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Data interfaces

Han-Brid

Han-Brid® F.O.

- Is suitable for all HP Versatile Link (Horizontal Package) transmitters and receivers
- Data rates: Standard 12 Mbit/s, suitable for all common fieldbus systems
- Insert allows integration of HP standard contacts for POF and HCS®\* fibres
- Temperature range -40 °C ... +70 °C

Han-Brid® Cu

- For termination of a shielded twisted pair
- Insert for 2x Han D® male or female contacts
- Connection of the shield by means of shielding plate and fixing clamps
- Connection of the device side can be realized either by a printed circuit board as a modular version or as part of the appliance PCB
- Insert for bulkhead mounted housing or the coupling housing are always equipped with a screening spring

Bus Terminator

- Active bus terminator in male and female version
- Standard Han® 3 A hoods and housings
- Power supply to the termination network via electrical contacts of Han-Brid®
- Integrated, galvanically separated DC/DC converter 24 V / 5 V

Han-Brid® Quintax 3 A

- Possibility to terminate shielded four/eight wires conductors
- Possibility to terminate Coax cable with large diameter
- Suitable for all 4-wire bus systems
- Suitable for shielded cable conductor diameter 3 – 9.5 mm
- Transmission of shielding separately from the hood's ground
- Connections are carried out acc. to DIN EN 50 173, Cat. 5
- Temperature range -40 °C ... +70 °C

Han-Brid® RJ45 C

- Suitable for standard RJ 45 Plug and Jack, shielded version
- Connections provided for conductors acc. to DIN EN 50 173, Cat. 5
- Termination from the device side is carried out via a PCB, two versions are possible: modular version or as part of the appliance PCB
- Assembly with standard tools
- Insert for 2 Han-D® male or female contacts offers the combination with electrical bus connector
- Rated current 10 A
- Rated voltage 24 V
- termination side 0.14 - 2.5 mm²

Han-Brid® USB

- Insert for all Han® 3 A hoods and housings
- Hood with glued sealing
- Simple and low-cost termination via insert of a patch cable
- Strain-relief via cable tie

Han-Brid® FireWire

- Insert for all Han® 3 A hoods and housings
- Hood with glued sealing
- Simple and low-cost termination via insert of a patch cable
- Strain-relief via cable tie
- Compatible to IEEE 1394

Han® 4 A SC

- Suitable with housings, size Han® 3 A including versions Han® M, Han® EMV and Han® HPR
- Degree of protection up to IP 68
- For fibre optic SC contacts; up to 4 SC contacts per connector
- For 1 mm POF
- For Multimode fibre 50 - 62.5 / 125 µm and Single-mode fibre 9 / 125 µm
- Full ceramic sleeves for a minimal insertion loss

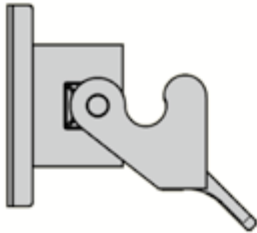
\* HCS® = Hard Clad Silica (registered trade mark of the SpecTran Corporation)

Overview (Sample: Han-Brid® Cu)

Thermoplastic  
 09 20 003 0320 (light grey)  
 09 20 003 0327 (black)

Metal  
 09 20 003 0301

EMC  
 09 62 003 0301

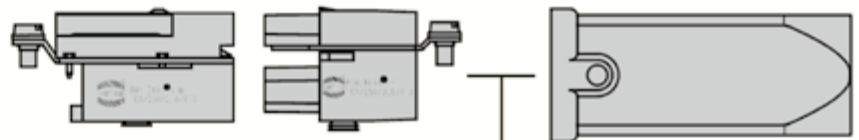


Device side	Cable side
09 12 006 2611	09 12 006 3111
09 12 006 2695	
09 12 006 2694	

Thermoplastic  
 19 20 003 0423 (light grey)  
 19 20 003 0426 (black)

Metal  
 19 20 003 1443

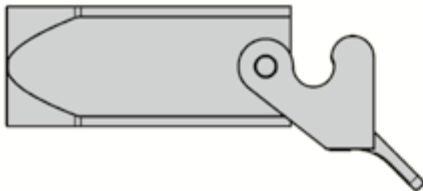
EMC  
 19 62 003 1443



Thermoplastic  
 19 20 003 0720 (light grey)  
 19 20 003 0727 (black)

Metal  
 19 20 003 1750

EMC  
 19 62 003 1750

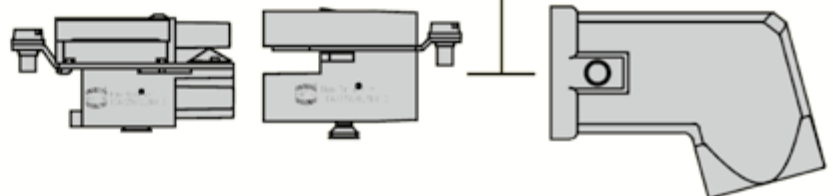


Device side	Cable side
09 12 006 2701	09 12 006 3001
09 12 006 2795	
09 12 006 2794	

Thermoplastic  
 19 20 003 0623 (light grey)  
 19 20 003 0627 (black)

Metal  
 19 20 003 1643

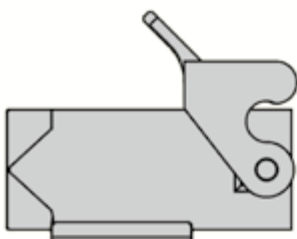
EMC  
 19 62 003 1643



Thermoplastic  
 19 20 003 0220 (light grey)  
 19 20 003 0227 (black)

Metal  
 19 20 003 1250

EMC  
 19 62 003 1250



Overview (Sample: Han-Brid® RJ45 C)

Han-Brid

Thermoplastic  
09 20 003 0320 (light grey)  
09 20 003 0327 (black)

Metal  
09 20 003 0301

EMC  
09 62 003 0301

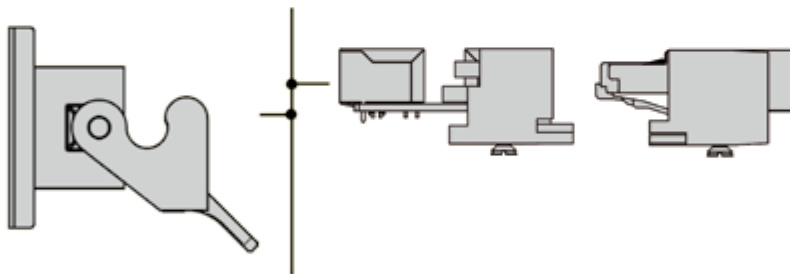
Device side  
09 12 003 2770  
09 12 003 2774  
09 12 003 2776

Cable side  
09 12 003 3011  
09 12 003 3021  
09 12 003 3031

Thermoplastic  
19 20 003 0423 (light grey)  
19 20 003 0427 (black)

Metal  
09 20 003 1443

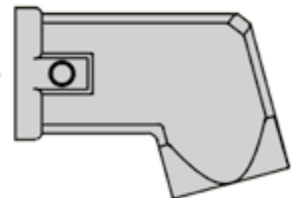
EMC  
19 62 003 1443



Thermoplastic  
19 20 003 0623 (light grey)  
19 20 003 0627 (black)

Metal  
19 20 003 1643

EMC  
19 62 003 1643



Features


Power supply

General Description

The Han-Brid® series allows the connection of a data interface and a power supply in a single space saving connector. This means that it is now possible to provide data transmission and power to devices in a single bus structure. This hybrid connector family includes provision for connection of a max. 50 V, 10 A power supply together with a range of inserts for connection of a variety of data protocols and transmission medias:

- Han-Brid® F.O. for plastic (POF) or for HCS®\* optical fibre
- Han-Brid® Cu for shielded twisted pair
- Han-Brid® Quintax 3 A for Coax cable with large diameter
- Han-Brid® Quintax 3 A for shielded 4 or 8 wire bus systems
- Han-Brid® RJ45 C for Ethernet application
- Han-Brid® USB / Firewire for fast data transmission

Han-Brid® inserts fit into the standard plastic as well as metal hoods and housings with seal of the Han® 3 A series offering a degree of protection IP 65 according to DIN EN 60 529. For harsher environments Han® 3 HPR hoods and housings with a degree of protection of IP 68 can be used.

- Han D® male and female with standard crimp contacts (Order crimp contacts separately)
- Rated current 10 A
- Rated voltage 50 V
- termination side 0.14 - 2.5 mm<sup>2</sup>
- Approval 

## Features

- for termination of a shielded twisted pair
- Insert for Han D® male or female contacts
- Connection of the shield by means of shielding plate and contact springs
- Connection of the device side can be realised either by a printed circuit board as a modular version or as part of the appliance PCB
- Insert for bulkhead mounted or cable to cable housings are always equipped with a contact spring
- Active bus terminator in standard Han® 3 A hoods and housings
- Power supply to the termination network via electrical contacts of Han-Brid®
- Integrated, galvanically separated DC/DC converter 24 V / 5 V

## Technical characteristics

Number of contacts	2
Additional contacts	+ 4 electrical contacts 10 A + option for PE
Rated current	10 A
Rated voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Insulation resistance	>10 <sup>10</sup> Ω
Limiting temperature	-40 ... +125 °C
Mating cycles	≥500
Material (insert)	Polycarbonate (PC)
Colour (insert)	RAL 7032 (pebble grey)
Material (hood/housing)	Polycarbonate (PC), Zinc die-cast
Colour (hood/housing)	RAL 9005 (jet black), RAL 7037 (dust grey)
Material flammability class acc. to UL 94	V-0
RoHS	compliant with exemption, compliant

## Specifications and approvals

IEC 61984  
 UL 1977 ECBT2.E235076  
 CSA-C22.2 No. 182.3 ECBT8.E235076


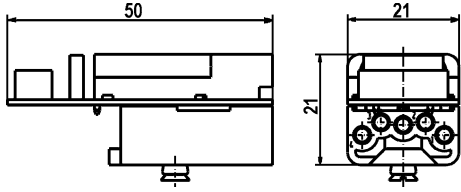
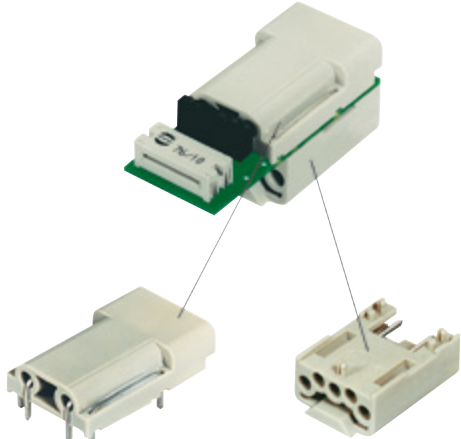

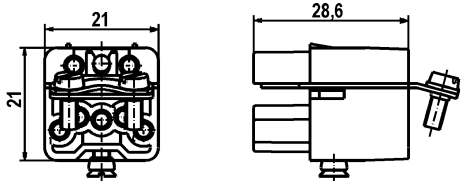
Number of contacts

# 2

10 A 50 V 0.8 kV 3  
+ 4 electrical contacts 10 A + option for PE



Han-Brid

Identification	Part number		Drawing (dimensions in mm)
	Male	Female	
Han-Brid®, Han-Brid® Cu, Hybrid field bus connector  Device side  	09 12 006 2611		  Also available as single parts: 09 12 002 2611 Upper part, loaded 09 12 002 3011 Upper part, unloaded 09 12 004 3011 Lower part, unloaded
Han-Brid®, Han-Brid® Cu, Hybrid field bus connector  Cable side  		09 12 006 3111	 Contact arrangement (view from termination side)

Number of contacts

# 2

10 A 50 V 0.8 kV 3  
+ 4 electrical contacts 10 A + option for PE



Identification	Part number		Drawing (dimensions in mm)
	Male	Female	
Han-Brid®, Han-Brid® Cu, Hybrid field bus connector  Device side		09 12 006 2701	  Also available as single parts: 09 12 002 2701 Upper part, loaded 09 12 002 3101 Upper part, unloaded 09 12 004 3101 Lower part, unloaded
Han-Brid®, Han-Brid® Cu, Hybrid field bus connector  Cable side	09 12 006 3001		



Number of contacts

# 2

10 A 50 V 0.8 kV 3  
+ 4 electrical contacts 10 A + option for PE



Han-Brid

Identification	Part number		Drawing (dimensions in mm)
	Male	Female	
Han-Brid®, Han-Brid® Cu, Bus terminator, Plastic hoods/housings	09 12 006 2691	09 12 006 2791	
Han-Brid®, Han-Brid® Cu, Bus terminator, Metal hoods / housings	09 12 006 2692	09 12 006 2792	
Han-Brid®, Han-Brid® Cu, Panel feed through	09 12 006 2694	09 12 006 2794	<p>X</p>
Han-Brid®, Han-Brid® Cu, Panel feed through	09 12 006 2695	09 12 006 2795	<p>X</p> <p>X= Cutting off the fin allows the use in cable to cable housings.</p>
Han-Brid®, Han-Brid® Cu, Panel feed through  With cage clamp	09 12 006 2695	09 12 006 2795	 

## Features

- Is suitable for all HP Versatile Link (Horizontal Package) transmitters and receivers
- Data rates: Standard 12 Mbit/s, suitable for all common field-bus systems
- Insert allows integration of HP standard contacts for POF and HCS® fibres

## Technical characteristics

Number of contacts	2
Additional contacts	+ 4 electrical contacts 10 A + option for PE
Rated current	10 A
Rated voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Insulation resistance	>10 <sup>10</sup> Ω
Limiting temperature	-40 ... +70 °C
Mating cycles	≥500
Material (insert)	Polycarbonate (PC)
Colour (insert)	RAL 7032 (pebble grey)
Material flammability class acc. to UL 94	V-0
RoHS	compliant

## Specifications and approvals

IEC 61984  
 UL 1977 ECBT2.E235076  
 CSA-C22.2 No. 182.3 ECBT8.E235076

Number of contacts

# 2

10 A 50 V 0.8 kV 3  
+ 4 electrical contacts 10 A + option for PE



Han-Brid

Identification	Part number		Drawing (dimensions in mm)
	Male	Female	
Han-Brid®, Han-Brid® FO, Hybrid field bus connector  Device side FO (f) + Han D® (m) With PCB	09 12 004 2611		<p>Contact arrangement (view from termination side) Also available as single parts: 09 12 004 3011 Lower part, unloaded</p>
Han-Brid®, Han-Brid® FO, Hybrid field bus connector  Cable side FO (m) + Han D® (f) for POF		09 12 004 2711	<p>09 12 004 3111 Unloaded</p>
Han-Brid®, Han-Brid® FO, Hybrid field bus connector  Cable side FO (m) + Han D® (f) for POF crimpless		09 12 004 2713	<p>09 12 004 3113 Unloaded</p>
Han-Brid®, Han-Brid® FO, Hybrid field bus connector  Cable side FO (m) + Han D® (f) for HCS® fibre		09 12 004 2716	<p>09 12 004 3116 Unloaded</p>

Number of contacts

2

10 A 50 V 0.8 kV 3  
+ 4 electrical contacts 10 A + option for PE



Han-Brid

Identification	Part number		Drawing (dimensions in mm)
	Male	Female	
Han-Brid®, Han-Brid® FO, Hybrid field bus connector  Device side FO (f) + Han D® (f) With PCB		09 12 004 2701	<p>Also available as single parts: 09 12 004 3101 Lower part, unloaded</p>
Han-Brid®, Han-Brid® FO, Hybrid field bus connector  Cable side FO (m) + Han D® (m) for POF	09 12 004 2601		<p>09 12 004 3001 Unloaded</p>
Han-Brid®, Han-Brid® FO, Hybrid field bus connector  Cable side With FO contacts FO (m) + Han D® (m) for POF crimpless	09 12 004 2603		<p>09 12 004 3003 Unloaded</p>
Han-Brid®, Han-Brid® FO, Hybrid field bus connector  Cable side FO (m) + Han D® (m) for HCS® fibre	09 12 004 2606		<p>09 12 004 3006 Unloaded</p>

## Features

- Possibility to terminate shielded four/eight wires conductors (2 pair STP)
- Possibility to terminate Coax cable with large diameter
- Suitable for all 4-wire bus systems
- Suitable for shielded cable conductor diameter 3 ... 9.5 mm
- Transmission of shielding separately from the hood's ground
- Connections are carried out acc. to EN 50173, Cat. 5

## Technical characteristics

Number of contacts	1, 4, 8
Additional contacts	+ shielding + 2 power contacts
Insulation resistance	$>10^{10} \Omega$
Contact resistance	$\leq 3 \text{ m}\Omega$
Limiting temperature	-40 ... +70 °C
Mating cycles	$\geq 500$
Material (insert)	Polycarbonate (PC)
Colour (insert)	RAL 7032 (pebble grey)
Material (contacts)	Copper alloy
Material flammability class acc. to UL 94	V-0
RoHS	compliant, compliant with exemption

## Specifications and approvals

EN 60664-1  
IEC 61984  
UL 1977 ECBT2.E235076  
CSA-C22.2 No. 182.3 ECBT8.E235076

## Details

ATTENTION! Han-Brid® Quintax in Han® HPR housings only to be used with the long version!

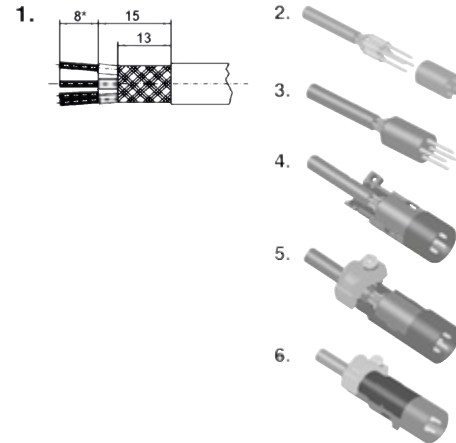
## Details

**Crimping tools** see chapter Han 90

### Remarks on the crimp technique

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

### Assembly instructions



1. Strip cable acc. to drawing 1 and fold the shielding over the cable.
2. Crimp Han D® contacts onto the wires.
3. Insert Han D® contacts into corresponding cavities of insulator until they are snapped in.
4. Fit the insert including the cable into the opened shielded bushing. The coding pin of the shielded bushing has to meet the groove of the insulator.
5. Clamp the tilt over the shielding onto the cable by means of the special clamp (small opening for cable diameter of 3 ... 6 mm, large opening for cable diameter of 6 ... 9.5 mm).
6. Check the wiring. Close the shielded bushing with the cover and insert it into the corresponding cavity of the Quintax Module as usual.


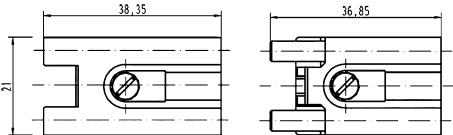

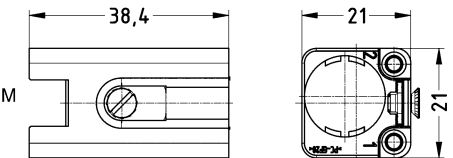

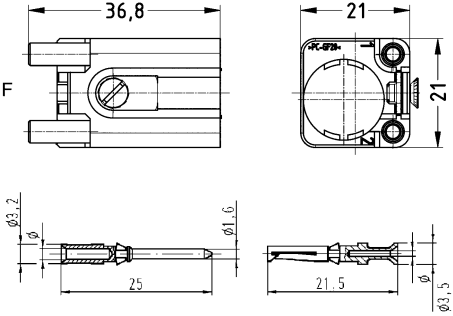
Number of contacts

# 1,4,8

+ shielding + 2 power contacts



Han-Brid

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)																					
		Male	Female																						
Han-Brid®, Han-Brid® Quintax 3 A, Crimp termination  <p>Please order crimp contacts separately.</p>	0.14 ... 2.5	09 15 003 3001	09 15 003 3101																						
Han-Brid®, Han-Brid® Quintax 3 A, Snap-in latches, snap-fit, Crimp termination  <p>Please order crimp contacts separately.</p>	0.14 ... 2.5	09 15 003 3002	09 15 003 3102																						
Han D®, Crimp contact, Contact surface: Gold plated 	0.14 ... 0.37 0.5 0.75 1 1.5 2.5	09 15 000 6124 09 15 000 6123 09 15 000 6125 09 15 000 6122 09 15 000 6121 09 15 000 6126	09 15 000 6224 09 15 000 6223 09 15 000 6225 09 15 000 6222 09 15 000 6221 09 15 000 6226																						
				<table border="1"> <thead> <tr> <th>Conductor cross-section</th> <th>∅</th> <th>Stripping length</th> </tr> </thead> <tbody> <tr> <td>0.14-0.37 mm<sup>2</sup> AWG 26-22</td> <td>0.9 mm</td> <td>8 mm</td> </tr> <tr> <td>0.5 mm<sup>2</sup> AWG 20</td> <td>1.1 mm</td> <td>8 mm</td> </tr> <tr> <td>0.75 mm<sup>2</sup> AWG 18</td> <td>1.3 mm</td> <td>8 mm</td> </tr> <tr> <td>1 mm<sup>2</sup> AWG 18</td> <td>1.45 mm</td> <td>8 mm</td> </tr> <tr> <td>1.5 mm<sup>2</sup> AWG 16</td> <td>1.75 mm</td> <td>8 mm</td> </tr> <tr> <td>2.5 mm<sup>2</sup> AWG 14</td> <td>2.25 mm</td> <td>6 mm</td> </tr> </tbody> </table>	Conductor cross-section	∅	Stripping length	0.14-0.37 mm <sup>2</sup> AWG 26-22	0.9 mm	8 mm	0.5 mm <sup>2</sup> AWG 20	1.1 mm	8 mm	0.75 mm <sup>2</sup> AWG 18	1.3 mm	8 mm	1 mm <sup>2</sup> AWG 18	1.45 mm	8 mm	1.5 mm <sup>2</sup> AWG 16	1.75 mm	8 mm	2.5 mm <sup>2</sup> AWG 14	2.25 mm	6 mm
Conductor cross-section	∅	Stripping length																							
0.14-0.37 mm <sup>2</sup> AWG 26-22	0.9 mm	8 mm																							
0.5 mm <sup>2</sup> AWG 20	1.1 mm	8 mm																							
0.75 mm <sup>2</sup> AWG 18	1.3 mm	8 mm																							
1 mm <sup>2</sup> AWG 18	1.45 mm	8 mm																							
1.5 mm <sup>2</sup> AWG 16	1.75 mm	8 mm																							
2.5 mm <sup>2</sup> AWG 14	2.25 mm	6 mm																							

Number of contacts

# 1

10 A 50 V 0.8 kV 3  
+ shielding

## Technical characteristics

Number of contacts	1
Additional contacts	+ shielding
Rated current	10 A
Rated voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Contact resistance	≤3 mΩ
Contact resistance, shielding	≤100 mΩ
Impedance	75 Ω
Limiting temperature	-40 ... +85 °C
Mating cycles	≥500
Material (insert)	Polycarbonate (PC)
Material (shielding)	Zinc die-cast, nickel-plated
Colour (insert)	RAL 7032 (pebble grey)
Material (contacts)	Copper alloy
Material flammability class acc. to UL 94	V-0

## Technical characteristics

RoHS compliant, compliant with exemption

## Specifications and approvals


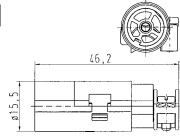
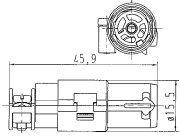
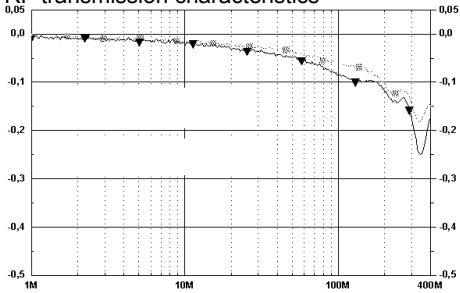
EN 60664-1  
IEC 61984

## Details


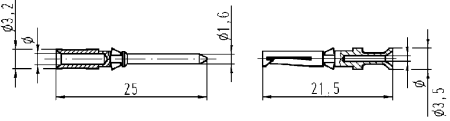
**Crimping tools** see chapter Han 90

### Remarks on the crimp technique

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

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
Han® D Coax, Crimp termination, for Han D® crimp contacts    Please order crimp contacts separately.	0.14 ... 2.5	09 15 001 3013	09 15 001 3113	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><b>M</b></p>  </div> <div style="text-align: center;"> <p><b>F</b></p>  </div> </div> <p><b>RF transmission characteristics</b></p>  <p>■ 75 Ohm Cable ▼ 75 Ohm Cable with Han D® Coax</p>

Han-Brid

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)																												
		Male	Female																													
Han D®, Crimp contact, Contact surface: Gold plated 	0.14 ... 0.37	09 15 000 6124	09 15 000 6224																													
	0.5	09 15 000 6123	09 15 000 6223																													
	0.75	09 15 000 6125	09 15 000 6225																													
	1	09 15 000 6122	09 15 000 6222																													
	1.5	09 15 000 6121	09 15 000 6221																													
	2.5	09 15 000 6126	09 15 000 6226																													
				<table border="1"> <thead> <tr> <th>Conductor cross-section</th> <th></th> <th>Ø</th> <th>Stripping length</th> </tr> </thead> <tbody> <tr> <td>0.14-0.37 mm<sup>2</sup></td> <td>AWG 26-22</td> <td>0.9 mm</td> <td>8 mm</td> </tr> <tr> <td>0.5 mm<sup>2</sup></td> <td>AWG 20</td> <td>1.1 mm</td> <td>8 mm</td> </tr> <tr> <td>0.75 mm<sup>2</sup></td> <td>AWG 18</td> <td>1.3 mm</td> <td>8 mm</td> </tr> <tr> <td>1 mm<sup>2</sup></td> <td>AWG 18</td> <td>1.45 mm</td> <td>8 mm</td> </tr> <tr> <td>1.5 mm<sup>2</sup></td> <td>AWG 16</td> <td>1.75 mm</td> <td>8 mm</td> </tr> <tr> <td>2.5 mm<sup>2</sup></td> <td>AWG 14</td> <td>2.25 mm</td> <td>6 mm</td> </tr> </tbody> </table>	Conductor cross-section		Ø	Stripping length	0.14-0.37 mm <sup>2</sup>	AWG 26-22	0.9 mm	8 mm	0.5 mm <sup>2</sup>	AWG 20	1.1 mm	8 mm	0.75 mm <sup>2</sup>	AWG 18	1.3 mm	8 mm	1 mm <sup>2</sup>	AWG 18	1.45 mm	8 mm	1.5 mm <sup>2</sup>	AWG 16	1.75 mm	8 mm	2.5 mm <sup>2</sup>	AWG 14	2.25 mm	6 mm
Conductor cross-section		Ø	Stripping length																													
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1.5 mm <sup>2</sup>	AWG 16	1.75 mm	8 mm																													
2.5 mm <sup>2</sup>	AWG 14	2.25 mm	6 mm																													



Number of contacts

# 1

16 A 50 V 0.8 kV 3  
+ shielding

## Technical characteristics

Number of contacts	1
Additional contacts	+ shielding
Rated current	16 A
Rated voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Contact resistance	≤1 mΩ
Contact resistance, shielding	≤100 mΩ
Impedance	50 Ω
Limiting temperature	-40 ... +85 °C
Mating cycles	≥500
Material (insert)	Polycarbonate (PC)
Material (shielding)	Zinc die-cast, nickel-plated
Colour (insert)	RAL 7032 (pebble grey)
Material (contacts)	Copper alloy
Material flammability class acc. to UL 94	V-0

## Technical characteristics

RoHS compliant, compliant with exemption

## Specifications and approvals


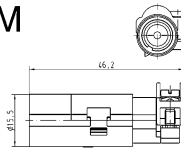
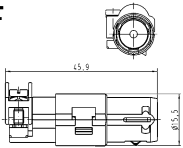

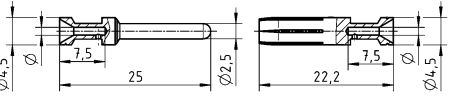
EN 60664-1  
IEC 61984

## Details

**Crimping tools** see chapter Han 90

### Remarks on the crimp technique

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

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)																								
		Male	Female																									
Han® E Coax, Crimp termination, for Han E® crimp contacts    Please order crimp contacts separately.	0.14 ... 4	09 15 001 3023	09 15 001 3123	M  F   <table border="1"> <tr> <td>Han E® Coax with RG 213 cable (2.5 mm<sup>2</sup>)</td> <td>200 MHz</td> <td>500 MHz</td> <td>1.0 GHz</td> <td>1.2 GHz</td> <td>1.5 GHz</td> <td>2.0 GHz</td> <td>2.5 GHz</td> </tr> <tr> <td>Return loss [dB]</td> <td>23.8</td> <td>21.1</td> <td>&gt;18.7</td> <td>&gt;17.7</td> <td>&gt;16.4</td> <td>&gt;14.1</td> <td>&gt;12.0</td> </tr> <tr> <td>Attenuation [dB]</td> <td>0.07</td> <td>0.11</td> <td>0.17</td> <td>0.2</td> <td>&lt;0.23</td> <td>&lt;0.53</td> <td>&lt;2.0</td> </tr> </table>	Han E® Coax with RG 213 cable (2.5 mm <sup>2</sup> )	200 MHz	500 MHz	1.0 GHz	1.2 GHz	1.5 GHz	2.0 GHz	2.5 GHz	Return loss [dB]	23.8	21.1	>18.7	>17.7	>16.4	>14.1	>12.0	Attenuation [dB]	0.07	0.11	0.17	0.2	<0.23	<0.53	<2.0
		Han E® Coax with RG 213 cable (2.5 mm <sup>2</sup> )	200 MHz		500 MHz	1.0 GHz	1.2 GHz	1.5 GHz	2.0 GHz	2.5 GHz																		
Return loss [dB]	23.8	21.1	>18.7	>17.7	>16.4	>14.1	>12.0																					
Attenuation [dB]	0.07	0.11	0.17	0.2	<0.23	<0.53	<2.0																					
Han E®, Crimp contact, Contact surface: Gold plated  	0.14 ... 0.37 0.5 0.75 1 1.5 2.5 4	09 33 000 6117 09 33 000 6122 09 33 000 6115 09 33 000 6118 09 33 000 6116 09 33 000 6123 09 33 000 6119	09 33 000 6217 09 33 000 6222 09 33 000 6215 09 33 000 6218 09 33 000 6216 09 33 000 6223 09 33 000 6221	  <table border="1"> <thead> <tr> <th>Conductor cross-section</th> <th>Identification</th> </tr> </thead> <tbody> <tr><td>0.14-0.37 mm<sup>2</sup> AWG 26-22</td><td>no groove</td></tr> <tr><td>0.5 mm<sup>2</sup> AWG 20</td><td>no groove</td></tr> <tr><td>0.75 mm<sup>2</sup> AWG 18</td><td>1 groove*</td></tr> <tr><td>1 mm<sup>2</sup> AWG 18</td><td>1 groove</td></tr> <tr><td>1.5 mm<sup>2</sup> AWG 16</td><td>2 groove</td></tr> <tr><td>2.5 mm<sup>2</sup> AWG 14</td><td>3 groove</td></tr> <tr><td>3 mm<sup>2</sup> AWG 12</td><td>wide groove</td></tr> <tr><td>4 mm<sup>2</sup> AWG 12</td><td>no groove</td></tr> </tbody> </table> <p>* on the back crimp collar</p> <p>Stripping length 7.5 mm</p>	Conductor cross-section	Identification	0.14-0.37 mm <sup>2</sup> AWG 26-22	no groove	0.5 mm <sup>2</sup> AWG 20	no groove	0.75 mm <sup>2</sup> AWG 18	1 groove*	1 mm <sup>2</sup> AWG 18	1 groove	1.5 mm <sup>2</sup> AWG 16	2 groove	2.5 mm <sup>2</sup> AWG 14	3 groove	3 mm <sup>2</sup> AWG 12	wide groove	4 mm <sup>2</sup> AWG 12	no groove						
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3 mm <sup>2</sup> AWG 12	wide groove																											
4 mm <sup>2</sup> AWG 12	no groove																											

Number of contacts

# 4

10 A 50 V 0.8 kV 3  
+ shielding

Han-Brid

## Features

- Shielding bus separate from housing potential
- Suitable for the transmission of sensitive signals (e.g. bus signals)
- The four pole Han® Quintax contact is suitable for Ethernet cat. 5 and PROFIBUS when diagonally wiring of the data pairs.

## Technical characteristics

Number of contacts	4
Additional contacts	+ shielding
Rated current	10 A
Rated voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Contact resistance	≤3 mΩ
Contact resistance, shielding	≤100 mΩ
Limiting temperature	-40 ... +85 °C
Mating cycles	≥500
Material (insert)	Polycarbonate (PC)
Material (shielding)	Zinc die-cast, nickel-plated
Colour (insert)	RAL 7032 (pebble grey)
Material (contacts)	Copper alloy
Material flammability class acc. to UL 94	V-0
RoHS	compliant with exemption, compliant

## Specifications and approvals


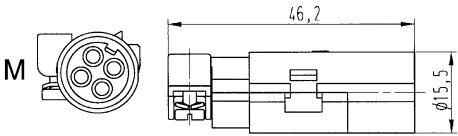
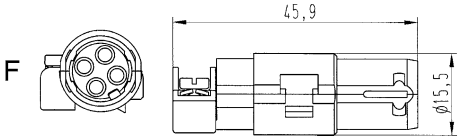
EN 60664-1  
IEC 61984  
UL 1977 ECBT2.E235076  
CSA-C22.2 No. 182.3 ECBT8.E235076

## Details

**Crimping tools** see chapter Han 90

### Remarks on the crimp technique

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

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
Han-Quintax®, for Han D® crimp contacts   Please order crimp contacts separately.	0.14 ... 2.5	09 15 004 3013	09 15 004 3113	  Cable diameter 3 ... 9.5 mm

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)																												
		Male	Female																													
Han D®, Crimp contact, Contact surface: Gold plated	0.14 ... 0.37	09 15 000 6124	09 15 000 6224																													
	0.5	09 15 000 6123	09 15 000 6223																													
	0.75	09 15 000 6125	09 15 000 6225																													
	1	09 15 000 6122	09 15 000 6222																													
	1.5	09 15 000 6121	09 15 000 6221																													
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2.5 mm <sup>2</sup>	AWG 14	2.25 mm	6 mm																													

Number of contacts

# 8

5 A 50 V 0.8 kV 3  
+ shielding

Han-Brid

## Technical characteristics


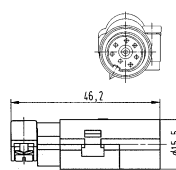
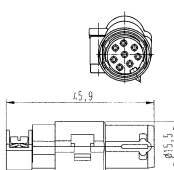

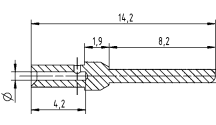
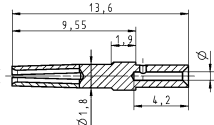
Number of contacts	8
Additional contacts	+ shielding
Rated current	5 A
Rated voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Contact resistance	≤10 mΩ
Contact resistance, shielding	≤100 mΩ
Limiting temperature	-40 ... +85 °C
Mating cycles	≥500
Material (insert)	Polycarbonate (PC)
Material (shielding)	Zinc die-cast, nickel-plated
Colour (insert)	RAL 7032 (pebble grey)

## Technical characteristics

Material (contacts)	Copper alloy
Material flammability class acc. to UL 94	V-0
RoHS	compliant, compliant with exemption

## Specifications and approvals

EN 60664-1  
IEC 61984  
UL 1977 ECBT2.E102079  
CSA-C22.2 No. 182.3 ECBT8.E102079

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)															
		Male	Female																
Han-Quintax® High Density, for Han® D-Sub crimp contacts  <p>Please order crimp contacts separately.</p>	0.09 ... 0.52	09 15 008 3013	09 15 008 3113	M  F  Cable diameter 3 ... 9.5 mm															
D-Sub, Standard, Crimp contact 	0.09 ... 0.25 0.13 ... 0.33 0.25 ... 0.52	09 67 000 7576 09 67 000 5576 09 67 000 8576	09 67 000 7476 09 67 000 5476 09 67 000 8476		  <table border="1"> <thead> <tr> <th>Conductor cross-section</th> <th>∅</th> <th>Stripping length</th> </tr> </thead> <tbody> <tr> <td>0.09-0.25 mm<sup>2</sup></td> <td>0.64 mm</td> <td>4 mm</td> </tr> <tr> <td>0.13-0.33 mm<sup>2</sup></td> <td>0.88 mm</td> <td>4 mm</td> </tr> <tr> <td>0.25-0.52 mm<sup>2</sup></td> <td>1.13 mm</td> <td>4 mm</td> </tr> <tr> <td>0.33-0.82 mm<sup>2</sup></td> <td>1.34 mm</td> <td>4 mm</td> </tr> </tbody> </table> for stranded wire according IEC 60228 Class 5	Conductor cross-section	∅	Stripping length	0.09-0.25 mm <sup>2</sup>	0.64 mm	4 mm	0.13-0.33 mm <sup>2</sup>	0.88 mm	4 mm	0.25-0.52 mm <sup>2</sup>	1.13 mm	4 mm	0.33-0.82 mm <sup>2</sup>	1.34 mm
Conductor cross-section	∅	Stripping length																	
0.09-0.25 mm <sup>2</sup>	0.64 mm	4 mm																	
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0.33-0.82 mm <sup>2</sup>	1.34 mm	4 mm																	

## Features

- Suitable for standard RJ 45 Plug and Jack, shielded version
- Connections are carried out acc. to EN 50173, Cat. 5
- Connection of the device side can be realised either by a printed circuit board as a modular version or as part of the appliance PCB
- Assembly with standard tools
- Insert for 2 Han-D® male or female contacts offers the combination with electrical bus connector

## Technical characteristics

Number of contacts	2
Additional contacts	+ RJ45
Rated current	10 A
Rated voltage	24 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Insulation resistance	>10 <sup>10</sup> Ω
Limiting temperature	-40 ... +70 °C, -40 ... +125 °C
Mating cycles	≥500
Wire outer diameter	≤1.6 mm
Transmission characteristics	Cat. 5, Class D up to 100 MHz
Data rate	10 Mbit/s, 100 Mbit/s
Material (insert)	Polycarbonate (PC)
Colour (insert)	RAL 7032 (pebble grey)
Material flammability class acc. to UL 94	V-0
RoHS	compliant

## Specifications and approvals


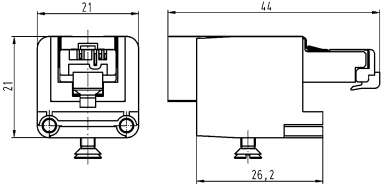



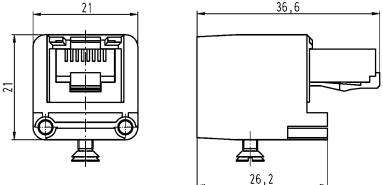

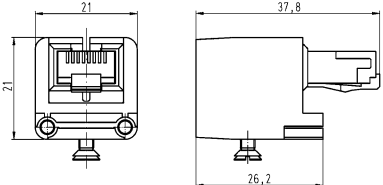
IEC 61984  
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 CSA-C22.2 No. 182.3 ECBT8.E235076  
 DNV GL


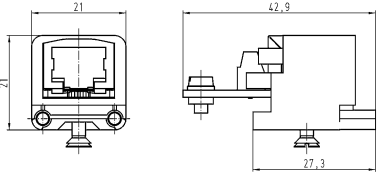

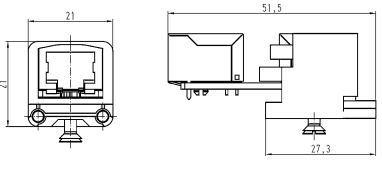

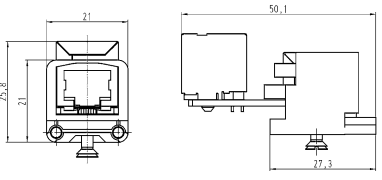
Number of contacts

# 2

10 A 24 V 0.8 kV 3  
+ RJ45

Han-Brid

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
Han-Brid®, Han-Brid® RJ45 C, hybrid network connector  	0.12 Stranded 0.22 ... 0.32 Stranded, 0.26 ... 0.32 Solid	09 12 003 3013 09 12 003 3011		
With RJ Industrial  Han-Brid®, Han-Brid® RJ45 C, hybrid network connector, 10 Gbit/s  		09 12 003 3015		
With RJ Industrial  Han-Brid®, Han-Brid® RJ45 C, hybrid network connector, Cat. 6A  		09 12 003 3016		
With RJ Industrial  Han-Brid®, Han-Brid® RJ45 C, hybrid network connector  		09 12 003 3021		
With Stewart RJ45  Han-Brid®, Han-Brid® RJ45 C, hybrid network connector  		09 12 003 3031		
With HIROSE RJ45				

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)	
		Male	Female		
<p>Han-Brid®, Han-Brid® RJ45 C, hybrid network connector</p>  <p>Panel feed through With 4-pin terminal block</p>			09 12 003 2770		
<p>Han-Brid®, Han-Brid® RJ45 C, hybrid network connector</p>  <p>Panel feed through Straight</p>			09 12 003 2774		
<p>Han-Brid®, Han-Brid® RJ45 C, hybrid network connector</p>  <p>Panel feed through Angled</p>			09 12 003 2776		

Number of contacts

# 2

1 A 50 V 0.8 kV 3  
+ USB

Han-Brid

## Features


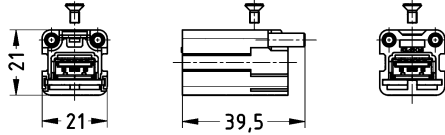

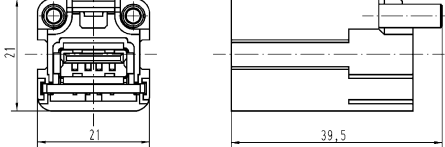

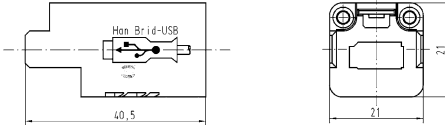
- Insert for all Han® 3 A hoods with glued seal
- Simple and cost effective termination by plug in patch cable
- Cable tie strain relief

## Technical characteristics

Number of contacts	2
Additional contacts	+ USB
Rated current	1 A
Rated voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Insulation resistance	>10 <sup>10</sup> Ω
Contact resistance	≥4 mΩ
Limiting temperature	-40 ... +85 °C
Mating cycles	≥500
Material (insert)	Polycarbonate (PC)
Colour (insert)	RAL 7032 (pebble grey)
Material flammability class acc. to UL 94	V-0
RoHS	compliant

## Specifications and approvals

EN 60664-1  
IEC 61984  
UL 1977 ECBT2.E235076  
CSA-C22.2 No. 182.3 ECBT8.E235076

Identification	Part number		Drawing (dimensions in mm)
	Male	Female	
Han-Brid®, Han-Brid® USB, USB 3.0  	09 12 001 2793		
Device side Han-Brid®, Han-Brid® USB, USB 2.0  	09 12 001 2794		
Device side Han-Brid®, Han-Brid® USB  		09 12 001 3091	
Cable side			



Number of contacts

# 2

1 A 50 V 0.8 kV 3  
+ FireWire

Han-Brid

## Features



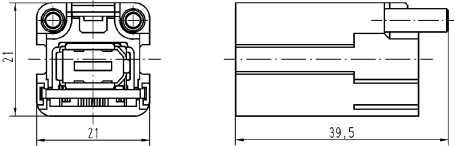
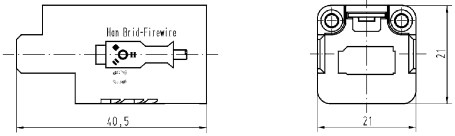
- Insert for all Han® 3 A hoods with glued seal
- Simple and cost effective termination by plug in patch cable
- Cable tie strain relief
- Compatibel to IEEE 1394

## Technical characteristics

Number of contacts	2
Additional contacts	+ FireWire
Rated current	1 A
Rated voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Insulation resistance	>10 <sup>10</sup> Ω
Contact resistance	≥4 mΩ
Limiting temperature	-40 ... +85 °C
Mating cycles	≥500
Material (insert)	Polycarbonate (PC)
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Material flammability class acc. to UL 94	V-0
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## Specifications and approvals

EN 60664-1  
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Identification	Part number		Drawing (dimensions in mm)
	Male	Female	
Han-Brid®, Han-Brid® FireWire    Device side  Han-Brid®, Han-Brid® FireWire    Cable side	09 12 001 2774	09 12 001 3071	  

## Features

- Suitable for housings, size Han® 3 A including versions Han® M, Han® EMC and Han® HPR
- Degree of protection up to IP68
- Suitable for HARTING SC contacts
- for Multimode fibre 50 - 62.5 / 125 µm and Singlemode fibre 9 / 125 µm
- 4 full ceramic sleeves for a minimal insertion loss
- 1 mm POF

## Technical characteristics

Number of contacts	4
Insulation resistance	$>10^{10} \Omega$
Limiting temperature	-40 ... +85 °C
Mating cycles	$\geq 500$
Material (insert)	Polycarbonate (PC)
Colour (insert)	RAL 7032 (pebble grey)
Material flammability class acc. to UL 94	V-0
RoHS	compliant with exemption, compliant

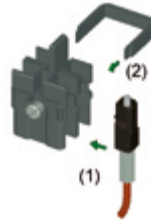
## Specifications and approvals

UL 1977 ECBT2.E235076  
CSA-C22.2 No. 182.3 ECBT8.E235076

## Details

### Assembly instructions

Male module

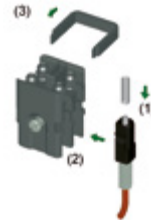


Assemble the SC contact

- ① Push the SC contact from the side into the relevant insert
- ② Push the spring clip over the contact body.

### Assembly instructions

Female module

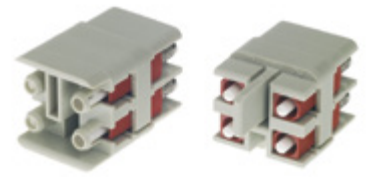


Assemble the SC contact

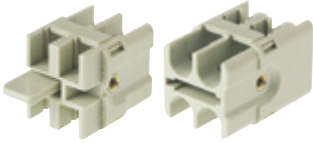
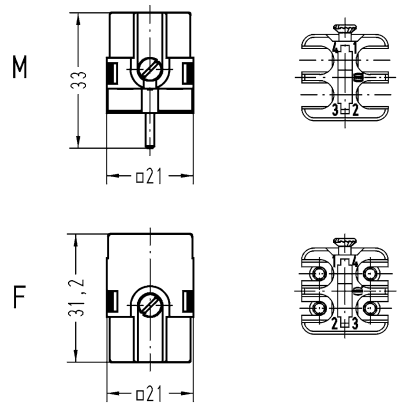

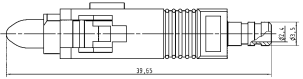

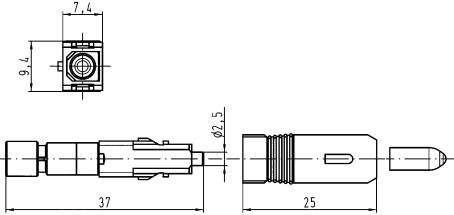

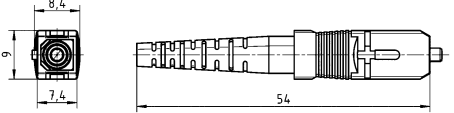
- ① Push the centering ferrule (included in delivery) on the SC contact
- ② Push the SC contact from the side into the relevant insert
- ③ Push the spring clip over the contact body.

Number of contacts


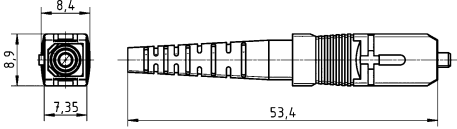
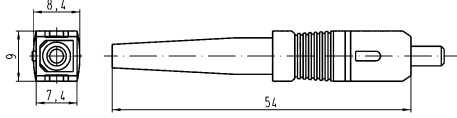
4



Han-Brid

Identification	Part number		Drawing (dimensions in mm)
	Male	Female	
<p>Han-Brid®, Han® 4 A SC, for FO</p>  <p>Please order contacts separately.</p>	09 20 004 4701	09 20 004 4711	 <p>Contact arrangement (view from termination side) The female inserts are equipped with centering ferrules. 4 ferrules are included within the delivery.</p>
<p>SC contact, for 1 mm plastic fibre, Crimp termination</p> 	20 10 001 5211		
<p>SC contact, for 1 mm plastic fibre, Fast termination</p> 	20 10 001 5217		
<p>SC contact, for singlemode fibre 9/125 µm</p> 	20 10 125 5220		

Han-Brid

Identification	Part number		Drawing (dimensions in mm)
	Male	Female	
SC contact, for GI fibre 50/125 µm, for ceramic ferrule 62.5/125 µm  	20 10 125 5211		
SC contact, for SI fibre (HCS®) 200/230 µm	20 10 230 5211		

Standard Hoods/housings for industrial applications  
Single locking lever

Han-Brid

### Features

- Hoods/housings for industrial applications
- With glued seal

### Technical characteristics

Limiting temperature	-40 ... +125 °C
Degree of protection acc. to IEC 60529	IP44, IP65 / IP67, with seal screw 09 20 000 9918
Type rating acc. to UL 50 / UL 50E	12
Material (hood/housing)	Zinc die-cast
Surface (hood/housing)	Powder-coated
Colour (hood/housing)	RAL 7037 (dust grey)
Material (seal)	NBR
RoHS	compliant with exemption, compliant


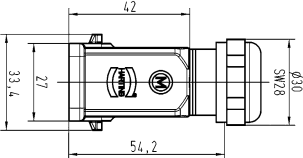

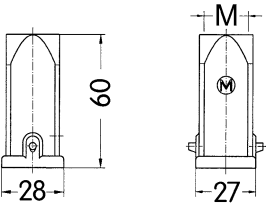
### Specifications and approvals

DNV GL




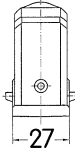
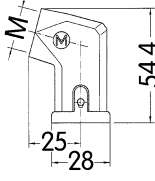
### Details

The special hoods with glued seal can be combined with standard housings (see chapter Han 31).

Identification	Cable entry	Cable diameter (mm)	Part number	Drawing (dimensions in mm)
Han A®, Hood, for Han-Brid®, With glued seal, With integrated cable gland, Top entry, IP44, IP65 / IP67 with seal screw 09 20 000 9918 	1x Integrated 1x Integrated	5 ... 13 6 ... 12	19 20 003 1423 19 20 003 1425	
Han A®, Hood, for Han-Brid®, With glued seal, Top entry, IP44, IP65 / IP67 with seal screw 09 20 000 9918 	1x M20 1x M25		19 20 003 1443 19 20 003 1447	



Han-Brid

Identification	Cable entry	Cable diameter (mm)	Part number	Drawing (dimensions in mm)	
<p>Han A®, Hood, for Han-Brid®, With glued seal, Side entry, IP44, IP65 / IP67 with seal screw 09 20 000 9918</p> 	<p>1x M20</p>		<p>19 20 003 1643</p>		

Standard Hoods/housings for industrial applications  
Single locking lever

Han-Brid

## Features

- Hoods/housings for industrial applications
- With glued seal

## Technical characteristics

Limiting temperature	-40 ... +125 °C
Degree of protection acc. to IEC 60529	IP44, IP65 / IP67, with seal screw 09 20 000 9918
Type rating acc. to UL 50 / UL 50E	4, 4X, 12
Material (hood/housing)	Polycarbonate (PC)
Colour (hood/housing)	RAL 7032 (pebble grey), RAL 9005 (jet black)
Material (seal)	NBR
Material flammability class acc. to UL 94	V-0
RoHS	compliant


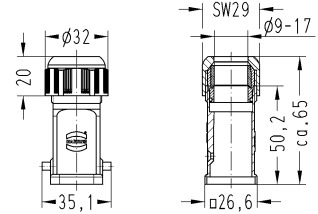

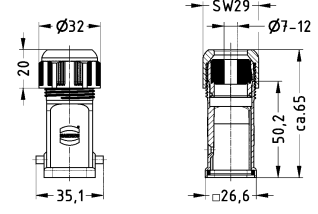
## Specifications and approvals

UL 1977 ECBT2.E235076  
CSA-C22.2 No. 182.3 ECBT8.E235076  
DNV GL


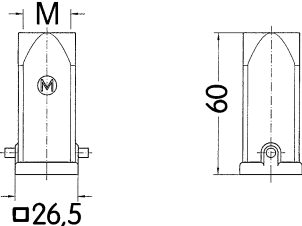


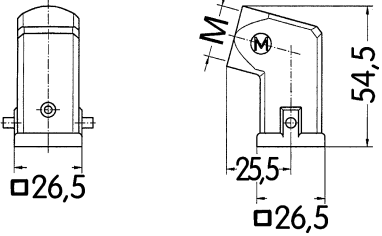



## Details

The special hoods with glued seal can be combined with standard housings (see chapter Han 31).

Identification	Cable entry	Cable diameter (mm)	Part number	Drawing (dimensions in mm)
Han A®, Hood, for Han-Brid®, With glued seal, With integrated cable gland, Top entry, IP44, IP65 / IP67 with seal screw 09 20 000 9918  	1x Integrated	9 ... 17	19 20 003 0413	
Han A®, Hood, for Han-Brid®, With glued seal, With integrated cable gland, Top entry, Black, IP44, IP65 / IP67 with seal screw 09 20 000 9918  	1x Integrated 1x Integrated	7 ... 12 9 ... 17	19 20 003 0421 19 20 003 0418	

Han-Brid

Identification	Cable entry	Cable diameter (mm)	Part number	Drawing (dimensions in mm)
<p>Han A®, Hood, for Han-Brid®, With glued seal, Top entry, IP44, IP65 / IP67 with seal screw 09 20 000 9918</p> 	1x M20 1x M25		19 20 003 0423 19 20 003 0433	
<p>Han A®, Hood, for Han-Brid®, With glued seal, Top entry, Black, IP44, IP65 / IP67 with seal screw 09 20 000 9918</p> 	1x M20 1x M25		19 20 003 0426 19 20 003 0436	
<p>Han A®, Hood, for Han-Brid®, With glued seal, Side entry, IP44, IP65 / IP67 with seal screw 09 20 000 9918</p> 	1x M20		19 20 003 0623	
<p>Han A®, Hood, for Han-Brid®, With glued seal, Side entry, Black, IP44, IP65 / IP67 with seal screw 09 20 000 9918</p> 	1x M20		19 20 003 0626	



Hoods/housings for rough environments  
Single locking lever

Han-  
Brid

### Features

- Hoods/housings for rough environments
- Corrosion resistance ASTM B117-09 (500 h)
- With glued seal

### Technical characteristics

Limiting temperature	-40 ... +125 °C
Degree of protection acc. to IEC 60529	IP65, IP67
Material (hood/housing)	Zinc die-cast
Surface (hood/housing)	Powder-coated
Colour (hood/housing)	RAL 9005 (jet black)
Material (seal)	FPM
RoHS	compliant


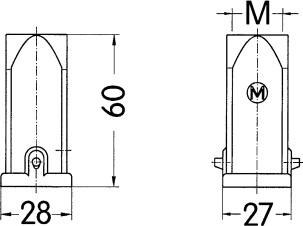

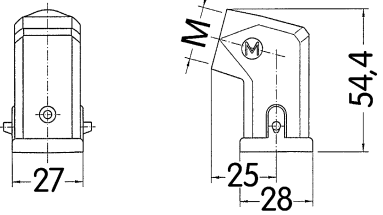
### Specifications and approvals

DNV GL



### Details

The special hoods with glued seal can be combined with standard housings (see chapter Han 31).

Identification	Cable entry	Part number	Drawing (dimensions in mm)
<p>Han® M, Hood, for Han-Brid®, With glued seal, Top entry, IP65, IP67</p> <p>Pack contents: With seal screw</p> 	<p>1x M20 1x M25</p>	<p>19 37 003 1443 19 37 003 1447</p>	
<p>Han® M, Hood, for Han-Brid®, With glued seal, Side entry, IP65, IP67</p> <p>Pack contents: With seal screw</p> 	<p>1x M20</p>	<p>19 37 003 1643</p>	

Hoods/Housings for higher EMC requirements  
Single locking lever

Han-Brid

### Features

- Hoods/Housings for higher EMC requirements
- With glued seal

### Technical characteristics

Limiting temperature	-40 ... +125 °C
Degree of protection acc. to IEC 60529	IP44, IP65 / IP67, with seal screw 09 20 000 9918
Type rating acc. to UL 50 / UL 50E	12
Material (hood/housing)	Zinc die-cast
Surface (hood/housing)	Uncoated
Colour (hood/housing)	Unpainted
Material (seal)	NBR
RoHS	compliant


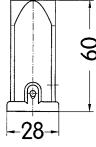
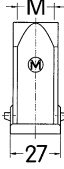

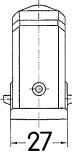
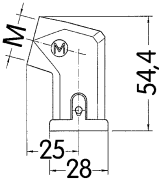
### Specifications and approvals

DNV GL



### Details

The special hoods with glued seal can be combined with standard housings (see chapter Han 31).

Identification	Cable entry	Part number	Drawing (dimensions in mm)	
<p>Han® EMC, Hood, for Han-Brid®, With glued seal, Top entry, IP44, IP65 / IP67 with seal screw 09 20 000 9918</p> 	<p>1x M20 1x M25</p>	<p>19 62 003 1443 19 62 003 1447</p>		
<p>Han® EMC, Hood, for Han-Brid®, With glued seal, Side entry, IP44, IP65 / IP67 with seal screw 09 20 000 9918</p> 	<p>1x M20</p>	<p>19 62 003 1643</p>		

Hoods/housings for harsh environments  
Single locking lever

Han-  
Brid

### Features

- Hoods/housings for harsh environments
- Extremely resistant to chemicals and other aggressive influences
- Made completely from high-quality stainless steel
- Extremely resistant to corrosion
- With glued seal

### Technical characteristics

Limiting temperature	-40 ... +125 °C
Degree of protection acc. to IEC 60529	IP65, IP67
Type rating acc. to UL 50 / UL 50E	4, 4X, 12
Material (hood/housing)	Stainless steel
Surface (hood/housing)	Uncoated
Colour (hood/housing)	Unpainted
Material (seal)	NBR
RoHS	compliant


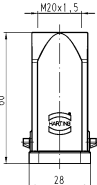
### Specifications and approvals

UL 1977 ECBT2.E235076  
CSA-C22.2 No. 182.3 ECBT8.E235076  
DNV GL


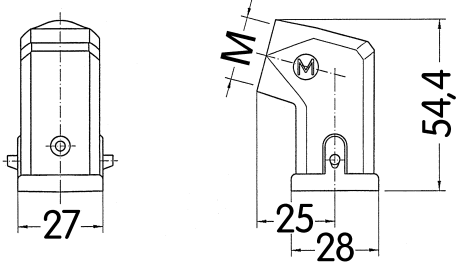


### Details

The special hoods with glued seal can be combined with standard housings (see chapter Han 31).

Identification	Cable entry	Part number	Drawing (dimensions in mm)
<p>Han-INOX®, Hood, for Han-Brid®, With glued seal, Top entry, IP65, IP67</p> <p>Pack contents: With seal screw</p> 	1x M20	19 44 003 1443	

Han-Brid

Identification	Cable entry	Part number	Drawing (dimensions in mm)	
<p>Han-INOX®, Hood, for Han-Brid®, With glued seal, Side entry, IP65, IP67</p> <p>Pack contents: With seal screw</p> 	<p>1x M20</p>	<p>19 44 003 1643</p>		

## Features

- Hoods/housings for harsh outdoor environments
- Metal hoods and housings with excellent corrosion resistance
- Corrosion resistance ASTM B117-09 (500 h)
- Excellent EMC characteristics
- Screw locking M4
- Field of application: for external electrical interconnections in vehicles, in highly demanding environments and wet areas, as well as for sensitive interconnections that have to be shielded
- Distinguishing feature: colour-coded black, internal seal

## Technical characteristics

Limiting temperature	-40 ... +125 °C
Tightening torque (screw locking)	2 Nm
Degree of protection acc. to IEC 60529	IP65, IP68, IP69 / IPX9K acc. to ISO 20653
Type rating acc. to UL 50 / UL 50E	4, 4X, 12
Material (hood/housing)	Zinc die-cast
Surface (hood/housing)	Powder-coated, Chromated
Colour (hood/housing)	RAL 9005 (jet black)
Material (locking)	Stainless steel
RoHS	compliant, not compliant


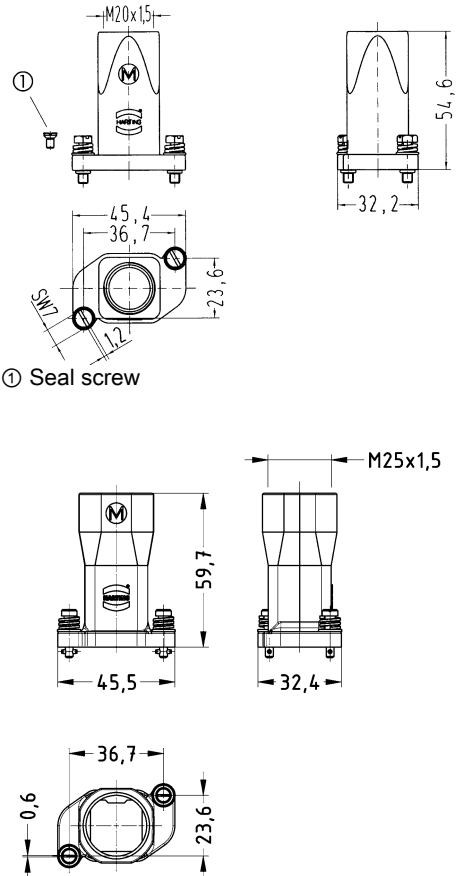
## Specifications and approvals

UL 1977 ECBT2.E235076  
 CSA-C22.2 No. 182.3 ECBT8.E235076  
 DNV GL

CE


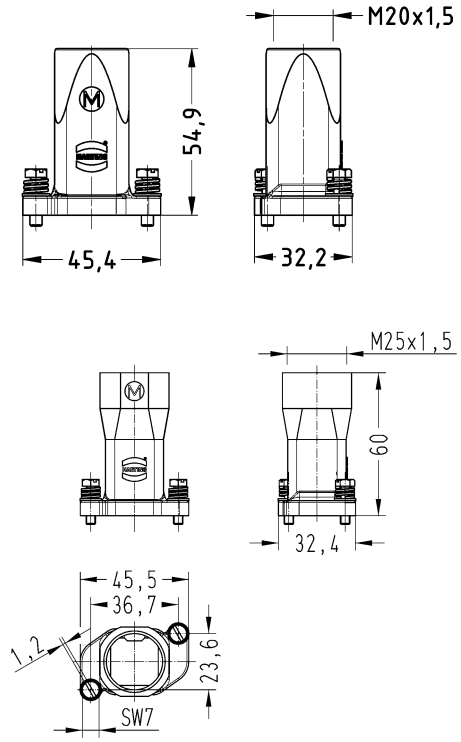
Hoods/housings for harsh outdoor environments  
Toggle locking

Han-  
Brid

Identification	Cable entry	Part number	Drawing (dimensions in mm)
<p>Han® HPR, Hood, Top entry, IP65, IP68</p> <p>Pack contents: With seal screw</p> 	<p>1x M20 1x M25</p>	<p>19 40 703 0400 19 40 703 0401</p>	 <p>① Seal screw</p>


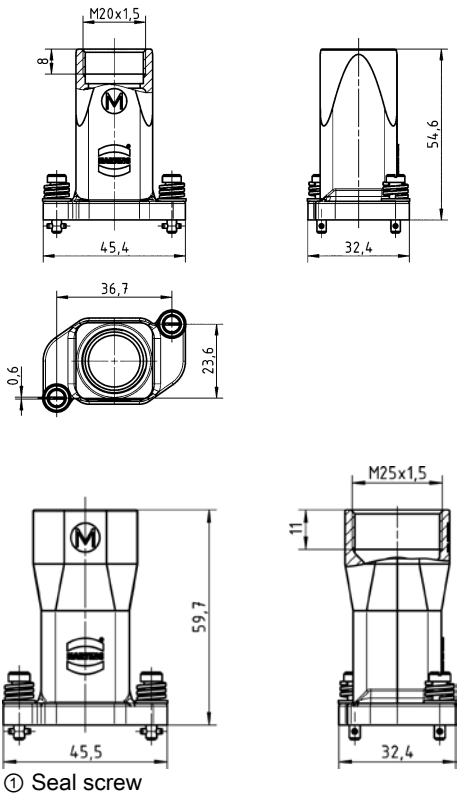
Hoods/housings for harsh outdoor environments  
Screw locking

Han-  
Brid

Identification	Cable entry	Part number	Drawing (dimensions in mm)
<p>Han® HPR, Hood, Top entry, IP65, IP68, IP69 / IPX9K acc. to ISO 20653</p> <p>Pack contents: With seal screw</p> 	<p>1x M20 1x M25</p>	<p>19 40 703 0410 19 40 703 0411</p>	 <p>Dimensions shown in drawing:              - Front view: 45,4 mm width, 54,9 mm height              - Side view: 32,2 mm width, M20x1,5 screw              - Top view: 45,5 mm width, 36,7 mm inner width, 23,6 mm height, SW7 hex key              - Alternative side view: 32,4 mm width, 60 mm height, M25x1,5 screw</p>

Hoods/housings for harsh outdoor environments  
Toggle locking


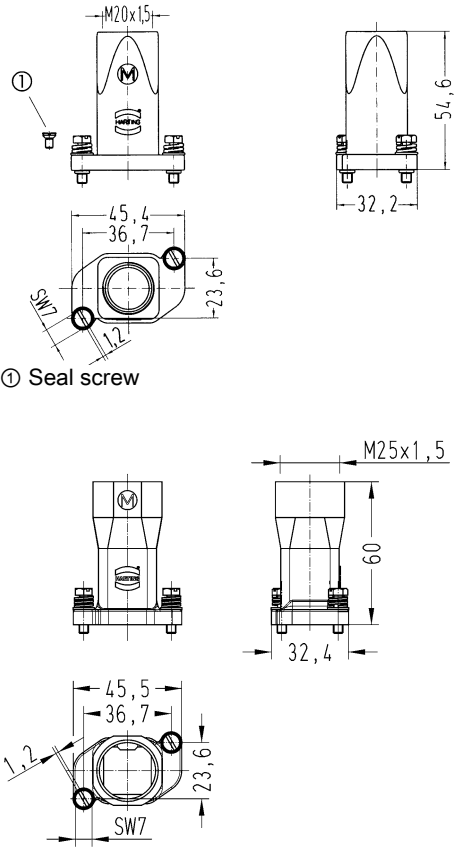
Han-  
Brid

Identification	Cable entry	Part number	Drawing (dimensions in mm)
<p>Han® HPR, Hood, Top entry, IP65, IP68</p> <p>Pack contents: With seal screw</p> 	<p>1x M20 1x M25</p>	<p>19 40 003 0400 19 40 003 0401</p>	 <p>① Seal screw</p>



Hoods/housings for harsh outdoor environments  
Screw locking

Han-  
Brid

Identification	Cable entry	Part number	Drawing (dimensions in mm)
<p>Han® HPR, Hood, Top entry, IP65, IP68, IP69 / IPX9K acc. to ISO 20653</p> <p>Pack contents: With seal screw</p> 	<p>1x M20 1x M25</p>	<p>19 40 003 0410 19 40 003 0411</p>	 <p>① Seal screw</p>