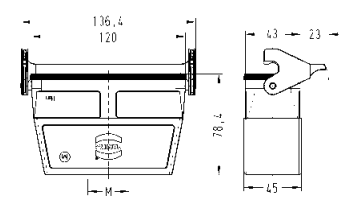
| Identification                                                                                                             | Part number                      |                                  | Cable entry<br>metric | Drawing                                                                               | Dimensions in mm                                                                      |
|----------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------|-----------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                                                                            | Low construction                 | High construction                |                       |                                                                                       |                                                                                       |
| <b>Hoods</b><br>side entry<br>            | 19 30 216 1541<br>19 30 216 1542 |                                  | 1 x 25<br>1 x 32      |    |    |
| side entry<br>                            |                                  | 19 30 216 0547<br>19 30 216 0548 | 1 x 32<br>1 x 40      |    |    |
| <b>Hoods</b><br>top entry<br>             | 19 30 216 1441<br>19 30 216 1442 |                                  | 1 x 25<br>1 x 32      |    |    |
| top entry<br>                           |                                  | 19 30 216 0447<br>19 30 216 0448 | 1 x 32<br>1 x 40      |  |  |
| <b>Hoods</b><br>without cable entry<br> |                                  | 09 30 216 0803                   | —                     |  |  |
| <b>Housings, bulkhead mounting</b><br>  | 09 30 216 0307                   |                                  |                       |  |  |
|                                                                                                                            |                                  |                                  |                       | Panel cut out                                                                         |                                                                                       |



## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification                                                                                                                                          | Part number                      |                                  | Cable entry<br>metric | Drawing                                                                               | Dimensions in mm |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------|-----------------------|---------------------------------------------------------------------------------------|------------------|
|                                                                                                                                                         | Low construction                 | High construction                |                       |                                                                                       |                  |
| <b>Hoods</b><br>side entry<br>                                         | 19 30 224 1541<br>19 30 224 1542 |                                  | 1 x 25<br>1 x 32      |    |                  |
| side entry<br>                                                         |                                  | 19 30 224 0547<br>19 30 224 0548 | 1 x 32<br>1 x 40      |    |                  |
| <b>Hoods</b><br>top entry<br>                                          | 19 30 224 1442                   |                                  | 1 x 32                |    |                  |
| top entry<br>                                                        |                                  | 19 30 224 0447<br>19 30 224 0448 | 1 x 32<br>1 x 40      |  |                  |
| <b>Hoods</b><br>without cable<br>entry<br>                           |                                  | 09 30 224 0803                   | —                     |  |                  |
| <b>Housings,<br/>           bulkhead<br/>           mounting</b><br> | 09 30 224 0307                   |                                  |                       |  |                  |
|                                                                                                                                                         |                                  |                                  |                       | Panel cut out                                                                         |                  |

## Metal hoods/housings for industrial applications / 1 lever locking system

| Identification                                                                                                                       | Part number                      |                   | Cable entry<br>metric | Drawing                                                                                                                  | Dimensions in mm |
|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------|------------------|
|                                                                                                                                      | Low construction                 | High construction |                       |                                                                                                                          |                  |
| Housings,<br>surface<br>mounting<br><br>side entry  | 19 30 224 1251<br>19 30 224 1291 |                   | 1 x 25<br>2 x 25      |  <p>Blind way for one cable entry</p> |                  |
| side entry                                          |                                  | 19 30 224 0292    | 2 x 32                |  <p>Blind way for one cable entry</p> |                  |
| Hoods,<br>cable to cable<br><br>top entry          | 19 30 224 1752                   |                   | 1 x 32                |                                      |                  |
| top entry                                         |                                  | 19 30 224 0757    | 1 x 32                |                                     |                  |
|                                                                                                                                      |                                  |                   |                       |                                                                                                                          |                  |

## Features

- Suitable for all inserts of the series Han D® HMC, Han E® HMC, Han® EEE HMC and Han DD® HMC
- Ideal for applications in the field of transportation, as well as in the printing industry
- Due to the floating system of the docking frame the PE connection of the mounting base has to be installed separately
- Inserts are protected against mechanical damage
- Designed for 10,000 mating cycles

## Technical characteristics

|                         |                    |
|-------------------------|--------------------|
| Material                |                    |
| Docking frame           | stainless steel    |
| Fixing screws           | steel, zinc-plated |
| Pull-in-range           |                    |
| x-axis                  | ± 1.5 mm           |
| y-axis                  | ± 1.5 mm           |
| Mechanical working life |                    |
| - mating cycles         | 10,000             |



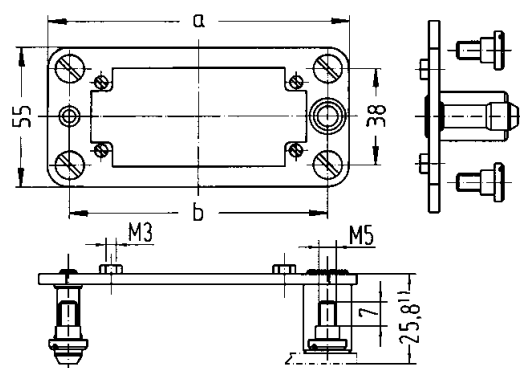
| Identification | Size | Part number | Drawing | Dimensions in mm |
|----------------|------|-------------|---------|------------------|
|----------------|------|-------------|---------|------------------|

Han® Docking frame



6 B

09 30 006 1701



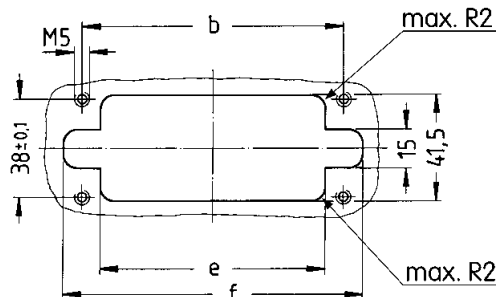
10 B

09 30 010 1701

Distance for electrical and F.O. contacts max. 27 mm; for pneumatic contacts max. 26.5 mm

16 B

09 30 016 1701



24 B

09 30 024 1701

| Size | a     | b     | e     | f     |
|------|-------|-------|-------|-------|
| 6 B  | 86    | 69    | 54.5  | 84    |
| 10 B | 99    | 82    | 67.5  | 97    |
| 16 B | 119.5 | 102.5 | 88    | 117.5 |
| 24 B | 146   | 129   | 114.5 | 144   |

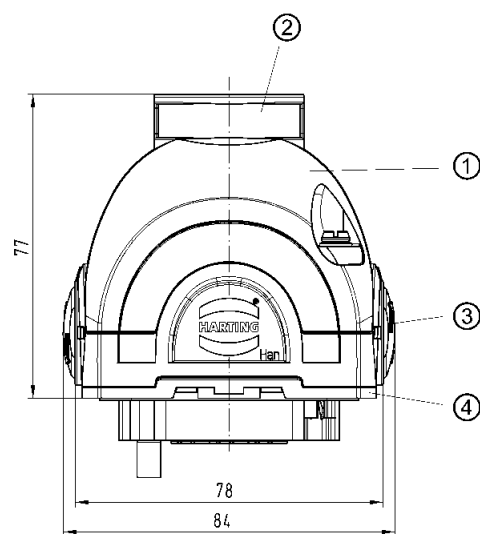
Range of delivery:

1 frame

4 cheese head shoulder screws to fix the docking frame

## Features

- Suitable for rough environments
- Two-part hoods for easy wiring and testing
- High robustness by means of an internal locking mechanism



- ① Shell with top entry
- ② Thread M25 ... M40
- ③ Carrier hood with push button release
- ④ Housings bulkhead mounting

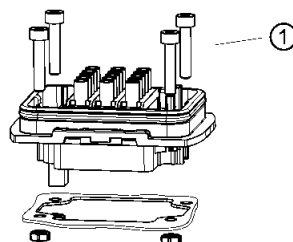
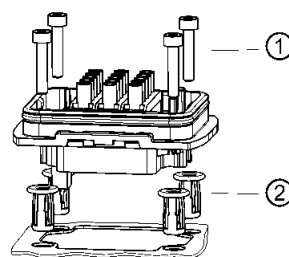
## Technical characteristics

### Shells and Housings, surface mounting

|                                                                  |                    |
|------------------------------------------------------------------|--------------------|
| Material                                                         | aluminium die-cast |
| Surface                                                          | powder coated      |
| Locking element                                                  | stainless steel    |
| Limiting temperatures                                            | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 and IP 67    |
| Tightening torque M4 fixing screw                                | 1.2 Nm ... 2.0 Nm  |

### Carrier hoods and Housings, bulkhead mounting

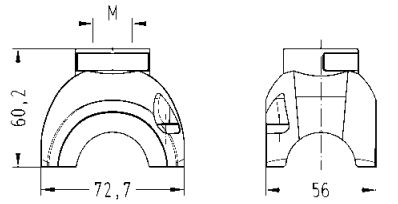
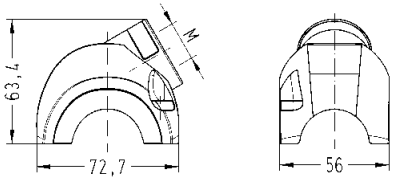
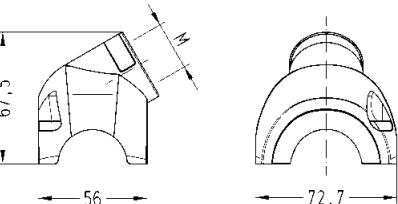
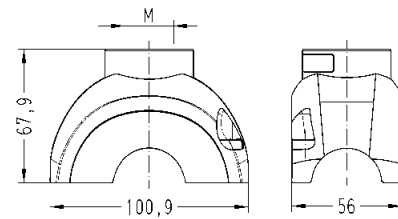
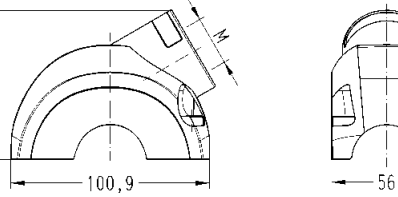
|                                                                  |                                      |
|------------------------------------------------------------------|--------------------------------------|
| Number of Han-Yellock® modules                                   |                                      |
| Han-Yellock® 30                                                  | 3                                    |
| Han-Yellock® 60                                                  | 6                                    |
| Material                                                         | zinc die-cast                        |
| Surface                                                          | chromated                            |
| Colour                                                           | RAL 9005 (black)                     |
| Locking element                                                  | metallised plastic / stainless steel |
| Hoods/Housings seal                                              | NBR                                  |
| Limiting temperatures                                            | -40 °C ... +125 °C                   |
| Un-/Locking temperatures                                         | -10 °C ... +85 °C                    |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 and IP 67                      |
| Mechanical working life - mating cycles                          | < 500                                |
| PE contact wire gauge                                            | ≤ 4 mm <sup>2</sup>                  |
| Tightening torque M4 fixing screw                                | 1 Nm                                 |
| panel fastener                                                   | 2.3 Nm                               |



- ① M4 fixing screw (screw length > 20 mm)
- ② Panel fastener

Available June 2013



| Identification                                                                                                                                                                                                                                                                                                                                                                                             | Part number                                                | Cable entry               | Drawing                                                                                                                                                                                                                                                                      | Dimensions in mm |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Shell</b><br><br>Han-Yellock® 30<br>top entry<br><br><br><br>Han-Yellock® 30<br>side entry<br><br><br><br>Han-Yellock® 30<br>angled entry<br><br> | 11 13 300 1401<br><br>11 13 300 1501<br><br>11 13 300 1601 | M25<br><br>M25<br><br>M25 | <br><br><br><br> |                  |
| <b>Shell</b><br><br>Han-Yellock® 60<br>top entry<br><br><br><br>Han-Yellock® 60<br>side entry<br><br>                                                                                                                                | 11 13 600 1402<br>11 13 600 1403<br><br>11 13 600 1502     | M32<br>M40<br><br>M32     | <br><br>                                                                                           |                  |

| Identification                                                                                                                                                                                                                | Part-Number                                                                          | Drawing | Dimensions in mm |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------|------------------|
| <b>Housings, bulkhead mounting</b><br><br>Han-Yellock® 30<br>Han-Yellock® 60<br><br>Set consists of<br>Han-Yellock® bulkhead<br>mounted housing<br>and panel fastener* <sup>1</sup><br><br>Han-Yellock® 30<br>Han-Yellock® 60 | 11 13 300 0301<br><br>11 13 600 0301<br><br><br><br>11 13 300 0302<br>11 13 600 0302 |         |                  |
| <sup>*1</sup> screws for using with panel fastener M4 x 20<br>or longer                                                                                                                                                       |                                                                                      |         |                  |
| <b>Carrier hood</b><br><br>push button with slot<br>Han-Yellock® 30* <sup>2</sup><br>Han-Yellock® 60<br><br>plain push button<br>Han-Yellock® 30* <sup>2</sup><br>Han-Yellock® 60* <sup>2</sup>                               | 11 13 300 0110<br>11 13 600 0110<br><br><br>11 13 300 0100<br>11 13 600 0100         |         |                  |
| <sup>*2</sup> differing from depiction                                                                                                                                                                                        |                                                                                      |         |                  |

## Features

- Suitable for HARTING LC contacts
- For GI-Fibre 50 - 62.5 / 125 µm and for single mode fibre
- Using of guiding pins (male and female) is obligatory

## Technical characteristics

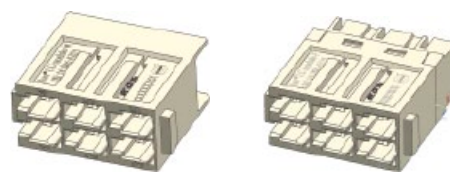
## Inserts

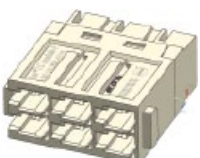
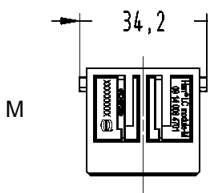
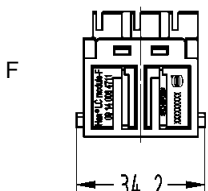
|                            |                     |
|----------------------------|---------------------|
| Number of contacts         | 6                   |
| Material                   | polycarbonate       |
| Limiting temperatures      | -40 °C ... +85 °C   |
| Flammability acc. to UL 94 | V 0                 |
| Mechanical working life    | ≥ 500 mating cycles |

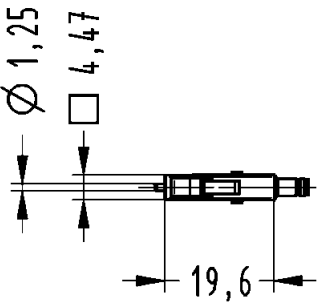
Number of contacts

6

Available Nov. 2013



| Identification                                                                                                                                                                                                           | Part-Number     |                   | Drawings                                                                                                                                                                                                                                                                                                                                                 | Dimensions in mm                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
|                                                                                                                                                                                                                          | Male insert (M) | Female insert (F) |                                                                                                                                                                                                                                                                                                                                                          |                                              |
| <b>LC module</b><br>order contacts separately<br><br> | 09 14 006 4701  | 09 14 006 4711    | <br><br><br> | Contact arrangement<br>View termination side |

| Identification                                                                                                                                                                                                                                                                                        | Part-Number                                                              |  | Drawings                                                                             | Dimensions in mm |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|------------------|
|                                                                                                                                                                                                                                                                                                       | Male insert (M)                                                          |  |                                                                                      |                  |
| <b>LC contact</b><br><br>for multi mode<br>for cable $\varnothing \leq 3$ mm<br>for cable $\varnothing \leq 2$ mm<br><br>for single mode<br>for cable $\varnothing \leq 3$ mm<br>for cable $\varnothing \leq 2$ mm | 20 10 125 8211<br>20 10 125 8212<br><br>20 10 125 8220<br>20 10 125 8221 |  |  |                  |

## Features

- Screw connection, suitable for all users around the world
- Field assembly without special tools
- For flexible and solid conductors from 0.5 to 2.5 mm<sup>2</sup>
- Additional protection against voltage and accidental contact by a sliding insulation cover that closes automatically during mating

## Technical characteristics

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

### Inserts

|                                      |                              |
|--------------------------------------|------------------------------|
| Number of contacts                   | 5                            |
| Electrical data<br>acc. to EN 61 984 | <b>16 A 230/400 V 4 kV 3</b> |
| Rated current                        | 16 A                         |
| Rated voltage                        | 230/400 V                    |
| Rated impulse voltage                | 4 kV                         |
| Pollution degree                     | 3                            |

|                                            |                      |
|--------------------------------------------|----------------------|
| Insulation resistance                      | ≥ 10 <sup>10</sup> Ω |
| Material                                   | polycarbonate        |
| Limiting temperatures                      | -40 °C ... +125 °C   |
| Flammability acc. to UL 94                 | V 0                  |
| Mechanical working life<br>- mating cycles | ≥ 500                |

### Contacts

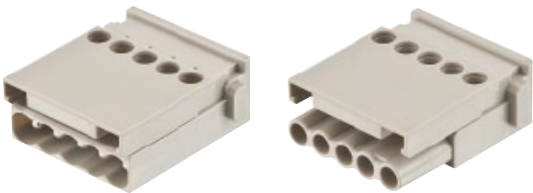
|                        |                             |
|------------------------|-----------------------------|
| Material               | copper alloy                |
| Surface                |                             |
| - hard-silver plated   | 3 µm Ag                     |
| Contact resistance     | ≤ 1 mΩ                      |
| Quick Lock termination |                             |
| - mm <sup>2</sup>      | 0.5 ... 2.5 mm <sup>2</sup> |
| - AWG                  | 20 ... 14                   |



Number of contacts

5

Available September 2013



| Identification    |  | Part number     |                   | Drawing                                                              | Dimensions in mm |
|-------------------|--|-----------------|-------------------|----------------------------------------------------------------------|------------------|
|                   |  | Male insert (M) | Female insert (F) |                                                                      |                  |
| Screw termination |  |                 |                   |                                                                      |                  |
|                   |  | 09 14 005 26 01 | 09 14 005 27 01   | <div>M<div></div><div>F<div></div></div><div></div><div></div></div> |                  |

## Features

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

### Note:

Due to 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 |
| Frames                     |                                  |
| Number of modules          | 2, 3, 4, 6                       |
| Material                   |                                  |
| Docking Frame              | polycarbonate                    |
| Float washer               | zinc die-cast alloy              |
| Floating tolerance         | ± 2 mm                           |
| Aligning tolerance         | ± 4 mm                           |
| Limiting temperatures      | -40 °C ... +125 °C               |
| Flammability acc. to UL 94 | V 0                              |
| Mechanical working life    | ≥ 500 mating cycles              |



| Identification                         | Float mount<br>A ... F | Fixed<br>a ... f | Drawings             | Dimensions in mm                                   |
|----------------------------------------|------------------------|------------------|----------------------|----------------------------------------------------|
| <b>Docking frame for 2 modules</b><br> | 09 14 006 1701         |                  | <p>panel cut out</p> | <p>① floating tolerance: <math>\pm 2</math> mm</p> |
| <b>Docking frame for 2 modules</b><br> |                        | 09 14 006 1711   | <p>panel cut out</p> |                                                    |
| <b>Docking frame for 3 modules</b><br> | 09 14 010 1701         |                  | <p>panel cut out</p> | <p>① floating tolerance: <math>\pm 2</math> mm</p> |
| <b>Docking frame for 3 modules</b><br> |                        | 09 14 010 1711   | <p>panel cut out</p> |                                                    |

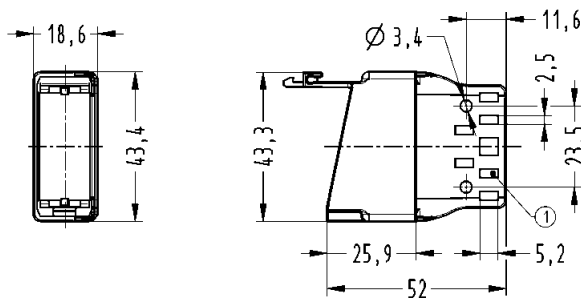
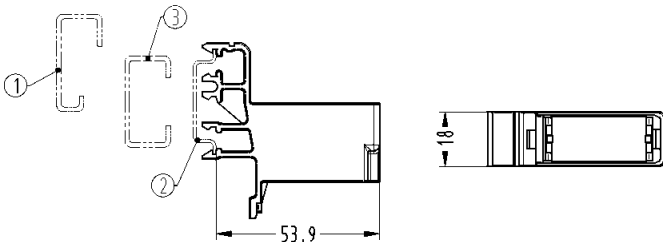


| Identification                                                                                              | Float mount<br>A ... F | Fixed<br>a ... f | Drawings                                                                | Dimensions in mm |
|-------------------------------------------------------------------------------------------------------------|------------------------|------------------|-------------------------------------------------------------------------|------------------|
| <p>Docking frame for 4 modules</p> <p>Docking frame for 4 modules</p>                                       | 09 14 016 1701         |                  | <p>① floating tolerance: <math>\pm 2</math> mm</p> <p>panel cut out</p> |                  |
| <p>Docking frame for 6 modules</p> <p>Docking frame for 6 modules</p>                                       | 09 14 024 1701         | 09 14 016 1711   | <p>① floating tolerance: <math>\pm 2</math> mm</p>                      |                  |
| <p>Float washer<br/>to enable the frame to<br/>be float mounted using<br/>standard M4 fixing<br/>screws</p> | 09 14 000 9936         |                  |                                                                         |                  |



## Features

- Suitable for individual modules of the series Han-Modular® in control cabinets, distribution etc. as cable-to-cable connection
- Strain relief provided by cable ties (max. width: 5 mm)
- Optional fixing due to two drill holes on the strain relief flange
- Easy mounting and removal of the modules (see Han-Modular® removal tool)

| Identification                                                                                                                  | Part-Number    | Depiction                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module clamp with strain relief *</b><br> | 09 14 000 0312 |  <p>1 For cable ties with max. 5 mm width</p>                                                                                                                                                                                                                        |
| <b>Module clamp for rail *</b><br>           | 09 14 000 0313 |  <p>                     1 G-rail DIN EN 60 715-G32<br/>                     2 Rail DIN EN 60 715-35 x 7.5 with 1 mm thickness<br/>                       or -35 x 15 with 1.5 mm thickness<br/>                     3 C-rail DIN EN 60 715-C30                 </p> |

## Features

- Suitable for rough industrial environments (degree of protection IP 65 with closed cover)
- Optimum locking (3 mm double bit or rotation knob)
- Safe opening (integrated spring, 30 degree opening and locking position in the cover)
- Worldwide use (see approvals)
- High quality plastics

## Technical characteristics

|                                                                |                                                                                                        |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Material                                                       |                                                                                                        |
| Frame                                                          | plastic PBT black                                                                                      |
| Cover                                                          | plastic PC transparent<br>plastic ABS metallic silver                                                  |
| Limiting temperatures                                          | -30 °C ... +70 °C                                                                                      |
| Locking                                                        | 3 mm double bit<br>rotation knob                                                                       |
| Suitable for wall thickness                                    | 1 ... 5 mm                                                                                             |
| Degree of protection<br>acc. to EN 60 529<br>with closed cover | IP 65                                                                                                  |
| Dimensions                                                     |                                                                                                        |
| single mounting frame (HxWxD)                                  | 127 x 66 x 32                                                                                          |
| double mounting frame (HxWxD)                                  | 127 x 131 x 32                                                                                         |
| Approvals                                                      | NEMA 4/4x/12/13<br> |

# Han-Port® Mounting Frame

Available September 2013



Plastic mounting frame

| Identification                                                 | Part-Number    | Depiction                                                                             |
|----------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------|
| Single mounting frames, plastic                                |                |                                                                                       |
| with transparent plastic cover and 3 mm double bit closure     | 39 50 000 0300 |    |
| with transparent plastic cover and rotation knob closure       | 39 50 000 0310 |   |
| with metallic silver plastic cover and 3 mm double bit closure | 39 50 000 0320 |  |
| with metallic silver plastic cover and rotation knob closure   | 39 50 000 0330 |  |

# Han-Port® Mounting Frame

Available September 2013



Plastic mounting frame

| Identification                                                 | Part-Number    | Depiction |
|----------------------------------------------------------------|----------------|-----------|
| Double mounting frames, plastic                                |                |           |
| with transparent plastic cover and 3 mm double bit closure     | 39 50 000 0400 |           |
| with transparent plastic cover and rotation knob closure       | 39 50 000 0410 |           |
| with metallic silver plastic cover and 3 mm double bit closure | 39 50 000 0420 |           |
| with metallic silver plastic cover and rotation knob closure   | 39 50 000 0430 |           |

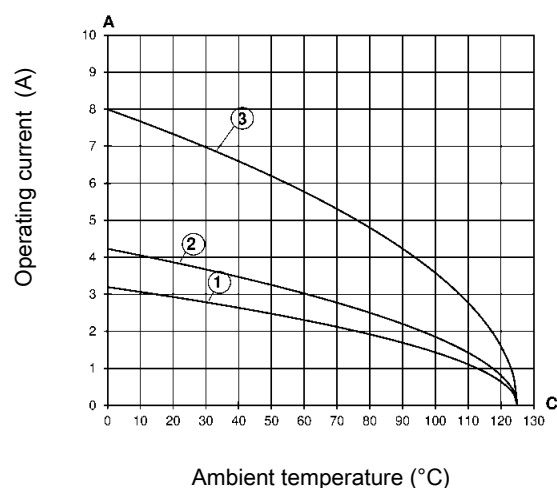
## Features

- Heavy duty connector for D-Sub signal contacts
- Suitable for all Han® 3 A hoods/housing types: Standard (metal, plastic), EMC, INOX, M and HPR
- High contact density at small foot print
- Easy handling of signal connectors in industrial environment
- One preleading 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



- ① wire gauge: 0.14 mm<sup>2</sup>    stamped contacts  
 ② wire gauge: 0.25 mm<sup>2</sup>    stamped contacts  
 ③ wire gauge: 0.5 mm<sup>2</sup>    turned contacts

## Technical characteristics

### Inserts

|                         |                                                 |
|-------------------------|-------------------------------------------------|
| Number of contacts      | 21                                              |
| Electrical data         |                                                 |
| acc. to EN 61 984       | <b>6.5 A ~50 V / 120 V 0.8 kV 3</b>             |
| Rated current           | 6.5 A                                           |
| Rated voltage AC        | ~50 V                                           |
| Rated voltage DC        | ~120 V                                          |
| Rated impulse voltage   | 0.8 kV                                          |
| Pollution degree        | 3                                               |
| Insulation resistance   | ≥ 10 <sup>10</sup> Ω                            |
| Material                | polycarbonate                                   |
| Limiting temperatures   | -40 °C ... +125 °C                              |
| Mechanical working life |                                                 |
| - mating cycles         | according to performance level of used contacts |

### Contacts

|                           |                                               |
|---------------------------|-----------------------------------------------|
| Material                  | copper alloy                                  |
| Surface                   |                                               |
| - selectively gold plated | according to performance level                |
| Crimp termination         |                                               |
| - mm <sup>2</sup>         | 0.09 mm <sup>2</sup> ... 0.56 mm <sup>2</sup> |
| - AWG                     | 28 ... 20                                     |

### Hoods/Housings

Detailed information and further hood/housing types see catalog "Industrial Connectors Han®", 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         |

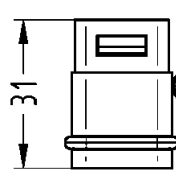
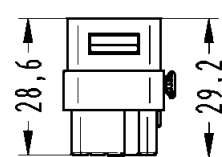
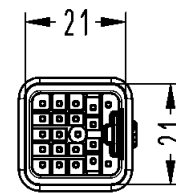
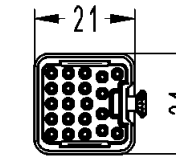
#### Metal hoods/housings

|                                                                  |                                                  |
|------------------------------------------------------------------|--------------------------------------------------|
| Material                                                         | zinc die-cast                                    |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44                                            |
|                                                                  | IP 67 is achieved with seal screw 09 20 000 9918 |

Number of contacts

21



| Identification                                    | Part number     |                   | Drawing                                                                                                                                                                                                                                                                                                                                     | Dimensions in mm                                                                                                                                                         |
|---------------------------------------------------|-----------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   | Male insert (M) | Female insert (F) |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                          |
| Crimp terminal<br>Order crimp contacts separately | 09 12 021 3001  | 09 12 021 3101    | <div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 20px;">M</div>  <div style="margin-bottom: 20px;">F</div>  </div> |   |

| Identification                                                                                                                                  | Part number    | Drawing | Dimensions in mm |
|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|------------------|
| Insertion / removal tool<br>for D-Sub crimp contacts<br><br> | 09 99 000 0368 |         |                  |

Contacts



| Identification                                                                   | Wire gauge<br>(mm <sup>2</sup> )    | Part number                                        |                                                    | Drawing | Dimensions in mm |
|----------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------|----------------------------------------------------|---------|------------------|
|                                                                                  |                                     | Male contact                                       | Female contact                                     |         |                  |
| Individual contacts,<br>turned                                                   |                                     |                                                    |                                                    |         |                  |
| Performance level 1                                                              | 0.09-0.25<br>0.13-0.33<br>0.25-0.52 | 09 67 000 7576<br>09 67 000 5576<br>09 67 000 8576 | 09 67 000 7476<br>09 67 000 5476<br>09 67 000 8476 |         |                  |
|  |                                     |                                                    |                                                    |         |                  |
|                                                                                  |                                     |                                                    |                                                    |         |                  |
| Individual contacts,<br>stamped                                                  |                                     |                                                    |                                                    |         |                  |
| Performance level 1                                                              | 0.09-0.25<br>0.25-0.56              | 09 67 000 7176<br>09 67 000 8176                   | 09 67 000 7276<br>09 67 000 8276                   |         |                  |
| 500 pieces/reel                                                                  |                                     |                                                    |                                                    |         |                  |
|                                                                                  |                                     |                                                    |                                                    |         |                  |
| Performance level 1<br>Unrolling left                                            | 0.09-0.25<br>0.25-0.56              | 09 67 000 7166<br>09 67 000 8166                   | 09 67 000 7266<br>09 67 000 8266                   |         |                  |
| 10,000 pieces/reel                                                               |                                     |                                                    |                                                    |         |                  |
|                                                                                  |                                     |                                                    |                                                    |         |                  |
| Performance level 1<br>Unrolling left                                            | 0.09-0.25<br>0.25-0.56              | 09 67 000 7156<br>09 67 000 8156                   | 09 67 000 7256<br>09 67 000 8256                   |         |                  |

| Wire gauge                |           | Ø*  | Stripping length |
|---------------------------|-----------|-----|------------------|
| 0.09-0.25 mm <sup>2</sup> | AWG 28-24 | 1.7 | 4 mm             |
| 0.13-0.33 mm <sup>2</sup> | AWG 26-22 | 1.7 | 4 mm             |
| 0.25-0.52 mm <sup>2</sup> | AWG 24-20 | 1.7 | 4 mm             |

| Wire gauge                |           | Ø*   | Stripping length |
|---------------------------|-----------|------|------------------|
| 0.09-0.25 mm <sup>2</sup> | AWG 28-24 | 1.02 | 2.5 mm + 0.5     |
| 0.25-0.56 mm <sup>2</sup> | AWG 24-20 | 1.52 | 2.5 mm + 0.5     |

| Wire gauge                |           | Ø*   | Stripping length |
|---------------------------|-----------|------|------------------|
| 0.09-0.25 mm <sup>2</sup> | AWG 28-24 | 1.02 | 2.5 mm + 0.5     |
| 0.25-0.56 mm <sup>2</sup> | AWG 24-20 | 1.52 | 2.5 mm + 0.5     |

| Wire gauge                |           | Ø*   | Stripping length |
|---------------------------|-----------|------|------------------|
| 0.09-0.25 mm <sup>2</sup> | AWG 28-24 | 1.02 | 2.5 mm + 0.5     |
| 0.25-0.56 mm <sup>2</sup> | AWG 24-20 | 1.52 | 2.5 mm + 0.5     |

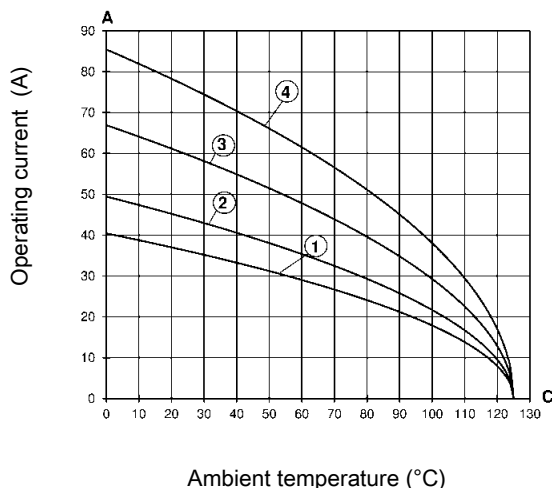
## Features

- High current inserts designed to fit all hoods/housings size Han® 3 A
- 4 coding options
- Use of standard Han® C crimp contacts
- Finger protected male and female contacts
- Pre-mating PE crimp 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



- ① wire gauge: 2.5 mm<sup>2</sup>
- ② wire gauge: 4 mm<sup>2</sup>
- ③ wire gauge: 6 mm<sup>2</sup>
- ④ wire gauge: 10 mm<sup>2</sup>

## Technical characteristics

### Inserts

|                            |                          |
|----------------------------|--------------------------|
| Number of contacts         | 3 + PE                   |
| Electrical data            |                          |
| acc. to EN 61 984          | <b>40 A 400 V 6 kV 3</b> |
| Rated current              | 40 A                     |
| Rated voltage              | 400 V                    |
| Rated impulse voltage      | 6 kV                     |
| Pollution degree           | 3                        |
| Insulation resistance      | ≥ 10 <sup>10</sup> 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 termination    |                            |
| - mm <sup>2</sup>    | 1.5 ... 10 mm <sup>2</sup> |
| - AWG                | 16 ... 8                   |

### Tools

see chapter 99  
in the main catalogue  
„Industrial Connectors Han®“

### Hoods/Housings

Detailed information and further hood/housing types see catalogue „Industrial Connectors Han®“, 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         |

#### Metal hoods/housings

|                                                                  |                                                  |
|------------------------------------------------------------------|--------------------------------------------------|
| Material                                                         | zinc die-cast                                    |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 44                                            |
|                                                                  | IP 67 is achieved with seal screw 09 20 000 9918 |

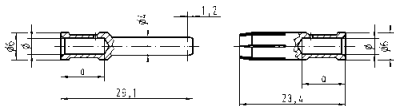
Number of contacts

3 +

Available July 2013



| Identification                                           | Part number     |                   | Drawing                                            | Dimensions in mm |
|----------------------------------------------------------|-----------------|-------------------|----------------------------------------------------|------------------|
|                                                          | Male insert (M) | Female insert (F) |                                                    |                  |
| <b>Crimp terminal</b><br>Order crimp contacts separately | 09 12 003 3051  | 09 12 003 3151    |                                                    |                  |
| <b>Coding element</b><br>20 pieces per frame<br>         | 09 12 000 9924  | 09 12 000 9924    | Contact arrangement view from termination side<br> |                  |

| Identification                                                                      |  | Wire gauge<br>(mm²) | Part number    |                | Male contact | Female contact | Drawing                                                                              | Dimensions in mm |
|-------------------------------------------------------------------------------------|--|---------------------|----------------|----------------|--------------|----------------|--------------------------------------------------------------------------------------|------------------|
| Crimp contacts                                                                      |  |                     |                |                |              |                |                                                                                      |                  |
| 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 |              |                |                                                                                      |                  |
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|                                                                                     |  |                     |                |                |              |                |                                                                                      |                  |
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|                                                                                     |  |                     |                |                |              |                |                                                                                      |                  |
|                                                                                     |  |                     |                |                |              |                |                                                                                      |                  |
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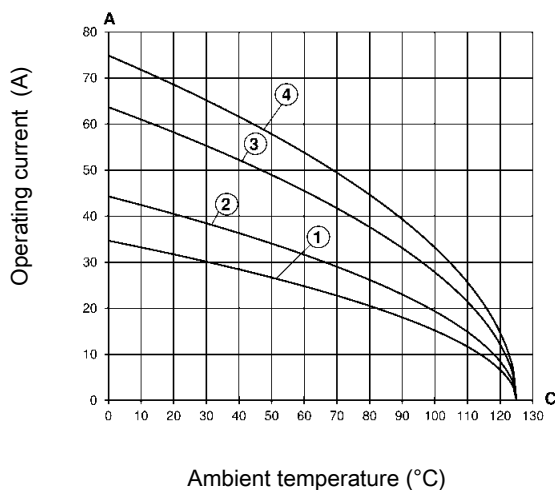
## Features

- High current insert in a compact design, suitable for plastic hoods/housings only in size Han® 3 A
- 4 coding options
- Use of standard Han® C crimp contacts
- Finger protected 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 wire gauge: 2.5 mm<sup>2</sup>
- ② wire gauge: 4 mm<sup>2</sup>
- ③ wire gauge: 6 mm<sup>2</sup>
- ④ wire gauge: 10 mm<sup>2</sup>

## Technical characteristics

### Inserts

|                            |                          |
|----------------------------|--------------------------|
| Number of contacts         | 4 without PE             |
| Electrical data            |                          |
| acc. to EN 61 984          | <b>40 A 830 V 8 kV 3</b> |
| Rated current              | 40 A                     |
| Rated voltage              | 830 V                    |
| Rated impulse voltage      | 8 kV                     |
| Pollution degree           | 3                        |
| Insulation resistance      | ≥ 10 <sup>10</sup> 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 termination    |                            |
| - mm <sup>2</sup>    | 1.5 ... 10 mm <sup>2</sup> |
| - AWG                | 16 ... 8                   |

### Tools

see chapter 99  
in the main catalogue  
„Industrial Connectors Han®“

### Hoods/Housings

Detailed information and further hood/housing types see catalogue „Industrial Connectors Han®“, 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         |

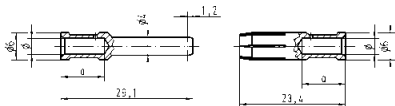
Number of contacts

4

Available July 2013



| Identification                                           | Part number     |                   | Drawing | Dimensions in mm |
|----------------------------------------------------------|-----------------|-------------------|---------|------------------|
|                                                          | Male insert (M) | Female insert (F) |         |                  |
| <b>Crimp terminal</b><br>Order crimp contacts separately | 09 12 004 3051  | 09 12 004 3151    |         |                  |
| <b>Coding element</b><br>20 pieces per frame<br>         | 09 12 000 9924  | 09 12 000 9924    |         |                  |

| Identification                                                                      |     | Wire gauge<br>(mm²) | Part number |                  | Male contact   | Female contact | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Dimensions in mm |  |  |   |                  |     |     |        |      |      |     |     |        |      |      |   |     |        |      |        |   |     |        |     |        |    |     |       |     |       |  |
|-------------------------------------------------------------------------------------|-----|---------------------|-------------|------------------|----------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--|--|---|------------------|-----|-----|--------|------|------|-----|-----|--------|------|------|---|-----|--------|------|--------|---|-----|--------|-----|--------|----|-----|-------|-----|-------|--|
| Crimp contacts                                                                      |     |                     |             |                  |                |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |  |  |   |                  |     |     |        |      |      |     |     |        |      |      |   |     |        |      |        |   |     |        |     |        |    |     |       |     |       |  |
| 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 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |  |  |   |                  |     |     |        |      |      |     |     |        |      |      |   |     |        |      |        |   |     |        |     |        |    |     |       |     |       |  |
|                                                                                     |     |                     |             |                  |                |                | <table><tr><th colspan="3">Wire gauge</th><th>Ø</th><th>Stripping length</th></tr><tr><td>1.5</td><td>mm²</td><td>AWG 16</td><td>1.75</td><td>9 mm</td></tr><tr><td>2.5</td><td>mm²</td><td>AWG 14</td><td>2.25</td><td>9 mm</td></tr><tr><td>4</td><td>mm²</td><td>AWG 12</td><td>2.85</td><td>9.6 mm</td></tr><tr><td>6</td><td>mm²</td><td>AWG 10</td><td>3.5</td><td>9.6 mm</td></tr><tr><td>10</td><td>mm²</td><td>AWG 8</td><td>4.3</td><td>12 mm</td></tr></table> | 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 | 10 | mm² | AWG 8 | 4.3 | 12 mm |  |
| 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           |                |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |  |  |   |                  |     |     |        |      |      |     |     |        |      |      |   |     |        |      |        |   |     |        |     |        |    |     |       |     |       |  |
| 10                                                                                  | mm² | AWG 8               | 4.3         | 12 mm            |                |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |  |  |   |                  |     |     |        |      |      |     |     |        |      |      |   |     |        |      |        |   |     |        |     |        |    |     |       |     |       |  |

## Features

- Suitable for extreme environmental conditions
- Suitable for sensitive interfaces that have to be protected and shielded
- Robust metal version
- For sizes 6, 10, 16 and 24 with screw and toggle locking
- Captive cover due to fixing cord

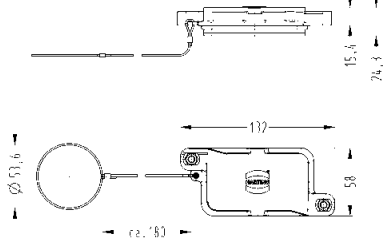
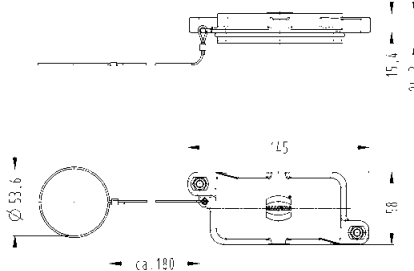
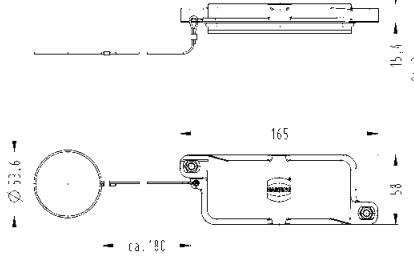
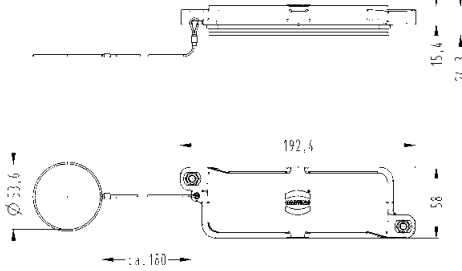
## Technical characteristics

|                                                                 |                                           |
|-----------------------------------------------------------------|-------------------------------------------|
| Material                                                        | aluminium die-cast<br>corrosion resistant |
| Colour                                                          | RAL 9005 (black)                          |
| Surface                                                         | powder-coated                             |
| Locking                                                         |                                           |
| Screw locking                                                   | M6                                        |
| - material                                                      | stainless steel                           |
| - tightening torque                                             | 4 Nm                                      |
| Toggle locking                                                  |                                           |
| - material                                                      | stainless steel                           |
| Fixing cord                                                     | stainless steel                           |
| Limiting temperatures                                           | -40 °C ... +125 °C                        |
| Corrosion resistance                                            | ASTM B117-09 (500 h)                      |
| Degree of protection<br>acc. to EN 60 529<br>in locked position | IP 68                                     |

Available by May 2013



## Cover for Han® HPR hood

| Identification                                                                                              | Part-Number    |                | Size | Drawing                                                                               | Dimensions in mm |
|-------------------------------------------------------------------------------------------------------------|----------------|----------------|------|---------------------------------------------------------------------------------------|------------------|
|                                                                                                             | Toggle         | Screw          |      |                                                                                       |                  |
| Cover for Han® HPR hood<br> | 09 40 006 5404 | 09 40 006 5414 | 6 B  |    |                  |
|                           | 09 40 010 5404 | 09 40 010 5414 | 10 B |  |                  |
|                           | 09 40 016 5404 | 09 40 016 5414 | 16 B |  |                  |
|                           | 09 40 024 5404 | 09 40 024 5414 | 24 B |  |                  |

## General description

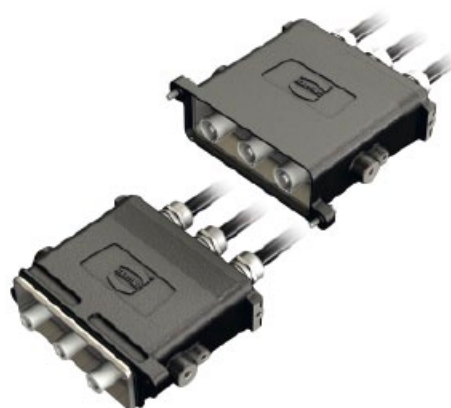
- Frame for Han® HC Modular 250 contacts suitable for Han® 24 HPR EasyCon

## Technical characteristics

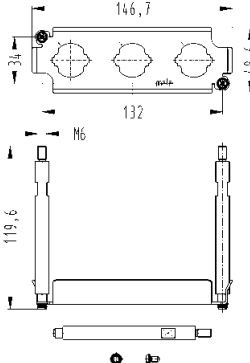
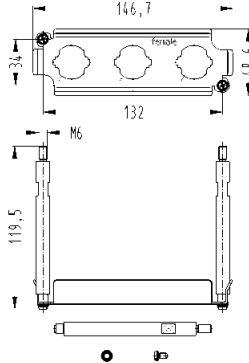
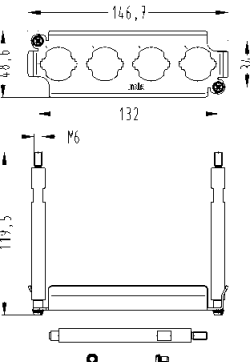
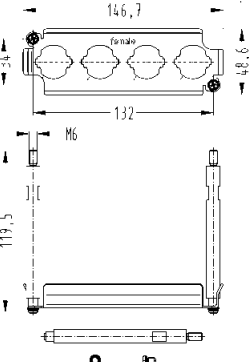
|          |                                          |
|----------|------------------------------------------|
| Material | Stainless steel                          |
| Frame    | 3 and 4 contacts for Han® HC Modular 250 |

# Han® 24 HPR EasyCon Frames

Available May 2013



## Frame for Han® HC Modular 250 contacts

| Identification                                                                                                                                                                                                                                                              | Part-Number                                  | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                                                | Dimensions in mm |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Frames</b><br><br>for 3 x Han® HC Modular 250 male<br><br><br>for 3 x Han® HC Modular 250 female<br> | 09 40 024 9901<br><br><br><br>09 40 024 9902 | <div> Male  </div> <div> Female  </div> <div> <p>Included in kit:</p> <ul style="list-style-type: none"> <li>2 x distance bolt (SW 7)</li> <li>2 x M4 screw</li> <li>2 x washer SK S4</li> <li>2 x M4 Countersunk screw</li> </ul> </div>                                       |                  |
| for 4 x Han® HC Modular 250 male<br><br><br>for 4 x Han® HC Modular 250 female<br>                    | 09 40 024 9903<br><br><br><br>09 40 024 9904 | <div> Male  </div> <div> Female  </div> <div> <p>Included in kit:</p> <ul style="list-style-type: none"> <li>4 x M4 screw</li> <li>4 x washer SK S4</li> <li>4 x washer SK S6</li> <li>4 x cheese-head screw M6 x 20</li> <li>4 x cheese-head screw M6 x 25</li> </ul> </div> |                  |

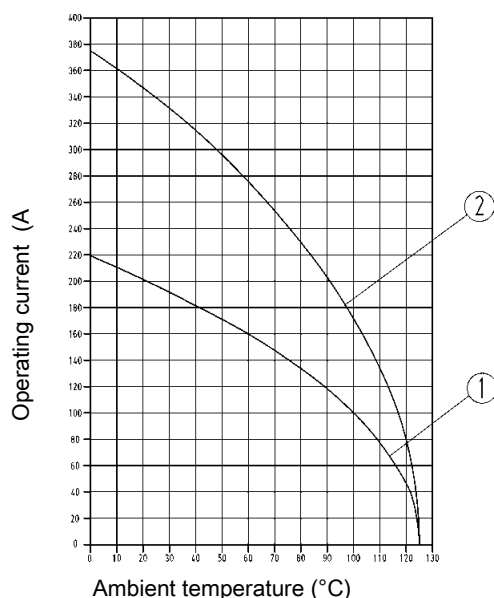
## Features

- Flexible high-current interface
- Low mating and unmating forces
- Stackable due to modular design
- Suitable for HC 350 crimp contacts
- On-board removal tool

## 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: 95 mm²

HC Individual 3-poles

## Technical characteristics

### Inserts

|                                                                        |                                        |
|------------------------------------------------------------------------|----------------------------------------|
| Number of contacts                                                     | 3                                      |
| Electrical data                                                        |                                        |
| acc. to EN 61 984                                                      | <b>350 A 4000 V 18 kV 3</b>            |
| Rated current                                                          | 350 A                                  |
| Rated voltage                                                          | 4000 V                                 |
| Rated impulse voltage                                                  | 18 kV                                  |
| Pollution degree                                                       | 3                                      |
| Termination wire gauge                                                 | 25 mm² ... 120 mm²                     |
| Insulation resistance                                                  | ≥ 10 <sup>10</sup> Ω                   |
| Material                                                               | polyamide                              |
| Limiting temperatures                                                  | -40 °C ... +125 °C                     |
| Flammability acc. to                                                   |                                        |
| UL 94                                                                  | V 0                                    |
| NFF 16-101/102                                                         | I2 / F3                                |
| CEN/TS 45545-2:2009                                                    | HL 2 / R24 outside<br>HL1 / R23 inside |
| FprEN 45545-2:2012                                                     | HL 2 / R23 outside<br>HL1 / R22 inside |
| Mechanical working life<br>- mating cycles                             | 500                                    |
| Degree of protection<br>acc. to DIN EN 60 529<br>for coupled connector | IP 66 (IP 68 in preparation)           |
| Cable gland thread                                                     | M 32                                   |

### Contacts

|                            |                    |
|----------------------------|--------------------|
| Material                   | copper alloy       |
| Surface                    | 3 µm Ag            |
| Contact resistance         | ≤ 0.3 mΩ           |
| Crimp terminal             | 25 mm² ... 120 mm² |
| Max. insulation diameter   | 20 mm              |
| Crimp die                  | DIN 46 235         |
| Pressing force requirement | 130 kN             |

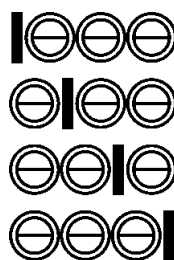
### Carrier plate and Locking modules

|          |                 |
|----------|-----------------|
| Material | aluminium       |
| Locking  | stainless steel |

### Mechanical solidness

|                |                                                                               |
|----------------|-------------------------------------------------------------------------------|
| Vibration test | acc. to DIN EN 60 068-2-6<br>• 5 Hz ... 9 Hz: 15 mm<br>• 9 Hz ... 150 Hz: 5 g |
| Shock test     | acc. to DIN EN 61 373<br>• 30 g, 18 ms<br>• 3 axis                            |
| Noise          | acc. to DIN EN 61 373<br>• Cat. 2                                             |

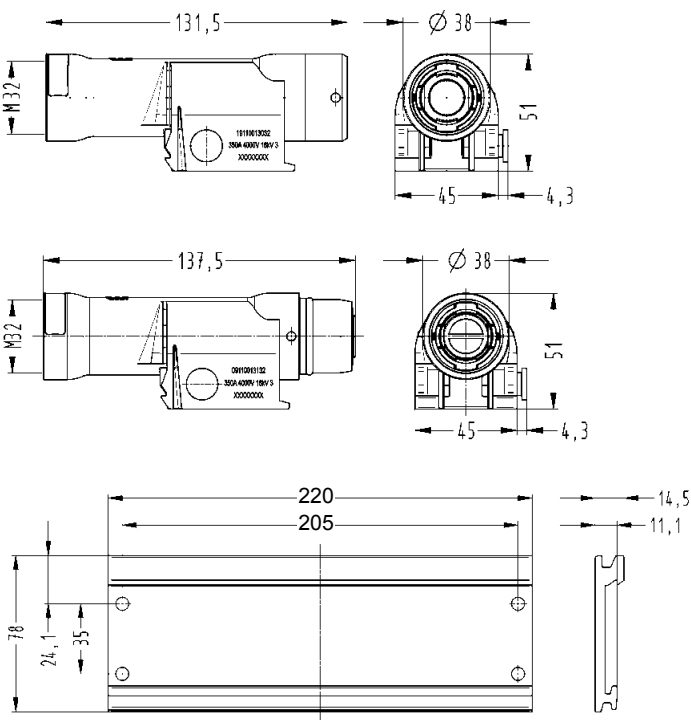
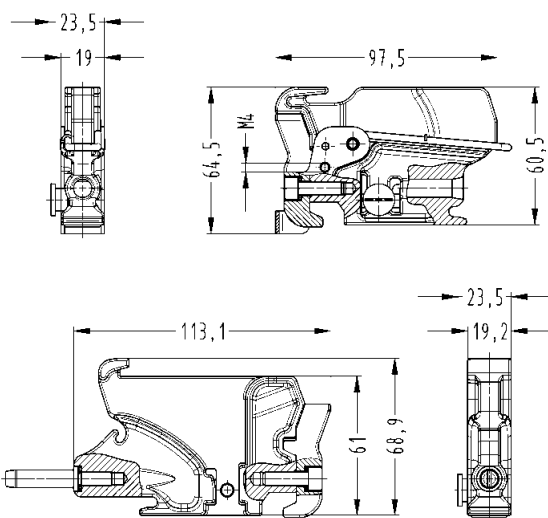
Coding possibilities with 1 coding element (3-poles set):



Other coding possibilities on request

Available August 2013



| Identification                                |               | Part Number    | Drawings                                                                             | Dimensions in mm |
|-----------------------------------------------|---------------|----------------|--------------------------------------------------------------------------------------|------------------|
| Han® HC Individual                            |               |                |                                                                                      |                  |
| Carrier module, male                          | 350 A         | 19 11 001 3032 |   |                  |
| Carrier module, female                        | 350 A         | 19 11 001 3132 |                                                                                      |                  |
| Carrier plate<br>for 3x 350 A carrier modules |               | 09 11 000 9991 |                                                                                      |                  |
|                                               | other lengths | on request     |                                                                                      |                  |
| Locking module, active                        |               | 09 11 000 9980 |  |                  |
| Locking module, passive                       |               | 09 11 000 9982 |                                                                                      |                  |

| Identification | Part Number | Drawings | Dimensions in mm |
|----------------|-------------|----------|------------------|
|----------------|-------------|----------|------------------|

Cable entry protection  
with metric cable entries (IP 68)

metal



**19 00 000 5080**

19 00 000 5081

**19 00 000 5082**

**19 00 000 5084**

**19 00 000 5090**

19 00 000 5091

**19 00 000 5092**

**19 00 000 5094**

19 00 000 5095

**19 00 000 5096**

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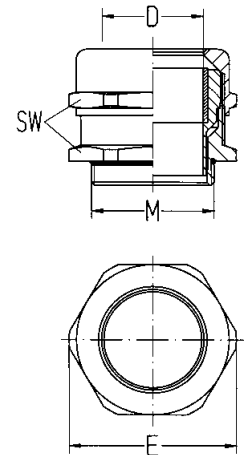
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32

| SW | E    | Outer cable Ø | Nm |
|----|------|---------------|----|
| 22 | 24.4 | 5 ... 9 mm    | 10 |
| 22 | 24.4 | 5 ... 9 mm    | 10 |
|    |      | 6 ... 12 mm   |    |
| 22 | 24.4 | 6 ... 12 mm   | 10 |
| 24 | 26.5 | 10 ... 14 mm  | 10 |
| 30 | 33.5 | 9 ... 16 mm   | 15 |
| 30 | 33.5 | 9 ... 16 mm   | 15 |
|    |      | 13 ... 18 mm  |    |
| 30 | 33.5 | 13 ... 18 mm  | 15 |
| 40 | 44   | 13 ... 20 mm  | 15 |
| 40 | 44   | 13 ... 20 mm  | 15 |
|    |      | 18 ... 25 mm  |    |
| 40 | 44   | 18 ... 25 mm  | 15 |



plastic



19 00 000 5180

19 00 000 5182

19 00 000 5184

19 00 000 5190

19 00 000 5192

19 00 000 5194

19 00 000 5196

20

20

20

25

25

32

32

|    |      |              |    |
|----|------|--------------|----|
| 22 | 26.4 | 5 ... 9 mm   | 8  |
| 22 | 26.4 | 6 ... 12 mm  | 8  |
| 22 | 29.8 | 10 ... 14 mm | 10 |
| 24 | 33.5 | 9 ... 16 mm  | 10 |
| 30 | 36.5 | 13 ... 18 mm | 15 |
| 30 | 46.8 | 13 ... 20 mm | 15 |
| 30 | 46.8 | 18 ... 25 mm | 15 |

Reducer  
for metric cable entries (IP 68)

metal



M32 → M20

19 00 000 5066

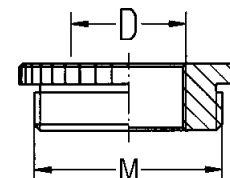
32

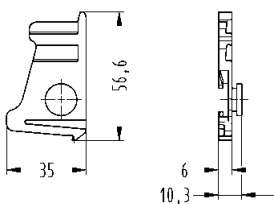
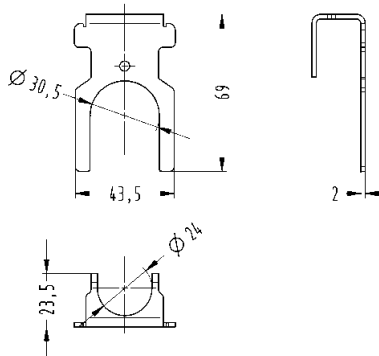
M32 → M25

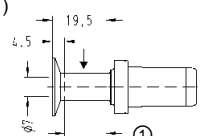
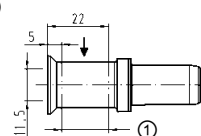
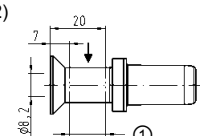
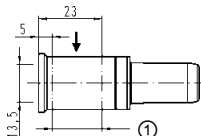
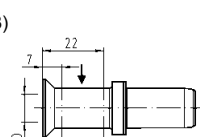
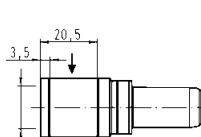
19 00 000 5069

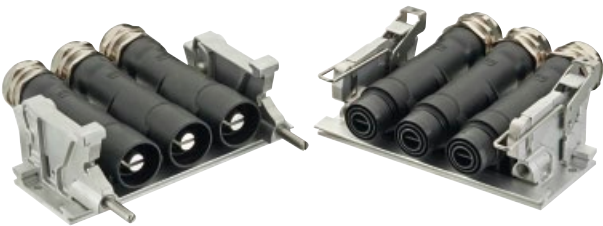
32

| D  |
|----|
| 20 |
| 25 |



| Identification                                                                                                         | Part Number                                                                                                       | Drawings                                                                           | Dimensions in mm |
|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------|
| Coding element (set with 2 pieces)<br> | 09 11 000 9987                                                                                                    |  |                  |
| Unlocking tool<br>                     | 09 99 000 0826                                                                                                    |  |                  |
| Identification carrier module<br>    | 1 - 10 A    09 11 000 9996<br>1 - 10 B    09 11 000 9997<br>1 - 10 C    09 11 000 9998<br>blank    09 11 000 9999 |                                                                                    |                  |

| Identification                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Wire gauge<br>mm <sup>2</sup> | Part-Number       |                     | Drawings                                                                               | Dimensions in mm                                                                       |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------|---------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------|---------------------|------------------|--------------------|----|-------|--------------------|----|-------|--------------------|----|-------|--------------------|----|-------|--------------------|----|-------|---------------------|----|-------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               | Male contacts (M) | Female contacts (F) |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
| Crimp contacts*<br><br>silver<br><br>                                                                                                                                                                                                                                                                                                                                                    |                               |                   |                     |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 25 <sup>1)</sup>              | 09 11 000 6139    | 09 11 000 6239      | 1)  | 4)  |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 35 <sup>2)</sup>              | 09 11 000 6140    | 09 11 000 6240      | 2)  | 5)  |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 50 <sup>3)</sup>              | 09 11 000 6141    | 09 11 000 6241      | 3)  | 6)  |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 70 <sup>4)</sup>              | 09 11 000 6142    | 09 11 000 6242      |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 95 <sup>5)</sup>              | 09 11 000 6143    | 09 11 000 6243      |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
| 120 <sup>6)</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 09 11 000 6144                | 09 11 000 6244    |                     |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
| <table><tr><th>Wire gauge</th><th>Tool identification</th><th>Stripping length</th></tr><tr><td>25 mm<sup>2</sup></td><td>10</td><td>26 mm</td></tr><tr><td>35 mm<sup>2</sup></td><td>12</td><td>26 mm</td></tr><tr><td>50 mm<sup>2</sup></td><td>14</td><td>28 mm</td></tr><tr><td>70 mm<sup>2</sup></td><td>16</td><td>28 mm</td></tr><tr><td>95 mm<sup>2</sup></td><td>18</td><td>30 mm</td></tr><tr><td>120 mm<sup>2</sup></td><td>20</td><td>24 mm</td></tr></table> |                               |                   |                     |                                                                                        |                                                                                        | Wire gauge | Tool identification | Stripping length | 25 mm <sup>2</sup> | 10 | 26 mm | 35 mm <sup>2</sup> | 12 | 26 mm | 50 mm <sup>2</sup> | 14 | 28 mm | 70 mm <sup>2</sup> | 16 | 28 mm | 95 mm <sup>2</sup> | 18 | 30 mm | 120 mm <sup>2</sup> | 20 | 24 mm |
| Wire gauge                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Tool identification           | Stripping length  |                     |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
| 25 mm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10                            | 26 mm             |                     |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
| 35 mm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 12                            | 26 mm             |                     |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
| 50 mm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 14                            | 28 mm             |                     |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
| 70 mm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 16                            | 28 mm             |                     |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
| 95 mm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 18                            | 30 mm             |                     |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
| 120 mm <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 20                            | 24 mm             |                     |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
| * Crimp zone (①) acc. to DIN EN 46 235                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                   |                     |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |
| * for stranded wire acc. to IEC 60 228 class 5                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                   |                     |                                                                                        |                                                                                        |            |                     |                  |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                    |    |       |                     |    |       |



Set, 3-poles

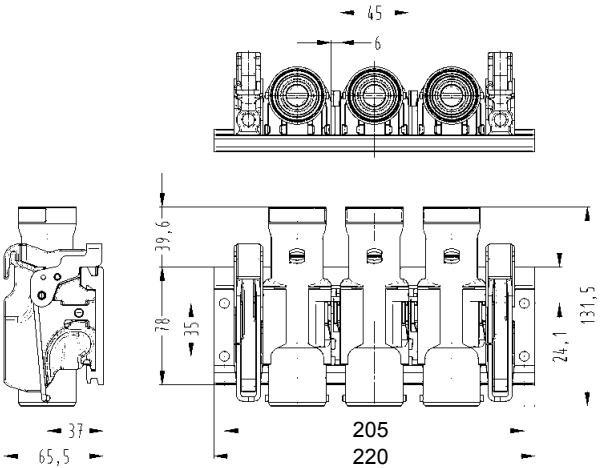
| Identification | Part Number | Drawings | Dimensions in mm |
|----------------|-------------|----------|------------------|
|----------------|-------------|----------|------------------|

Set\*, 3-poles, male

- consists of:
- 3x carrier module, male  
(19 11 001 3032)
  - 1x carrier plate  
(09 11 000 9991)
  - 2x locking module, passive  
(09 11 000 9982)



19 11 003 3032

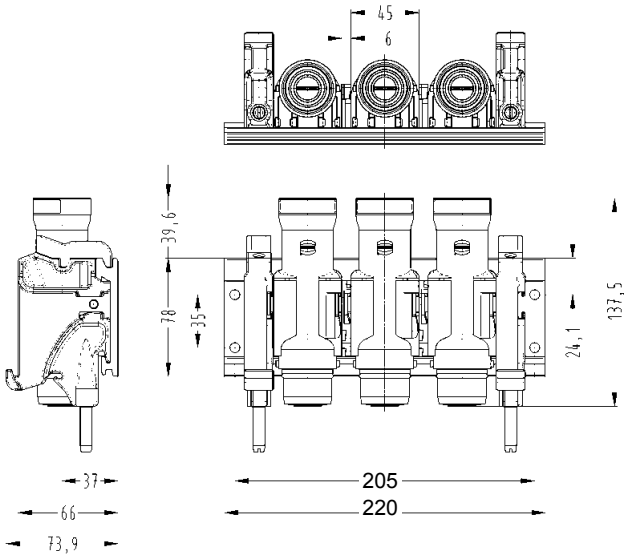


Set\*, 3-poles, female

- consists of:
- 3x carrier module, female  
(19 11 001 3132)
  - 1x carrier plate  
(09 11 000 9991)
  - 2x locking module, active  
(09 11 000 9980)



19 11 003 3132



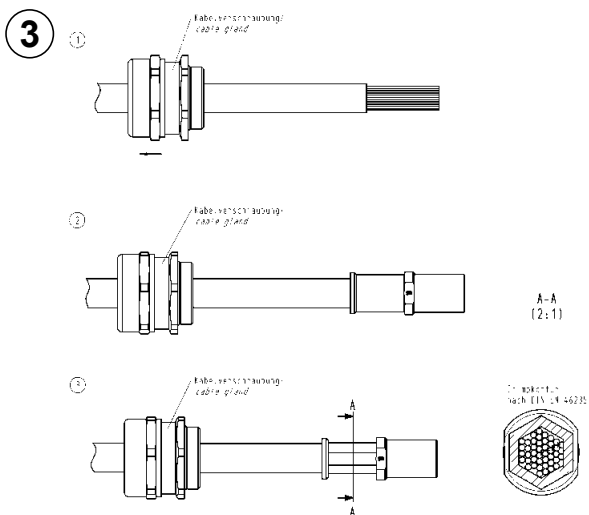
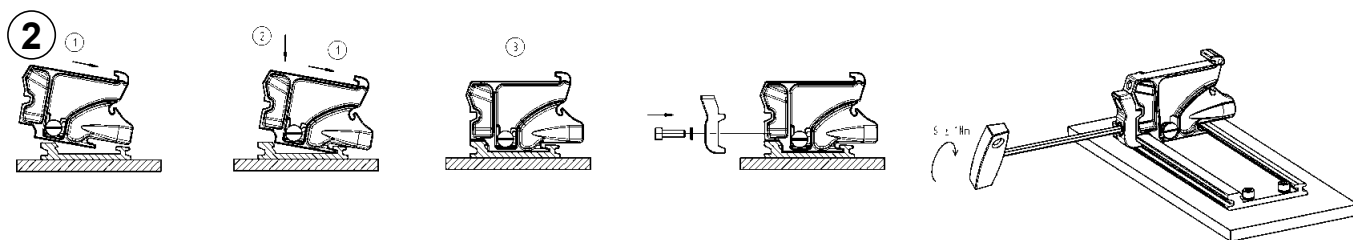
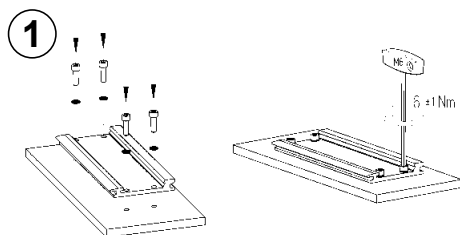
other sets

on request

\* Order separately:

- coding elements
- unlocking tool
- cable glands
- crimp contacts

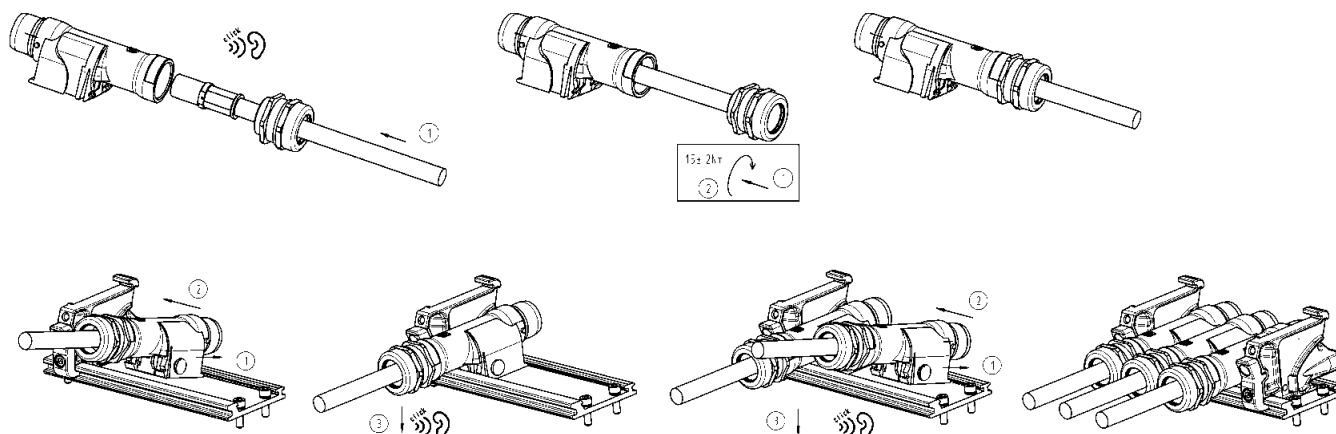
## Assembly and construction



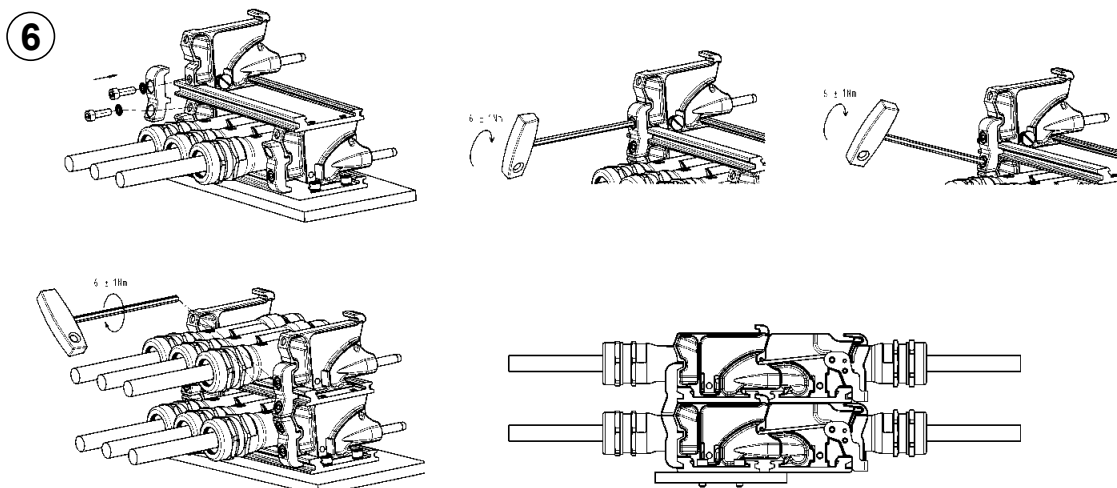
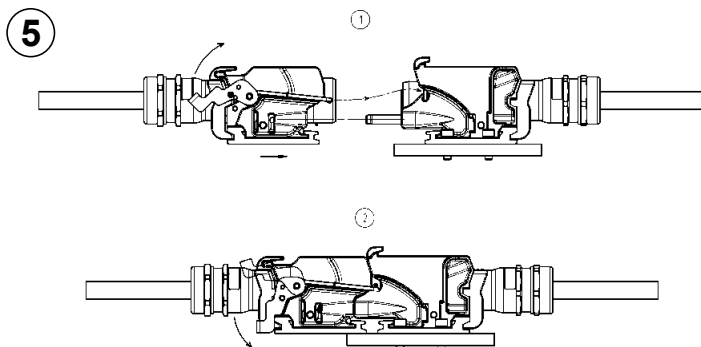
| Wire gauge          | Tool identification | Stripping length |
|---------------------|---------------------|------------------|
| 25 mm <sup>2</sup>  | 10                  | 26 mm            |
| 35 mm <sup>2</sup>  | 12                  | 26 mm            |
| 50 mm <sup>2</sup>  | 14                  | 28 mm            |
| 70 mm <sup>2</sup>  | 16                  | 28 mm            |
| 95 mm <sup>2</sup>  | 18                  | 30 mm            |
| 120 mm <sup>2</sup> | 20                  | 24 mm            |

\* for stranded wire acc. to IEC 60 228 class 5

### 4 Variant 1



④ Variant 2



## Features

- Direct hall effect current sensor
- $I_{Pmax} = 300 \text{ A} \dots 1000 \text{ A}$
- Galvanic insulation between primary and secondary current
- Panel mounting
- Housing material and potting mass have a flammability rating UL94 V0
- Standard EN 50 178: Electronic equipment for use in power installations

## Advantages

- High accuracy
- Wide measuring range
- High current overload capability
- Very low susceptance to external magnetic fields

## Technical characteristics

### HCSE 100

|          |                         |                           |
|----------|-------------------------|---------------------------|
| $I_{PN}$ | Nominal primary current | 100 A                     |
| $I_P$    | Measuring range         | 0 ... $\pm 300 \text{ A}$ |

### HCSE 300

|          |                         |                           |
|----------|-------------------------|---------------------------|
| $I_{PN}$ | Nominal primary current | 300 A                     |
| $I_P$    | Measuring range         | 0 ... $\pm 900 \text{ A}$ |

### HCSE 500

|          |                         |                            |
|----------|-------------------------|----------------------------|
| $I_{PN}$ | Nominal primary current | 500 A                      |
| $I_P$    | Measuring range         | 0 ... $\pm 1000 \text{ A}$ |

### HCSE 800

|          |                         |                            |
|----------|-------------------------|----------------------------|
| $I_{PN}$ | Nominal primary current | 800 A                      |
| $I_P$    | Measuring range         | 0 ... $\pm 1000 \text{ A}$ |

|           |                                     |                       |
|-----------|-------------------------------------|-----------------------|
| $V_{out}$ | Output voltage at $I_{PN}$          | 4 V                   |
| $R_L$     | Load resistance                     | $> 1 \text{ k}\Omega$ |
| $V_C$     | Nominal power supply ( $\pm 5 \%$ ) | $\pm 15 \text{ V}$    |

|          |                                       |                         |
|----------|---------------------------------------|-------------------------|
| $I_C$    | Supply current @ $V_C = 15 \text{ V}$ | $< 25 \text{ mA}$       |
| $R_{IN}$ | Insulation resistance                 | $> 500 \text{ M}\Omega$ |

|       |                                                              |            |
|-------|--------------------------------------------------------------|------------|
| X     | Accuracy at $I_{PN}$ $T_A = 25^\circ\text{C}$ without Offset | $\pm 1 \%$ |
| $E_L$ | Linearity                                                    | $< 0.5 \%$ |

|            |                                                                       |                              |
|------------|-----------------------------------------------------------------------|------------------------------|
| $V_O$      | Offset voltage at $I_P = 0$ , $T = 25^\circ\text{C}$                  | $\pm 10 \text{ mV}$          |
| $V_{OOL}$  | Offset after $I_{Pmax}$                                               | $\pm 10 \text{ mV}$          |
| $V_{OT}$   | Thermal offset drift, $T = -25^\circ\text{C} \dots +85^\circ\text{C}$ | $\pm 1 \text{ mV/K}$         |
| $V_{outT}$ | Thermal gain drift, $T = -25^\circ\text{C} \dots +85^\circ\text{C}$   | $\pm 0.05 \%/K$              |
| $t_r$      | Delay time of $I_{PN}$                                                | $< 3 \mu\text{s}$            |
| $di/dt$    | $di/dt$ correctly following                                           | $> 50 \text{ A}/\mu\text{s}$ |
| f          | Bandwidth                                                             | DC ... 100 kHz               |

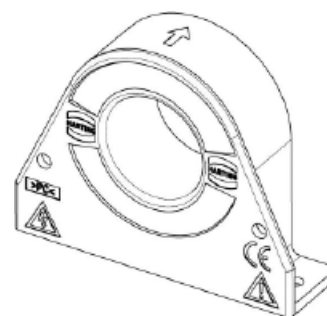
|       |                                                  |                               |
|-------|--------------------------------------------------|-------------------------------|
| $T_A$ | Operating temperature range                      | $-25 \dots +85^\circ\text{C}$ |
| $T_S$ | Storage temperature range                        | $-25 \dots +90^\circ\text{C}$ |
| m     | Weight                                           | $\sim 0.2 \text{ kg}$         |
| $V_D$ | Proof stress voltage, effective, 50 Hz, 1 minute | 3.5 kV                        |
| $V_B$ | Rated voltage <sup>1)</sup>                      | 690 V                         |

<sup>1)</sup> Safe separation (Overvoltage Category III, pollution degree 2). Value applies for sensors with clamp terminal, for other secondary connections are higher values possible

$I_{PN} = 100\text{ A} \dots 800\text{ A}$

Measureable currents are AC, DC, pulsed ...

Available September 2013



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

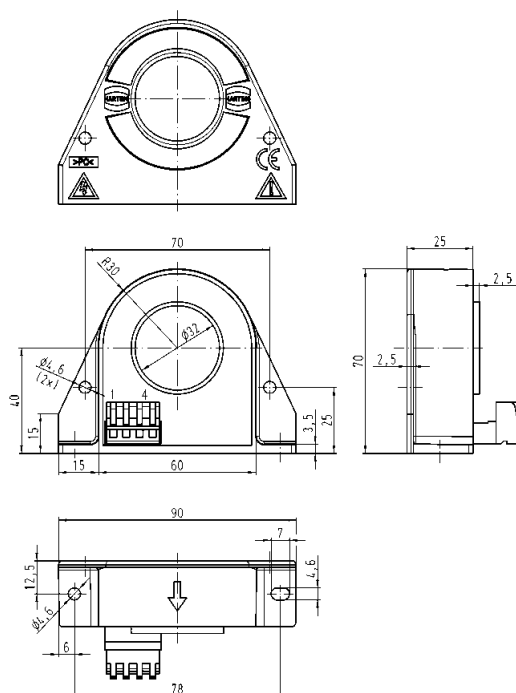
HCSE 100 – HCSE 800

Sensor fastening:

2 x M4 Steel screws

(recommended fastening torque 3.2 Nm)

Tolerances  $\pm 0.5\text{ mm}$



HCSE 100

20 32 010 0101

HCSE 300

20 32 030 0101

HCSE 500

20 32 050 0101

HCSE 800

20 32 080 0101

Connections:

Spring clamp terminal, pluggable

Centerline 5.0 mm; 4pins

Pin output:

- 1 +15 V
- 2 -15 V
- 3 Signal
- 4 0 V

## Remarks

- If  $I_P$  flows in the direction of the Arrow  $I_{Sek}$  is positive
- Over currents ( $\gg I_{PN}$ ) or the missing of the supply voltage can cause an additional remaining magnetic offset
- The temperature of the primary conductor may not exceed 100 °C
- Protection degree of the standard interface is IP 20



- These sensors may only be used in electrical or electronic systems which fulfill the relevant regulations (Standards, EMC Requirements,...)



- Pay attention to protect non-insulated high-voltage current carrying parts against direct contact (e.g. with a protective housing)
- When installing this sensor you must ensure that the safe separation (between primary circuit and secondary circuit) is maintained over the whole circuits and their connections
- The sensor may only be connected to a power supply respecting the SELV/PELV protective regulations acc. to EN 50 178
- Disconnecting the main power must be possible

The Current Sensors support a Safe Separation. The creepage and clearance distances taken as a basis for the rated voltage are the shortest distance between the secondary connection and the transducer window. The actual rated voltage depends on the position of the primary conductor respectively on the actual distance between the primary conductor and the secondary connection



Crimping Tool for Han-Fast® Lock contacts

Features

- Manual crimping tool for Han-Fast® Lock contacts for wire gauges of 4 mm², 6 mm² and 10 mm²
- Integrated locator guarantees precise contact alignment
- Balanced grip force and optimised handle design
- Built in interlock to ensure a complete crimping cycle
- Easy exchange of crimp dies
- High quality crimping

Technical characteristics

|                      |                                                  |
|----------------------|--------------------------------------------------|
| Specification        | IEC 60 352-2                                     |
| Dimensions           | 207.4 mm x 95.2 mm<br>(length x diameter)        |
| Wire gauge           | 4, 6 and 10 mm²<br>AWG 12, 10 und 8              |
| Wire retention force | 4 mm² > 310 N<br>6 mm² > 360 N<br>10 mm² > 380 N |

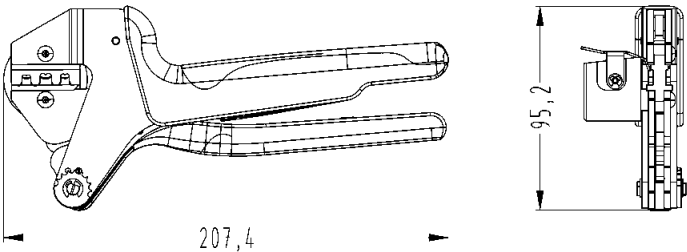
Identification

Part-Number

Depiction

Crimping tool Han-Fast® Lock

09 99 000 0831



| Identification                                                                                                                                                                                | Part-Number                      | Depiction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Removal tool for Han-Modular®                                                                                                                                                                 |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| plastic                                                                                                                                                                                       | 09 99 000 0331                   |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| metal                                                                                                                                                                                         | 09 99 000 0828                   |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Suitable for                                                                                                                                                                                  | Part-Number                      | Depiction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Han-Modular® docking frame                                                                                                                                                                    | 09 14 0xx 1701<br>09 14 0xx 1711 | <p>The removal tool is applicable to the plastic frames and housings for the Han-Modular® series, Han-Yellock® adapter frames and Han-Eco® hoods / housings</p> <br><br>                                                                                 |
| Han-Yellock® adapter frame                                                                                                                                                                    | 11 00 x00 0101<br>11 00 x00 0301 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Han-Eco®                                                                                                                                                                                      | 19 41 xxx xxxx                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p>Modules without plastic latches<br/>i.e. Han® GigaBit module</p> <p>Modules with plastic latches<br/>i.e. Han® Pneumatic module</p> <p>Double modules<br/>i.e. Han® 100 A Axial module</p> |                                  | <p>The removal tool can be used for all Han-Modular® modules. It is compatible to modules with and without plastic latches.</p> <br><br> <p>for double modules please use<br/>4 x 09 99 000 0331<br/>or<br/>2 x 09 99 000 0331 + 1 x 09 99 000 0828</p> |

**Part-Number: 09 99 000 0833**



Han® Torque Tool Set for High Current Axial Screw Contacts

## Features

- Numerical, digital display of torque values
- Torque value can be set stepless by means of a torque-setter (included with delivery)
- Comfortable T-handle with soft zones for optimal torque transmission
- Audible click signal when the pre-set torque value has been attained
- Including factory calibration certificate
- Interchangeable blades made of high quality chrome-vanadium-molybdenum steel

## Technical characteristics

- Tightening torque is variable between 5 and 14 Nm
- Torque accuracy:  $\pm 6\%$
- Specifications: EN ISO 6789, BS EN 26789, ASME B107.14M.
- Dimensions: 273 x 153 mm (Length x Width)

## Included with the set

- High quality metal box
- Variable tightening torque tool TorqueVario®-STplus\*
- Setting tool: torque-setter
- HARTING optimised interchangeable blades hexagonal SW 4 and SW 5

## Suitable for HARTING products

- Han® 200 A Axial module
- Han® 100 A Axial module
- Han® 100 A single module
- Han® K 3/0
- Han® K 3/2
- Han® K 6/6 (power contacts)
- Han® K 8/0 (power contacts)
- Han® HC Modular 350 Axial (up to 95 mm<sup>2</sup>)

\* TorqueVario® is a registered trademark of Wiha Werkzeuge GmbH

**Part-Number: 09 99 000 0834**



Han® Torque Tool Set for Power Contacts

## Features

- Torque value can be set via window scale
- Torque value can be set stepless by means of a torque-setter (included with delivery)
- Ergonomic multi-component handle, particularly light and compact
- Audible click signal when the pre-set torque value has been attained
- Including factory calibration certificate
- Interchangeable blades made of high quality chrome-vanadium-molybdenum steel

## Technical characteristics

- Tightening torque is variable between 1 and 5 Nm
- Torque accuracy:  $\pm 6\%$
- Specifications: EN ISO 6789, BS EN 26789, ASME B107.14M.
- Dimensions: 273 x 153 mm (Length x Width)

## Included with the set

- High quality metal box
- Variable tightening torque tool TorqueVario®-S\*
- Setting tool: torque-setter
- HARTING optimised interchangeable blades hexagonal SW 2 and SW 2.5
- Torque bit universal holder
- Bits: SW3, SW4, P 0, PH1, PH2, T10, T15, T20, slot 0.6 x 4.5, slot 0.8 x 4.5

## Suitable for HARTING products

- Han® 70 A Axial module
- Han® 40 A Axial module
- Han® C Axial module
- Han® C Axial module
- Han® K 4/4 (power contacts)
- Han® K 6/12 (power contacts)

\* TorqueVario® is a registered trademark of Wiha Werkzeuge GmbH

**Part-Number: 09 99 000 0835**



Han® Torque Tool Set for HARTING Screw Contacts and Fixing Screws

## Features

- Precise torque value by means of a fixed torque value pre-set by the manufacturer
- Ergonomic multi-component handle, particularly light and compact
- Audible click signal when the pre-set torque value has been attained
- Including factory calibration certificate
- Interchangeable blades made of high quality chrome-vanadium-molybdenum steel

## Technical characteristics

- Fixed torque value: 0.5 and 1.2 Nm
- Torque accuracy:  $\pm 6\%$
- Specifications EN ISO 6789, BS EN 26789, ASME B107.14M.
- Dimensions: 273 x 153 mm (Length x Width)

## Included with the set

- High quality metal box
- Two pre-set tightening torque screwdrivers TorqueFix®\*
- Interchangeable blades PH1, PH2, slot 0.5 x 3.0

## Suitable for HARTING products

- Han® 10 A – 32 A
- Han D® AV, Han E® AV,
- Han® K 6/6, K 6/12 (signal)
- Han® E
- Han Hv E®
- Han® HsB
- Han® fixing screws
- Han® PE contact: Han A®, Han E®, Han D®, Han DD®, K 8/24, K 6/6, K 8/0

\* TorqueVario® is a registered trademark of Wiha Werkzeuge GmbH

**Part-Number: 09 99 000 0836**



Han® VDE Screw Driver Set

## Features

- Safety when working with loaded equipment up to 1.000 V AC
- Tool complying with IEC security standards
- High quality chrome-vanadium-molybdenum steel, through-hardened, chrome-plated
- Protective insulation moulded directly onto the bit
- Ergonomic SoftFinish®\* multi-component handle with roll off protection

## Technical characteristics

- Specifications: DIN ISO 2380, DIN ISO 8764, manufactured acc. to IEC 60900:2004



- Dimensions (Tool length x diameter):  
 0.4 x 2.5: 179 x 23 mm  
 0.5 x 3.0: 204 x 23 mm  
 0.6 x 3.5: 204 x 23 mm  
 1.0 x 4.5: 236 x 30 mm  
 PH1: 191 x 23 mm  
 PH2: 218 x 23 mm

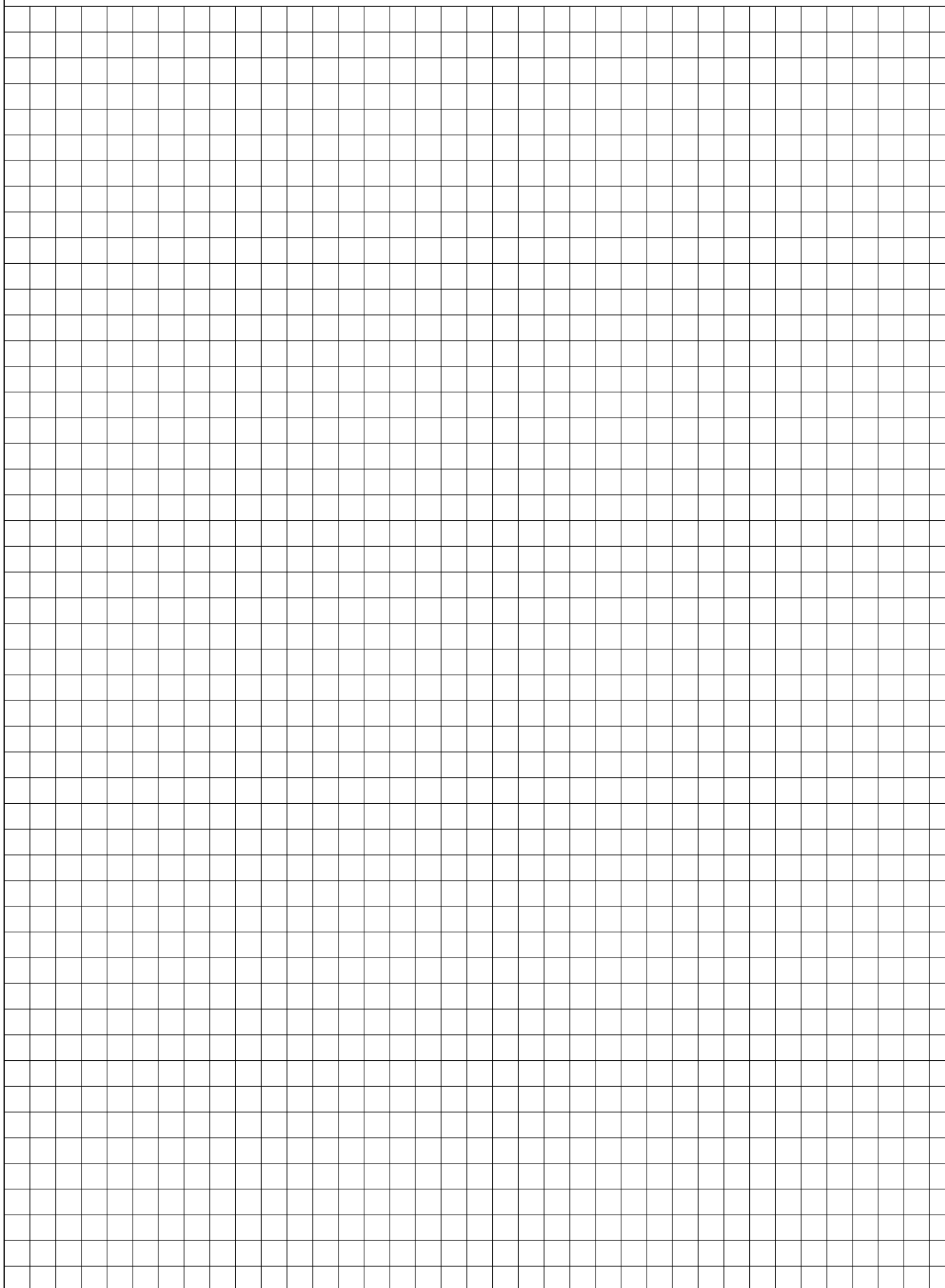
## Range of delivery

- SoftFinish®\* electric slim bit screw driver: 0.4 x 2.5, 0.5 x 3.0, 0.6 x 3.5, 1.0 x 4.5
- SoftFinish®\* electric Phillips screw driver: PH1, PH2,

## Suitable for HARTING products

- Han® A
- Han Staf®
- Han® D® AV, Han E® AV,
- Han® K 6/6, K 6/12 (signal)
- Han® E, Hv E®, Han® HsB
- Han® fixing screws
- Han® K 4/0 K 4/2 K 4/8 screw contacts
- Han® PE contacts: Han A®, Han E®, Han D®, Han DD®, K 8/24, K 6/6, K 8/0

\* SoftFinish® is a registered trademark of Wiha Werkzeuge GmbH





## Ha-VIS Middleware

## Advantages

- Easy integration of HARTING RFID Reader
- Collecting any kind of tag information
- Filtering, grouping and aggregation based on various tag information
- Application flow triggered by manual, digital IO or scheduled events
- Report of cumulated data in standardized or customized formats
- Central RFID Reader management
- Advanced reading, writing, locking and muting of RFID transponders
- Import of data e. g. passwords from different sources like caches, association table or random values is supported
- Conform to EPCglobal® ALE 1.1.1 standard

## General Description

The HARTING Ha-VIS Middleware is the intelligent software bridge between RFID Hardware and your company application. Scalable number of RFID Reader can easily be connected and configured. The connection is done with the connectors. Via configuration the Ha-VIS Middleware can filter, consolidate and group the raw data. The subscribers deliver the customized data to different sources/formats e. g. to files, databases or programmable interfaces. With the interface bidirectional interaction with the TAGs is easily realizable. The Ha-VIS Middleware Management is a client-software developed for configuration and management of the Middleware. For optimal functionality, the Ha-VIS middleware is delivered with service contract and training.

| Identification                                                       | Part number        | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                                             | Dimensions in mm                                                                      |
|----------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Ha-VIS Middleware                                                    |                    | <div> <div>Connector<br/>RF-R500</div> <div> up to 5 reader<br/>up to 15 reader<br/>up to 25 reader<br/>up to 50 reader </div> </div>                                                                                                                                                                                                                                                                                                               |                                                                                       |
| incl XML subscriber and connector for one Ha-VIS RF-R500 RFID Reader | 26 99 210 1110 00  | <div> <div>Middleware</div> <div> Middleware including connector for one RF-R500 and XML subscriber </div> </div>                                                                                                                                                                                                                                                                                                                                   | <div> <div>Subscribers</div> <div> XML file<br/>MySQL database<br/>http </div> </div> |
| Subscriber (Software side)                                           |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| MySQL Subscriber                                                     | 26 99 220 4110 00  |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| http Subscriber                                                      | 26 99 220 5110 00  |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| Connector (Hardware side)                                            |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| Connector for up to 5 RF-R500                                        | 26 99 230 1120 00  |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| Connector for up to 15 RF-R500                                       | 26 99 230 1130 00  |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| Connector for up to 25 RF-R500                                       | 26 99 230 1140 00  |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| Connector for up to 50 RF-R500                                       | 26 99 230 1150 00  |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| Connector for up to 5 RF-R200                                        | 26 99 230 3120 00* |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| Connector for up to 15 RF-R200                                       | 26 99 230 3130 00* |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| Connector for up to 25 RF-R200                                       | 26 99 230 3140 00* |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| Connector for up to 50 RF-R200                                       | 26 99 230 3150 00* |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| recommendation:<br>Visit our special training                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
| optional:<br>Installation and configuration service                  |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                       |
|                                                                      |                    | <b>Note</b><br>Please specify which connector and which subscriber you need (each component has a separate part no.). If you only order the middleware (part no. 26 99 210 1110 00) you receive the middleware, the XML subscriber and a connector for one Ha-VIS RF-R500 RFID reader.<br>For example, you order the middleware and an additional connector for the Ha-VIS RF-R500 with up to 15 reader, you are allowed to use 16 reader in total. |                                                                                       |

\* available quarter 3/2013

## Technical characteristics

### Functionality

- Simple connection and integration of HARTING RFID reader
- Data filtering, aggregation and grouping based on various tag data like PC, TID, user memory bank and user defined primary key.
- Easy reporting of new, current and deleted tags.
- Reducing the appearance of tags moving in and out of the reader field. (Tag Smoothing)
- Management of complex reader hierarchies with composite reader and antenna restriction support.
- Supporting read, write, lock and kill operations according to EPC Class-1 Generation-2
- Different ways to trigger report generation
  - On occurrence of digital Input and Output events.
  - On http trigger events.
  - Time controlled like time interval, time period or specific point of time.
  - Tag controlled like no new tags, first tag occurred or specific amount of processed tags.
- Easy management and configuration access with Ha-VIS Middleware Management

### System requirements

- Operating System
    - Microsoft® Windows Server 2008 R2 64 Bit (recommended) or Windows 7 64 Bit
  - Software
    - Microsoft® .NET 3.5
  - Minimum hardware
    - Processor: 2 GHz 64 Bit Dual-Core
    - RAM: 4 GB or more
    - Disk space: 64 GB or more
- (Recommended hardware depends on customer application)

### Architecture and concept

#### Middleware:

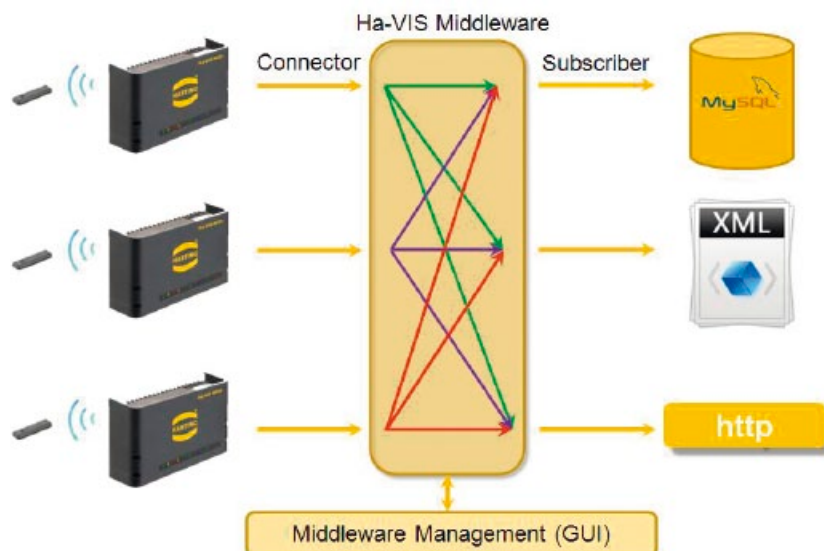
The middleware is the central data handling unit. Within the middleware, the data delivered from the connectors is filter, aggregated and grouped. The handled data can be consolidated and enriched with additional information.

#### Connector:

The connector bundles the full communication with the physical device. Changes in the hardware are fully handled by the connector without implications for the middleware. For every type of RFID reader, a different connector is needed.

#### Subscriber:

The subscriber delivers reports of the data processed by the middleware. There are different subscribers available for different output formats (e.g. XML). If a direct communication with another software is needed the http subscriber can be used.





## Ha-VIS RFID RF-R200 Reader

## Advantages

- One internal antenna (up to 30 cm)
- One external antenna (SMA)
- Flexible through large external antenna portfolio
- Power over Ethernet
- For distributed identification points
- Small size and DIN rail mounting
- Easy integration in machines or cabinets

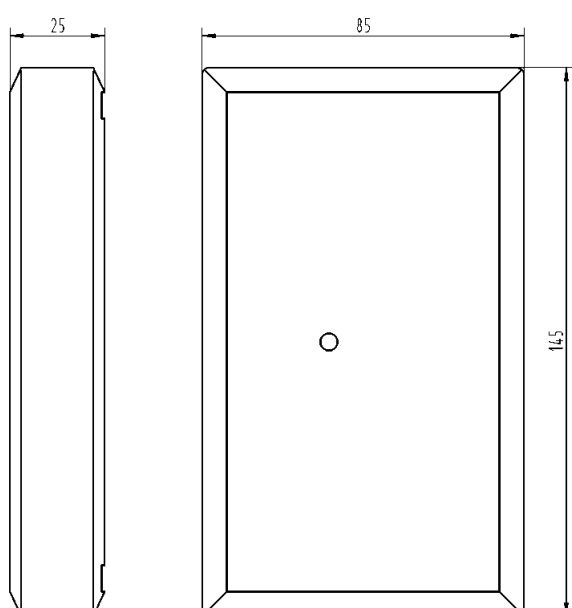
## General Description

The Ha-VIS RF-R200 is a cost-efficient mid range reader licensed according to ETSI, FCC und IC.

Due to its very compact design, the Ha-VIS RF-R200 is best suited for integration in machines as well as office applications

Characteristics:

- very compact
- can easily be integrated in machines
- internal antenna for applications with limited space
- one external antenna makes numerous application possible
- 0.5 W transmission power
- Power over Ethernet

| Identification                                 | Part number    | Drawing                                                                              |  | Dimensions in mm |
|------------------------------------------------|----------------|--------------------------------------------------------------------------------------|--|------------------|
| Ha-VIS RFID RF-R200-PoE                        |                |  |  |                  |
| EU version                                     | 20 91 106 1101 |                                                                                      |  |                  |
| Ha-VIS RFID RF-R200-USB                        |                |                                                                                      |  |                  |
| EU version                                     | 20 91 106 1102 |                                                                                      |  |                  |
| Ha-VIS RFID RF-R200-Serial module (no housing) |                |                                                                                      |  |                  |
| EU version                                     | 20 91 106 1103 |                                                                                      |  |                  |
| Optional accessories                           |                |                                                                                      |  |                  |
| DIN Rail mounting Kit for RF-R200              | 20 93 102 0202 |                                                                                      |  |                  |
| Mounting Kit (screwings)                       | 20 93 102 0203 |                                                                                      |  |                  |
| Power supply                                   | 20 93 310 0203 |                                                                                      |  |                  |

## Technical characteristics

|                                         |                                                                                                                                                                                                     |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Transponder protocol</b>             | EPC class Gen2 (ISO 18000-6-c)                                                                                                                                                                      |
| <b>UHF RFID antenna interface</b>       |                                                                                                                                                                                                     |
| Antenna connection                      | 1 x SMA connector (50 Ohm); internally multiplexed; one internal antenna<br>3 x SMA connector (50 Ohm) RF-R200 (module) only                                                                        |
| Transmitting Power                      | max. 0.5 W configurable                                                                                                                                                                             |
| Frequency area                          | 860 MHz ... 960 MHz (depending on specific reader)                                                                                                                                                  |
| <b>Interfaces</b>                       | <ul style="list-style-type: none"> <li>RF-R200 (PoE) Ethernet (TCP/IP) 10/100 Mbit/s; Full Spec. 802.3</li> <li>RF-R200 (module); RS 323 (serial)</li> </ul>                                        |
| <b>Performance</b>                      |                                                                                                                                                                                                     |
| Max. Operating Distance                 | Up to 2 m, depending on transponder & environmental conditions                                                                                                                                      |
| <b>Protocol Modi</b>                    | <ul style="list-style-type: none"> <li>Host Mode</li> <li>Notification Mode (Ha-VIS RFID RF-R200-PoE only)</li> <li>Scan Mode (Ha-VIS RFID RF-R200-USB only)</li> <li>Buffered read mode</li> </ul> |
| <b>Power Supply</b>                     |                                                                                                                                                                                                     |
| Power supply                            | 12 V ... 24 V DC                                                                                                                                                                                    |
| Power consumption                       | max. 7 W                                                                                                                                                                                            |
| <b>Design features</b>                  |                                                                                                                                                                                                     |
| Dimensions (W x H x D)                  | 145 x 85 x 27 mm                                                                                                                                                                                    |
| Degree of protection acc. to DIN 60 529 | IP 30                                                                                                                                                                                               |
| Installation on DIN rail                | DIN rail mounting kit (optional accessories)                                                                                                                                                        |
| <b>Environmental conditions</b>         |                                                                                                                                                                                                     |
| Operating temperature                   | -25 °C ... +45 °C (PoE)<br>-25 °C ... +50 °C (USB)                                                                                                                                                  |
| Storage temperature                     | -25 °C ... +85 °C                                                                                                                                                                                   |
| Relative humidity                       | 5 % ... 95 % (non-condensing)                                                                                                                                                                       |
| Vibration                               | EN 60 068-2-6<br>10 Hz ... 150 Hz: 0.075 mm / 1 g                                                                                                                                                   |
| Shock                                   | EN 60 068-2-27<br>Acceleration: 30 g                                                                                                                                                                |

## Technical characteristics

### Norms & Safety

Radio license

- EN 302 208
- FCC 47 FCR Part 15
- IC RSS-GEN, RSS-210

EMC

EN 301 489

Safety

EN 60 950

RoHS compliant

Extras

- Internal overheating control
- Demo- and configuration software Ha-VIS RFID config

## Management functions

### Basic Functions

|                   |                                                          |                    |
|-------------------|----------------------------------------------------------|--------------------|
|                   | Store and Forward Switching Mode                         | IEEE 802.3         |
|                   | Manual and Dynamic IP Address Assignment                 |                    |
| Port-Settings     | Auto-negotiation on / off                                |                    |
|                   | Port Speed 10 Mbit/s / 100 Mbit/s                        |                    |
|                   | Half / Full duplex                                       |                    |
|                   | Port disable / enable                                    |                    |
|                   | Link Up/Down Trap disable / enable                       |                    |
|                   | Flow Control disable / enable                            |                    |
| Network Discovery | Link Layer Discovery Protocol (LLDP)                     | 802.1AB, 2005      |
| Rate Control      | Rate Control per port<br>(Broadcast, Multicast, Unicast) |                    |
| File Transfer     | Firmware import and export via TFTP and HTTP             |                    |
|                   | Configuration import and export via TFTP and HTTP        |                    |
| Time Settings     | Manual time setting                                      |                    |
|                   | Simple Network Time Protocol (SNTP)                      | RFC 1305, RFC 4330 |
| User Management   | Admin, Guest and Service Level                           |                    |
| Service           | Service Mode via port 1                                  |                    |

### PROFINET

|  |                                        |  |
|--|----------------------------------------|--|
|  | PROFINET IO Device Stack <sup>1)</sup> |  |
|--|----------------------------------------|--|

### Time Synchronization

|  |                                       |                 |
|--|---------------------------------------|-----------------|
|  | Precision Time Protocol <sup>1)</sup> | IEEE 1588, 2008 |
|--|---------------------------------------|-----------------|

### QoS

|  |                                    |                |
|--|------------------------------------|----------------|
|  | Quality of Service (QoS)           | IEEE 802.1p    |
|  | Differentiated services (DiffServ) | RFC 2474, 2475 |

### VLAN

|  |                                                                                        |                            |
|--|----------------------------------------------------------------------------------------|----------------------------|
|  | Port protocol based VLANs<br>VLAN ID Range: 1 – 4094<br>Max. Anzahl aktiver VLANs: 256 | IEEE 802.1Q Rev D5.0, 2005 |
|--|----------------------------------------------------------------------------------------|----------------------------|

### Redundancy

|  |                                            |                    |
|--|--------------------------------------------|--------------------|
|  | Spanning Tree (STP)                        | IEEE 802.1D (2004) |
|  | Rapid Spanning Tree (RSTP)                 | IEEE 802.1D (2004) |
|  | Media redundancy protocol <sup>1) 2)</sup> | DIN EN 62 439-2    |

### Security

|  |                                                                         |               |
|--|-------------------------------------------------------------------------|---------------|
|  | Port-Based Network Access Control<br>Port Based Authentication with EAP | 802.1X (2004) |
|  | RADIUS Client                                                           | RFC 2138      |
|  | IP authorized manager                                                   |               |

### Link Aggregation

|  |                         |                     |
|--|-------------------------|---------------------|
|  | Link Aggregation (LACP) | IEEE 802.3ad (2005) |
|--|-------------------------|---------------------|

### Multicast

|  |                                                     |                      |
|--|-----------------------------------------------------|----------------------|
|  | IGMP Snooping (v1, v2, v3) with support for querier | RFC 1112, 2236, 3376 |
|--|-----------------------------------------------------|----------------------|

## Management functions

### DHCP

|  |                  |          |
|--|------------------|----------|
|  | DHCP Client      | RFC 2131 |
|  | DHCP relay agent | RFC 2131 |
|  | DHCP Option 82   | RFC 3046 |

### Alarm

|  |                                                            |  |
|--|------------------------------------------------------------|--|
|  | Alarms via E-mail (SMTP) and SNMP Traps                    |  |
|  | Signalling contact for low voltage detection or Link break |  |

### Diagnostic

|  |                         |          |
|--|-------------------------|----------|
|  | Port diagnostic         |          |
|  | Port Mirroring          |          |
|  | Switch History          |          |
|  | MAC Address Table       |          |
|  | RMON (1,2,3 & 9 groups) | RFC 2819 |

### Management

|  |                                                             |                                                                                              |
|--|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|
|  | Password protected Web-Management interface                 |                                                                                              |
|  | SNMP (v1, v2c, v3) agent & MIB support                      | RFC 1155, 1157, 1212, 1213, 1215, 2089, 2578, 3411, 3412, 3413, 3414, 3415, 3416, 3417, 3584 |
|  | Command Line Interface (CLI)                                |                                                                                              |
|  | Pluggable SD card for saving of configuration <sup>1)</sup> |                                                                                              |
|  | Multifunction button <sup>1)</sup>                          |                                                                                              |

<sup>1)</sup> ... Available for Ha-VIS mCon 3000 Next Generation

<sup>2)</sup> ... Licensing via separately available SD card

**Ethernet Switch**  
**Ha-VIS mCon 3000 Next Generation**  
 Ethernet Switches, managed,  
 for mounting onto top-hat mounting rail  
 in control cabinets



## General Description

The fully Managed Ethernet Switches of the product family Ha-VIS mCon 3000 enable the connection of up to 10 network devices (according to type) over RJ45 ports or SFP modules on lowest area.

Degree of protection, mechanical stability and the comprehensive management software provide for high operation safety and meet highest demands.

The Ha-VIS mCon 3000 Ethernet Switches are designed for an effective, industrial and individual use.

The configuraton via SD card or via the Multifunction button enables an easy and fast commisioning in the field.

Comprehensive possibilities of configuration and diagnostic are provided easy via web interface or standardized via SNMP.

The Ethernet Switches of the Ha-VIS mCon 3000 Next Generation family can be used as PROFINET IO devices.

## Features

- Full managed Ethernet Switch acc. to IEEE 802.3
- Up to 10 ports, managed, non-blocking
- Store and Forward Switching Mode
- Gigabit Uplink ports, RJ45 and SFP modules
- Auto-crossing, Auto-negotiation, Auto-polarity
- Temperature range -40 °C ... +70 °C
- PROFINET IO device
- Time synchronization via IEEE 1588v2
- Multifunction button for fast commisioning
- SD card slot for storage of the configuration
- Management functions see pages 120 and 121

## Advantages

- Small, robust metal housing
- External SD card for storage of the configuration
- Individual pre-configuration via Multifunction button
- Fast removable Ethernet data links via SFP „Hot-Swap“
- Optimised DIN rail fitting
- EMC, temperature range and mechanical stability meet the highest demands
- Universally applicable: PROFINET, Ethernet/IP or profile neutral

## Application fields

- Industrial automation
- Automotive industry
- Wind power, Solar Power
- Maritime

## Technical characteristics

### Ethernet interface RJ45

#### Number of ports

|                        |                                                                           |
|------------------------|---------------------------------------------------------------------------|
| Ha-VIS mCon 3080-A     | 8x 10/100Base-T(X)                                                        |
| Ha-VIS mCon 3102-AASFP | 8x 10/100Base-T(X)<br>2x 10/100/1000Base-T(X) (Combo ports with SFP slot) |

#### Cable types according to IEEE 802.3

Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5

#### Data rate

10 Mbit/s, 100 Mbit/s or 1000 Mbit/s (RJ45)

#### Maximum cable length

100 m (Twisted Pair; with Category 5 cable acc. to DIN EN 50 173-1)

#### Termination

RJ45 (Twisted Pair)

#### Diagnostics (via LED)

- Status Link – Green
- Data transfer (Act) – Green flashing
- Data transfer rate (Speed) – 1000 Mbit/s: Green  
100 Mbit/s: Yellow  
10 Mbit/s: OFF

#### Topology

Ring, Line, Star or mixed

### Ethernet Interface SFP (mini-GBIC) Fibre Optic and copper

#### Number of ports

|                        |                                             |
|------------------------|---------------------------------------------|
| Ha-VIS mCon 3102-AASFP | 2x 100/1000Base (Combo ports with SFP slot) |
|------------------------|---------------------------------------------|

#### Data rate

100 Mbit/s, 1000 Mbit/s

#### Termination

SFP modules according to MSA (Multi Source Agreement)  
(see catalogue „HARTING Ethernet Network Solutions Automation IT“)

#### Diagnostics (via LED)

- Status Link – Green
- Data transfer (Act) – Green flashing

### Power supply

#### Nominal input voltage

24/48 V DC ---

#### Termination

5-pole screw terminal, pluggable  
for redundant power supply

### Switch

#### Diagnostics (via LED)

- Device operates without failures – Green
- Power supply in the admissible range – Green
- Low voltage – Red
- Diagnostics failure – Red
- PROFINET failure / diagnosis – Red/Green flashing

### Configuration

#### Slot for SD cards (back side)

- Saving and loading of configuration files
- Licence management for MRP

#### Multifunction button

Individual pre-configuration of software functions

## Technical characteristics

### Design features

|                                           |                                                                                                                                   |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Housing material                          | Aluminium, anodized                                                                                                               |
| Dimensions (W x H x D)                    | 44 x 130 x 100 mm (without connectors)                                                                                            |
| Degree of protection<br>acc. to DIN 60529 | IP 30                                                                                                                             |
| Mounting                                  | <ul style="list-style-type: none"><li>• 35 mm top-hat rail acc. to EN 60715</li><li>• Panel mounting, vertical assembly</li></ul> |

### Environmental conditions

|                       |                                |
|-----------------------|--------------------------------|
| Operating temperature | –40 °C ... +70 °C              |
| Storage temperature   | –40 °C ... +85 °C              |
| Relative humidity     | 10 % ... 95 % (non-condensing) |

### Management software

Full managed via web interface and SNMP  
Range of functions and detailed description see pages 120 and 121

## Ethernet Switch Ha-VIS mCon 3080-A

8-port Ethernet Switch, full managed  
for mounting onto top-hat mounting rail in control cabinets



Managed

IP 30

PROFINET compatible ☒EtherNet/IP compatible ☒

Number of ports, Copper / Termination 8x 10/100Base-T(X) / RJ45 (Twisted Pair)

Nominal input voltage range 24/48 V DC ---

Permissible range (min/max) 12 V ... 60 V DC ---

Termination 5-pole screw terminal, pluggable redundant power supply

Input current approx. 130 mA (at 24 V ---)

Housing material Aluminium, anodized

Dimensions (W x H x D) 44 x 130 x 100 mm (without connectors)

Weight approx. 0.450 kg

Operating temperature -40 °C ... +70 °C

MTBF 678.372 h

Approvals (in preparation) UL 508; UL 60 950-1; DNV

Management fully Managed via Web interface and SNMP  
Functions see pages 120 and 121

## Identification

## Part number

## Drawing

## Dimensions in mm

## Ha-VIS mCon 3080-A

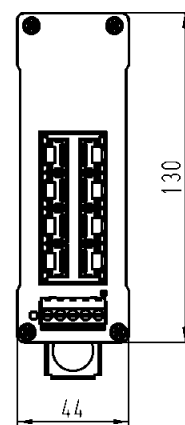
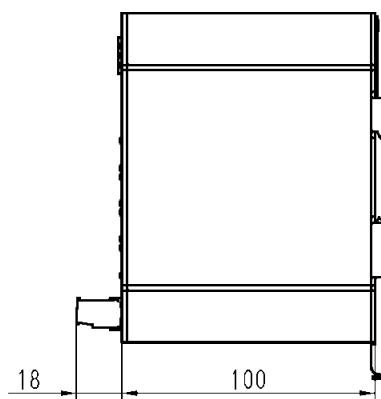
Ethernet Switch, full managed

8 RJ45 ports

including

Set for assembly on standard rail

20 76 108 4000



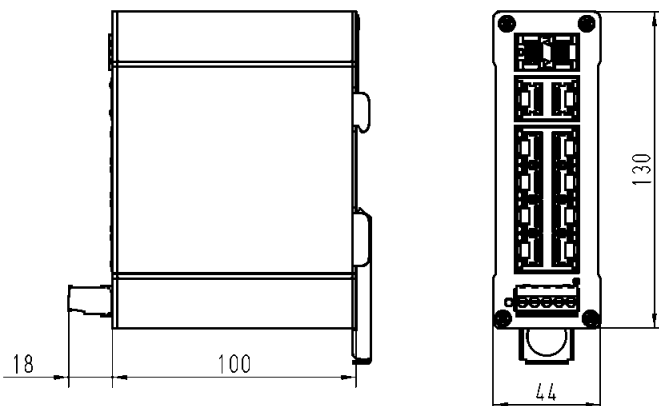
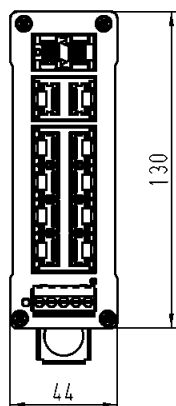


## Ethernet Switch

## Ha-VIS mCon 3102-AASFP

10-port Ethernet Switch with 2 ports Gigabit Ethernet, full managed for mounting onto top-hat mounting rail in control cabinets

|                                       |                                                                                           |                                                         |                                                            |
|---------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------------|
| Managed                               | IP 30                                                                                     | PROFINET compatible <input checked="" type="checkbox"/> | EtherNet/IP compatible <input checked="" type="checkbox"/> |
| Number of ports, Copper / Termination | 8x 10/100Base-T(X) / RJ45 (Twisted Pair)<br>2x 10/100/1000Base-T(X) / RJ45 (Twisted Pair) |                                                         |                                                            |
| Number of slots SFP / Termination     | 2x 100/1000Base / Combo ports                                                             |                                                         |                                                            |
| Nominal input voltage range           | 24/48 V DC ---                                                                            |                                                         |                                                            |
| Permissible range (min/max)           | 12 V ... 60 V DC ---                                                                      |                                                         |                                                            |
| Termination                           | 5-pole screw terminal, pluggable redundant power supply                                   |                                                         |                                                            |
| Input current                         | approx. 250 mA (at 24 V ---)                                                              |                                                         |                                                            |
| Housing material                      | Aluminium, eloxiert                                                                       |                                                         |                                                            |
| Dimensions (W x H x D)                | 44 x 130 x 100 mm (incl. cap, without connectors)                                         |                                                         |                                                            |
| Weight                                | approx. 0.485 kg                                                                          |                                                         |                                                            |
| Operating temperature                 | -40 °C ... +70 °C                                                                         |                                                         |                                                            |
| MTBF                                  | 597.974 h                                                                                 |                                                         |                                                            |
| Approvals (in preparation)            | UL 508; UL 60 950-1; DNV                                                                  |                                                         |                                                            |
| Management                            | fully Managed via Web interface and SNMP<br>Functions see pages 120 and 121               |                                                         |                                                            |

| Identification                                                                                                                                                                             | Part number    | Drawing                                                                              | Dimensions in mm                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>Ha-VIS mCon 3102-AASFP</b><br>Ethernet Switch, full managed<br>8 ports Fast Ethernet RJ45<br>2 ports Gigabit Ethernet (combo SFP)<br><br>including<br>Set for assembly on standard rail | 20 76 112 4300 |  |  |



## Accessories

### Ha-VIS Memory cards

The HARTING SD cards are used for saving the switch configuration. The web interface can be used to save the current configuration to the SD card.

If an SD card is inserted in the back of the switch, the switch will use the configuration saved on the card when it boots.

So it's quite easy when replacing a switch to transfer the entire configuration to the new switch. The old SD card with your current configuration is simply pushed into the new switch which then boots with these settings. No special network expertise is required.

**Note:** The HARTING Ethernet Switches are not compatible with conventional memory cards.

MRP memory cards allow you to activate the MRP functionality (media redundancy protocol) when using switches from the FTS 3000 and mCon 3000 series (with firmware ver. 3.0.0.1 and later). For example, in order to operate the device as an MRP slave, you need only have the corresponding MRP slave card inserted during operations.

Operating temperature      -40 °C ... +70 °C

Memory space                128 MB

#### SD Memory cards

|                      |                |
|----------------------|----------------|
| Configuration memory | 20 89 900 1000 |
| MRP Slave            | 20 89 900 1001 |
| MRP Master           | 20 89 900 1002 |



## Accessories

### Ha-VIS SFP modules

#### General description

SFPs (Small Form-factor Pluggable) are small standardized modules for network connections.

These modules are a specification for a new generation of modular optical transceivers. The devices are constructed as connecting plugs for extremely quick network connections.

The SFPs are available in a variety of models, depending on the cable type (multi-mode or single-mode), the wave length (850 nm, 1300 nm, 1550 nm or CWDM), data rate or range.

Copper-based SFP are also available.

#### Features

- Highly flexible
- Easily swapped out in event of malfunction
- Hot swappable
- Variants:

|             | SM fibre | MM fibre |
|-------------|----------|----------|
| 100 Mbit/s  | X        | X        |
| 1000 Mbit/s | X        | X        |

#### Advantages

- SFP used as connecting plug for extremely quick network connections
- Standardized modules for network connections

#### Application fields

- Railway applications
- Industrial automation
- Automotive industry
- Wind power



## Accessories

Ha-VIS SFP modules 100 Mbit/s

## SFP:

| Type               | SFP Fast Ethernet Transceiver 155 Mbit/s MM | SFP Fast Ethernet Transceiver 155 Mbit/s SM | SFP Fast Ethernet Transceiver 155 Mbit/s SM | SFP Fast Ethernet Transceiver 155 Mbit/s SM |
|--------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|
| Wave length        | 1310 nm                                     | 1310 nm                                     | 1310 nm                                     | 1550 nm                                     |
| Mode               | Multimode                                   | Singlemode                                  | Singlemode                                  | Singlemode                                  |
| Fiber              | 50 / 125 µm or 62.5 / 125 µm                | 9 / 125 µm                                  | 9 / 125 µm                                  | 9 / 125 µm                                  |
| Max. cable length* | 2 km                                        | 15 km                                       | 40 km                                       | 80 km                                       |
| Connector          | LC connector duplex                         | LC connector duplex                         | LC connector duplex                         | LC connector duplex                         |
| Optical budget     | min. 8.2 dB                                 | min. 8.2 dB                                 | min. 10 dB                                  | min. 10 dB                                  |
| Data rate          | 155 Mbit/s                                  | 155 Mbit/s                                  | 155 Mbit/s                                  | 155 Mbit/s                                  |

\* Typical cable length depending on attenuation of each specific application.

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

## SFP modules

SFP Fast Ethernet Transceiver 155 Mbit/s MM

20 76 000 0300

SFP Fast Ethernet Transceiver 155 Mbit/s SM

20 76 020 0300

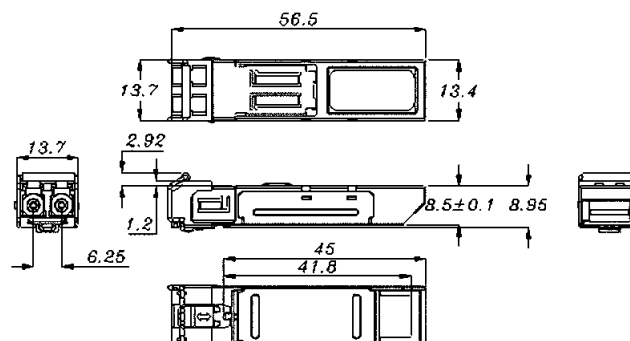
SFP Fast Ethernet Transceiver L40 155 Mbit/s SM

20 76 024 0300

SFP Fast Ethernet Transceiver L80 155 Mbit/s SM

20 76 028 0300

other types on request





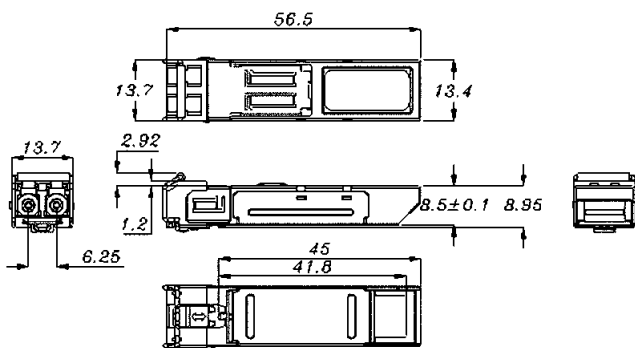
## Accessories

Ha-VIS SFP modules 1000 Mbit/s

## SFP:

| Type               | SFP Gigabit Ethernet Transceiver 1.25 Gbit/s MM | SFP Gigabit Ethernet Transceiver 1.25 Gbit/s SM | SFP Gigabit Ethernet Transceiver 1.25 Gbit/s SM | SFP Gigabit Ethernet Transceiver 1.25 Gbit/s SM |
|--------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| Wave length        | 850 nm                                          | 1310 nm                                         | 1310 nm                                         | 1310 nm                                         |
| Mode               | Multimode                                       | Singlemode                                      | Singlemode                                      | Singlemode                                      |
| Fiber              | 50 / 125 µm or 62.5 / 125 µm                    | 9 / 125 µm                                      | 9 / 125 µm                                      | 9 / 125 µm                                      |
| Max. cable length* | 550 m (50 / 125)<br>275 m (62.5 / 125)          | 10 km                                           | 40 km                                           | 80 km                                           |
| Connector          | LC connector duplex                             | LC connector duplex                             | LC connector duplex                             | LC connector duplex                             |
| Optical budget     | min. 9 dB                                       | min. 9 dB                                       | min. 9 dB                                       | min. 9 dB                                       |
| Data rate          | 1250 Mbit/s                                     | 1250 Mbit/s                                     | 1250 Mbit/s                                     | 1250 Mbit/s                                     |

\* Typical cable length depending on attenuation of each specific application.

| Identification                                                                                                                                                                                                                                                   | Part number                                                          | Drawing                                                                              | Dimensions in mm |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------|
| <b>SFP modules</b><br>SFP Gigabit Ethernet Transceiver 1,25 Gbit/s MM<br>SFP Gigabit Ethernet Transceiver 1,25 Gbit/s SM<br>SFP Gigabit Ethernet Transceiver L40 1,25 Gbit/s SM<br>SFP Gigabit Ethernet Transceiver L80 1,25 Gbit/s SM<br>other types on request | 20 76 010 0300<br>20 76 030 0300<br>20 76 034 0300<br>20 76 038 0300 |  |                  |

Number of contacts 20-30

Contact spacing (mm) 2.54

Working current  
see current carrying  
capacity chart 2 A max.

Clearance  $\geq 1.2$  mm

Creepage  $\geq 1.2$  mm

Working voltage  
The working voltage also depends  
on the clearance and creepage  
dimensions of the pcb itself,  
and the associated wiring according to the safety regulations  
of the equipment

Test voltage  $U_{r.m.s.}$  1 kV

Contact resistance  $\leq 20$  m $\Omega$

Insulation resistance  $\geq 10^{12}$   $\Omega$

Temperature range  
The higher temperature limit  
includes the local ambient  
and heating effects of the  
contacts under load  
During reflow soldering  
– 55 °C ... + 125 °C  
– 40 °C ... + 105 °C  
for press-in connector  
max. + 240 °C for 15 s  
for SMC connectors

Electrical termination  
Solder pins for pcb connections  
 $\varnothing 1.0 \pm 0.1$  mm  
according to IEC 60 326-3  
wrap posts 0.6 x 0.6 mm  
diagonal 0.79-0.86 mm  
Compliant press-in  
terminations  
PCB thickness  $\geq 1.6$  mm  
Recommended PCB holes  
for press-in technology in acc. to EN 60 352-5

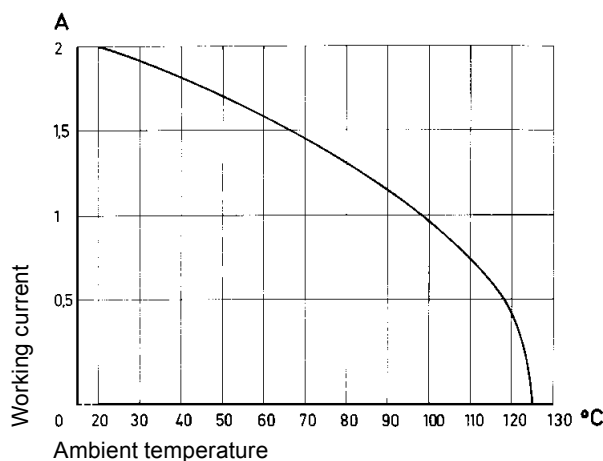
Insertion and withdrawal force  
20way  $\leq 20$  N  
30way  $\leq 30$  N

Materials  
Mouldings Thermoplastic resin,  
glass-fibre filled, UL 94-V0  
Contacts Copper alloy  
Contact surface  
Contact zone Selectively plated according to  
performance level

## Current carrying capacity

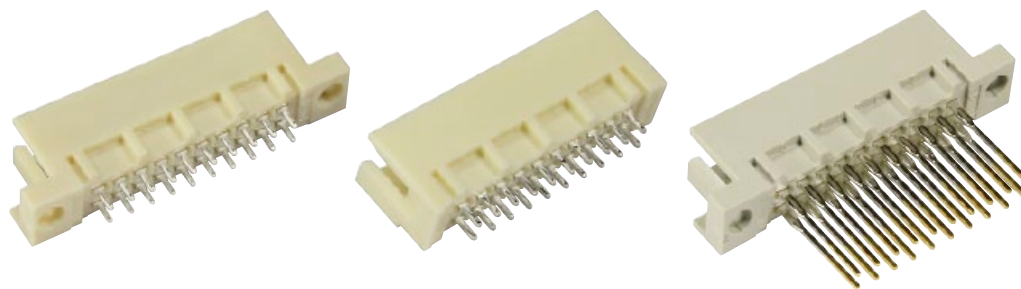
The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60512



Number of contacts

20



Male connectors

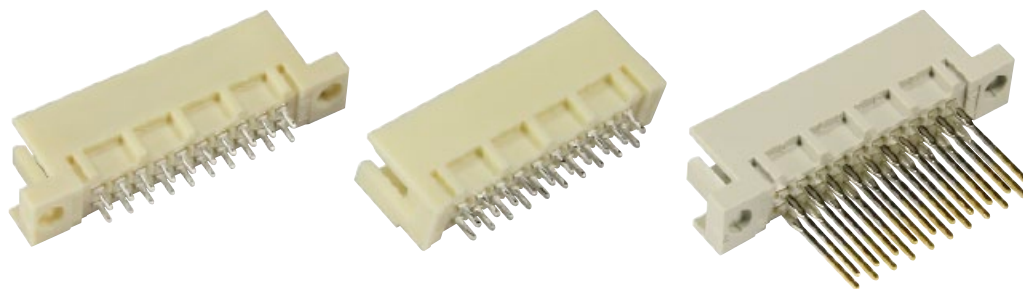
| Identification                                     | Number of contacts | Contact arrangement                                                                 | Part No.<br>3                  | Performance levels according to IEC 60603-2.  |                                |
|----------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------|--------------------------------|
|                                                    |                    |                                                                                     |                                | 2                                             | 1                              |
| Male connector with solder pins 2.5 mm             |                    |                                                                                     | Performance level 3 on request |                                               | Performance level 1 on request |
| with fixing flange                                 | 20                 |    |                                | 09 75 120 6902                                |                                |
| with fixing flange, SMC                            | 20                 |    |                                | 09 75 120 6519 <sup>d)</sup>                  |                                |
| without fixing flange                              | 20                 |    |                                | 09 75 120 6592                                |                                |
| without fixing flange, SMC                         | 20                 |    |                                | 09 75 120 6569 <sup>d)</sup>                  |                                |
| Male connector with solder pins 4.0 mm             |                    |                                                                                     |                                |                                               |                                |
| with fixing flange                                 | 20                 |  |                                | 09 75 120 6903                                |                                |
| with fixing flange, SMC                            | 20                 |  |                                | 09 75 120 6520 <sup>d)</sup>                  |                                |
| without fixing flange                              | 20                 |  |                                | 09 75 120 6593                                |                                |
| without fixing flange, SMC                         | 20                 |  |                                | 09 75 120 6570 <sup>d)</sup>                  |                                |
| Male connector with solder pins 13 mm              |                    |                                                                                     |                                |                                               |                                |
| with fixing flange                                 | 20                 |  |                                | 09 75 120 6577                                |                                |
| with fixing flange, SMC                            | 20                 |  |                                | 09 75 120 6521 <sup>d)</sup>                  |                                |
| Male connector with wrap posts <sup>1)</sup> 13 mm |                    |                                                                                     |                                |                                               |                                |
| with fixing flange                                 | 20                 |  |                                | 09 75 120 6907                                |                                |
| Male connector with press-in pins 5.0 mm           |                    |                                                                                     |                                |                                               |                                |
| with fixing flange                                 | 20                 |  |                                | 09 75 120 6904                                |                                |
| without fixing flange                              | 20                 |  |                                | 09 75 120 6504                                |                                |
| Male connector with press-in pins 13 mm            |                    |                                                                                     |                                |                                               |                                |
| with fixing flange                                 | 20                 |  |                                | 09 75 120 6985<br>09 75 120 6974 <sup>•</sup> |                                |
| without fixing flange                              | 20                 |  |                                | 09 75 120 6574 <sup>•</sup>                   |                                |

• Wrap posts for interfacing selectively gold plated (performance level 3)

<sup>1)</sup> To be used only for wire wrap termination

<sup>d)</sup> CTI > 400

20



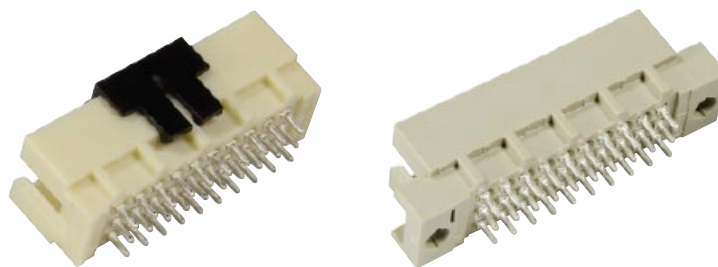
## Male connectors

133

Other contact arrangements as well with lagging/leading pins on request

Number of contacts

30, 20



Male connectors

| Identification                                     | Number of contacts | Contact arrangement                                                                 | Part No.<br>3                  | Performance levels according to IEC 60603-2.<br>2 | 1                              |
|----------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------|--------------------------------|
| Male connector with solder pins 2.5 mm             | 30                 |    | Performance level 3 on request | 09 29 130 6902                                    | Performance level 1 on request |
| with fixing flange                                 | 20                 |    |                                | 09 29 120 6902                                    |                                |
| with fixing flange, SMC                            | 30                 |    |                                | 09 29 130 6519 <sup>d)</sup>                      |                                |
| without fixing flange                              | 30                 |    |                                | 09 29 130 6592                                    |                                |
| without fixing flange, SMC                         | 30                 |    |                                | 09 29 130 6569 <sup>d)</sup>                      |                                |
| Male connector with solder pins 4.0 mm             | 30                 |   |                                | 09 29 130 6903                                    |                                |
| with fixing flange                                 | 20                 |  |                                | 09 29 120 6903                                    |                                |
| with fixing flange, SMC                            | 30                 |  |                                | 09 29 130 6520 <sup>d)</sup>                      |                                |
| without fixing flange                              | 30                 |  |                                | 09 29 130 6593                                    |                                |
| without fixing flange, SMC                         | 30                 |  |                                | 09 29 130 6570 <sup>d)</sup>                      |                                |
| Male connector with solder pins 13 mm              | 30                 |  |                                | 09 29 130 6577                                    |                                |
| with fixing flange                                 | 20                 |  |                                | 09 29 120 6577                                    |                                |
| with fixing flange, SMC                            | 30                 |  |                                | 09 29 130 6521 <sup>d)</sup>                      |                                |
| Male connector with wrap posts <sup>1)</sup> 13 mm | 30                 |  |                                | 09 29 130 6907                                    |                                |
| Male connector with press-in pins 5.0 mm           | 30                 |  |                                | 09 29 130 6904                                    |                                |
| with fixing flange                                 | 20                 |  |                                | 09 29 120 6904                                    |                                |
| without fixing flange                              | 30                 |  |                                | 09 29 130 6504                                    |                                |
| Male connector with press-in pins 13 mm            | 30                 |  |                                | 09 29 130 6985<br>09 29 130 6974•                 |                                |
| with fixing flange                                 | 20                 |  |                                | 09 29 120 6974•                                   |                                |
| without fixing flange                              | 30                 |  |                                | 09 29 130 6574•                                   |                                |

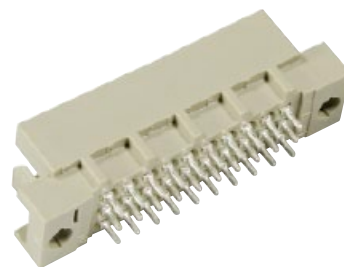
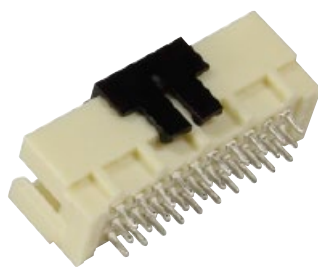
• Wrap posts for interfacing selectively gold plated (performance level 3)

<sup>1)</sup> To be used only for wire wrap termination<sup>d)</sup> CTI > 400

Number of contacts

30, 20

Male connectors

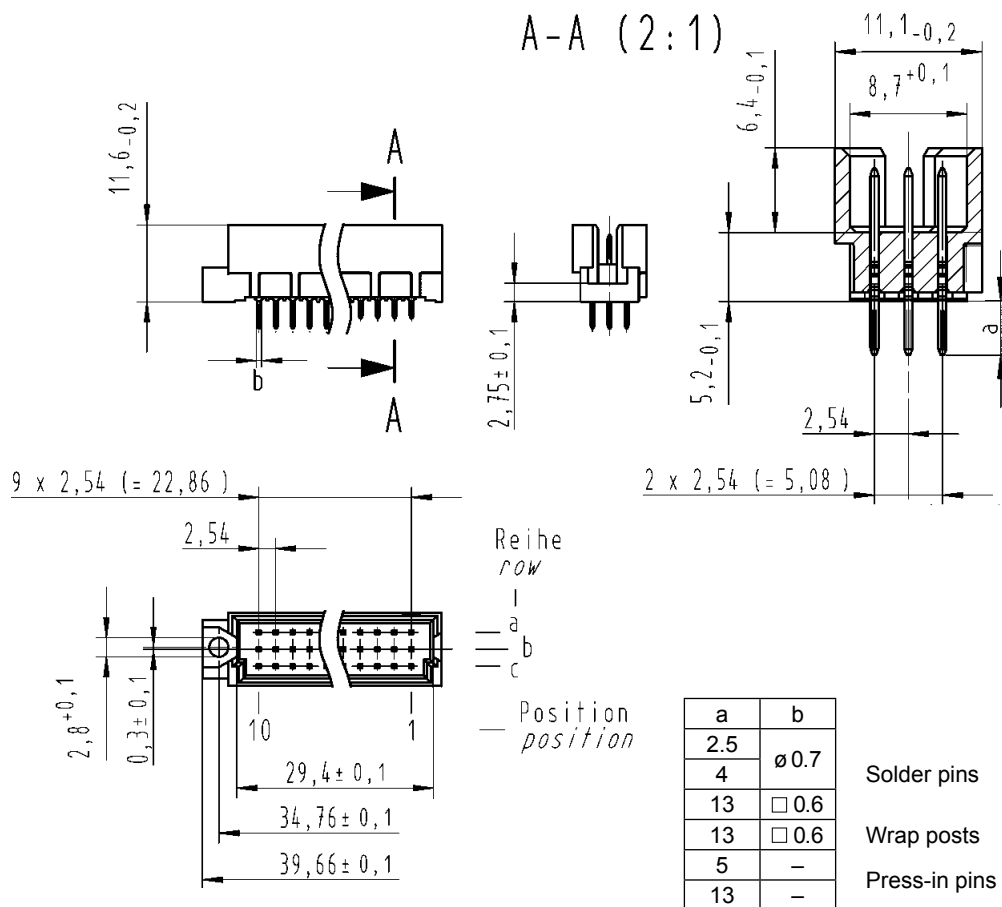


Identification

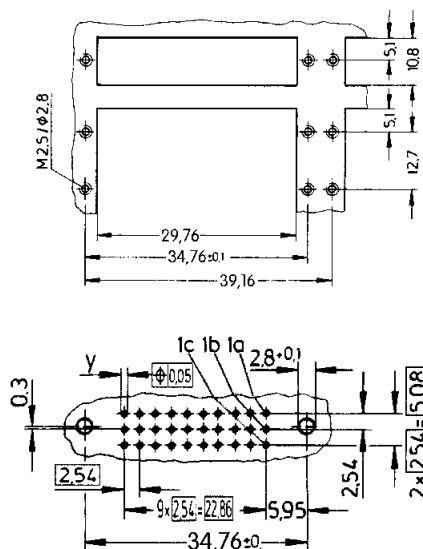
Drawing

Dimensions in mm

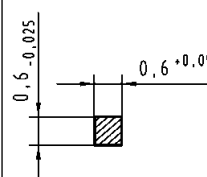
Dimensions



Panel cut out

Board drillings  
Mounting side


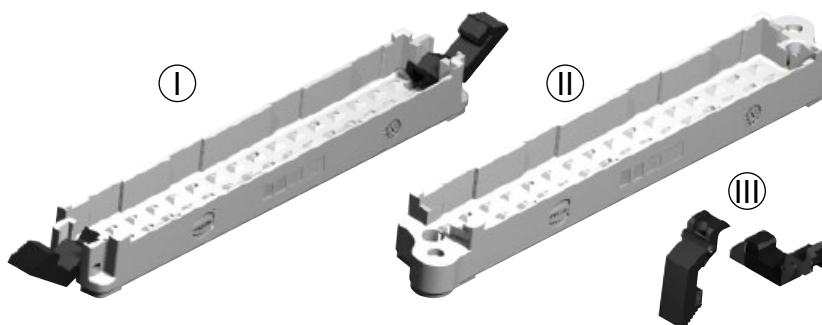
|        |         |
|--------|---------|
|        | Y       |
| Solder | 1 ± 0.1 |

Cross section  
of solder terminations

Cross area (A) of contacts  
row a, b, c: A = 0.35 - 0.39 mm²

Number of contacts

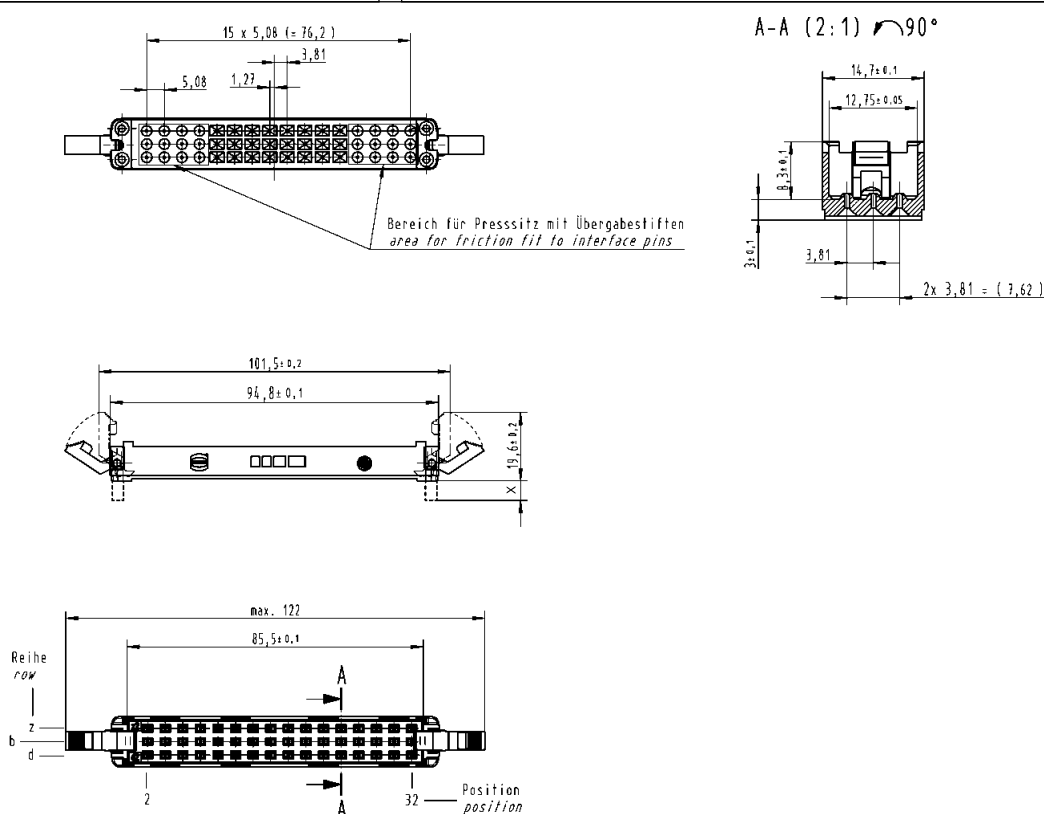
# 48

Pin shrouds  
for type F “low profile”  
with press-in pins 13 mm

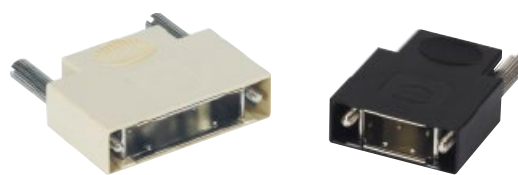


| Identification                                            | pcb-thickness<br>± 10 % | Dimension X<br>± 0.1 | Part No.       |
|-----------------------------------------------------------|-------------------------|----------------------|----------------|
| Pin shrouds                                               |                         |                      |                |
| Ⓘ with locking levers<br>and press-in fixing              | 1.6 - 2.4               | 1.6                  | 09 06 002 9902 |
| Ⓘ without locking levers<br>for screw fixing              | 1.6 - 2.4               | 1.6                  | 09 06 002 9912 |
| Ⓙ without locking levers<br>with press-in nuts            | 1.6 - 2.4               | 1.6                  | 09 06 002 9922 |
| Ⓘ with locking levers<br>and press-in fixing              | 3.2 - 4.0               | 0                    | 09 06 002 9901 |
| Ⓘ without locking levers<br>for screw fixing              | 3.2 - 4.0               | 0                    | 09 06 002 9911 |
| Ⓙ without locking levers<br>with press-in nuts            | 3.2 - 4.0               | 0                    | 09 06 002 9921 |
| Ⓚ Locking lever for female connector type F <sup>1)</sup> |                         |                      | 09 06 001 9946 |

Dimensions,  
valid for types  
with locking lever  
and for screw fixing



Dimensions in mm

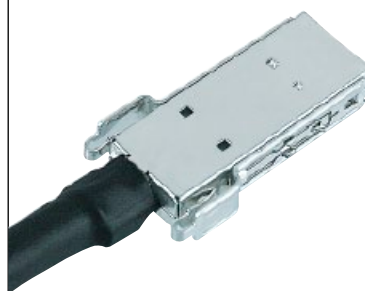


## Top entry hoods

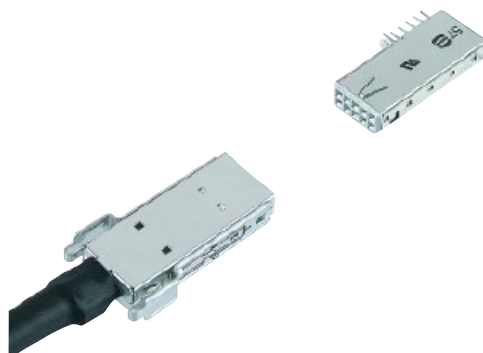
| Identification                                       | No. of contacts | Part No.                         | Drawing                                                                                                                                                                                                                                                                                                                                                       | Dimensions in mm |   |   |   |   |    |       |       |       |     |    |       |       |       |     |    |       |       |       |     |  |
|------------------------------------------------------|-----------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---|---|---|---|----|-------|-------|-------|-----|----|-------|-------|-------|-----|----|-------|-------|-------|-----|--|
| Plastic hood with internal screen and knurled screws |                 |                                  |                                                                                                                                                                                                                                                                                                                                                               |                  |   |   |   |   |    |       |       |       |     |    |       |       |       |     |    |       |       |       |     |  |
| Colour: Beige                                        | 14              | 60 13 014 0146 351 <sup>1)</sup> |                                                                                                                                                                                                                                                                                                                                                               |                  |   |   |   |   |    |       |       |       |     |    |       |       |       |     |    |       |       |       |     |  |
|                                                      | 26              | 60 13 026 0146 351 <sup>1)</sup> |                                                                                                                                                                                                                                                                                                                                                               |                  |   |   |   |   |    |       |       |       |     |    |       |       |       |     |    |       |       |       |     |  |
|                                                      | 36              | 60 13 036 0146 351 <sup>1)</sup> |                                                                                                                                                                                                                                                                                                                                                               |                  |   |   |   |   |    |       |       |       |     |    |       |       |       |     |    |       |       |       |     |  |
| Colour: Black                                        | 14              | 60 13 014 0146 110 <sup>1)</sup> |                                                                                                                                                                                                                                                                                                                                                               |                  |   |   |   |   |    |       |       |       |     |    |       |       |       |     |    |       |       |       |     |  |
|                                                      | 26              | 60 13 026 0146 110 <sup>1)</sup> |                                                                                                                                                                                                                                                                                                                                                               |                  |   |   |   |   |    |       |       |       |     |    |       |       |       |     |    |       |       |       |     |  |
|                                                      | 36              | 60 13 036 0146 110 <sup>1)</sup> |                                                                                                                                                                                                                                                                                                                                                               |                  |   |   |   |   |    |       |       |       |     |    |       |       |       |     |    |       |       |       |     |  |
|                                                      |                 |                                  | <table border="1"> <thead> <tr> <th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr> </thead> <tbody> <tr> <td>14</td><td>31.40</td><td>37.00</td><td>23.64</td><td>7.2</td></tr> <tr> <td>26</td><td>39.00</td><td>33.00</td><td>31.26</td><td>8.0</td></tr> <tr> <td>36</td><td>45.40</td><td>33.00</td><td>37.61</td><td>9.2</td></tr> </tbody> </table> |                  | a | b | c | d | 14 | 31.40 | 37.00 | 23.64 | 7.2 | 26 | 39.00 | 33.00 | 31.26 | 8.0 | 36 | 45.40 | 33.00 | 37.61 | 9.2 |  |
|                                                      | a               | b                                | c                                                                                                                                                                                                                                                                                                                                                             | d                |   |   |   |   |    |       |       |       |     |    |       |       |       |     |    |       |       |       |     |  |
| 14                                                   | 31.40           | 37.00                            | 23.64                                                                                                                                                                                                                                                                                                                                                         | 7.2              |   |   |   |   |    |       |       |       |     |    |       |       |       |     |    |       |       |       |     |  |
| 26                                                   | 39.00           | 33.00                            | 31.26                                                                                                                                                                                                                                                                                                                                                         | 8.0              |   |   |   |   |    |       |       |       |     |    |       |       |       |     |    |       |       |       |     |  |
| 36                                                   | 45.40           | 33.00                            | 37.61                                                                                                                                                                                                                                                                                                                                                         | 9.2              |   |   |   |   |    |       |       |       |     |    |       |       |       |     |    |       |       |       |     |  |

<sup>1)</sup> Temperature range: - 55 °C ... + 85 °C

|                                              |                                                                                                                                                                                                                                              |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of contacts                           | 10                                                                                                                                                                                                                                           |
| Approvals                                    | IEC 61076-4-107<br>UL recognized: E102079                                                                                                                                                                                                    |
| Contact pitch                                | 2 mm                                                                                                                                                                                                                                         |
| Connector pitch                              | 6 mm                                                                                                                                                                                                                                         |
| Working current                              | 1.5 A at 70 °C                                                                                                                                                                                                                               |
| Test voltage $U_{r.m.s.}$                    | 750 V                                                                                                                                                                                                                                        |
| Contact resistance                           | $\leq 35 \text{ m}\Omega$                                                                                                                                                                                                                    |
| Insulation resistance                        | $\geq 10^{10} \Omega$                                                                                                                                                                                                                        |
| Temperature range<br>during reflow soldering | -55 °C ... +125 °C<br>female:<br>max. + 260 °C for 60 s                                                                                                                                                                                      |
| Mating cycles                                | 250, performance level 2                                                                                                                                                                                                                     |
| Terminations                                 | Insulation displacement<br>(male), AWG 28/7 - 30/7,<br>AWG 30 solid<br>Solder buckets (male),<br>AWG 24-30,<br>outer insulation $\varnothing$<br>$5.33 \pm 0.25 \text{ mm}$<br>Solder pins for $\varnothing 0.6 \text{ mm}$<br>min. (female) |
| Insertion force                              | 10 N max. / module                                                                                                                                                                                                                           |
| Withdrawal force                             | 2 N min. / module<br>(without locking levers)                                                                                                                                                                                                |
| Latching system                              | Locking levers                                                                                                                                                                                                                               |
| Materials                                    |                                                                                                                                                                                                                                              |
| Mouldings                                    | Male connector: Polyester,<br>UL 94-V0<br>Female connector: High<br>temperature plastic material,<br>UL 94-V0                                                                                                                                |
| Contacts                                     | Copper alloy                                                                                                                                                                                                                                 |
| Shells                                       | Male connector:<br>Stainless steel<br>Female connector:<br>Silver nickel                                                                                                                                                                     |
| Contact surface                              |                                                                                                                                                                                                                                              |
| Contact zone                                 | Selectively gold-plated                                                                                                                                                                                                                      |

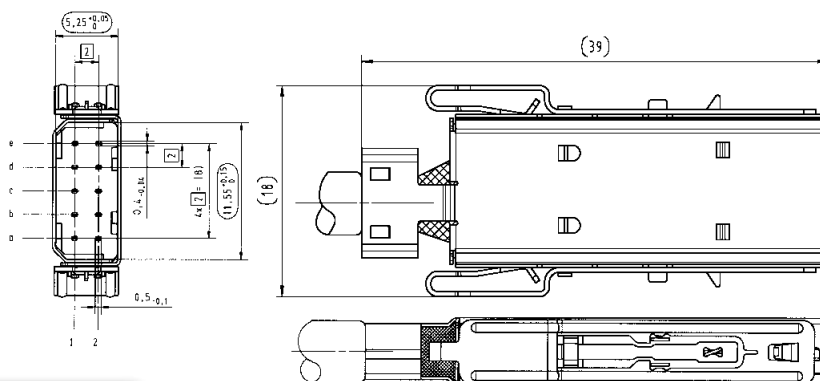


Male connectors, straight  
Female connectors, angled



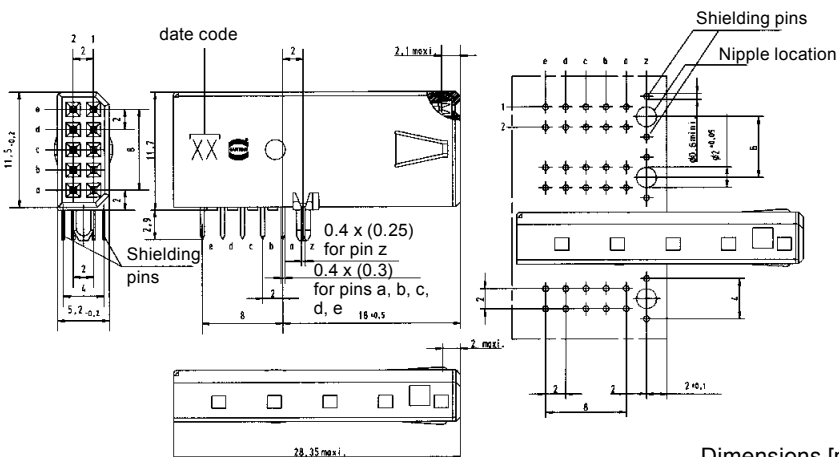
| Identification                                                       | No. of contacts | Colour           | Part No.       |
|----------------------------------------------------------------------|-----------------|------------------|----------------|
| Male connector<br>for insulation displacement<br>with solder buckets | 10              | Black            | 27 11 161 8001 |
|                                                                      | 10              | Black            | 27 11 122 2001 |
| Female connector<br>with solder pins                                 | 10              | Beige (standard) | 27 21 121 8000 |
|                                                                      | 10              | Red              | 27 21 121 8002 |
|                                                                      | 10              | Yellow           | 27 21 121 8004 |
|                                                                      | 10              | Green            | 27 21 121 8005 |
|                                                                      | 10              | Blue             | 27 21 121 8006 |
|                                                                      | 10              | Black            | 27 21 121 8010 |

Male connector  
(delivered in piece parts)



Manuals for the *har-link*® cable free connector assemblies are available in our online catalogue *HARKIS*® or on demand at your local HARTING representative.

Female connector



Dimensions [mm]



## Turned crimp contacts

| Identification                    |    | Wire gauge<br>(mm <sup>2</sup> ) | Part No.                |                         |                          |
|-----------------------------------|----|----------------------------------|-------------------------|-------------------------|--------------------------|
| Individual contacts <sup>1)</sup> |    |                                  | Male contacts           | Female contacts         | High-end female contacts |
|                                   |    |                                  | Performance level<br>1* | Performance level<br>1* | Performance level<br>1*  |
|                                   |    |                                  |                         |                         |                          |
|                                   |    |                                  |                         |                         |                          |
|                                   |    |                                  |                         |                         |                          |
|                                   |    |                                  |                         |                         |                          |
|                                   |    |                                  |                         |                         |                          |
|                                   |    |                                  |                         |                         |                          |
|                                   |    |                                  |                         |                         |                          |
|                                   |    |                                  |                         |                         |                          |
|                                   |    |                                  |                         |                         |                          |
|                                   |    |                                  |                         |                         |                          |
|                                   |    |                                  |                         |                         |                          |
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\* Performance level 1 as per CECC 75301-802, 500 mating cycles, 10 days 4 mixed gas test – IEC 60512  
Use crimp tool with the part no. 09 99 000 0501 and the locator with the part no. 09 99 000 0531.

Number of contacts 9, 15, 25, 37

Working current 5 A

Test voltage  $U_{r.m.s.}$  1 kV

Clearance and creepage  $\geq 1.0$  mm

Contact resistance  $< 25$  m $\Omega$   
Insulation resistance  $> 5$  G $\Omega$

Temperature range as per profile JEDEC 020 D

Terminations Solder pins for P.C.B. pads

#### Materials

Mouldings LCP black  
UL 94-V0

Contacts Phosphorus bronze

Grounding die Zamac

Shell Steel

#### Contact surface

Contact zone selectively plated  
acc. to performance level<sup>1)</sup>

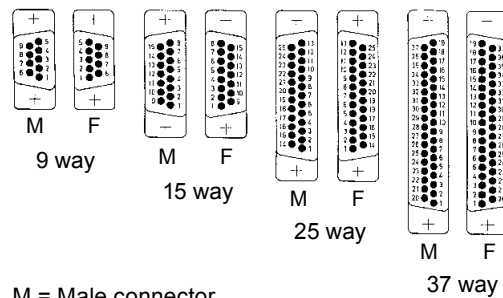
Grounding die Pure tin

Shell Nickel plated

#### Mating force

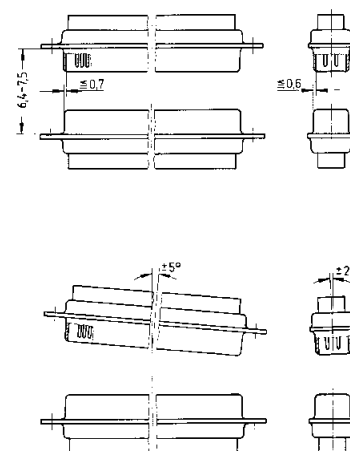
9 way  $\leq 30$  N  
15 way  $\leq 50$  N  
25 way  $\leq 83$  N  
37 way  $\leq 123$  N

#### Contact arrangement View from termination side



M = Male connector  
F = Female connector

#### Mating conditions as per DIN 41 652



<sup>1)</sup> Performance level 3, 50 mating cycles, no gas test  
Performance level 2 as per CECC 75301-802, 250 mating cycles, 4 days 4 mixed gas test – IEC 60512

Number of contacts

9–37



SMT stamped solder pins, straight without grounding pins

| Identification                                                                                                                                                     | No. of contacts     | Part No.                                                                                 |                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>Performance levels</b><br>Other performance levels on request                  |                     | Performance level 3                                                                      | Performance level 2                                                                      |
| <b>Male connector</b><br>metal shell with dimples                                                                                                                  | 9<br>15<br>25<br>37 | 09 55 129 78 .. 741<br>09 55 229 78 .. 741<br>09 55 329 78 .. 741<br>09 55 429 78 .. 741 | 09 55 129 68 .. 741<br>09 55 229 68 .. 741<br>09 55 329 68 .. 741<br>09 55 429 68 .. 741 |
| <b>Female connector</b><br>metal shell                                                                                                                             | 9<br>15<br>25<br>37 | 09 55 115 76 .. 741<br>09 55 215 76 .. 741<br>09 55 315 76 .. 741<br>09 55 415 76 .. 741 | 09 55 115 66 .. 741<br>09 55 215 66 .. 741<br>09 55 315 66 .. 741<br>09 55 415 66 .. 741 |
| Please insert digit for flange thread or fitted female screw locks<br><br>M3 ► 11<br>4-40 UNC ► 12<br>fixed screw locks M3 ► 21<br>fixed screw locks 4-40 UNC ► 22 |                     |                                                                                          |                                                                                          |

Number of contacts

9–37

SMT stamped solder pins, straight without grounding pins

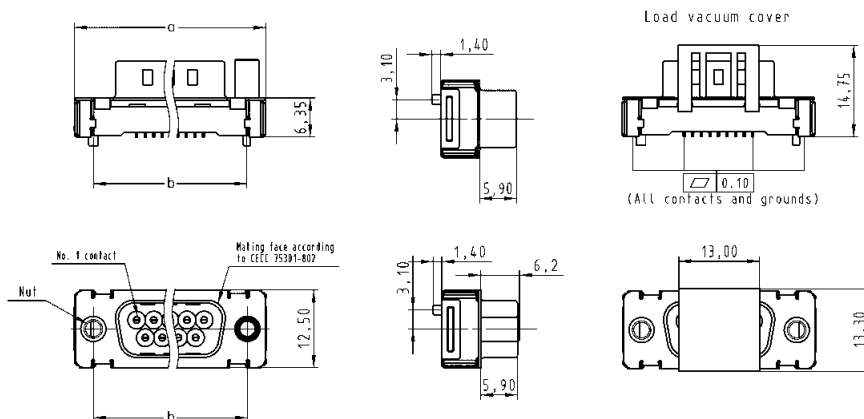


Identification

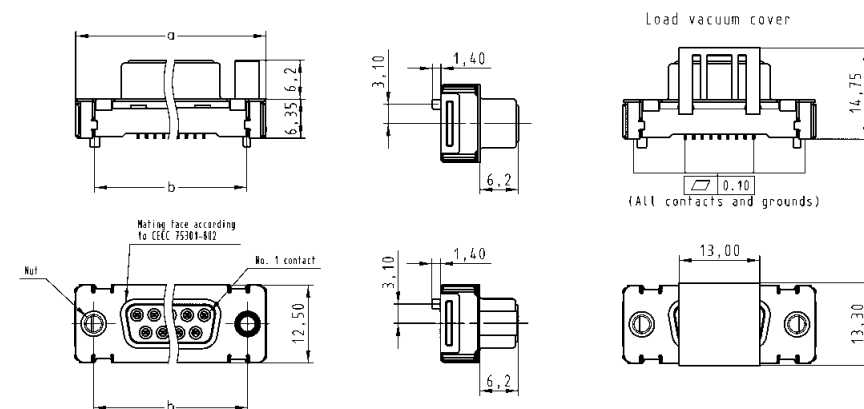
Drawing

Dimensions in mm

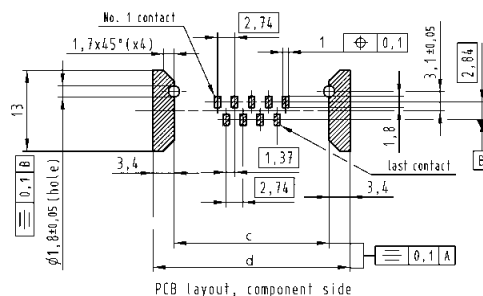
Male connector

M3 or 4-40 UNC non-removable fitted screw  
locks M3 or 4-40 UNC

Female connector



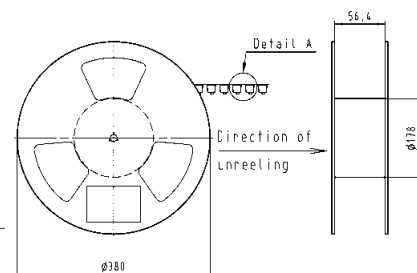
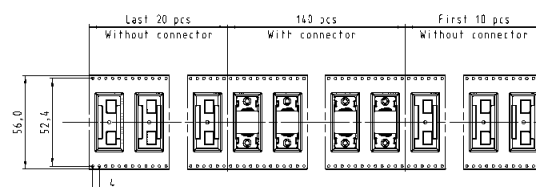
pcb layout



PCB layout, component side

|    | a     | b     | c    | d    |
|----|-------|-------|------|------|
| 9  | 31.12 | 25.00 | 25.0 | 31.8 |
| 15 | 39.45 | 33.33 | 33.3 | 40.1 |
| 25 | 53.35 | 47.04 | 47.0 | 53.8 |
| 37 | 69.62 | 63.50 | 63.5 | 70.3 |

Packaging

(1 reel = 140 pieces)  
Reel diameter = 380 mm

Number of contacts

9–37



SMT stamped solder pins, straight with grounding pins

| Identification                                                                                                                                                     | No. of contacts     | Part No.                                                                                 |                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>Performance levels</b><br>Other performance levels on request                  |                     | Performance level 3                                                                      | Performance level 2                                                                      |
| <b>Male connector</b><br>metal shell with dimples                                                                                                                  | 9<br>15<br>25<br>37 | 09 55 169 78 .. 741<br>09 55 269 78 .. 741<br>09 55 369 78 .. 741<br>09 55 469 78 .. 741 | 09 55 169 68 .. 741<br>09 55 269 68 .. 741<br>09 55 369 68 .. 741<br>09 55 469 68 .. 741 |
| <b>Female connector</b><br>metal shell                                                                                                                             | 9<br>15<br>25<br>37 | 09 55 155 76 .. 741<br>09 55 255 76 .. 741<br>09 55 355 76 .. 741<br>09 55 455 76 .. 741 | 09 55 155 66 .. 741<br>09 55 255 66 .. 741<br>09 55 355 66 .. 741<br>09 55 455 66 .. 741 |
| Please insert digit for flange thread or fitted female screw locks<br><br>M3 ► 11<br>4-40 UNC ► 12<br>fixed screw locks M3 ► 21<br>fixed screw locks 4-40 UNC ► 22 |                     |                                                                                          |                                                                                          |

9-37



SMT stamped solder pins, straight with grounding pins

| Identification | Drawing | Dimensions in mm |
|----------------|---------|------------------|
|----------------|---------|------------------|

M3 or 4-40 UNC      non-removable fitted screw  
locks M3 or 4-40 UNC

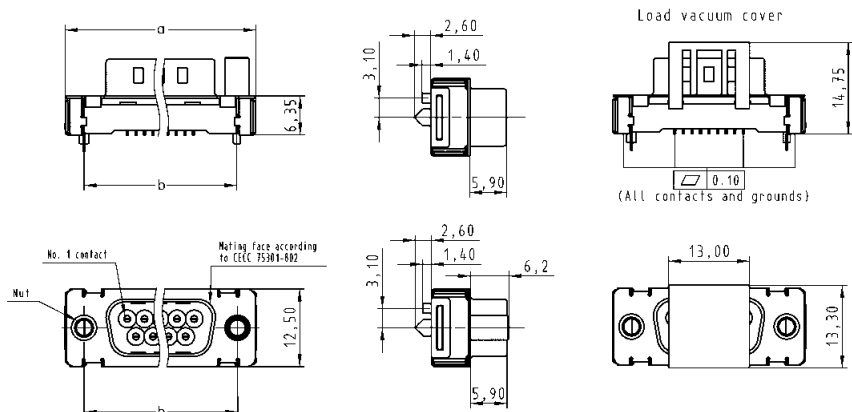
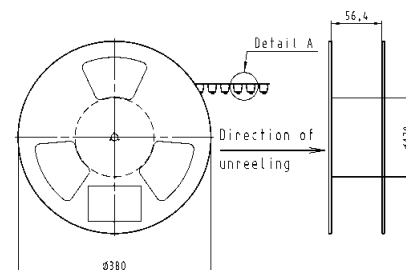
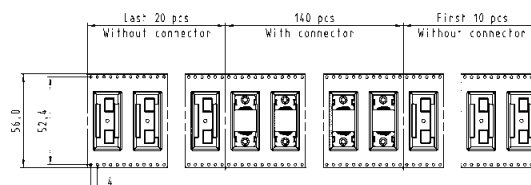


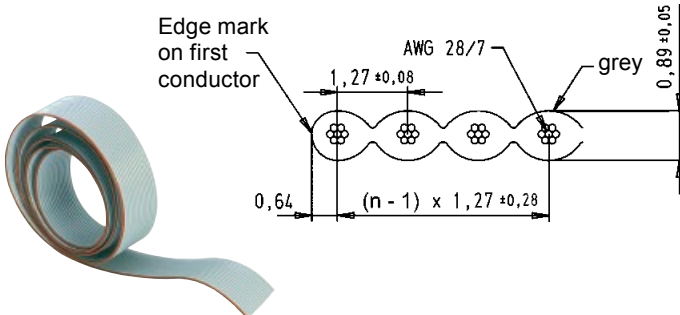
Figure 1: PCB layout, component side. This technical drawing shows the component side of a PCB layout for a 12-pin connector. It includes dimensions for pin spacing (2.74mm), pin diameter (1.7x45°), and various offsets (1.37mm, 3.4mm, 1.8mm). Tolerances are specified for several dimensions, such as ±0.1mm for the pin diameter and ±0.05mm for the hole diameter. The layout is symmetrical around a central axis, with a 'No. 1 contact' on the left and a 'last contact' on the right. The overall width is 13mm, and the total length is 3.1±0.05mm. The drawing is labeled 'PCB layout, component side' at the bottom.

|    | a     | b     | c    | d    |
|----|-------|-------|------|------|
| 9  | 31.12 | 25.00 | 25.0 | 31.8 |
| 15 | 39.45 | 33.33 | 33.3 | 40.1 |
| 25 | 53.35 | 47.04 | 47.0 | 53.8 |
| 37 | 69.62 | 63.50 | 63.5 | 70.3 |

(1 reel = 140 pieces)  
Reel diameter = 380 mm



## Cables for insulation displacement termination

| Identification                                                             | No. of contacts | Part No.            | Drawing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Dimensions in mm |
|----------------------------------------------------------------------------|-----------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Flat cable</b><br>grey<br>non-halogenated<br>UL style 21447<br>for VW-1 |                 |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 6               | 09 18 006 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                         |                  |
|                                                                            | 9               | 09 18 009 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 10              | 09 18 010 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 14              | 09 18 014 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 15              | 09 18 015 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 16              | 09 18 016 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 18              | 09 18 018 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 20              | 09 18 020 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 24              | 09 18 024 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 25              | 09 18 025 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 26              | 09 18 026 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 28              | 09 18 028 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 34              | 09 18 034 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 37              | 09 18 037 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 40              | 09 18 040 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 50              | 09 18 050 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 60              | 09 18 060 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            | 64              | 09 18 064 700 □ 900 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
| Length per reel                                                            |                 |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
| 30.48 m<br>(100 feet)                                                      | 1               |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |
|                                                                            |                 |                     | Conductor material _____ Copper tinned<br>Gauge _____ AWG 28/7 0.089 mm <sup>2</sup><br>Voltage rating _____ 300 V <sub>r.m.s.</sub><br>Current rating _____ 1.3 A<br>Capacity unbalanced _____ 42.6 pF/m at 1 MHz<br>Impedance unbalanced _____ 100 Ω<br>Inductance _____ 0.56 μH/m<br>Propagation delay _____ 4.8 ns/m<br>Insulation material _____ Non-halogenated flame retardent Polyolefin<br>Temperature rating _____ -40 °C ... +80 °C<br>Insulation resistance _____ 10000 MΩ/km |                  |

Ha-VIS data bus cable  
2-wire, elastic



## Advantages

- Halogen free
- Electron-beam cross-linked cable
- Improved fire performance
- High resistance to temperature
- Conform to MVB standard according IEC 61375-3-1

## Applications

For fixed and moveable installation inside and outside of rail vehicles and buses. For symmetrical signal and data transmission with impedance of 120 Ohm. Suitable for use in MVB (Multifunction Vehicle Bus) as part of the TCN (Train Communication Network). Especially designed for termination with HARTING D-Sub InduCom and Han-Quintax® and other railway-specific Han® connectors and housings.

### Identification

### Part No.

Ha-VIS data bus cable  
2-wire, elastic

#### Sheath material:

Elastomer, electron-beam cross-linked,  
COMP 603

Color: black

Nominal voltage: 300 V

#### Testing voltage:

conductor/conductor 2 kV AC  
conductor/shielding 2 kV AC

#### Maximum conductor

resistance at 20 °C: < 40.1 mΩ / m

#### Impedance at

0.75 – 3 MHz: 120 Ω ±12 Ω

#### Transfer impedance

at 20 MHz: ≤ 20 mΩ / m

#### Attenuation:

1 MHz: ≤ 12 dB / km

3 MHz: ≤ 17 dB / km

4 MHz: ≤ 22 dB / km

#### Maximum conductor temperature:

fixed installed -40 °C ... +90 °C

short circuit +160 °C

#### Minimum bending radius:

fixed installed > 6 x diameter

Cable sheath diameter: (Ø 7.8 ± 0.2) mm

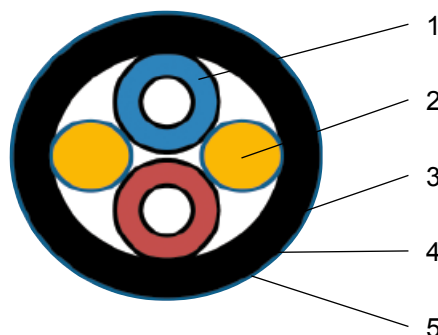
Cable weight: 77 kg / km

100 m ring

500 m drum

09 45 600 0160

09 45 600 0170



#### 1. Pair

Conductor: tinned copper strands according to VDE 0295 / IEC 60228 class 5 construction 16 x 0.20 mm, Ø 0.85 mm

Insulation: Polyethylene (PE), electron-beam cross-linked, Comp 655 Ø 2.85 mm

colors: red, blue

#### 2. Filler

#### 3. Wrapping

Plastic tape

#### 4. Shielding

Tinned fine copper braid, Ø 6.4 mm

#### 5. Jacket

Elastomer electron-beam cross-linked Comp 603, Ø 7.8 mm

Color: black

Ha-VIS data bus cable  
2-wire, elastic



## Advantages

- Halogen free
- Electron-beam cross-linked cable
- Improved fire performance
- High resistance to temperature
- Conform to UIC 558 standard
- Conform to WTB standard according IEC 61375-2-1

## Applications

For fixed and moveable installation inside and outside of rail vehicles and buses. For symmetrical signal and data transmission with impedance of 120 Ohm. Suitable for use in WTB (Wire Train Bus) as part of the TCN (Train Communication Network) according UIC 558.

Especially designed for termination with HARTING D-Sub InduCom and Han-Quintax® and other railway- specific Han® connectors and housings.

### Identification

### Part No.

Ha-VIS data bus cable  
2-wire, elastic

#### Sheath material:

Elastomer, electron-beam cross-linked,  
COMP 603

Color: black

Nominal voltage: 300 V

#### Testing voltage:

conductor/conductor 2 kV AC

conductor/shielding 2 kV AC

#### Maximum conductor

resistance at 20 °C: < 26.7 mΩ / m

#### Capacitance at 1 MHz:

wire/wire: < 65 pF / m

wire/screen: < 120 pF / m

#### Impedance at

0.75 – 3 MHz: 120 Ω ±12 Ω

#### Transfer impedance

at 30 MHz: ≤ 30 mΩ / m

#### Attenuation:

1 MHz: ≤ 10 dB / km

4 MHz: ≤ 14 dB / km

5 MHz: ≤ 18 dB / km

#### Maximum conductor temperature:

fixed installed -40 °C ... +90 °C

short circuit +160 °C

#### Minimum bending radius:

fixed installed > 6 x diameter

Cable sheath diameter: (Ø 9.7 ± 0.2) mm

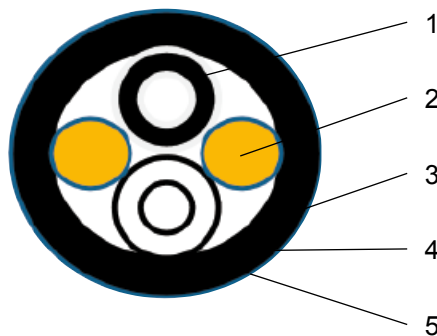
Cable weight: 106 kg / km

500 m drum

1000 m drum

09 45 600 0180

09 45 600 0190



#### 1. Pair

Conductor: tinned copper strands according to VDE 0295 / IEC 60228 class 5 construction 24 x 0.20 mm, Ø 1.1 mm

Insulation: Polyethylene (PE), electron-beam cross-linked, Comp 655 Ø 3.9 mm

colors: black, white

#### 2. Filler

Polyolefine copolymer

#### 3. Wrapping

Plastic tape

#### 4. Shielding

Tinned fine copper braid, Ø 8.5 mm

#### 5. Jacket

Elastomer electron-beam cross-linked Comp 603, Ø 9.7 mm

Color: black

Ha-VIS data bus cable  
2-wire FOAM, elastic



## Advantages

- Halogen free
- Electron-beam cross-linked cable
- Improved fire performance
- High resistance to temperature
- Reduced outer diameter
- Conform to UIC 558 standard
- Conform to WTB standard according IEC 61375-2-1

## Applications

Primary for fixed but also moveable installation inside and outside of rail vehicles and buses. For symmetrical signal and data transmission with impedance of 120 Ohm. Suitable for use in WTB (Wire Train Bus) as part of the TCN (Train Communication Network) according UIC 558. Especially designed for termination with HARTING D-Sub InduCom and Han-Quintax® and other railway-specific Han® connectors and housings.

### Identification

### Part No.

Ha-VIS data bus cable  
2-wire FOAM, elastic

Sheath material:  
Elastomer, electron-beam cross-linked,  
COMP 603  
Color: black

Nominal voltage: 300 V

Testing voltage:  
conductor/conductor 1.5 kV AC  
conductor/shielding 1.5 kV AC

Maximum conductor  
resistance at 20 °C: < 26.7 mΩ / m

Capacitance at 1 MHz:  
wire/wire: < 65 pF / m  
wire/screen: < 120 pF / m

Impedance at  
0.5 – 2 MHz: 120 Ω ±12 Ω

Transfer impedance  
at 30 MHz: ≤ 30 mΩ / m

Attenuation:  
1 MHz: ≤ 10 dB / km  
2 MHz: ≤ 14 dB / km

Maximum conductor temperature:  
fixed installed -25 °C ... +90 °C  
temperature load  
sporadically  
temporary +100 °C

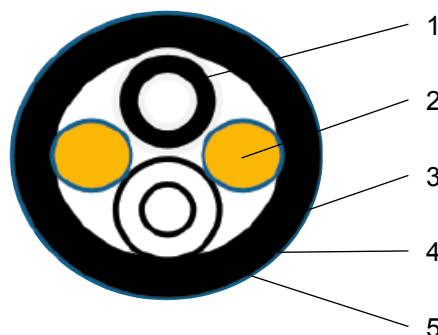
Minimum bending radius:  
fixed installed > 6 x diameter

Cable sheath diameter: (Ø 8.0 ± 0.2) mm

Cable weight: 79 kg / km

500 m drum  
1000 m drum

09 45 600 0181  
09 45 600 0191



#### 1. Pair

Conductor: tinned copper strands construction 19 x 0.20 mm, Ø 1.1 mm

Insulation: foam-skin polyolefin Ø 2.7mm

colors: black, white

#### 2. Filler

Polyolefine copolymer

#### 3. Wrapping

Plastic tape

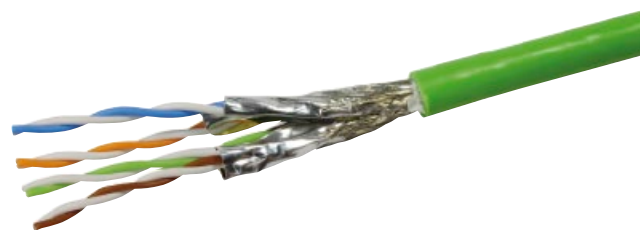
#### 4. Shielding

Tinned fine copper braid, Ø 6.4 mm

#### 5. Jacket

Elastomer electron-beam cross-linked Comp 603, Ø 8.0 mm

Color: black



## PROFINET 4TP type A cable 8 wires, Cat. 6<sub>A</sub>, PVC

For fixed laying or to build up PROFINET system cables

### Technical characteristics

|                           |                                                                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Cable construction:       | 4 x 2, twisted pair, shielded, PIMF                                                                                                              |
| Conductor construction:   | 4 x 2 x AWG 23/1, solid copper                                                                                                                   |
| Conductor insulation:     | PE Ø 1.4 mm                                                                                                                                      |
| Sheath material:          | PVC                                                                                                                                              |
| Cable diameter:           | 7.9 mm                                                                                                                                           |
| Transmission performance: | Category 6 <sub>A</sub> / class E <sub>A</sub> up to 500 MHz<br>Acc. to ISO/IEC 11 801:2002, EN 50 173-1                                         |
| Transmission rate:        | 10/100 Mbit/s, 1/10 Gbit/s                                                                                                                       |
| Shielding:                | Twisted shielding and additional overall shielding                                                                                               |
| Temperature range:        | -20 °C ... +60 °C                                                                                                                                |
| Standard length:          | 20 m / 50 m / 100 m / 500 m                                                                                                                      |
| Colour:                   | Green                                                                                                                                            |
| Printing:                 | HARTING specific printing                                                                                                                        |
| Advantages:               | <ul style="list-style-type: none"> <li>• Robust design</li> <li>• PROFINET conform</li> <li>• RoHS conform</li> <li>• Flame retardant</li> </ul> |

### Identification

### Part number

### Drawing

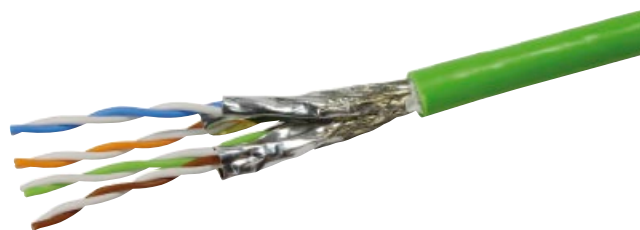
PROFINET 4TP type A cable  
8 wires, Cat. 6<sub>A</sub>, PVC, green

|       |      |
|-------|------|
| 20 m  | ring |
| 50 m  | ring |
| 100 m | ring |
| 500 m | drum |

|                |
|----------------|
| 09 45 600 1200 |
| 09 45 600 1210 |
| 09 45 600 1220 |
| 09 45 600 1230 |



- Conductor: Solid copper AWG 23/1



## PROFINET 4TP type B cable 8 wires, Cat. 6<sub>A</sub>, PVC

For flexible laying or to build up PROFINET system cables

### Technical characteristics

|                           |                                                                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Cable construction:       | 4 x 2, twisted pair, shielded, PIMF                                                                                                              |
| Conductor construction:   | 4 x 2 x AWG 23/7, stranded tinned copper braid                                                                                                   |
| Conductor insulation:     | PE Ø 1.59 mm                                                                                                                                     |
| Sheath material:          | PVC                                                                                                                                              |
| Cable diameter:           | 8.7 mm                                                                                                                                           |
| Transmission performance: | Category 6 <sub>A</sub> / class E <sub>A</sub> up to 500 MHz<br>Acc. to ISO/IEC 11 801:2002, EN 50 173-1                                         |
| Transmission rate:        | 10/100 Mbit/s, 1/10 Gbit/s                                                                                                                       |
| Shielding:                | Twisted shielding and additional overall shielding                                                                                               |
| Temperature range:        | -40 °C ... +80 °C                                                                                                                                |
| Standard length:          | 20 m / 50 m / 100 m / 500 m                                                                                                                      |
| Colour:                   | Green                                                                                                                                            |
| Printing:                 | HARTING specific printing                                                                                                                        |
| Advantages:               | <ul style="list-style-type: none"> <li>• Robust design</li> <li>• PROFINET conform</li> <li>• RoHS conform</li> <li>• Flame retardant</li> </ul> |

### Identification

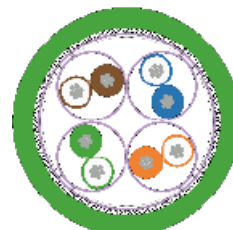
### Part number

### Drawing

PROFINET 4TP type B cable  
8 wires, Cat. 6<sub>A</sub>, PVC, green

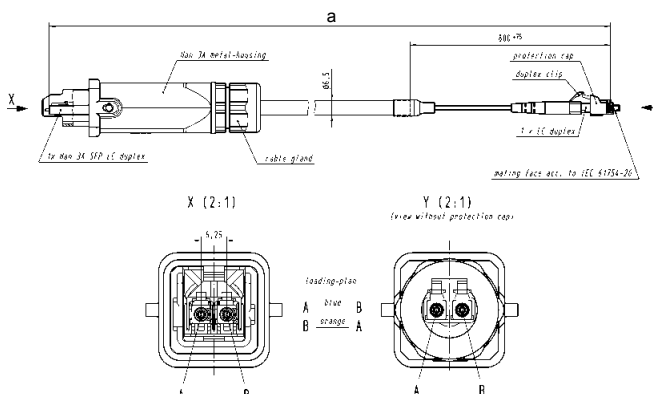
|       |      |
|-------|------|
| 20 m  | ring |
| 50 m  | ring |
| 100 m | ring |
| 500 m | drum |

|                |
|----------------|
| 09 45 600 1211 |
| 09 45 600 1221 |
| 09 45 600 1231 |
| 09 45 600 1241 |



- Conductor: Stranded tinned copper braid  
4x2xAWG 23/7



| Identification                                                                                                                                                                                 | Part No.                                                                                                                         | Drawing                                                                                                                      | Dimensions in mm |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Fibre optic cable, double ended, single mode</b><br>Han® SFP LC duplex to LC duplex<br><br>Length: a = 1.0 m<br>a = 2.0 m<br>a = 5.0 m<br>a = 10.0 m<br>a = 15.0 m<br>a = 20.0 m            | 33 54 451 0010 010<br>33 54 451 0020 010<br>33 54 451 0050 010<br>33 54 451 0100 010<br>33 54 451 0150 010<br>33 54 451 0200 010 | <b>double ended</b><br><br><br>a = length |                  |
| <b>Fibre optic cable, double ended, multi mode 50/125 µm</b><br>Han® SFP LC duplex to LC duplex<br><br>Length: a = 1.0 m<br>a = 2.0 m<br>a = 5.0 m<br>a = 10.0 m<br>a = 15.0 m<br>a = 20.0 m   | 33 54 451 0010 012<br>33 54 451 0020 012<br>33 54 451 0050 012<br>33 54 451 0100 012<br>33 54 451 0150 012<br>33 54 451 0200 012 |                                                                                                                              |                  |
| <b>Fibre optic cable, double ended, multi mode 62.5/125 µm</b><br>Han® SFP LC duplex to LC duplex<br><br>Length: a = 1.0 m<br>a = 2.0 m<br>a = 5.0 m<br>a = 10.0 m<br>a = 15.0 m<br>a = 20.0 m | 33 54 451 0010 007<br>33 54 451 0020 007<br>33 54 451 0050 007<br>33 54 451 0100 007<br>33 54 451 0150 007<br>33 54 451 0200 007 |                                                                                                                              |                  |



## Advantages

- For blind mating on various optical SFP transceivers
- Direct compensation of largest transceiver tolerances
- Direct connection to SFP transceivers
- Mechanical keying – no mismatching possible

## Technical characteristics

|                      |                                                        |
|----------------------|--------------------------------------------------------|
| Degree of protection | IP 65 / IP 67                                          |
| Mating face          | LC acc. to IEC 61 754-20                               |
| Mating cycles        | 50                                                     |
| Temperature range    | -40 °C ... +85 °C                                      |
| Housing material     | Zinc die-cast, powder coating black                    |
| Glas optical fibre   | Single mode, multi mode 50/125 and multi mode 62.5/125 |

### Identification

### Part No.

### Drawing

### Dimensions in mm

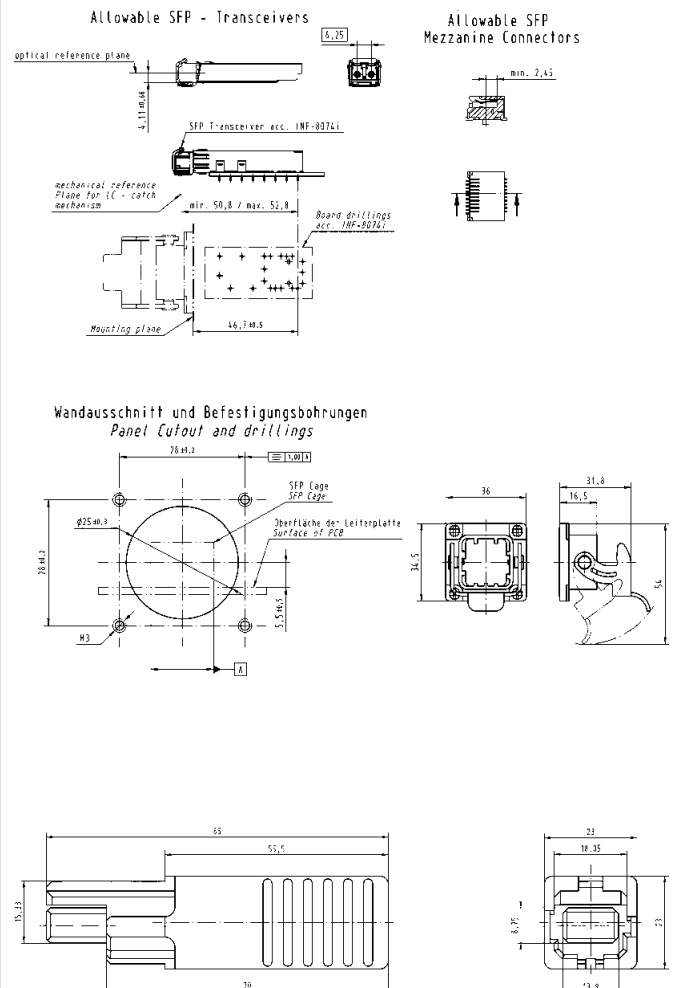
Han® SFP

Receptacle housing  
device side

09 57 474 0500 001

Assembly aid

09 57 000 0000 200



## preLink® Extender



## Application

- Structured cabling for industrial premises
- Extension of cables for data communication
- Connection of cables with different cross-sections
- Linking of fire compartments

## Advantages

- preLink® termination
- Simple, fast and reliable connection of data cables
- Flexible in the application
- Future proof, Category 6A, transmission rate up to 10 Gbit/s

## Identification

## Part No.

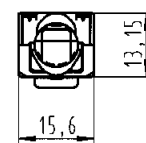
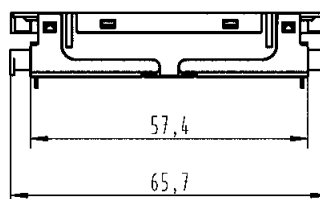
## Drawing

## Dimensions in mm

## preLink® Extender

Wire termination: Ha-VIS preLink®  
 Number of contacts: 8  
 Transmission: Cat. 6A  
 Transmission rate: 10 Gbit/s  
 Shielding: fully shielded 360°  
 flexible shielding termination  
 Cable diameter: Ø 5 – 9 mm  
 Wire cross-section: AWG22 ... AWG27  
 Single wire diameter: Ø 0.8 mm ... 1.6 mm  
 depending on termination module  
 Degree of protection: IP 20  
 Operating temperature range: -40 °C ... +70 °C  
 Housing material: zinc die-cast,  
 nickel plated

20 82 101 0001



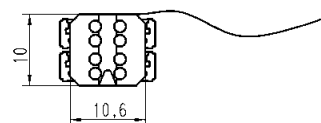
## preLink® terminal module

(package with 10 pcs.)  
 Contact block with IDC termination

Number of contacts: 8

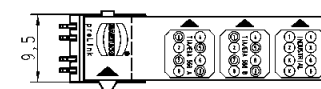
Wire cross-section: AWG 22/23 (24)  
 solid and stranded  
 Single wire diameter: Ø 1.3 – 1.6 mm  
 Colour: yellow

20 82 000 0001



Wire cross-section: AWG 26/27  
 solid and stranded  
 Single wire diameter: Ø 0.8 – 1.1 mm  
 Colour: white

20 82 000 0003





HARTING RJ Industrial® RJ45 jacks with transformer

## Advantages

- Compact design
- Integrated optical fibres
- Excellent EMC behaviour due to integrated transformers and filters for 10/100 Mbit or 1 Gbit Ethernet
- SMC compatible
- Versions from 10/100 Mbit up to 10 Gbit Ethernet and PoE

## Technical characteristics

|                      |                          |
|----------------------|--------------------------|
| Mating face          | RJ45 acc. to IEC 60603-7 |
| Number of contacts   | 8                        |
| Degree of protection | IP 20                    |
| Rated voltage        | 30 V DC                  |
| Rated current        | 8 mA DC                  |
| Mating cycles        | min. 750                 |
| Temperature range    | -25 °C ... +70 °C        |

### Identification

### Part No.

### Drawing

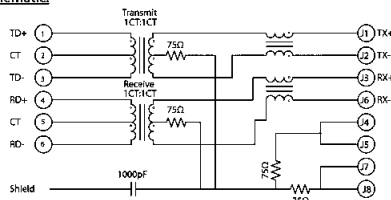
### Dimensions in mm

#### Components device side

#### RJ45 jack with transformer (low profile)

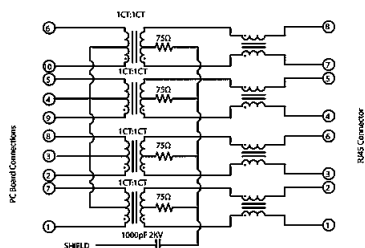
90° angled, THT  
10/100 Mbit Ethernet  
10/100 Mbit Ethernet and PoE

##### Schematic:



90° angled, THT  
1 Gbit Ethernet  
1 Gbit Ethernet and PoE

##### Schematic:

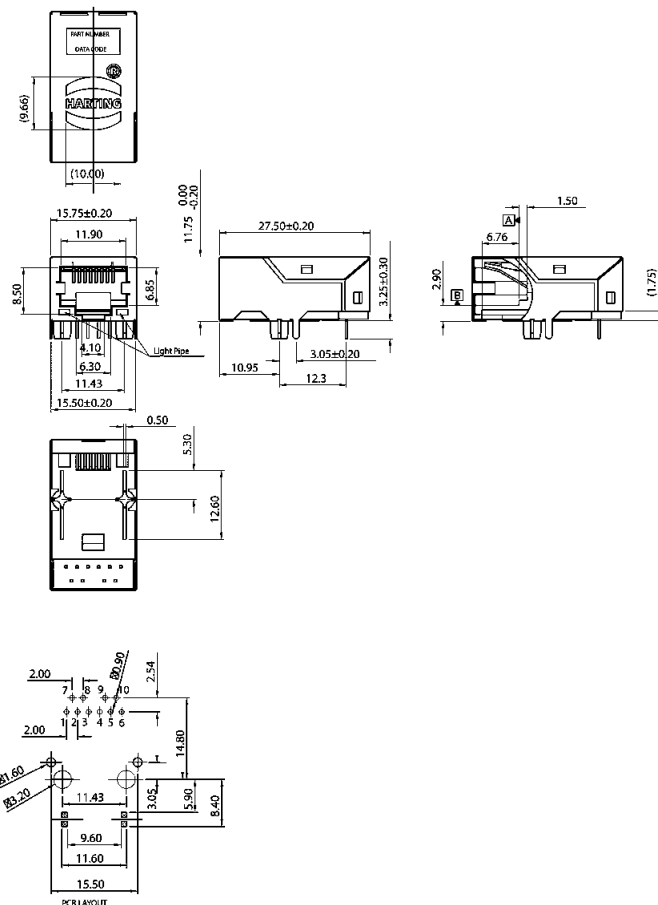


90° angled, THT  
10 Gbit Ethernet

09 45 551 1130<sup>1)</sup>  
09 45 551 1131<sup>1)</sup>

09 45 551 1530<sup>1)</sup>  
09 45 551 1531<sup>1)</sup>

09 45 551 1560<sup>1)</sup>



Customer specific versions on request

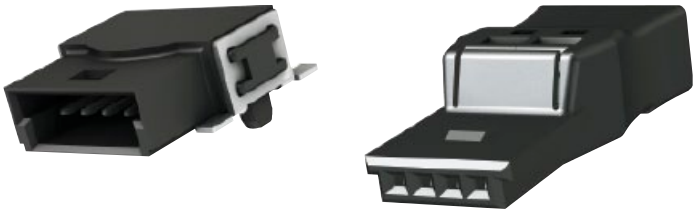
<sup>1)</sup> Packaging: Blister à 56 pieces



| Identification                                                            | Part No.       | Drawing                                                                                                                | Dimensions in mm |
|---------------------------------------------------------------------------|----------------|------------------------------------------------------------------------------------------------------------------------|------------------|
| <p><i>har-speed</i> M12<br/>adapter M12-RJ45</p> <p>straight, Cat. 6A</p> | 21 03 381 2800 | <p>X<br/>Montageausschnitt<br/>panel cut out</p> <p>1 8</p> <p>SW18<br/>width across<br/>flats SW18</p> <p>M16x1,5</p> |                  |
| <p>angled, Cat. 6A</p>                                                    | 21 03 381 4800 | <p>X<br/>Montageausschnitt<br/>panel cut out</p> <p>1 8</p> <p>SW18<br/>width across<br/>flats SW18</p> <p>M16x1,5</p> |                  |
| <p>Gender changer, Cat. 6A</p>                                            | 21 03 381 6815 | <p>Stromlaufplan<br/>circuit diagram</p> <p>M12 RJ45</p> <p>SW18<br/>width across<br/>flats SW18</p> <p>M16x1,5</p>    |                  |

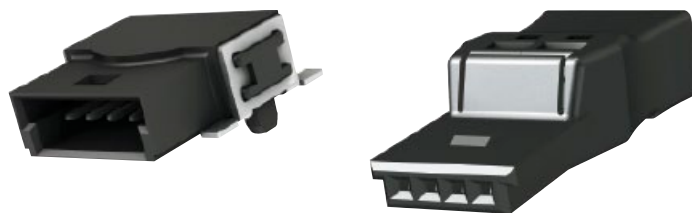


| Identification                                                                          | Part No.       | Drawing                                                                                                                                                                                                                                                         | Dimensions in mm |
|-----------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>har-speed M12</b><br>8 poles, X-coded, Cat. 6A<br>Cable: 4.4 - 8.8 mm outer diameter | 21 03 881 1804 | <p>Gesamtlänge in verschraubtem Zustand ca. 46,1mm<br/>complete length when assembled approx. 46,1mm</p> <p>Sx15<br/>width across flats 15</p> <p>Sw16<br/>width across flats 16</p> <p>X (2:1)<br/>Steckgesicht nach Kontaktfläche acc. to IEC 61075-2-121</p> |                  |
| <b>har-speed M12 Crimp</b><br>5 poles, A-coded<br>Cable: 4.4 - 8.8 mm outer diameter    | 21 03 881 1505 | <p>Gesamtlänge in verschraubtem Zustand ca. 46,1mm<br/>complete length when assembled approx. 46,1mm</p> <p>Sx15<br/>width across flats 15</p> <p>Sw16<br/>width across flats 16</p> <p>X (2:1)<br/>Steckgesicht nach Kontaktfläche acc. to IEC 61075-2-121</p> |                  |
| 4 poles, D-coded<br>Cable: 4.4 - 8.8 mm outer diameter                                  | 21 03 881 1405 | <p>Gesamtlänge in verschraubtem Zustand ca. 46,1mm<br/>complete length when assembled approx. 46,1mm</p> <p>Sx15<br/>width across flats 15</p> <p>Sw16<br/>width across flats 16</p> <p>X (2:1)<br/>Steckgesicht nach Kontaktfläche acc. to IEC 61075-2-121</p> |                  |



PCB connectors with IDC termination  
for SMT reflow soldering  
pitch 1.27 mm

| Identification                         | No. of contacts | Part No.           | Packaging unit |
|----------------------------------------|-----------------|--------------------|----------------|
| PCB connectors<br>with IDC termination |                 |                    |                |
| Female                                 | 4               | 14 31 041 0301 000 | 50             |
| Male                                   | 4               | 14 11 041 0002 000 | 560            |

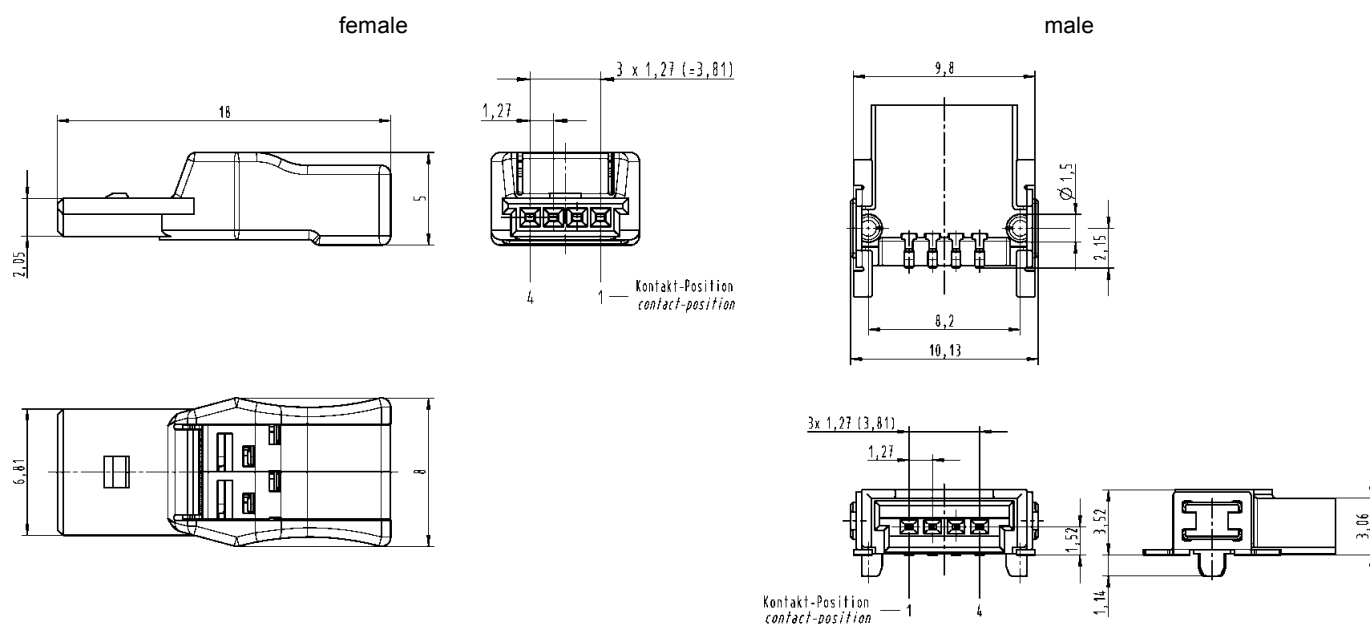


PCB connectors with IDC termination  
for SMT reflow soldering  
pitch 1.27 mm

Drawing

Dimensions in mm

## Dimensions



## Technical characteristics

### Technical data

Rated current 2 A  
Pitch 1.27 mm

Surge voltage category /  
pollution degree

Rated voltage  
Rated surge voltage

| III/3 | III/2 | II/2   |
|-------|-------|--------|
| —     | —     | 16 V   |
| —     | —     | 0.5 kV |

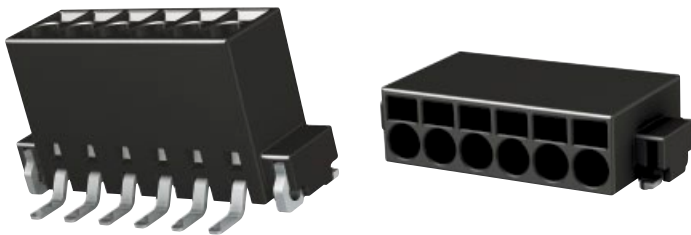
### Conductor data

Connection technology wire IDC termination  
Conductor size solid / stranded — / 0.05 - 0.14 mm<sup>2</sup>  
Conductor size AWG 28 - 26  
Stripping length 0 mm

### Material data

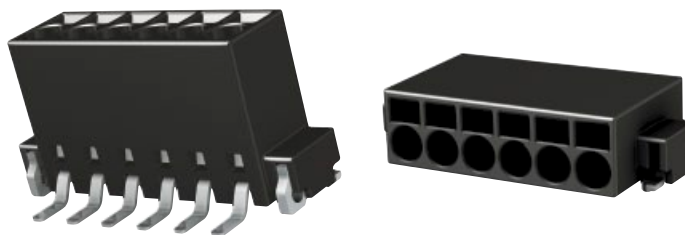
Group of insulation material III a  
Type of insulation material LCP  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +125 °C  
Contact material Copper alloy  
Contact plating Nickel plated

PCB terminal blocks,  
vertical/horizontal  
with push-in-spring-cage termination  
for SMT reflow soldering  
pitch 2.54 mm



| Identification                                                                         | No. of contacts |   | Part No.            |  | Packaging unit        |
|----------------------------------------------------------------------------------------|-----------------|---|---------------------|--|-----------------------|
| PCB terminal blocks,<br>vertical/horizontal<br>with push-in-spring-cage<br>termination |                 |   |                     |  | vertical / horizontal |
|                                                                                        | 2               |   | 14 01 021 310 . . . |  | 250 / 500             |
|                                                                                        | 3               |   | 14 01 031 310 . . . |  | 250 / 500             |
|                                                                                        | 4               |   | 14 01 041 310 . . . |  | 250 / 500             |
|                                                                                        | 5               |   | 14 01 051 310 . . . |  | 250 / 500             |
|                                                                                        | 6               |   | 14 01 061 310 . . . |  | 250 / 500             |
|                                                                                        | 7               |   | 14 01 071 310 . . . |  | 250 / 500             |
|                                                                                        | 8               |   | 14 01 081 310 . . . |  | 250 / 500             |
|                                                                                        | 9               |   | 14 01 091 310 . . . |  | 250 / 500             |
|                                                                                        | 10              |   | 14 01 101 310 . . . |  | 250 / 500             |
|                                                                                        | 11              |   | 14 01 111 310 . . . |  | 250 / 500             |
|                                                                                        | 12              |   | 14 01 121 310 . . . |  | 250 / 500             |
|                                                                                        |                 |   |                     |  |                       |
| Please insert digit for                                                                |                 |   |                     |  |                       |
| vertical ►                                                                             |                 | 1 |                     |  |                       |
| horizontal ►                                                                           |                 | 2 |                     |  |                       |

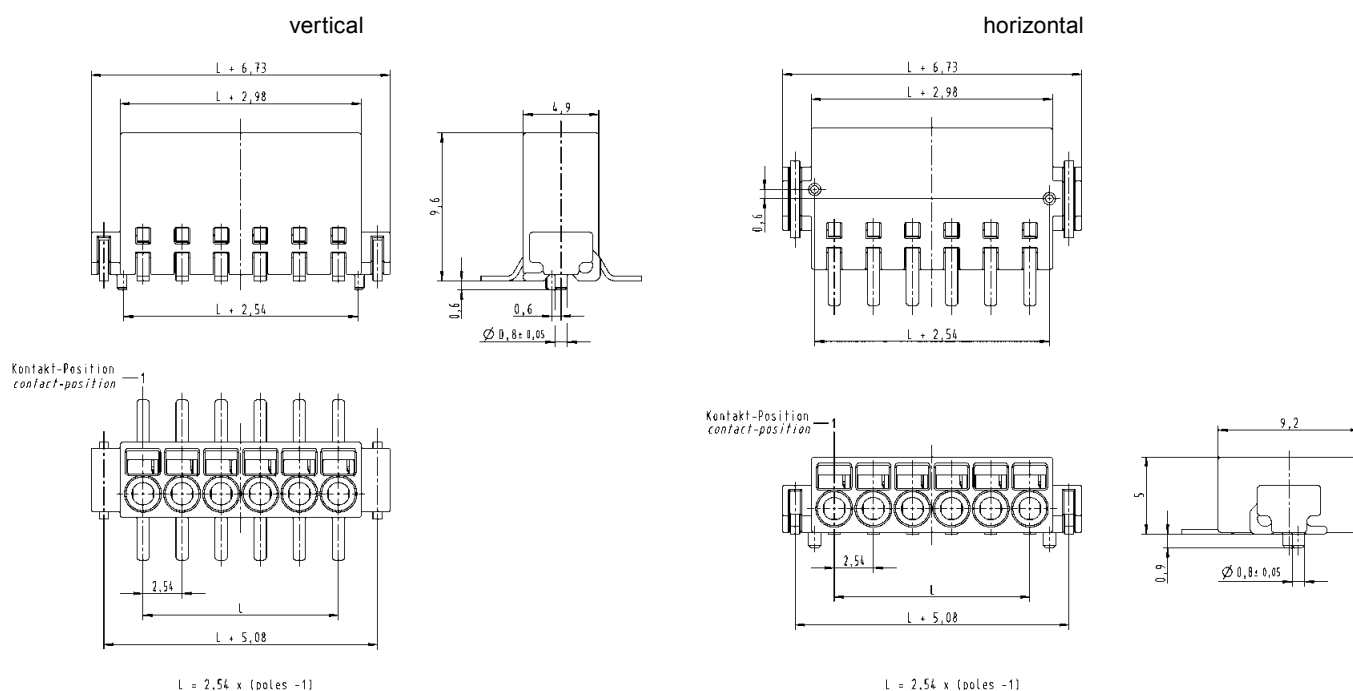
PCB terminal blocks,  
vertical/horizontal  
with push-in-spring-cage termination  
for SMT reflow soldering  
pitch 2.54 mm



Drawing

Dimensions in mm

## Dimensions



## Technical characteristics

### Technical data

Rated current 6 A  
Pitch 2.54 mm

Surge voltage category /  
pollution degree

Rated voltage  
Rated surge voltage

| III/3  | III/2  | II/2   |
|--------|--------|--------|
| 32 V   | 160 V  | 160 V  |
| 2.5 kV | 2.5 kV | 2.5 kV |

### Material data

Group of insulation material III a  
Type of insulation material LCP  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +125 °C  
Contact material copper alloy  
Contact plating tin plated

### Conductor data

Connection technology wire push-in-spring-cage  
termination  
Conductor size solid / stranded 0.14 - 0.5 / 0.2 - 0.5 mm<sup>2</sup>  
Conductor size AWG 24 - 20  
Stripping length 6 mm

PCB connectors female,  
vertical  
with push-in-spring-cage termination  
pitch 2.54 mm



| Identification                                                                | No. of contacts | Part No.           | Packaging unit |
|-------------------------------------------------------------------------------|-----------------|--------------------|----------------|
| PCB connectors female,<br>vertical<br>with push-in-spring-cage<br>termination |                 |                    |                |
|                                                                               | 2               | 14 31 021 3101 000 | 200            |
|                                                                               | 3               | 14 31 031 3101 000 | 200            |
|                                                                               | 4               | 14 31 041 3101 000 | 200            |
|                                                                               | 5               | 14 31 051 3101 000 | 150            |
|                                                                               | 6               | 14 31 061 3101 000 | 150            |
|                                                                               | 7               | 14 31 071 3101 000 | 150            |
|                                                                               | 8               | 14 31 081 3101 000 | 100            |
|                                                                               | 9               | 14 31 091 3101 000 | 100            |
|                                                                               | 10              | 14 31 101 3101 000 | 100            |
|                                                                               | 11              | 14 31 111 3101 000 | 50             |
|                                                                               | 12              | 14 31 121 3101 000 | 50             |

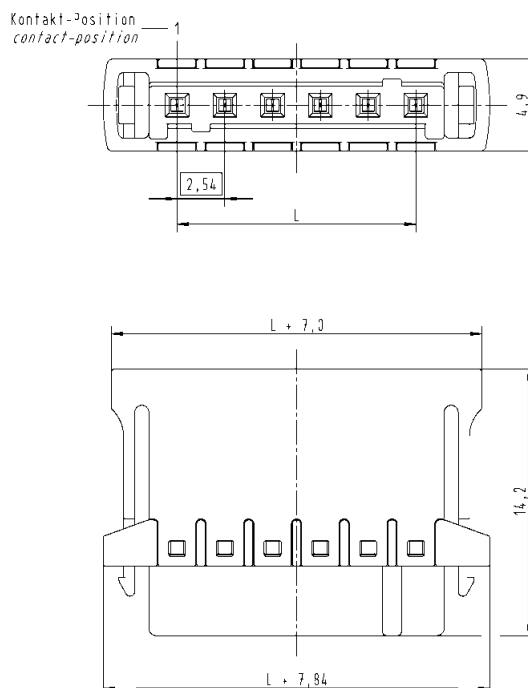
PCB connectors female,  
vertical  
with push-in-spring-cage termination  
pitch 2.54 mm



Drawing

Dimensions in mm

Dimensions


 $L = \text{pitch} \times (\text{poles} - 1)$ 

## Technical characteristics

### Technical data

Rated current 6 A  
Pitch 2.54 mm

Surge voltage category /  
pollution degree

Rated voltage  
Rated surge voltage

| III/3  | III/2  | II/2   |
|--------|--------|--------|
| 32 V   | 160 V  | 160 V  |
| 2.5 kV | 2.5 kV | 2.5 kV |

### Material data

Group of insulation material III a  
Type of insulation material LCP  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +125 °C  
Contact material copper alloy  
Contact plating tin plated

### Conductor data

Connection technology wire push-in-spring-cage  
termination  
Conductor size solid / stranded 0.14 - 0.5 / 0.2 - 0.5 mm<sup>2</sup>  
Conductor size AWG 24 - 20  
Stripping length 6 mm

PCB connectors male,  
vertical/horizontal  
for SMT reflow soldering  
pitch 2.54 mm



| Identification                              | No. of contacts | Part No.        |     |  | Packaging unit        |
|---------------------------------------------|-----------------|-----------------|-----|--|-----------------------|
| PCB connectors male,<br>vertical/horizontal |                 |                 |     |  | vertical / horizontal |
|                                             | 2               | 14 11 021 300 . | ... |  | 500 / 600             |
|                                             | 3               | 14 11 031 300 . | ... |  | 500 / 600             |
|                                             | 4               | 14 11 041 300 . | ... |  | 500 / 600             |
|                                             | 5               | 14 11 051 300 . | ... |  | 500 / 600             |
|                                             | 6               | 14 11 061 300 . | ... |  | 500 / 600             |
|                                             | 7               | 14 11 071 300 . | ... |  | 500 / 600             |
|                                             | 8               | 14 11 081 300 . | ... |  | 500 / 600             |
|                                             | 9               | 14 11 091 300 . | ... |  | 500 / 600             |
|                                             | 10              | 14 11 101 300 . | ... |  | 500 / 600             |
|                                             | 11              | 14 11 111 300 . | ... |  | 500 / 600             |
|                                             | 12              | 14 11 121 300 . | ... |  | 500 / 600             |
|                                             |                 |                 |     |  |                       |
| Please insert digit for                     |                 |                 |     |  |                       |
| vertical ►                                  |                 | 1               |     |  |                       |
| horizontal ►                                |                 | 2               |     |  |                       |

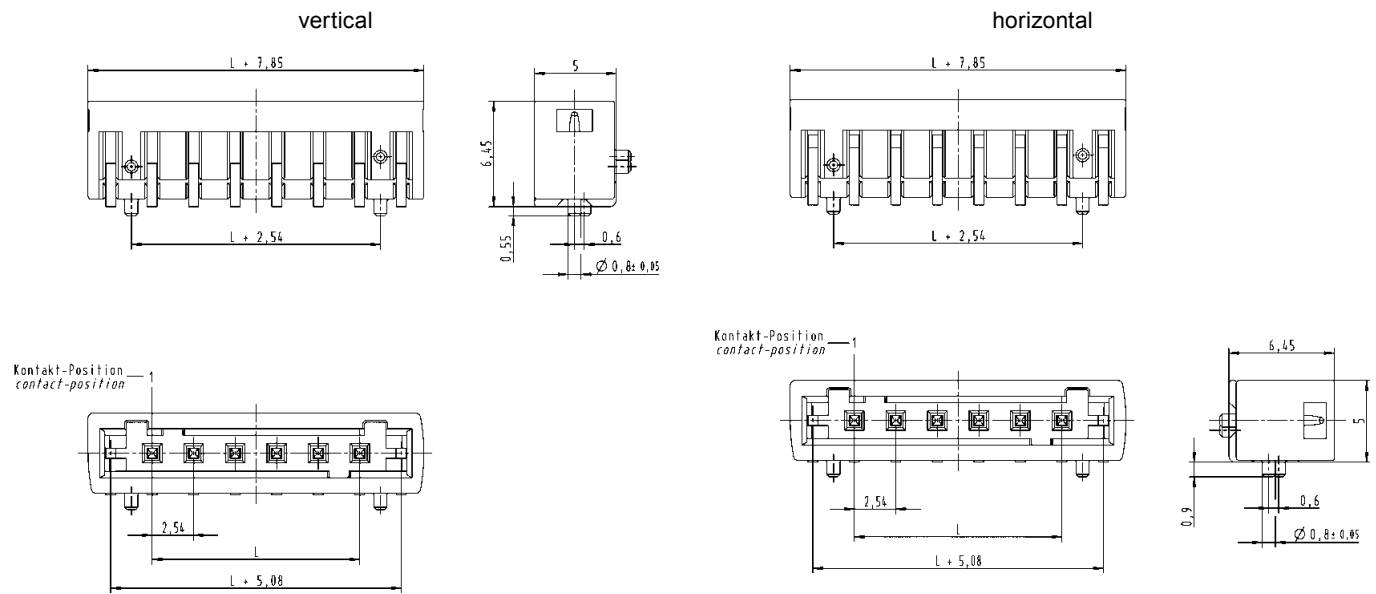
PCB connectors male,  
vertical/horizontal  
for SMT reflow soldering  
pitch 2.54 mm



Drawing

Dimensions in mm

## Dimensions



$L = \text{pitch} \times (\text{poles} - 1)$

## Technical characteristics

### Technical data

Rated current 6 A  
Pitch 2.54 mm

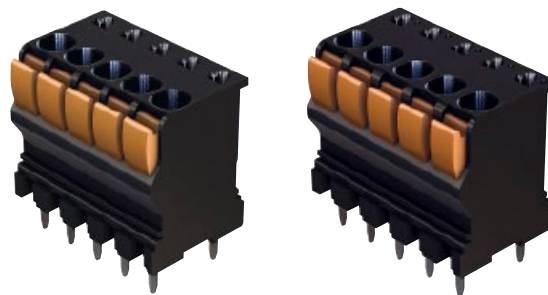
Surge voltage category /  
pollution degree  
Rated voltage  
Rated surge voltage

| III/3  | III/2  | II/2   |
|--------|--------|--------|
| 32 V   | 160 V  | 160 V  |
| 2.5 kV | 2.5 kV | 2.5 kV |

### Material data

Group of insulation material III a  
Type of insulation material LCP  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +125 °C  
Contact material copper alloy  
Contact plating tin plated

PCB terminal blocks,  
vertical with push-in-spring-cage  
termination  
pitch 3.50 / 3.81 mm



| Identification | No. of contacts | Part No. | Packaging unit |
|----------------|-----------------|----------|----------------|
|----------------|-----------------|----------|----------------|

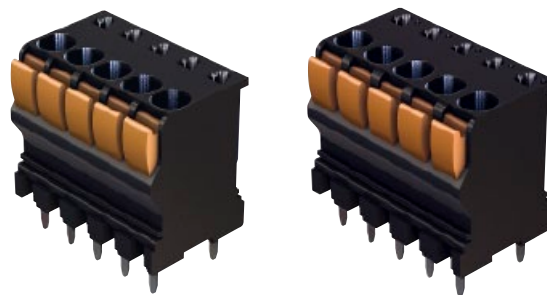
PCB terminal blocks,  
vertical with push-in-spring-cage  
termination

|    |                     |     |
|----|---------------------|-----|
| 2  | 14 02 021 . 101 000 | 300 |
| 3  | 14 02 031 . 101 000 | 200 |
| 4  | 14 02 041 . 101 000 | 150 |
| 5  | 14 02 051 . 101 000 | 150 |
| 6  | 14 02 061 . 101 000 | 100 |
| 7  | 14 02 071 . 101 000 | 100 |
| 8  | 14 02 081 . 101 000 | 100 |
| 9  | 14 02 091 . 101 000 | 100 |
| 10 | 14 02 101 . 101 000 | 100 |
| 11 | 14 02 111 . 101 000 | 100 |
| 12 | 14 02 121 . 101 000 | 100 |
| 13 | 14 02 131 . 101 000 | 50  |
| 14 | 14 02 141 . 101 000 | 50  |
| 15 | 14 02 151 . 101 000 | 50  |
| 16 | 14 02 161 . 101 000 | 50  |

Please insert digit for

pitch 3.50 mm ► 4  
pitch 3.81 mm ► 5

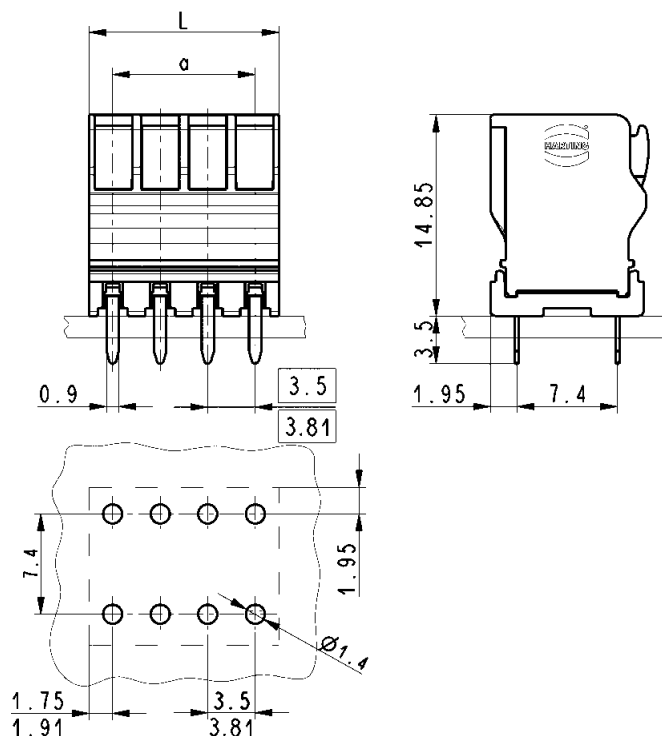
PCB terminal blocks,  
vertical with push-in-spring-cage  
termination  
pitch 3.50 / 3.81 mm



Drawing

Dimensions in mm

Dimensions



L = pitch x poles  
a = pitch x (poles - 1)

## Technical characteristics

### Technical data

Rated current 10 A  
Pitch 3.50 mm / 3.81 mm

Surge voltage category /  
pollution degree

Rated voltage  
Rated surge voltage

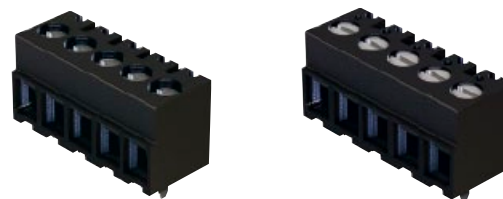
| III/3 | III/2 | II/2  |
|-------|-------|-------|
| 220 V | 300 V | 600 V |
| 4 kV  | 4 kV  | 4 kV  |

### Material data

Group of insulation material I  
Type of insulation material PA / PPA  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +110 °C  
Contact material copper alloy  
Contact plating tin plated

### Conductor and solder pin data

Connection technology wire push-in-spring-cage  
termination  
Conductor size solid / stranded 0.14 - 1.5 / 0.14 - 1.5 mm<sup>2</sup>  
Conductor size AWG 30 - 16  
Stripping length 9 - 10 mm  
Solder pin: drilled hole diameter 1.4 mm



PCB terminal blocks,  
horizontal with screw termination  
for reflow soldering  
pitch 3.50 / 3.81 mm

| Identification | No. of contacts | Part No. | Packaging unit |
|----------------|-----------------|----------|----------------|
|----------------|-----------------|----------|----------------|

PCB terminal blocks,  
horizontal with screw termination

|    |                     |     |
|----|---------------------|-----|
| 2  | 14 02 021 . 402 000 | 300 |
| 3  | 14 02 031 . 402 000 | 200 |
| 4  | 14 02 041 . 402 000 | 150 |
| 5  | 14 02 051 . 402 000 | 150 |
| 6  | 14 02 061 . 402 000 | 100 |
| 7  | 14 02 071 . 402 000 | 100 |
| 8  | 14 02 081 . 402 000 | 100 |
| 9  | 14 02 091 . 402 000 | 100 |
| 10 | 14 02 101 . 402 000 | 100 |
| 11 | 14 02 111 . 402 000 | 100 |
| 12 | 14 02 121 . 402 000 | 100 |

Please insert digit for

pitch 3.50 mm ► 4  
pitch 3.81 mm ► 5

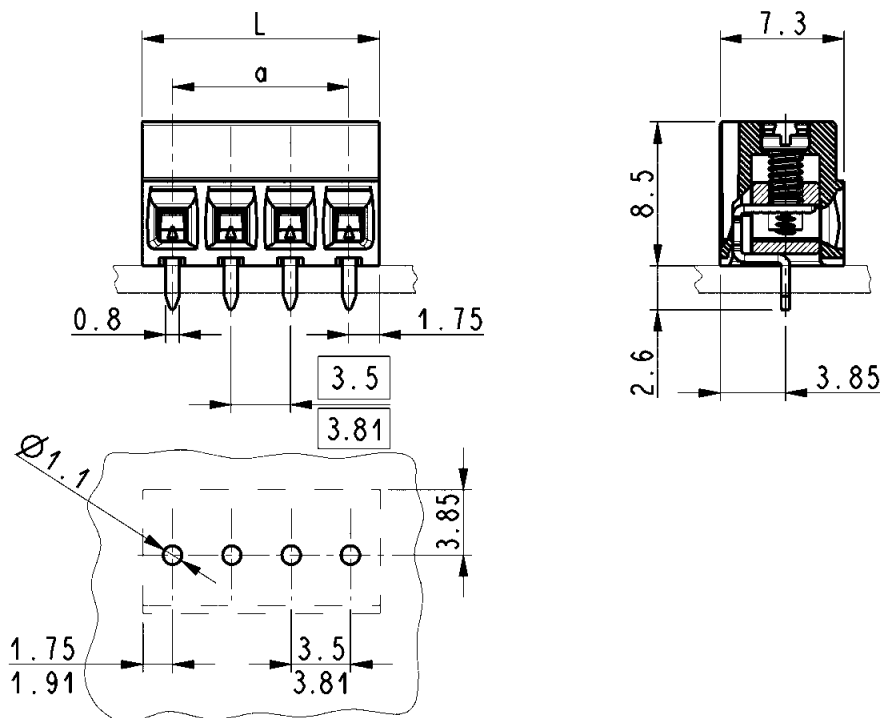
PCB terminal blocks,  
horizontal with screw termination  
for reflow soldering  
pitch 3.50 / 3.81 mm



Drawing

Dimensions in mm

Dimensions



L = pitch x poles  
a = pitch x (poles - 1)

## Technical characteristics

### Technical data

Rated current 12 A  
Pitch 3.50 mm / 3.81 mm

Surge voltage category /  
pollution degree

Rated voltage  
Rated surge voltage

| III/3  | III/2  | II/2   |
|--------|--------|--------|
| 150 V  | 150 V  | 300 V  |
| 2.5 kV | 2.5 kV | 2.5 kV |

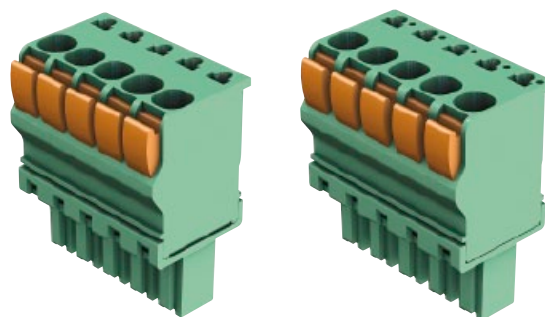
### Material data

Group of insulation material I  
Type of insulation material PA / PPA  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +110 °C  
Contact material copper alloy  
Contact plating tin plated

### Conductor and solder pin data

Connection technology wire screw termination  
Conductor size solid / stranded 0.05 - 1.5 / 0.05 - 1 mm<sup>2</sup>  
Conductor size AWG 28 - 16  
Screw thread M2  
Tightening torque 0.2 - 0.25 Nm  
Stripping length 5 - 6 mm  
Solder pin: drilled hole diameter 1.1 mm

PCB connectors female,  
horizontal  
with push-in-spring-cage termination  
pitch 3.50 / 3.81 mm



| Identification | No. of contacts | Part No. | Packaging unit |
|----------------|-----------------|----------|----------------|
|----------------|-----------------|----------|----------------|

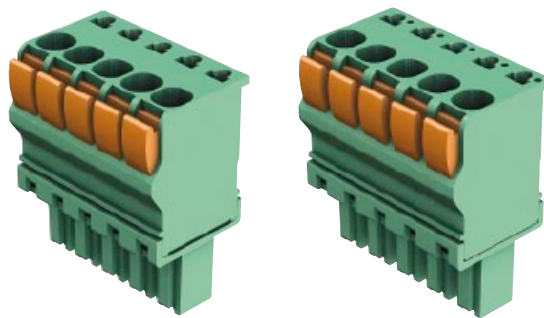
PCB connectors female,  
horizontal  
with push-in-spring-cage  
termination

|     |                     |     |
|-----|---------------------|-----|
| 2   | 14 31 021 . 102 000 | 300 |
| 3   | 14 31 031 . 102 000 | 200 |
| 4   | 14 31 041 . 102 000 | 150 |
| 5   | 14 31 051 . 102 000 | 150 |
| 6   | 14 31 061 . 102 000 | 100 |
| 7   | 14 31 071 . 102 000 | 100 |
| 8   | 14 31 081 . 102 000 | 100 |
| 9   | 14 31 091 . 102 000 | 100 |
| 10  | 14 31 101 . 102 000 | 100 |
| 11  | 14 31 111 . 102 000 | 100 |
| 12  | 14 31 121 . 102 000 | 100 |
| 13  | 14 31 131 . 102 000 | 50  |
| 14  | 14 31 141 . 102 000 | 50  |
| 15  | 14 31 151 . 102 000 | 50  |
| 16  | 14 31 161 . 102 000 | 50  |
| 17  | 14 31 171 . 102 000 | 50  |
| 18  | 14 31 181 . 102 000 | 50  |
| 19  | 14 31 191 . 102 000 | 50  |
| 20  | 14 31 201 . 102 000 | 50  |
| 21* | 14 31 211 . 102 000 | 25  |
| 22* | 14 31 221 . 102 000 | 25  |
| 23* | 14 31 231 . 102 000 | 25  |
| 24* | 14 31 241 . 102 000 | 25  |
| 25* | 14 31 251 . 102 000 | 25  |

Please insert digit for

pitch 3.50 mm ► 4  
pitch 3.81 mm ► 5

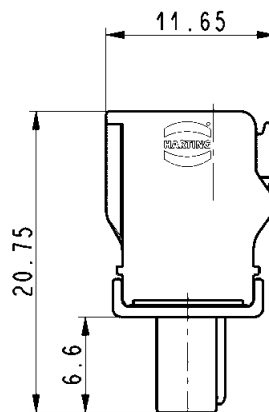
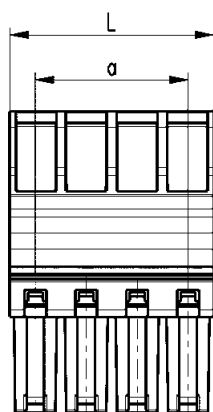
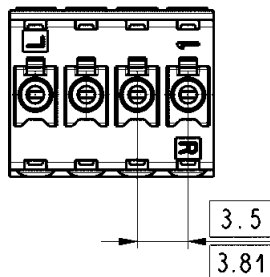
PCB connectors female,  
horizontal  
with push-in-spring-cage termination  
pitch 3.50 / 3.81 mm



Drawing

Dimensions in mm

Dimensions



L = pitch x poles  
a = pitch x (poles - 1)

## Technical characteristics

### Technical data

Rated current 11 A  
Pitch 3.50 mm / 3.81 mm

Surge voltage category /  
pollution degree

Rated voltage  
Rated surge voltage

| III/3  | III/2  | II/2   |
|--------|--------|--------|
| 150 V  | 150 V  | 300 V  |
| 2.5 kV | 2.5 kV | 2.5 kV |

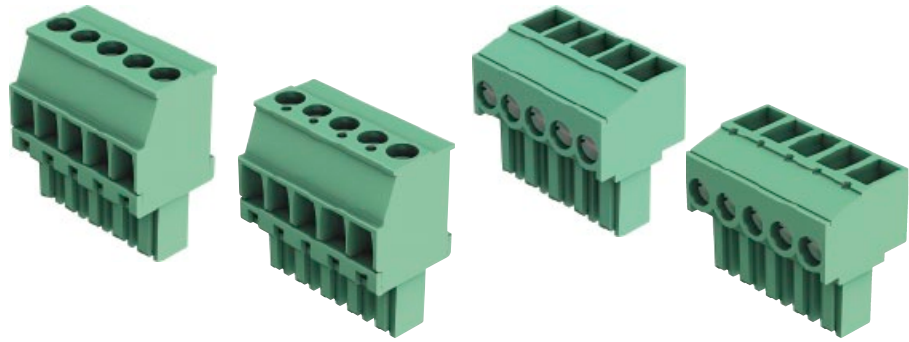
### Material data

Group of insulation material I  
Type of insulation material PA / PPA  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +110 °C  
Contact material copper alloy  
Contact plating tin plated

### Conductor data

Connection technology wire push-in-spring-cage  
termination  
Conductor size solid / stranded 0.14 - 1.5 / 0.14 - 1.5 mm<sup>2</sup>  
Conductor size AWG 30 - 14  
Stripping length 9 - 10 mm

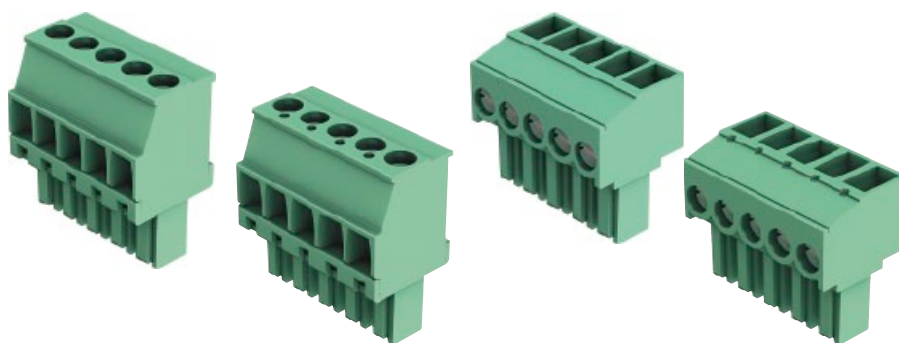
PCB connectors female,  
vertical/horizontal  
with screw termination  
pitch 3.50 / 3.81 mm



| Identification                                                          | No. of contacts | Part No.             | Packaging unit |
|-------------------------------------------------------------------------|-----------------|----------------------|----------------|
| PCB connectors female,<br>vertical/horizontal<br>with screw termination |                 |                      |                |
|                                                                         | 2               | 14 31 021 . 40 . 000 | 300            |
|                                                                         | 3               | 14 31 031 . 40 . 000 | 200            |
|                                                                         | 4               | 14 31 041 . 40 . 000 | 150            |
|                                                                         | 5               | 14 31 051 . 40 . 000 | 150            |
|                                                                         | 6               | 14 31 061 . 40 . 000 | 100            |
|                                                                         | 7               | 14 31 071 . 40 . 000 | 100            |
|                                                                         | 8               | 14 31 081 . 40 . 000 | 100            |
|                                                                         | 9               | 14 31 091 . 40 . 000 | 100            |
|                                                                         | 10              | 14 31 101 . 40 . 000 | 100            |
|                                                                         | 11              | 14 31 111 . 40 . 000 | 100            |
|                                                                         | 12              | 14 31 121 . 40 . 000 | 100            |
|                                                                         | 13              | 14 31 131 . 40 . 000 | 50             |
|                                                                         | 14              | 14 31 141 . 40 . 000 | 50             |
|                                                                         | 15              | 14 31 151 . 40 . 000 | 50             |
|                                                                         | 16              | 14 31 161 . 40 . 000 | 50             |
|                                                                         | 17*             | 14 31 171 . 40 . 000 | 50             |
|                                                                         | 18*             | 14 31 181 . 40 . 000 | 50             |
|                                                                         | 19*             | 14 31 191 . 40 . 000 | 50             |
|                                                                         | 20*             | 14 31 201 . 40 . 000 | 50             |
|                                                                         | 21*             | 14 31 211 . 40 . 000 | 25             |
|                                                                         | 22*             | 14 31 221 . 40 . 000 | 25             |
|                                                                         | 23*             | 14 31 231 . 40 . 000 | 25             |
|                                                                         | 24*             | 14 31 241 . 40 . 000 | 25             |
|                                                                         | 25*             | 14 31 251 . 40 . 000 | 25             |
| Please insert digit for                                                 |                 |                      |                |
| pitch 3.50 mm ►                                                         | 4               |                      |                |
| pitch 3.81 mm ►                                                         | 5               |                      |                |
| vertical ►                                                              | 1               |                      |                |
| horizontal ►                                                            | 2               |                      |                |

\* Pitch 3.81 mm (vertical) only available with 2-16 contacts

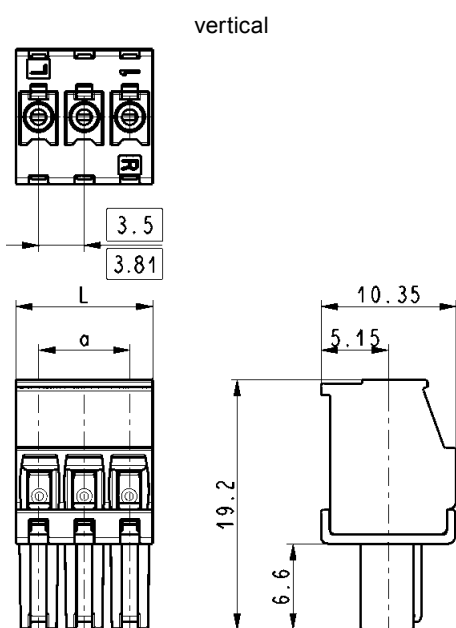
PCB connectors female,  
vertical/horizontal  
with screw termination  
pitch 3.50 / 3.81 mm



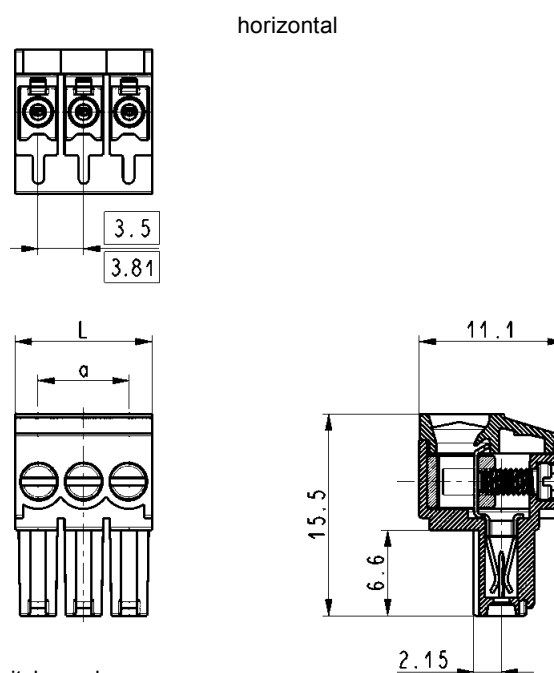
Drawing

Dimensions in mm

## Dimensions



L = pitch x poles  
a = pitch x (poles - 1)



L = pitch x poles  
a = pitch x (poles - 1)

## Technical characteristics

### Technical data

Rated current 10 A  
Pitch 3.50 mm / 3.81 mm

Surge voltage category /  
pollution degree

Rated voltage  
Rated surge voltage

| III/3  | III/2  | II/2   |
|--------|--------|--------|
| 150 V  | 150 V  | 300 V  |
| 2.5 kV | 2.5 kV | 2.5 kV |

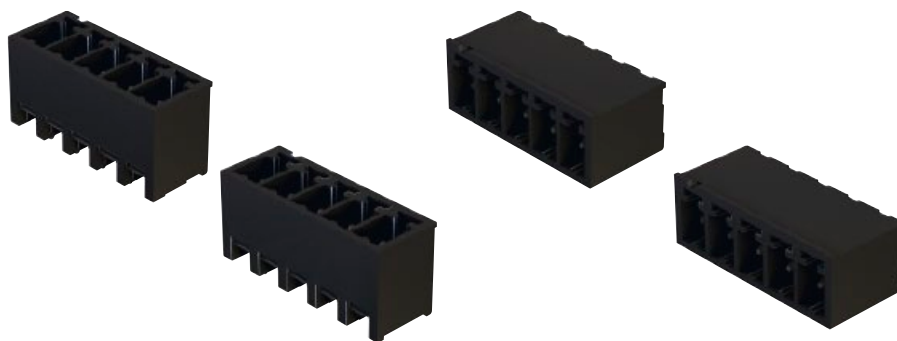
### Material data

Group of insulation material I  
Type of insulation material PA / PPA  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +110 °C  
Contact material copper alloy  
Contact plating tin plated

### Conductor data

Connection technology wire screw termination  
Conductor size solid / stranded 0.05 - 1.5 / 0.05 - 1.5 mm<sup>2</sup>  
Conductor size AWG 30 - 14  
Screw thread M2  
Tightening torque 0.2 - 0.25 Nm  
Stripping length 5.0 - 6.0 mm

PCB connectors male,  
vertical/horizontal  
for SMT reflow soldering  
pitch 3.50 / 3.81 mm



| Identification | No. of contacts | Part No. | Packaging unit |
|----------------|-----------------|----------|----------------|
|----------------|-----------------|----------|----------------|

Connectors,  
male, vertical/horizontal

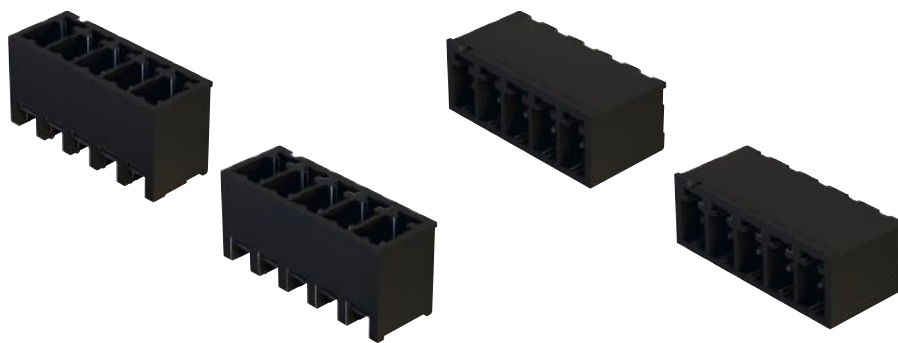
|    |                      |     |
|----|----------------------|-----|
| 2  | 14 12 021 . 00 . 000 | 300 |
| 3  | 14 12 031 . 00 . 000 | 200 |
| 4  | 14 12 041 . 00 . 000 | 150 |
| 5  | 14 12 051 . 00 . 000 | 150 |
| 6  | 14 12 061 . 00 . 000 | 100 |
| 7  | 14 12 071 . 00 . 000 | 100 |
| 8  | 14 12 081 . 00 . 000 | 100 |
| 9  | 14 12 091 . 00 . 000 | 100 |
| 10 | 14 12 101 . 00 . 000 | 100 |
| 11 | 14 12 111 . 00 . 000 | 100 |
| 12 | 14 12 121 . 00 . 000 | 100 |
| 13 | 14 12 131 . 00 . 000 | 50  |
| 14 | 14 12 141 . 00 . 000 | 50  |
| 15 | 14 12 151 . 00 . 000 | 50  |
| 16 | 14 12 161 . 00 . 000 | 50  |
| 17 | 14 12 171 . 00 . 000 | 50  |
| 18 | 14 12 181 . 00 . 000 | 50  |
| 19 | 14 12 191 . 00 . 000 | 50  |
| 20 | 14 12 201 . 00 . 000 | 50  |
| 21 | 14 12 211 . 00 . 000 | 25  |
| 22 | 14 12 221 . 00 . 000 | 25  |
| 23 | 14 12 231 . 00 . 000 | 25  |
| 24 | 14 12 241 . 00 . 000 | 25  |
| 25 | 14 12 251 . 00 . 000 | 25  |

Please insert digit for

pitch 3.50 mm ► 4  
pitch 3.81 mm ► 5

vertical ► 1  
horizontal ► 2

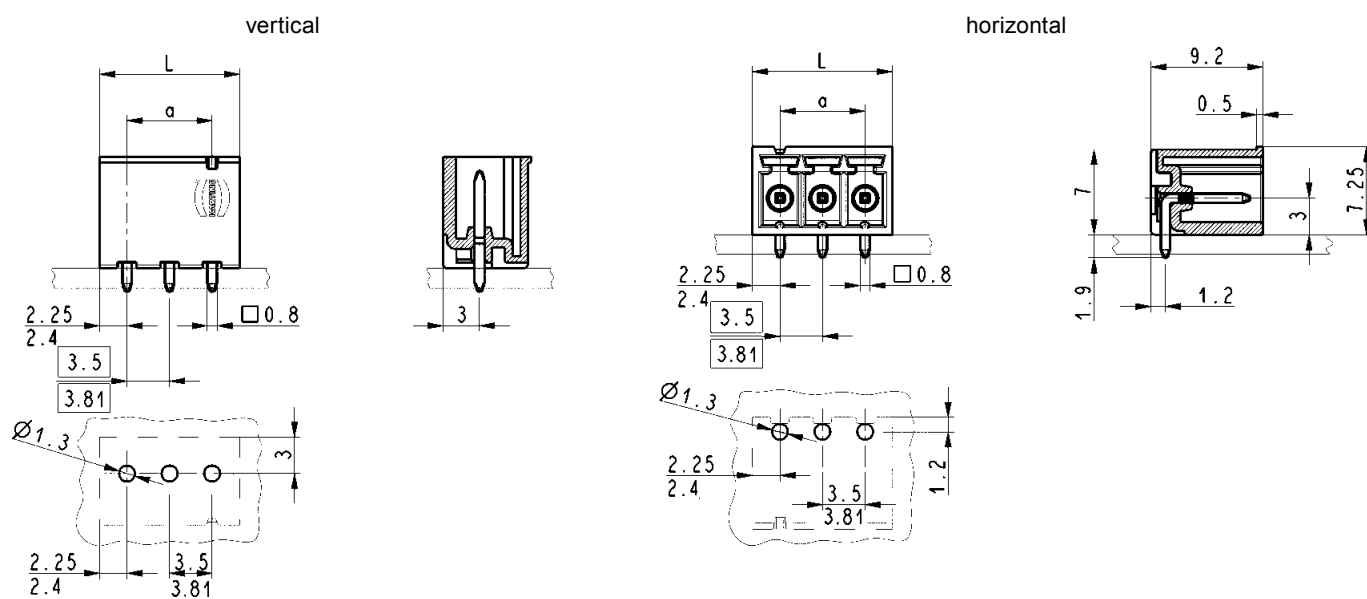
PCB connectors male,  
vertical/horizontal  
for SMT reflow soldering  
pitch 3.50 / 3.81 mm



Drawing

Dimensions in mm

## Dimensions



$L = (\text{pitch} \times \text{poles}) + 1$   
 $a = \text{pitch} \times (\text{poles} - 1)$

$L = (\text{pitch} \times \text{poles}) + 1$   
 $a = \text{pitch} \times (\text{poles} - 1)$

## Technical characteristics

### Technical data

Rated current 11 A  
Pitch 3.50 mm / 3.81 mm

Surge voltage category /  
pollution degree

Rated voltage  
Rated surge voltage

| III/3  | III/2  | II/2   |
|--------|--------|--------|
| 150 V  | 150 V  | 300 V  |
| 2.5 kV | 2.5 kV | 2.5 kV |

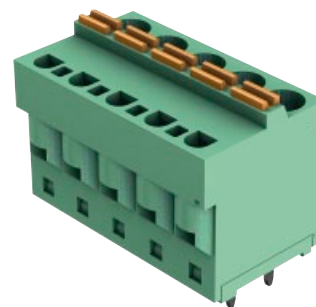
### Material data

Group of insulation material I  
Type of insulation material PA / PPA  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +110 °C  
Contact material copper alloy  
Contact plating tin plated

### Solder pin data

Solder pin: drilled hole diameter 1.2 mm

PCB terminal blocks,  
vertical with push-in-spring-cage  
termination  
pitch 5.00 mm



| Identification | No. of contacts | Part No. | Packaging unit |
|----------------|-----------------|----------|----------------|
|----------------|-----------------|----------|----------------|

PCB terminal blocks,  
vertical with push-in-spring-cage  
termination

2

14 03 021 6101 000

300

3

14 03 031 6101 000

200

4

14 03 041 6101 000

150

5

14 03 051 6101 000

150

6

14 03 061 6101 000

100

7

14 03 071 6101 000

100

8

14 03 081 6101 000

100

9

14 03 091 6101 000

100

10

14 03 101 6101 000

100

11

14 03 111 6101 000

100

12

14 03 121 6101 000

100

13

14 03 131 6101 000

50

14

14 03 141 6101 000

50

15

14 03 151 6101 000

50

16

14 03 161 6101 000

50

17

14 03 171 6101 000

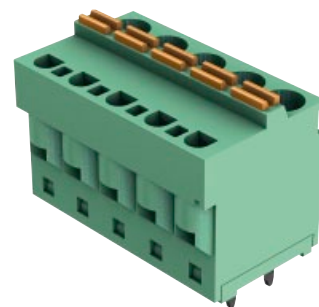
50

18

14 03 181 6101 000

50

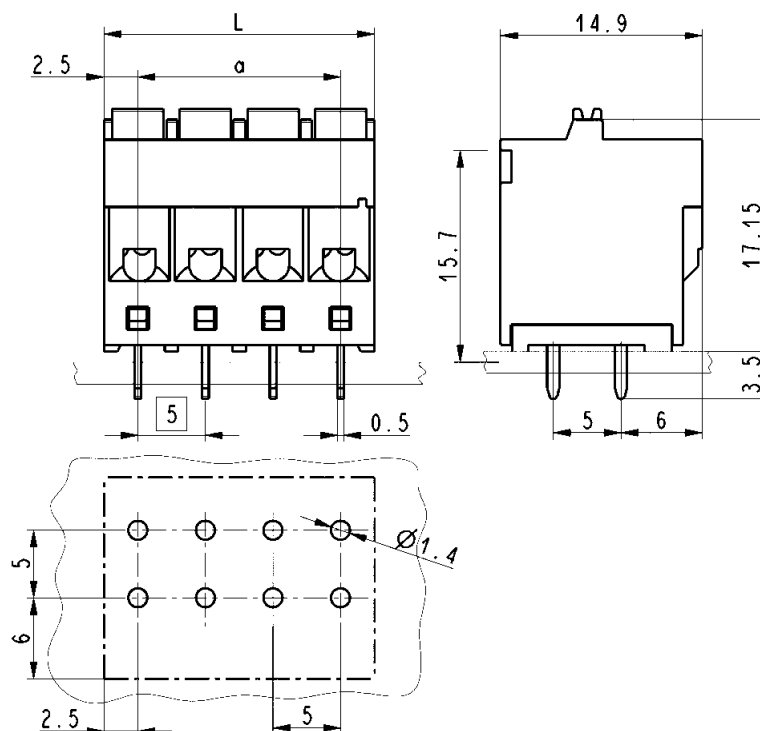
PCB terminal blocks,  
vertical with push-in-spring-cage termination  
for wave soldering  
pitch 5.00 mm



## Drawing

Dimensions in mm

## Dimensions


$$L = \text{pitch} \times \text{poles}$$
$$a = \text{pitch} \times (\text{poles} - 1)$$

## Technical characteristics

## Technical data

|               |         |
|---------------|---------|
| Rated current | 12 A    |
| Pitch         | 5.00 mm |

Surge voltage category /  
pollution degree

|                     |       |       |       |
|---------------------|-------|-------|-------|
| Rated voltage       | 300 V | 300 V | 600 V |
| Rated surge voltage | 4 kV  | 4 kV  | 4 kV  |

### Conductor and solder pin data

|                                   |                                 |
|-----------------------------------|---------------------------------|
| Connection technology wire        | push-in-spring-cage termination |
| Conductor size solid / stranded   | 0.2 - 2.5 / 0.2 - 2.5 mm²       |
| Conductor size AWG                | 30 - 12                         |
| Stripping length                  | 10 mm                           |
| Solder pin: drilled hole diameter | 1.4 mm                          |

## Material data

|                               |                    |
|-------------------------------|--------------------|
| Group of insulation material  | I                  |
| Type of insulation material   | PA                 |
| Flammability rating per UL 94 | V0                 |
| Operating temperature         | -40 °C ... +110 °C |
| Contact material              | copper alloy       |
| Contact plating               | tin plated         |

PCB terminal blocks,  
horizontal with screw termination  
for reflow soldering  
pitch 5.00 mm



| Identification | No. of contacts | Part No. | Packaging unit |
|----------------|-----------------|----------|----------------|
|----------------|-----------------|----------|----------------|

PCB terminal blocks,  
horizontal with screw termination

for wire gauge 2.5 mm<sup>2</sup>

2

14 02 021 6404 000

300

3

14 02 031 6404 000

200

4

14 02 041 6404 000

150

5

14 02 051 6404 000

150

6

14 02 061 6404 000

100

7

14 02 071 6404 000

100

8

14 02 081 6404 000

100

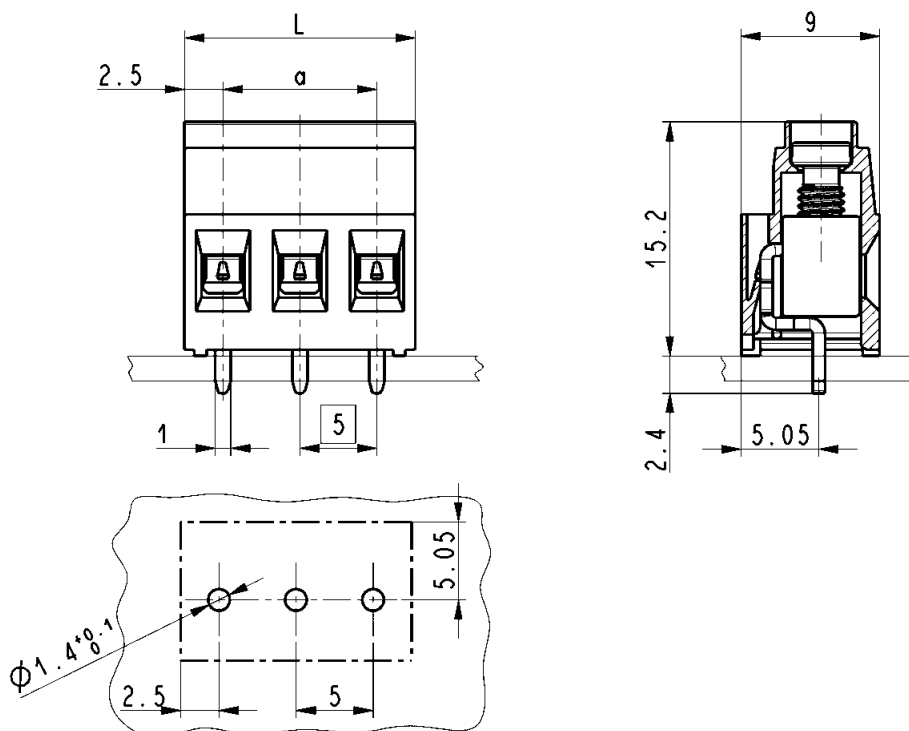
PCB terminal blocks,  
horizontal with screw termination  
for reflow soldering  
pitch 5.00 mm



Drawing

Dimensions in mm

Dimensions



L = pitch x poles  
a = pitch x (poles - 1)

## Technical characteristics

### Technical data

Rated current 17.5 A  
Pitch 5.00 mm

Surge voltage category /  
pollution degree

Rated voltage  
Rated surge voltage

| III/3 | III/2 | II/2  |
|-------|-------|-------|
| 300 V | 300 V | 600 V |
| 4 kV  | 4 kV  | 4 kV  |

### Material data

Group of insulation material I  
Type of insulation material PA / PPA  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +110 °C  
Contact material copper alloy  
Contact plating tin plated

### Conductor and solder pin data

Connection technology wire screw termination  
Conductor size solid / stranded 0.05 - 2.5 / 0.05 - 2.5 mm<sup>2</sup>  
Conductor size AWG 30 - 12  
Screw thread M3  
Tightening torque 0.5 - 0.6 Nm  
Stripping length 5.5 - 6.5 mm  
Solder pin: drilled hole diameter 1.4 mm

PCB terminal blocks,  
horizontal with screw termination  
for reflow soldering  
pitch 5.00 mm



| Identification                                            | No. of contacts | Part No.           | Packaging unit |
|-----------------------------------------------------------|-----------------|--------------------|----------------|
| PCB terminal blocks,<br>horizontal with screw termination |                 |                    |                |
| for wire gauge 1.5 mm <sup>2</sup>                        | 2               | 14 02 021 6402 000 | 300            |
|                                                           | 3               | 14 03 031 6402 000 | 200            |
|                                                           | 4               | 14 03 041 6402 000 | 150            |
|                                                           | 5               | 14 03 051 6402 000 | 150            |
|                                                           | 6               | 14 03 061 6402 000 | 100            |
|                                                           | 7               | 14 03 071 6402 000 | 100            |
|                                                           | 8               | 14 03 081 6402 000 | 100            |
|                                                           | 9               | 14 03 091 6402 000 | 100            |
|                                                           | 10              | 14 03 101 6402 000 | 100            |
|                                                           | 11              | 14 03 111 6402 000 | 100            |
|                                                           | 12              | 14 03 121 6402 000 | 100            |

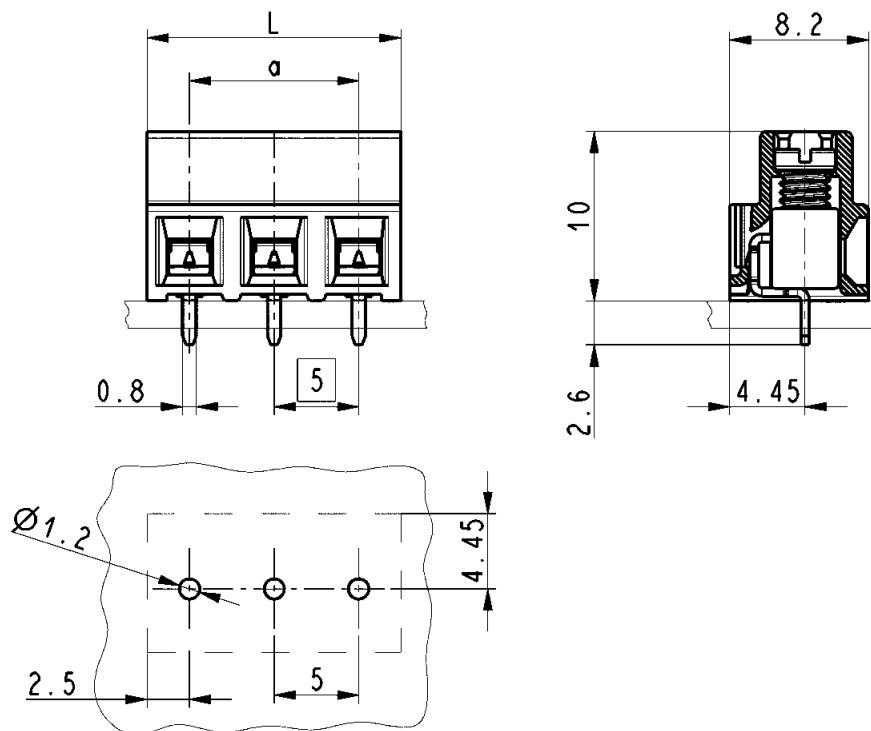
PCB terminal blocks,  
horizontal with screw termination  
for reflow soldering  
pitch 5.00 mm



Drawing

Dimensions in mm

Dimensions



L = pitch x poles  
a = pitch x (poles - 1)

## Technical characteristics

### Technical data

Rated current 13.5 A  
Pitch 5.00 mm

Surge voltage category /  
pollution degree

Rated voltage  
Rated surge voltage

| III/3 | III/2 | II/2  |
|-------|-------|-------|
| 220 V | 300 V | 600 V |
| 4 kV  | 4 kV  | 4 kV  |

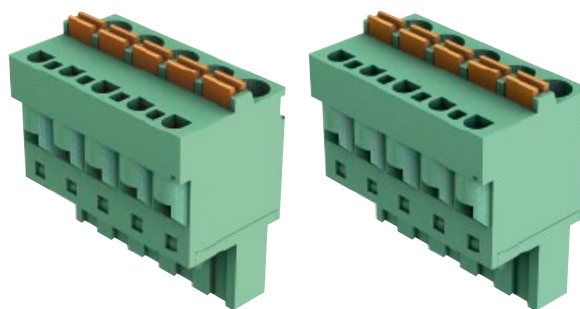
### Material data

Group of insulation material I  
Type of insulation material PA / PPA  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +110 °C  
Contact material copper alloy  
Contact plating tin plated

### Conductor and solder pin data

Connection technology wire screw termination  
Conductor size solid / stranded 0.05 - 1.5 / 0.05 - 1.5 mm<sup>2</sup>  
Conductor size AWG 30 - 16  
Screw thread M3  
Tightening torque 0.5 - 0.6 Nm  
Stripping length 5.0 - 6.0 mm  
Solder pin: drilled hole diameter 1.1 mm

PCB connectors female,  
horizontal  
with push-in-spring-cage termination  
pitch 5.00 / 5.08 mm



| Identification | No. of contacts | Part No. | Packaging unit |
|----------------|-----------------|----------|----------------|
|----------------|-----------------|----------|----------------|

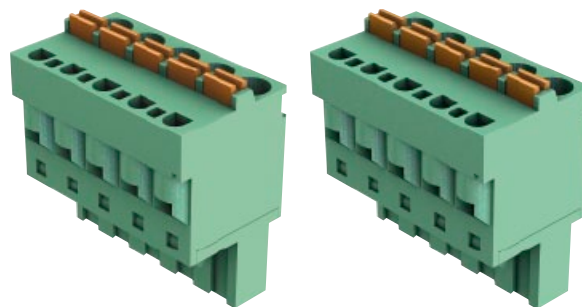
PCB connectors female,  
horizontal  
with push-in-spring-cage  
termination

|    |                     |     |
|----|---------------------|-----|
| 2  | 14 31 021 . 102 000 | 300 |
| 3  | 14 31 031 . 102 000 | 200 |
| 4  | 14 31 041 . 102 000 | 150 |
| 5  | 14 31 051 . 102 000 | 150 |
| 6  | 14 31 061 . 102 000 | 100 |
| 7  | 14 31 071 . 102 000 | 100 |
| 8  | 14 31 081 . 102 000 | 100 |
| 9  | 14 31 091 . 102 000 | 100 |
| 10 | 14 31 101 . 102 000 | 100 |
| 11 | 14 31 111 . 102 000 | 100 |
| 12 | 14 31 121 . 102 000 | 100 |
| 13 | 14 31 131 . 102 000 | 50  |
| 14 | 14 31 141 . 102 000 | 50  |
| 15 | 14 31 151 . 102 000 | 50  |
| 16 | 14 31 161 . 102 000 | 50  |
| 17 | 14 31 171 . 102 000 | 50  |
| 18 | 14 31 181 . 102 000 | 50  |

Please insert digit for

pitch 5.00 mm ► 6  
pitch 5.08 mm ► 7

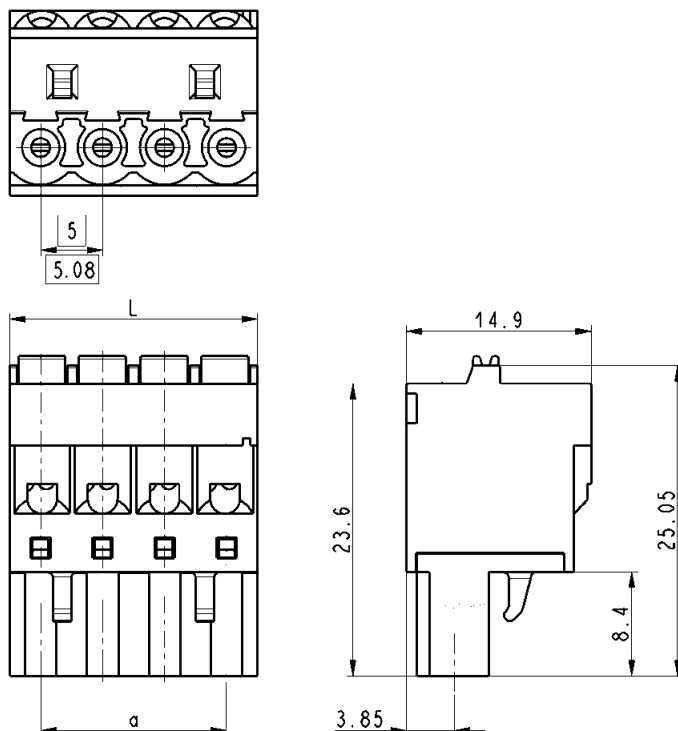
PCB connectors female,  
horizontal  
with push-in-spring-cage termination  
pitch 5.00 / 5.08 mm



Drawing

Dimensions in mm

Dimensions



L = pitch x poles  
a = pitch x (poles - 1)

## Technical characteristics

### Technical data

Rated current 12 A  
Pitch 5.00 mm / 5.08 mm

Surge voltage category /  
pollution degree

Rated voltage  
Rated surge voltage

| III/3 | III/2 | II/2  |
|-------|-------|-------|
| 250 V | 300 V | 600 V |
| 4 kV  | 4 kV  | 4 kV  |

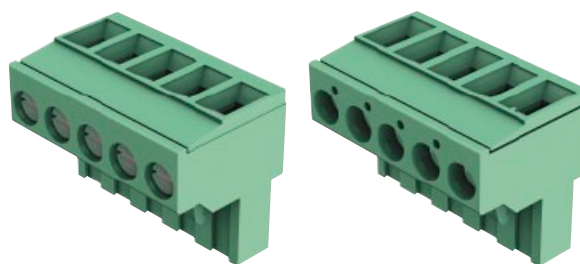
### Material data

Group of insulation material I  
Type of insulation material PA / PPA  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +110 °C  
Contact material copper alloy  
Contact plating tin plated

### Conductor data

Connection technology wire push-in-spring-cage  
termination  
Conductor size solid / stranded 0.2 - 2.5 / 0.2 - 2.5 mm<sup>2</sup>  
Conductor size AWG 30 - 12  
Stripping length 10 mm

PCB connectors female,  
horizontal  
with screw termination  
pitch 5.00 / 5.08 mm



| Identification | No. of contacts | Part No. | Packaging unit |
|----------------|-----------------|----------|----------------|
|----------------|-----------------|----------|----------------|

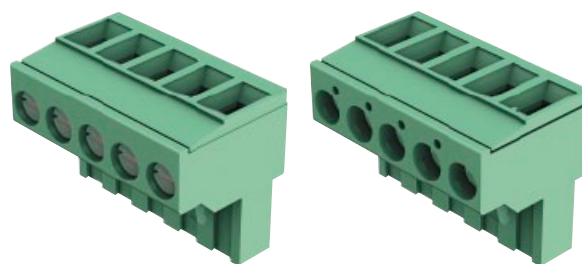
PCB connectors female,  
horizontal  
with screw termination

|    |                     |     |
|----|---------------------|-----|
| 2  | 14 31 021 . 402 000 | 300 |
| 3  | 14 31 031 . 402 000 | 200 |
| 4  | 14 31 041 . 402 000 | 150 |
| 5  | 14 31 051 . 402 000 | 150 |
| 6  | 14 31 061 . 402 000 | 100 |
| 7  | 14 31 071 . 402 000 | 100 |
| 8  | 14 31 081 . 402 000 | 100 |
| 9  | 14 31 091 . 402 000 | 100 |
| 10 | 14 31 101 . 402 000 | 100 |
| 11 | 14 31 111 . 402 000 | 100 |
| 12 | 14 31 121 . 402 000 | 100 |
| 13 | 14 31 131 . 402 000 | 50  |
| 14 | 14 31 141 . 402 000 | 50  |
| 15 | 14 31 151 . 402 000 | 50  |
| 16 | 14 31 161 . 402 000 | 50  |
| 17 | 14 31 171 . 402 000 | 50  |
| 18 | 14 31 181 . 402 000 | 50  |
| 19 | 14 31 191 . 402 000 | 50  |
| 20 | 14 31 201 . 402 000 | 50  |
| 21 | 14 31 211 . 402 000 | 25  |
| 22 | 14 31 221 . 402 000 | 25  |
| 23 | 14 31 231 . 402 000 | 25  |
| 24 | 14 31 241 . 402 000 | 25  |
| 25 | 14 31 251 . 402 000 | 25  |

Please insert digit for

pitch 5.00 mm ► 6  
pitch 5.08 mm ► 7

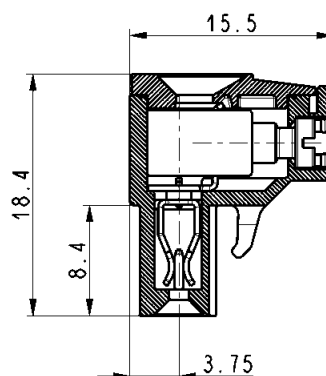
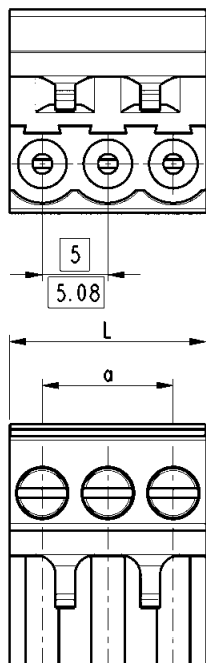
PCB connectors female,  
horizontal  
with screw termination  
pitch 5.00 / 5.08 mm



Drawing

Dimensions in mm

Dimensions



$L = \text{pitch} \times \text{poles}$   
 $a = \text{pitch} \times (\text{poles} - 1)$

## Technical characteristics

### Technical data

Rated current 15 A  
Pitch 5.00 mm / 5.08 mm

Surge voltage category /  
pollution degree

Rated voltage  
Rated surge voltage

| III/3 | III/2 | II/2  |
|-------|-------|-------|
| 250 V | 300 V | 600 V |
| 4 kV  | 4 kV  | 4 kV  |

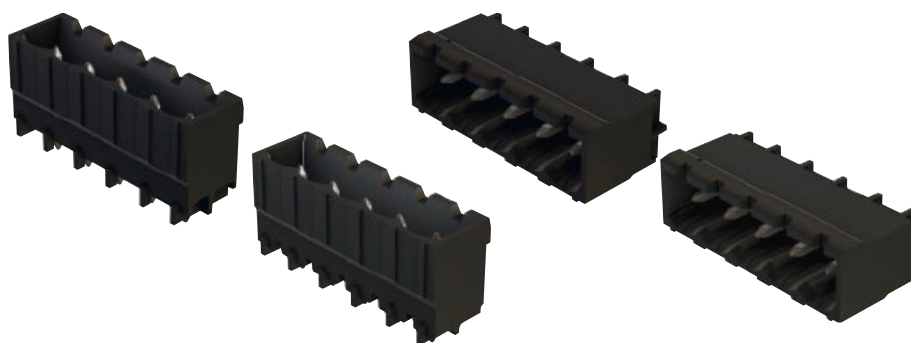
### Conductor data

Connection technology wire screw termination  
Conductor size solid / stranded 0.05 - 2.5 / 0.05 - 2.5 mm<sup>2</sup>  
Conductor size AWG 30 - 12  
Screw thread M3  
Tightening torque 0.5 - 0.6 Nm  
Stripping length 6.0 - 7.5 mm

### Material data

Group of insulation material I  
Type of insulation material PA / PPA  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +110 °C  
Contact material copper alloy  
Contact plating tin plated

PCB connectors male,  
vertical/horizontal  
for reflow soldering  
pitch 5.00 / 5.08 mm



| Identification | No. of contacts | Part No. | Packaging unit |
|----------------|-----------------|----------|----------------|
|----------------|-----------------|----------|----------------|

PCB connectors male,  
vertical/horizontal

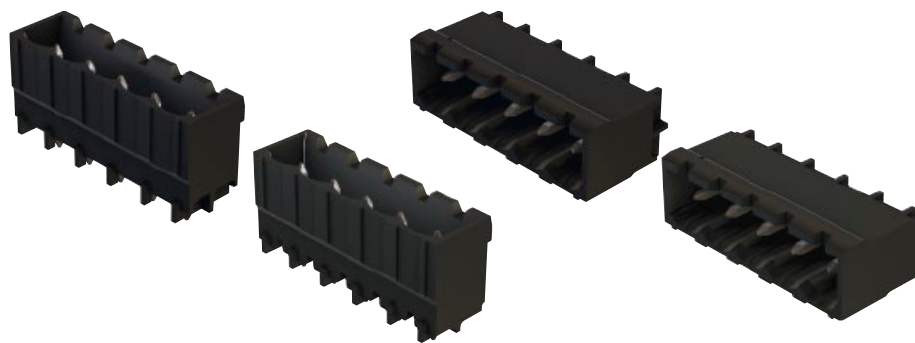
|     |                      |     |
|-----|----------------------|-----|
| 2   | 14 12 021 . 00 . 000 | 300 |
| 3   | 14 12 031 . 00 . 000 | 200 |
| 4   | 14 12 041 . 00 . 000 | 150 |
| 5   | 14 12 051 . 00 . 000 | 150 |
| 6   | 14 12 061 . 00 . 000 | 100 |
| 7   | 14 12 071 . 00 . 000 | 100 |
| 8   | 14 12 081 . 00 . 000 | 100 |
| 9   | 14 12 091 . 00 . 000 | 100 |
| 10  | 14 12 101 . 00 . 000 | 100 |
| 11  | 14 12 111 . 00 . 000 | 100 |
| 12  | 14 12 121 . 00 . 000 | 100 |
| 13* | 14 12 131 . 00 . 000 | 50  |
| 14* | 14 12 141 . 00 . 000 | 50  |
| 15* | 14 12 151 . 00 . 000 | 50  |
| 16* | 14 12 161 . 00 . 000 | 50  |
| 17* | 14 12 171 . 00 . 000 | 50  |
| 18* | 14 12 181 . 00 . 000 | 50  |
| 19* | 14 12 191 . 00 . 000 | 50  |

Please insert digit for

pitch 5.00 mm ► 6  
pitch 5.08 mm ► 7

vertical ► 1  
horizontal ► 2

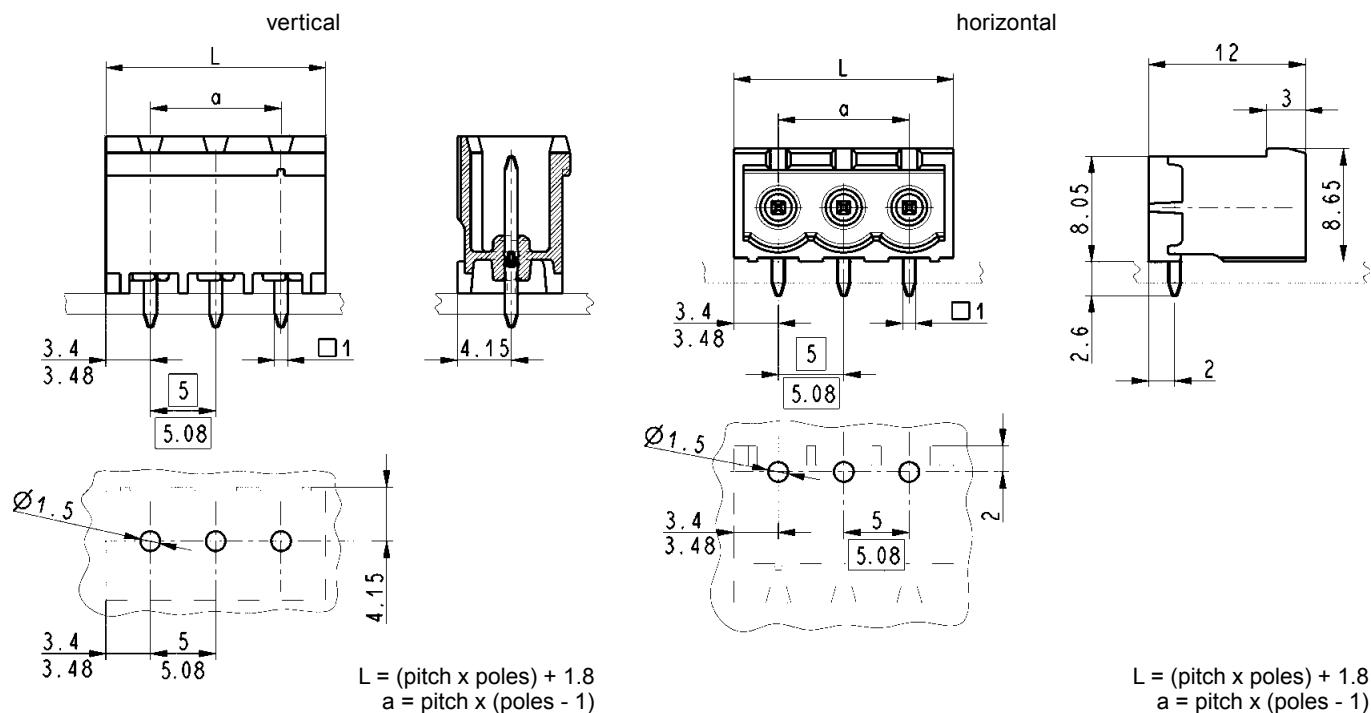
PCB connectors male,  
vertical/horizontal  
for reflow soldering  
pitch 5.00 / 5.08 mm



Drawing

Dimensions in mm

### Dimensions



### Technical characteristics

#### Technical data

Rated current 15 A  
Pitch 5.00 mm / 5.08 mm

Surge voltage category /  
pollution degree  
Rated voltage  
Rated surge voltage

| III/3 | III/2 | II/2  |
|-------|-------|-------|
| 250 V | 300 V | 600 V |
| 4 kV  | 4 kV  | 4 kV  |

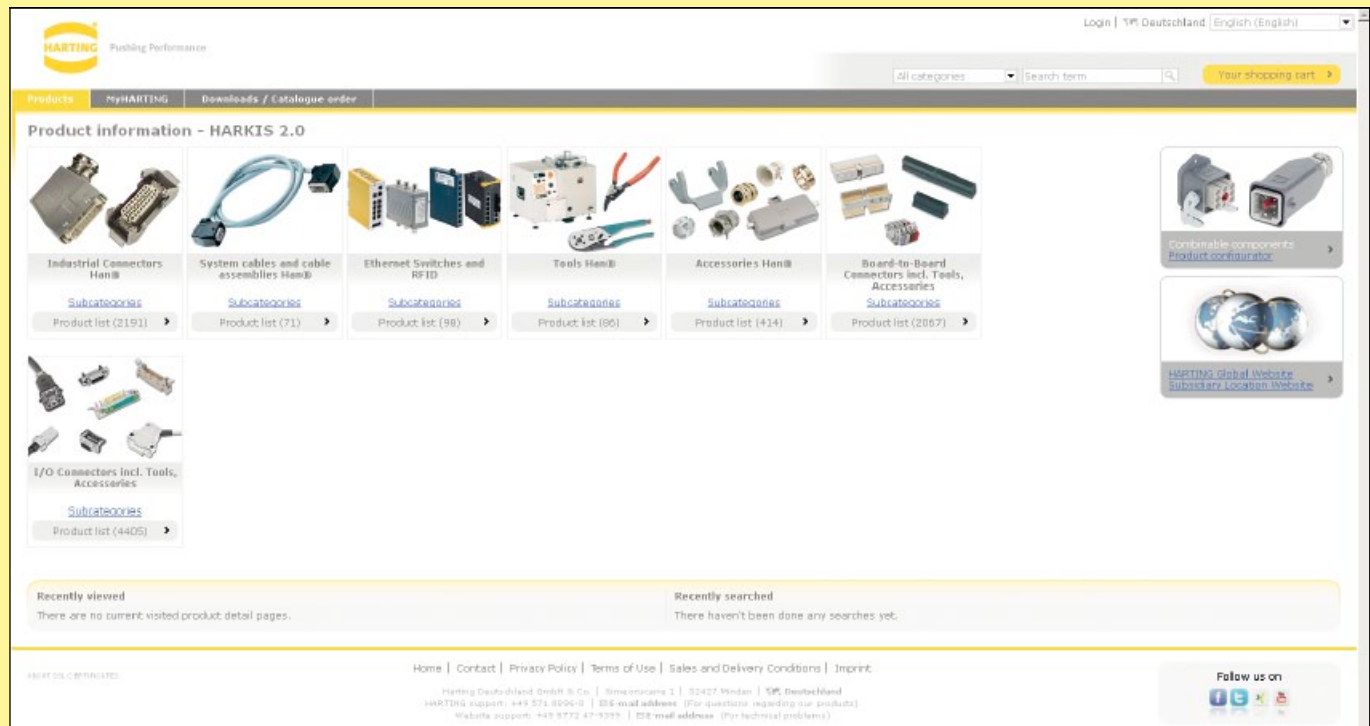
#### Material data

Group of insulation material I  
Type of insulation material PA / PPA  
Flammability rating per UL 94 V0  
Operating temperature -40 °C ... +110 °C  
Contact material copper alloy  
Contact plating tin plated

#### Solder pin data

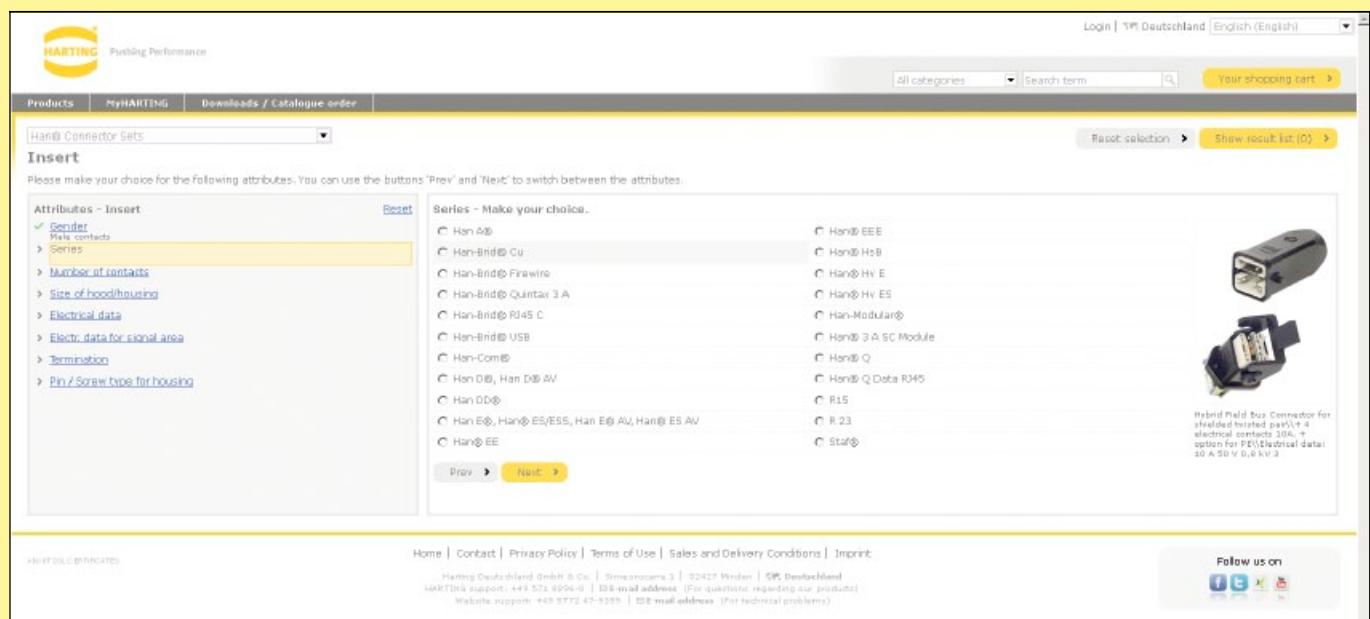
Solder pin: drilled hole diameter 1.4 mm

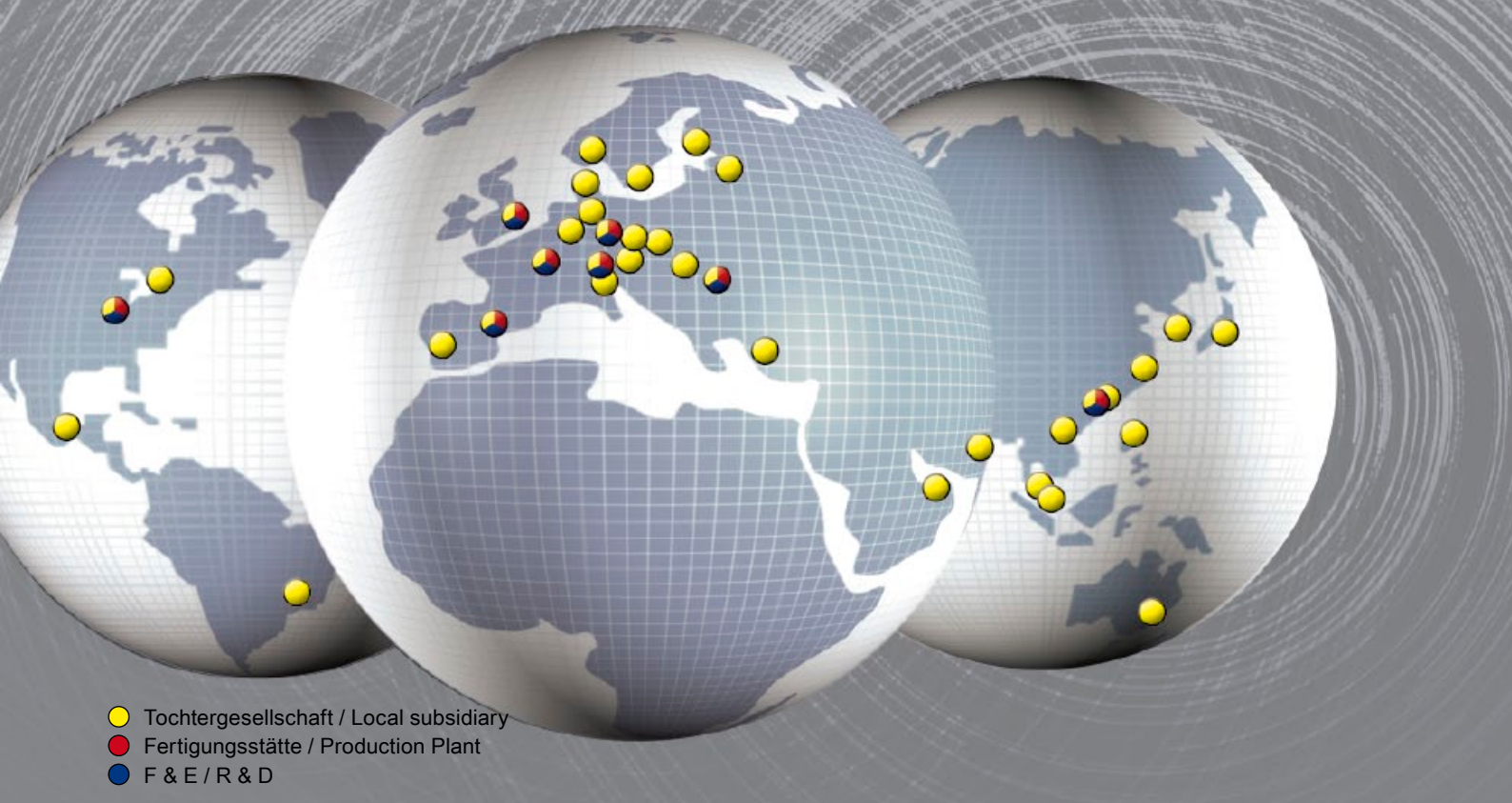
You can find the **HARTING eCatalogue** at [www.HARTING.com](http://www.HARTING.com).



The **HARTING eCatalogue** is an electronic catalogue with a product configurator. Here you can choose a connector according to your requirements. Afterwards you are able to send your inquiry directly to a HARTING sales partner. 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.

## Product configurator





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www.farnell.com

RS Components:  
www.rs-components.com

Mouser Electronics:  
www.mouser.com

Digi-Key Corporation:  
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