



Pushing Performance

People | Power | Partnership

# **HARTING** Han<sup>®</sup> 1A

## Versatile compact connector series

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## Han® 1A - Versatile compact connector series

Han  
1A

### Markets and applications

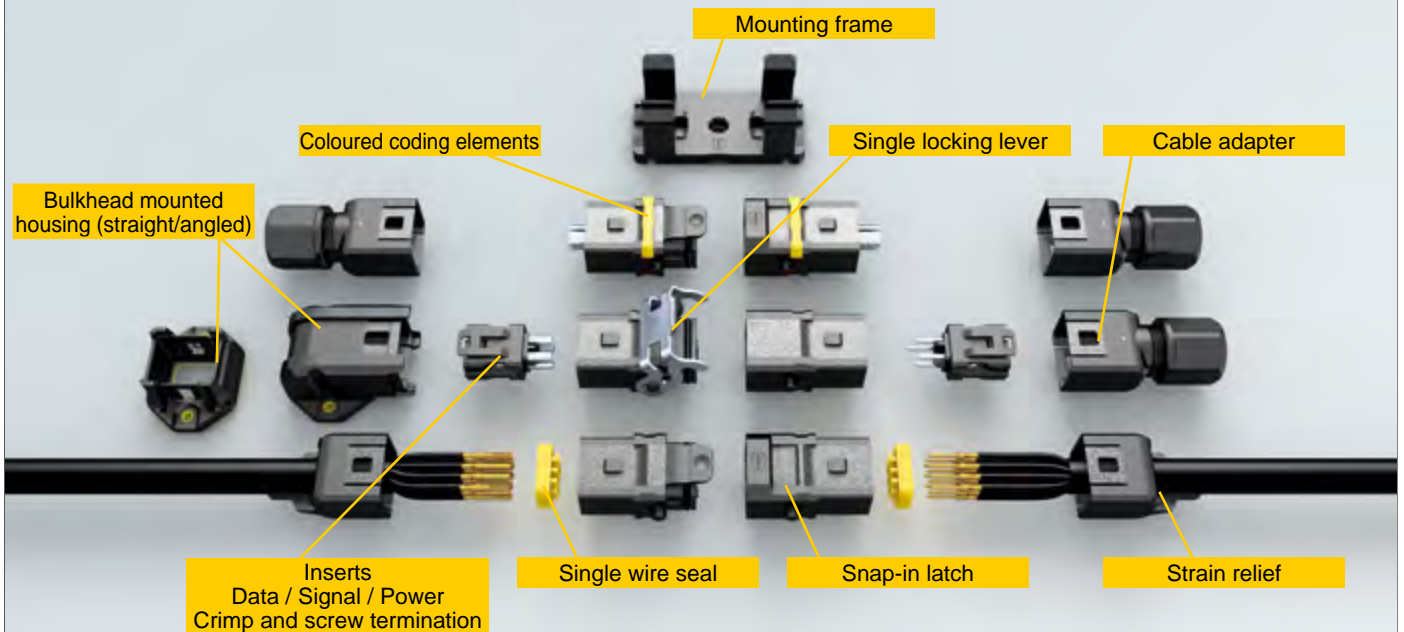
- **Transportation**
  - Can be used in: door systems and ramps, illumination, headlights, speakers, indicating lights, warning lights, screens, door opener, push buttons, buzzers, windscreen wiper systems,...
- **Wind energy**
  - Can be used in: tower lightning, emergency stops, sensors, indicating sounds, ventilators,...
- **Energy storage systems**
  - Can be used in: battery storage systems, solar inverters, power plant control systems and cabinets, power generator sets, sensors,...
- **Machinery & Robotics**
  - Can be used in: subunits of injection moulding machines like heater, fan, control terminals, industrial lightning, small drives, vibratory conveyors, connections inside cabinets,...

### Features and benefits

- **Versatile concept**
  - Build your own connectivity solution by using the modularity advantage of the Han® 1A with inserts covering data, signal and power transmission. Together with all accessory parts the Han® 1A is a very flexible system usable for a broad range of applications.
- **Time saving**
  - Due to the easy mate and click design of all single components the assembly of the connector is done within seconds - and there are no tools needed.
- **Space saving**
  - The Han® 1A components are designed to fulfil the trend of miniaturisation - while being still a robust Han® connector also for harsh environments.
- **IP protected where needed**
  - By usage of hood and housing elements or single wire seals IP65 protection degree can be realized in easy manner.

## Flexible connector system

The right connectivity solution for every application!



Number of contacts

4

4 A 1.5 kV 3  
+ shielding  
Cat. 5

Han  
1A

## Technical characteristics

Number of contacts	4
Additional contacts	+ shielding
Rated current	4 A
Rated impulse voltage	1.5 kV
Pollution degree	3
Rated voltage	48 V AC, 60 V DC
Insulation resistance	$>10^8 \Omega$
Limiting temperature	-30 ... +90 °C
Mating cycles	$\geq 100$
Degree of protection acc. to IEC 60529	IP20
Transmission characteristics	Cat. 5, Class D up to 100 MHz
Data rate	100 Mbit/s
Material (insert)	Polyamide (PA)
Colour (insert)	RAL 9005 (jet black)
Material (seal)	NBR
Colour (seal)	Black
Material flammability class acc. to UL 94	V-0

## Technical characteristics


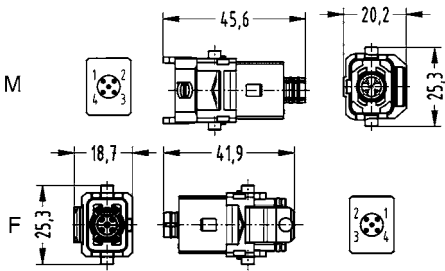
RoHS compliant

## Specifications and approvals


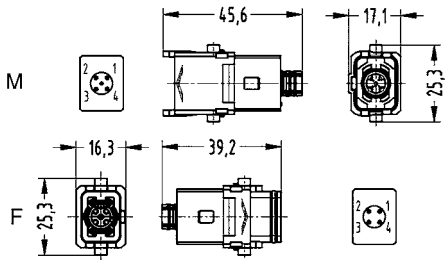
EN 45545-2 R22: HL1, HL2, HL3  
EN 45545-2 R23: HL1, HL2, HL3  
EN 45545-2 R24: HL1, HL2, HL3  
IEC 61373 Category 1 Class B  
EN 60664-1  
IEC 61984  
DNV GL

## Details

A Han® 1A configuration that only consists of inserts (with or without strain relief, 09 10 000 5300) is an unenclosed connector. In this case protection against electric shock must be provided by the installation methods of the user.

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
<p>Han® 1A, Crimp termination, With cable tie, Snap-in latches, IP20</p>  <p>Please order crimp contacts separately. Order separately the hoods/housings for an IP65 performance. Contact insert not compatible with 09 10 000 0800 (bulkhead mounted housing, angled)</p>	0.13 ... 0.82	09 10 004 3001	09 10 004 3101	

Han  
1A


Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
<p>Han® 1A, Crimp termination, With cable tie, Single locking lever, IP20</p>  <p>Please order crimp contacts separately. Order separately the hoods/housings for an IP65 performance. Contact insert not compatible with 09 10 000 0800 (bulkhead mounted housing, angled) Please order locking lever separately.</p>	0.13 ... 0.82	09 10 004 3006	09 10 004 3106	 <p>M</p> <p>F</p>

**Technical characteristics**

Contact resistance ≤10 mΩ

**Technical characteristics**

Material (contacts) Copper alloy  
RoHS compliant with exemption

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)															
		Male	Female																
D-Sub, Standard, Crimp contact  	0.13 ... 0.33	09 67 000 5576	09 67 000 5476	<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	4 mm
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0.25 ... 0.52	09 67 000 8576	09 67 000 8476																	
0.33 ... 0.82	09 67 000 3576	09 67 000 3476																	

Number of contacts

8

0.5 A 48 V 0.8 kV 3  
+ shielding  
Cat. 6<sub>A</sub>

## Technical characteristics

Number of contacts	8
Additional contacts	+ shielding
Rated current	0.5 A
Rated voltage	48 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Insulation resistance	>10 <sup>8</sup> Ω
Limiting temperature	-30 ... +90 °C
Mating cycles	≥100
Degree of protection acc. to IEC 60529	IP20
Transmission characteristics	Cat. 6 <sub>A</sub> , Class E <sub>A</sub> up to 500 MHz
Data rate	10 Gbit/s
Material (insert)	Polyamide (PA)
Colour (insert)	RAL 9005 (jet black)
Material (seal)	NBR
Colour (seal)	Black
Material flammability class acc. to UL 94	V-0

## Technical characteristics


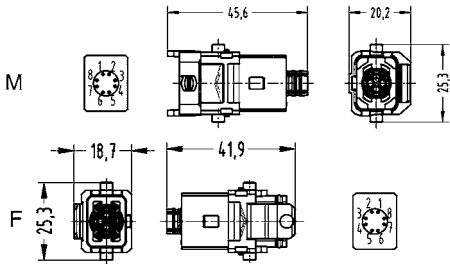
RoHS compliant


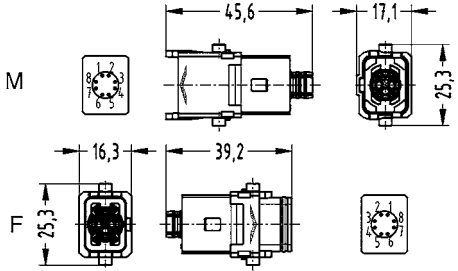
## Specifications and approvals

EN 45545-2 R22: HL1, HL2, HL3  
EN 45545-2 R23: HL1, HL2, HL3  
EN 45545-2 R24: HL1, HL2, HL3  
IEC 61373 Category 1 Class B  
EN 60664-1  
IEC 61984  
DNV GL

## Details

A Han® 1A configuration that only consists of inserts (with or without strain relief, 09 10 000 5300) is an unenclosed connector. In this case protection against electric shock must be provided by the installation methods of the user.

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
<p>Han® 1A, Crimp termination, With cable tie, Snap-in latches, IP20</p>  <p>Please order crimp contacts separately. Order separately the hoods/housings for an IP65 performance. Contact insert not compatible with 09 10 000 0800 (bulkhead mounted housing, angled)</p>	0.08 ... 0.25	09 10 008 3001	09 10 008 3101	

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
<p>Han® 1A, Crimp termination, With cable tie, Single locking lever, IP20</p>  <p>Please order crimp contacts separately. Order separately the hoods/housings for an IP65 performance. Contact insert not compatible with 09 10 000 0800 (bulkhead mounted housing, angled) Please order locking lever separately.</p>	0.08 ... 0.25	09 10 008 3006	09 10 008 3106	

Han 1A


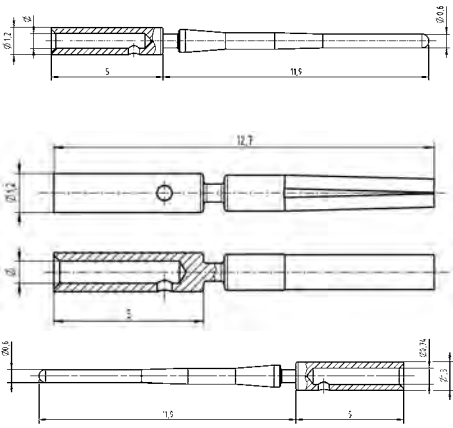


Technical characteristics

Material (contacts) Copper alloy

Technical characteristics

RoHS compliant with exemption

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
<p><i>har-speed</i>, Crimp contact, Contact surface: Gold plated</p> 	<p>0.08 ... 0.22 0.13 ... 0.25</p>	<p>21 01 100 9014 21 01 100 9019</p>	<p>21 01 100 9023 21 01 100 9021</p>	

Number of contacts

12

6.5 A 50 V 0.8 kV 3

Han  
1A

## Technical characteristics

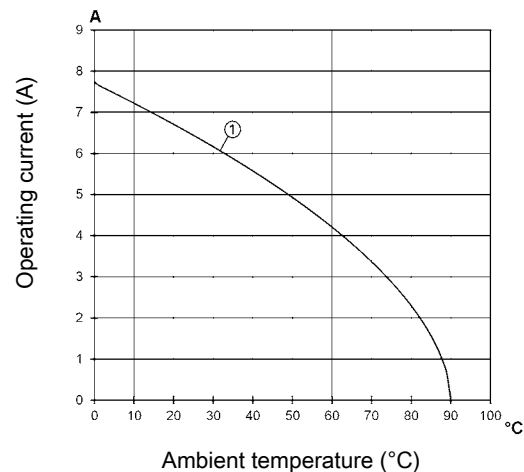
Number of contacts	12
Rated current	6.5 A
Rated voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Insulation resistance	$>10^8 \Omega$
Limiting temperature	-30 ... +90 °C
Mating cycles	$\geq 100$
Degree of protection acc. to IEC 60529	IP20
Material (insert)	Polyamide (PA)
Colour (insert)	RAL 9005 (jet black)
Material (seal)	NBR
Colour (seal)	Black
Material flammability class acc. to UL 94	V-0
RoHS	compliant

## Derating

### 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 acc. to IEC 60512-5-2



① Conductor cross-section 0.52 mm<sup>2</sup>


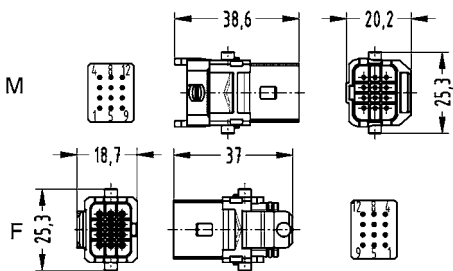

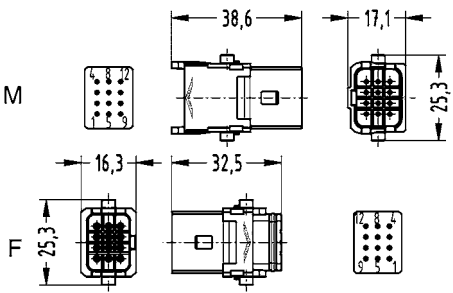

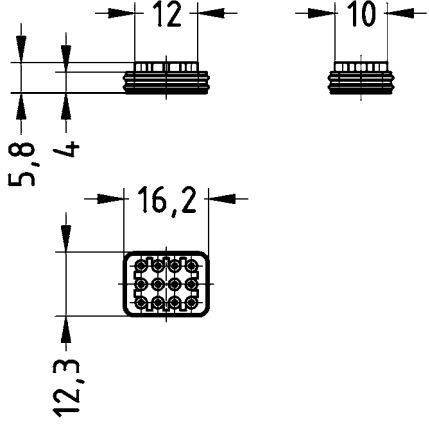
## Specifications and approvals

EN 45545-2 R22: HL1, HL2, HL3  
 EN 45545-2 R23: HL1, HL2, HL3  
 EN 45545-2 R24: HL1, HL2, HL3  
 IEC 61373 Category 1 Class B  
 EN 60664-1  
 IEC 61984  
 DNV GL

## Details

A Han® 1A configuration that only consists of inserts (with or without strain relief, 09 10 000 5300) is an unenclosed connector. In this case protection against electric shock must be provided by the installation methods of the user.

Han  
1A

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
<p>Han® 1A, Crimp termination, Snap-in latches, IP20</p>  <p>Please order crimp contacts separately. Order separately the single wire seal or the hoods/housings for an IP65 performance.</p>	0.09 ... 0.52	09 10 012 3001	09 10 012 3101	
<p>Han® 1A, Crimp termination, Single locking lever, IP20</p>  <p>Please order crimp contacts separately. Order separately the single wire seal or the hoods/housings for an IP65 performance. Please order locking lever separately.</p>	0.09 ... 0.52	09 10 012 3006	09 10 012 3106	
<p>Single wire seal, Silicone, for 12 contacts</p> 		09 10 012 9900	09 10 012 9900	


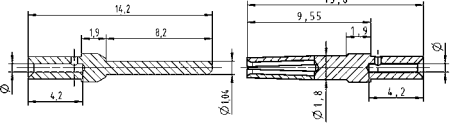
Han  
22  
10

## Technical characteristics


Contact resistance  $\leq 10 \text{ m}\Omega$

## Technical characteristics

Material (contacts) Copper alloy  
RoHS compliant with exemption

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)															
		Male	Female																
D-Sub, Standard, Crimp contact  	0.09 ... 0.25	09 67 000 7576	09 67 000 7476	 <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> <p>for stranded wire according IEC 60228 Class 5</p>	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	4 mm
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0.33-0.82 mm <sup>2</sup>	1.34 mm	4 mm																	
0.13 ... 0.33	09 67 000 5576	09 67 000 5476																	
0.25 ... 0.52	09 67 000 8576	09 67 000 8476																	
0.33 ... 0.82	09 67 000 3576	09 67 000 3476																	

Number of contacts

**2+** 

10 A 230/400 V 4 kV 3

Han  
1A

## Technical characteristics

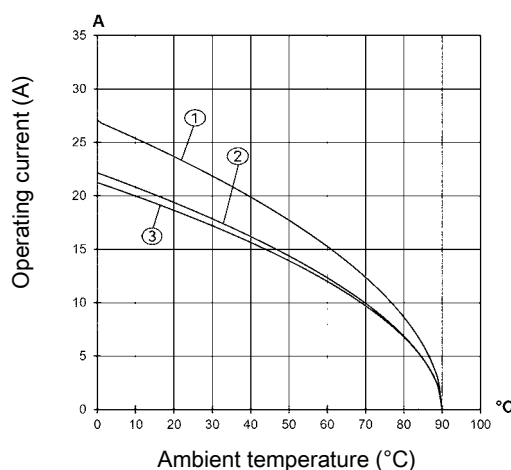
Number of contacts	2
Rated current	10 A
Rated voltage conductor-earth	230 V
Rated voltage conductor-conductor	400 V
Rated impulse voltage	4 kV
Pollution degree	3
Insulation resistance	>10 <sup>8</sup> Ω
Limiting temperature	-30 ... +90 °C
Mating cycles	≥100
Degree of protection acc. to IEC 60529	IP20
Material (insert)	Polyamide (PA)
Colour (insert)	RAL 9005 (jet black)
Material (seal)	NBR
Colour (seal)	Black
Material (contacts)	Copper alloy
Material flammability class acc. to UL 94	V-0
RoHS	compliant with exemption, compliant

## Derating

### 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 acc. to IEC 60512-5-2



- ① Conductor cross-section 1.5 mm<sup>2</sup>
- ② Conductor cross-section 1 mm<sup>2</sup>
- ③ Conductor cross-section 0.75 mm<sup>2</sup>


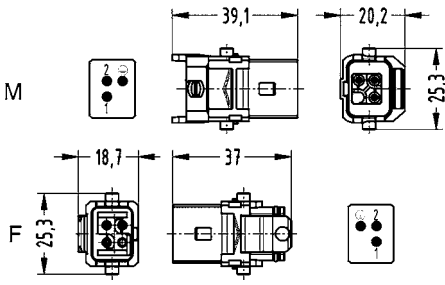

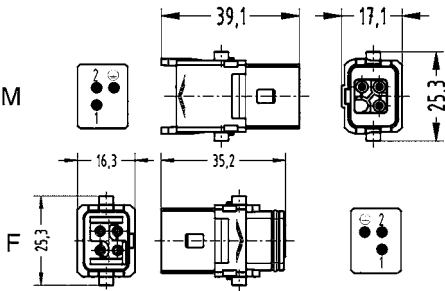

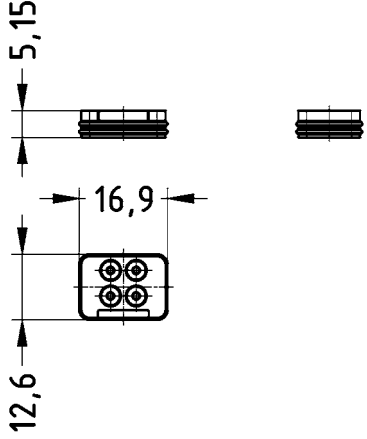
## Specifications and approvals

EN 45545-2 R22: HL1, HL2, HL3  
 EN 45545-2 R23: HL1, HL2, HL3  
 EN 45545-2 R24: HL1, HL2, HL3  
 IEC 61373 Category 1 Class B  
 EN 60664-1  
 IEC 61984  
 DNV GL

## Details

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


A Han® 1A configuration that only consists of inserts (with or without strain relief, 09 10 000 5300) is an unenclosed connector. In this case protection against electric shock must be provided by the installation methods of the user.

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
<p>Han® 1A, Screw termination, Snap-in latches, IP20</p> <p>Contact surface: Silver plated</p>  <p>Order separately the single wire seal or the hoods/housings for an IP65 performance.</p>	0.75 ... 1.5	09 10 002 2601	09 10 002 2701	
<p>Han® 1A, Screw termination, Single locking lever, IP20</p> <p>Contact surface: Silver plated</p>  <p>Order separately the single wire seal or the hoods/housings for an IP65 performance. Please order locking lever separately.</p>	0.75 ... 1.5	09 10 002 2606	09 10 002 2706	
<p>Single wire seal, Silicone, for 4 contacts</p> 		09 10 004 9900	09 10 004 9900	

Han 1A

Han 22 13

Number of contacts

**3+** 

16 A 400 V 6 kV 3

Han  
1A

## Technical characteristics

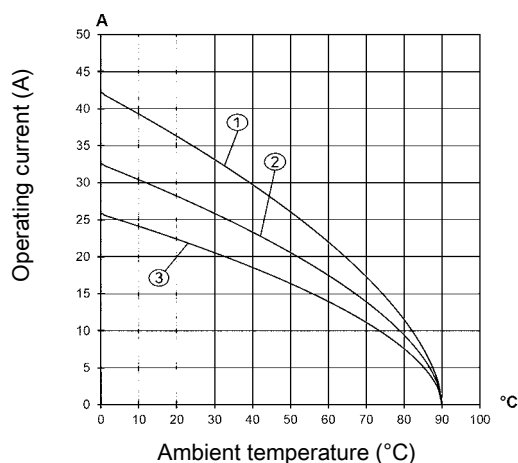
Number of contacts	3
Rated current	16 A
Rated voltage	400 V
Rated impulse voltage	6 kV
Pollution degree	3
Insulation resistance	$>10^8 \Omega$
Limiting temperature	-30 ... +90 °C
Mating cycles	$\geq 100$
Degree of protection acc. to IEC 60529	IP20
Material (insert)	Polyamide (PA)
Colour (insert)	RAL 9005 (jet black)
Material (seal)	NBR
Colour (seal)	Black
Material flammability class acc. to UL 94	V-0
RoHS	compliant

## Derating

### 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 acc. to IEC 60512-5-2




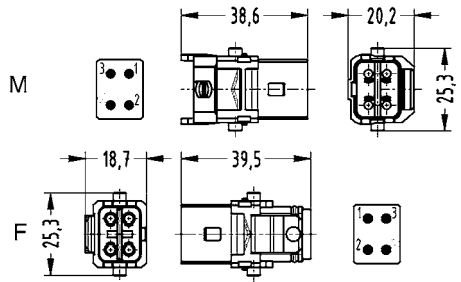

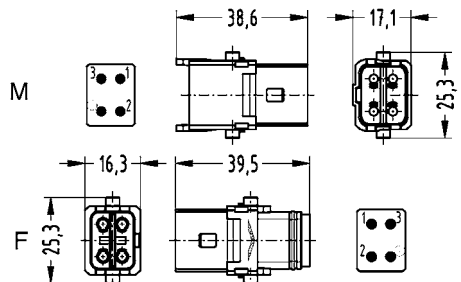

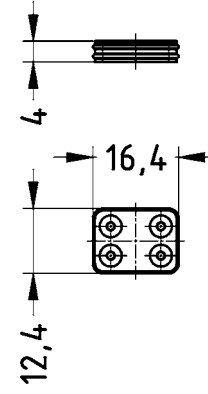
- ① Conductor cross-section 4 mm<sup>2</sup>
- ② Conductor cross-section 2.5 mm<sup>2</sup>
- ③ Conductor cross-section 1.5 mm<sup>2</sup>

## Specifications and approvals

EN 45545-2 R22: HL1, HL2, HL3  
 EN 45545-2 R23: HL1, HL2, HL3  
 EN 45545-2 R24: HL1, HL2, HL3  
 IEC 61373 Category 1 Class B  
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 DNV GL

## Details

A Han® 1A configuration that only consists of inserts (with or without strain relief, 09 10 000 5300) is an unenclosed connector. In this case protection against electric shock must be provided by the installation methods of the user.

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
<p>Han® 1A, Crimp termination, Snap-in latches, IP20</p>  <p>Please order crimp contacts separately. Order separately the single wire seal or the hoods/housings for an IP65 performance.</p>	0.14 ... 4	09 10 003 3201	09 10 003 3301	
<p>Han® 1A, Crimp termination, Single locking lever, IP20</p>  <p>Please order crimp contacts separately. Order separately the single wire seal or the hoods/housings for an IP65 performance. Please order locking lever separately.</p>	0.14 ... 4	09 10 003 3206	09 10 003 3306	
<p>Single wire seal, Silicone, for 4 contacts</p> 		09 10 004 9901	09 10 004 9901	

Han 1A

Han 22 15



## Technical characteristics

Contact resistance	≤1 mΩ
Material (contacts)	Copper alloy
RoHS	compliant with exemption

## Specifications and approvals


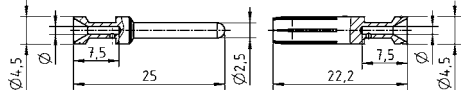

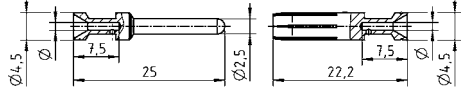
EN 60664-1  
IEC 61984

## 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 <sup>®</sup> , Crimp contact, Contact surface: Silver plated  	0.14 ... 0.37	09 33 000 6127	09 33 000 6227	 <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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	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																					
0.5	09 33 000 6121	09 33 000 6220																				
0.75	09 33 000 6114	09 33 000 6214																				
1	09 33 000 6105	09 33 000 6205																				
1.5	09 33 000 6104	09 33 000 6204																				
2.5	09 33 000 6102	09 33 000 6202																				
3	09 33 000 6106	09 33 000 6206																				
4	09 33 000 6107	09 33 000 6207																				
Han E <sup>®</sup> , Crimp contact, Contact surface: Gold plated  	0.14 ... 0.37	09 33 000 6117	09 33 000 6217	 <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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4 mm <sup>2</sup> AWG 12	no groove																					
0.5	09 33 000 6122	09 33 000 6222																				
0.75	09 33 000 6115	09 33 000 6215																				
1	09 33 000 6118	09 33 000 6218																				
1.5	09 33 000 6116	09 33 000 6216																				
2.5	09 33 000 6123	09 33 000 6223																				
3	09 33 000 6119	09 33 000 6221																				
4	09 33 000 6119	09 33 000 6221																				

Number of contacts

**3+** 

10 A 230/400 V 4 kV 3

Han  
1A

## Technical characteristics

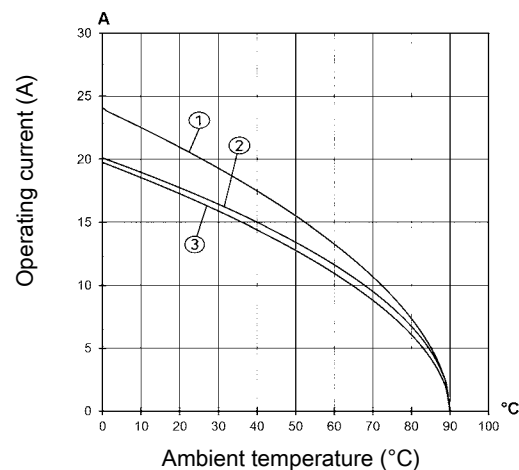
Number of contacts	3
Rated current	10 A
Rated voltage conductor-earth	230 V
Rated voltage conductor-conductor	400 V
Rated impulse voltage	4 kV
Pollution degree	3
Insulation resistance	>10 <sup>8</sup> Ω
Limiting temperature	-30 ... +90 °C
Mating cycles	≥100
Degree of protection acc. to IEC 60529	IP20
Material (insert)	Polyamide (PA)
Colour (insert)	RAL 9005 (jet black)
Material (seal)	NBR
Colour (seal)	Black
Material (contacts)	Copper alloy
Material flammability class acc. to UL 94	V-0
RoHS	compliant with exemption, compliant

## Derating

### 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 acc. to IEC 60512-5-2



- ① Conductor cross-section 1.5 mm<sup>2</sup>
- ② Conductor cross-section 1 mm<sup>2</sup>
- ③ Conductor cross-section 0.75 mm<sup>2</sup>

## Specifications and approvals


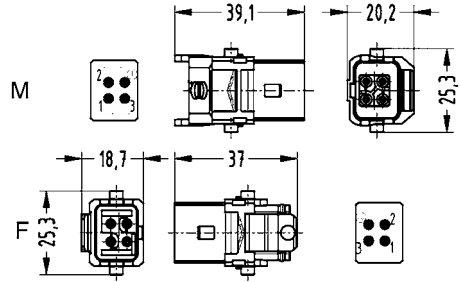

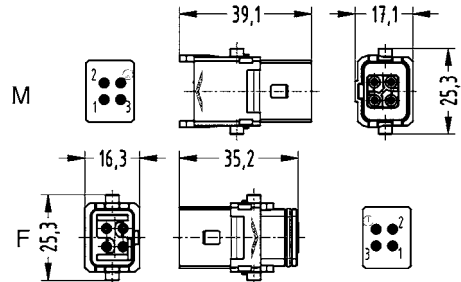

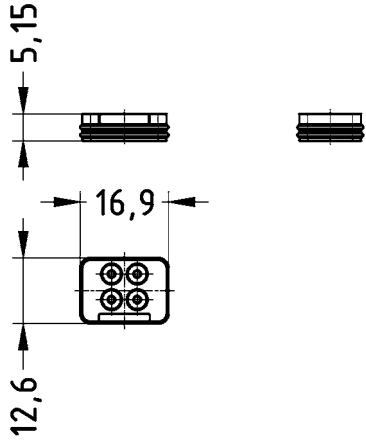
EN 45545-2 R22: HL1, HL2, HL3  
 EN 45545-2 R23: HL1, HL2, HL3  
 EN 45545-2 R24: HL1, HL2, HL3  
 IEC 61373 Category 1 Class B  
 EN 60664-1  
 IEC 61984  
 DNV GL  
 IEC 61373

## Details

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


A Han® 1A configuration that only consists of inserts (with or without strain relief, 09 10 000 5300) is an unenclosed connector. In this case protection against electric shock must be provided by the installation methods of the user.

Han  
1A

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
<p>Han® 1A, Screw termination, Snap-in latches, IP20</p> <p>Contact surface: Silver plated</p>  <p>Order separately the single wire seal or the hoods/housings for an IP65 performance.</p>	0.75 ... 1.5	09 10 003 2601	09 10 003 2701	
<p>Han® 1A, Screw termination, Single locking lever, IP20</p> <p>Contact surface: Silver plated</p>  <p>Order separately the single wire seal or the hoods/housings for an IP65 performance. Please order locking lever separately.</p>	0.75 ... 1.5	09 10 003 2606	09 10 003 2706	
<p>Single wire seal, Silicone, for 4 contacts</p> 		09 10 004 9900	09 10 004 9900	

Han  
22  
18

Number of contacts

**3+** 

 10 A 400 V 6 kV 3  
 + shielding
Han  
1A

## Technical characteristics

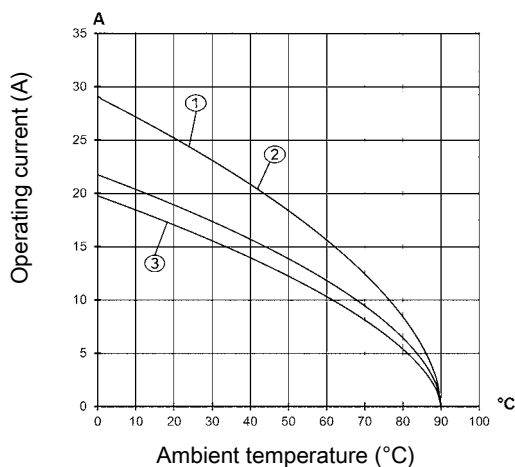
Number of contacts	3
Additional contacts	+ shielding
Rated current	10 A
Rated voltage	400 V
Rated impulse voltage	6 kV
Pollution degree	3
Insulation resistance	$>10^8 \Omega$
Limiting temperature	-30 ... +90 °C
Mating cycles	$\geq 100$
Degree of protection acc. to IEC 60529	IP20
Material (insert)	Polyamide (PA)
Colour (insert)	RAL 9005 (jet black)
Material (seal)	NBR
Colour (seal)	Black
Material flammability class acc. to UL 94	V-0
RoHS	compliant

## Derating

### 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 acc. to IEC 60512-5-2



- ① Conductor cross-section 2.5 mm<sup>2</sup>
- ② Conductor cross-section 1.5 mm<sup>2</sup>
- ③ Conductor cross-section 1 mm<sup>2</sup>

## Specifications and approvals


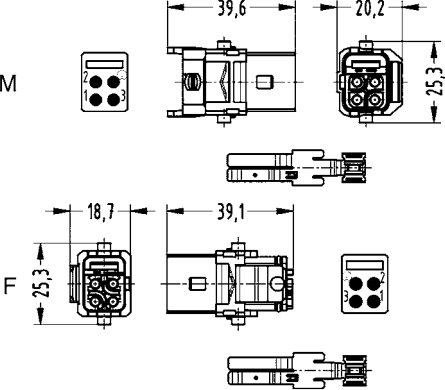

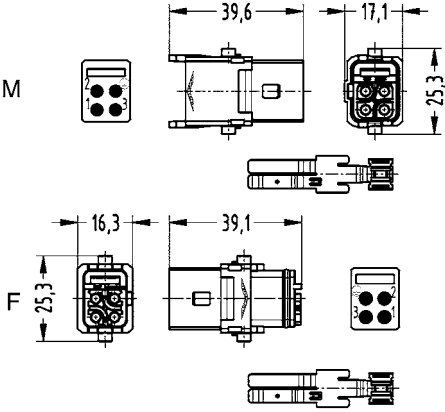
EN 45545-2 R22: HL1, HL2, HL3  
 EN 45545-2 R23: HL1, HL2, HL3  
 EN 45545-2 R24: HL1, HL2, HL3  
 IEC 61373 Category 1 Class B  
 EN 60664-1  
 IEC 61984  
 DNV GL

## Details

A Han® 1A configuration that only consists of inserts (with or without strain relief, 09 10 000 5300) is an unenclosed connector. In this case protection against electric shock must be provided by the installation methods of the user.

The Han® 1A insert has no conductive connection between PE-contact and shielding element. Protection against electric shock must be provided by connecting the cable shielding to a protective earth (PE).

Han  
1A

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
<p>Han® 1A, Crimp termination, With cable tie, Snap-in latches, IP20</p> <p>Pack contents: Shielding element is included within the delivery</p>  <p>Please order crimp contacts separately. Order separately the hoods/housings for an IP65 performance.</p>	0.14 ... 2.5	09 10 003 3001	09 10 003 3101	
<p>Han® 1A, Crimp termination, With cable tie, Single locking lever, IP20</p> <p>Pack contents: Shielding element is included within the delivery</p>  <p>Please order crimp contacts separately. Order separately the hoods/housings for an IP65 performance. Please order locking lever separately.</p>	0.14 ... 2.5	09 10 003 3006	09 10 003 3106	

Han  
22  
·  
20

## Technical characteristics

Contact resistance	≤3 mΩ
Material (contacts)	Copper alloy
RoHS	compliant with exemption

## Specifications and approvals


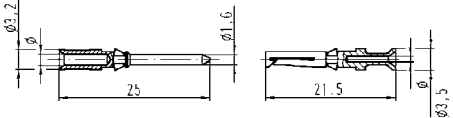

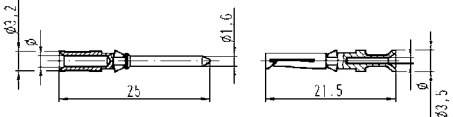
EN 60664-1  
IEC 61984

## 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®, Crimp contact, Contact surface: Silver plated  	0.14 ... 0.37	09 15 000 6104	09 15 000 6204	 <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
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0.5	09 15 000 6103	09 15 000 6203																							
0.75	09 15 000 6105	09 15 000 6205																							
1	09 15 000 6102	09 15 000 6202																							
1.5	09 15 000 6101	09 15 000 6201																							
2.5	09 15 000 6106	09 15 000 6206																							
Han D®, Crimp contact, Contact surface: Gold plated  	0.14 ... 0.37	09 15 000 6124	09 15 000 6224	 <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
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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																							

Number of contacts

**5+** 

10 A 400 V 6 kV 3

Han  
1A

## Technical characteristics

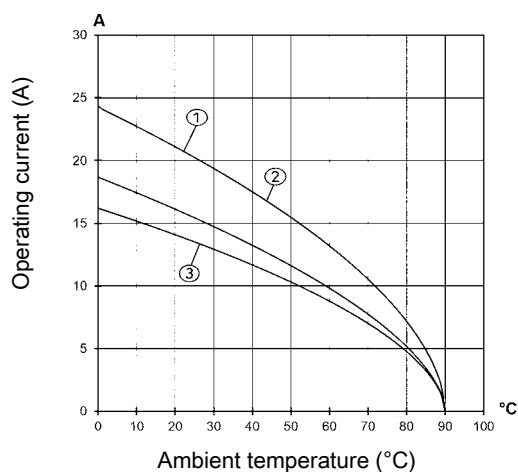
Number of contacts	5
Rated current	10 A
Rated voltage	400 V
Rated impulse voltage	6 kV
Pollution degree	3
Insulation resistance	>10 <sup>8</sup> Ω
Limiting temperature	-30 ... +90 °C
Mating cycles	≥100
Degree of protection acc. to IEC 60529	IP20
Material (insert)	Polyamide (PA)
Colour (insert)	RAL 9005 (jet black)
Material (seal)	NBR
Colour (seal)	Black
Material flammability class acc. to UL 94	V-0
RoHS	compliant

## Derating

### 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 acc. to IEC 60512-5-2




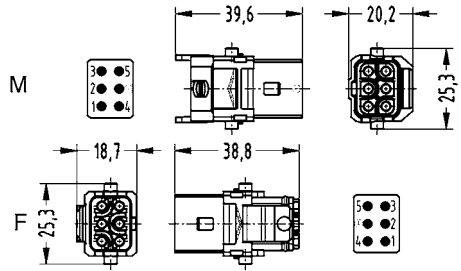

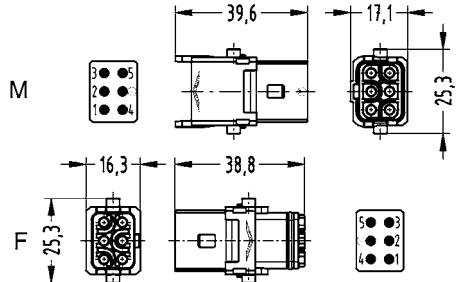

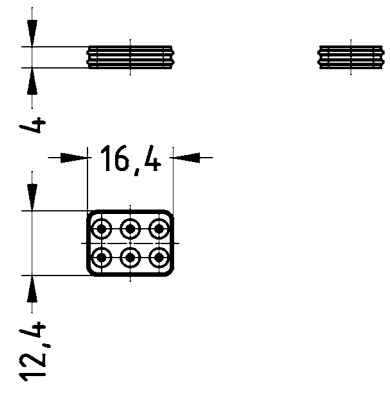
- ① Conductor cross-section 2.5 mm<sup>2</sup>
- ② Conductor cross-section 1.5 mm<sup>2</sup>
- ③ Conductor cross-section 1 mm<sup>2</sup>

## Specifications and approvals

EN 45545-2 R22: HL1, HL2, HL3  
 EN 45545-2 R23: HL1, HL2, HL3  
 EN 45545-2 R24: HL1, HL2, HL3  
 IEC 61373 Category 1 Class B  
 EN 60664-1  
 IEC 61984  
 DNV GL

## Details

A Han® 1A configuration that only consists of inserts (with or without strain relief, 09 10 000 5300) is an unenclosed connector. In this case protection against electric shock must be provided by the installation methods of the user.

Identification	Conductor cross-section (mm <sup>2</sup> )	Part number		Drawing (dimensions in mm)
		Male	Female	
<p>Han® 1A, Crimp termination, Snap-in latches, IP20</p>  <p>Please order crimp contacts separately. Order separately the single wire seal or the hoods/housings for an IP65 performance.</p>	0.14 ... 2.5	09 10 005 3001	09 10 005 3101	
<p>Han® 1A, Crimp termination, Single locking lever, IP20</p>  <p>Please order crimp contacts separately. Order separately the single wire seal or the hoods/housings for an IP65 performance. Please order locking lever separately.</p>	0.14 ... 2.5	09 10 005 3006	09 10 005 3106	
<p>Single wire seal, Silicone, for 6 contacts</p> 		09 10 006 9900	09 10 006 9900	

Han  
1A

Han  
22  
-  
23



## Technical characteristics

Contact resistance	≤3 mΩ
Material (contacts)	Copper alloy
RoHS	compliant with exemption

## Specifications and approvals


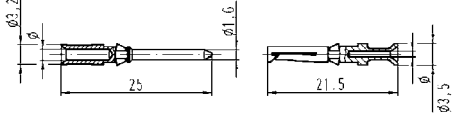

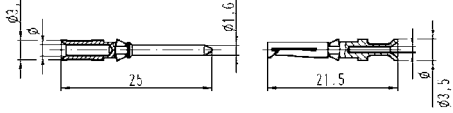
EN 60664-1  
IEC 61984

## 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)																					
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Han D®, Crimp contact, Contact surface: Silver plated  	0.14 ... 0.37	09 15 000 6104	09 15 000 6204	 <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
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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																							
0.5	09 15 000 6103	09 15 000 6203																							
0.75	09 15 000 6105	09 15 000 6205																							
1	09 15 000 6102	09 15 000 6202																							
1.5	09 15 000 6101	09 15 000 6201																							
2.5	09 15 000 6106	09 15 000 6206																							
Han D®, Crimp contact, Contact surface: Gold plated  	0.14 ... 0.37	09 15 000 6124	09 15 000 6224	 <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
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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																							



### Technical characteristics

Limiting temperature	-30 ... +90 °C
Number of relockings	<10
Degree of protection acc. to IEC 60529	IP65, IP20
Material (hood/housing)	Polyamide (PA)
Colour (hood/housing)	RAL 9005 (jet black)
Material (seal)	TPE
Colour (seal)	Yellow
Material (accessories)	Polyamide (PA)
Colour (accessories)	Black
Material flammability class acc. to UL 94	V-0


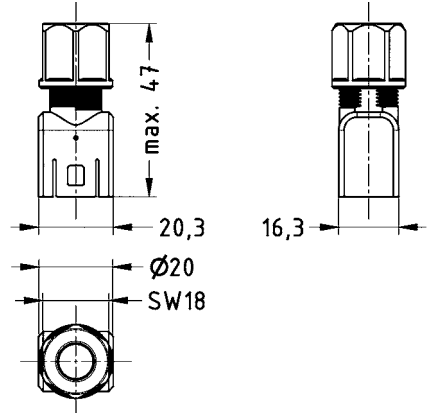

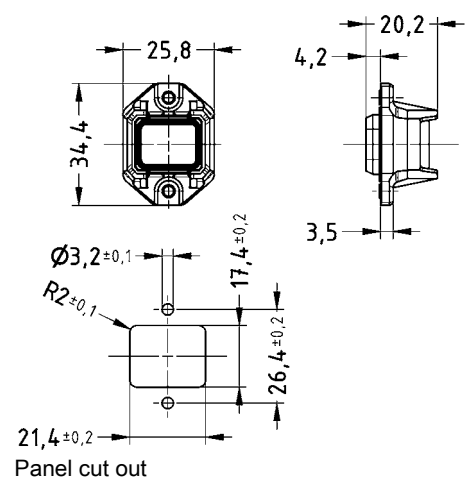
### Technical characteristics

RoHS compliant


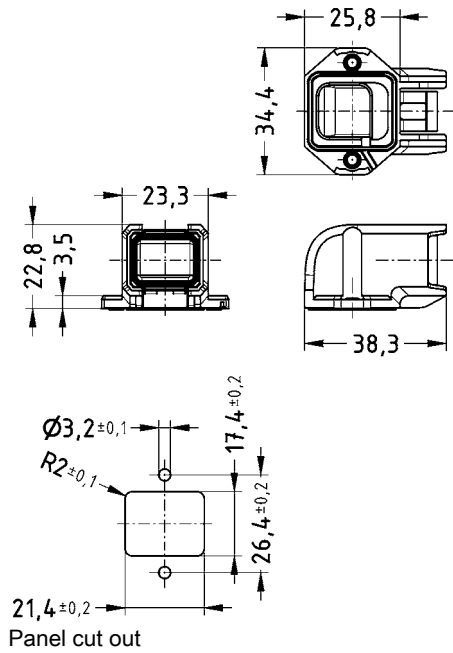


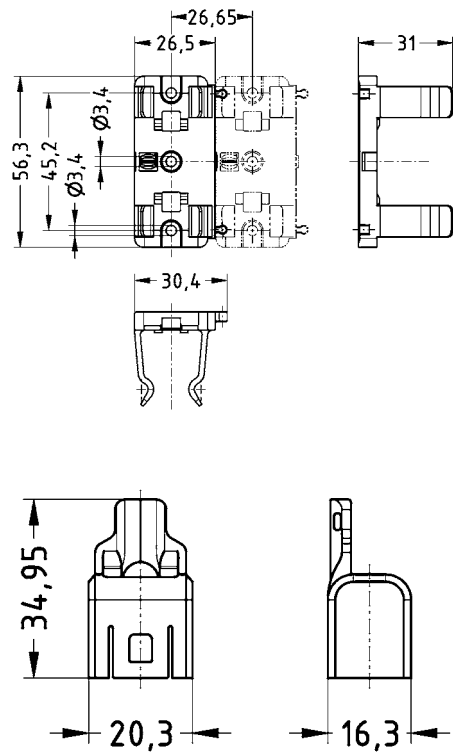
### Specifications and approvals

EN 45545-2 R22: HL1, HL2, HL3  
 EN 45545-2 R23: HL1, HL2, HL3  
 EN 45545-2 R24: HL1, HL2, HL3  
 IEC 61373 Category 1 Class B  
 DNV GL



Identification	Cable entry	Cable diameter (mm)	Part number	Drawing (dimensions in mm)
Han® 1A, Cable adapter, Top entry, IP65 	1x Integrated	5.7 ... 10	09 10 000 0400	
Han® 1A, Bulkhead mounted housing, Straight, IP65 			09 10 000 0300	

Han  
1A

Identification	Cable entry	Cable diameter (mm)	Part number	Drawing (dimensions in mm)
<p>Han® 1A, Bulkhead mounted housing, Angled, IP65</p> 			09 10 000 0800	
<p>Han® 1A, Mounting frames, for wall mounting</p>  <p>Han® 1A, Strain relief, IP20, IP20 Pack contents: Cable tie is included within the delivery</p>  <p>A Han® 1A configuration that only consists of inserts (with or without strain relief, 09 10 000 5300) is an unenclosed connector. In this case protection against electric shock must be provided by the installation methods of the user.</p>			<p>09 10 000 9908</p> <p>09 10 000 5300</p>	

Technical characteristics

Number of relockings  $\geq 100$

Technical characteristics

Material (accessories) Stainless steel  
RoHS compliant

Identification

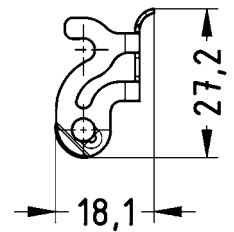
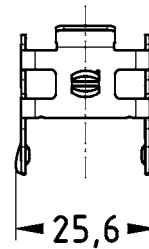
Han® 1A,  
Locking levers,  
for Han® 1A inserts with single locking lever



Part number

09 10 000 5200

Drawing  
(dimensions in mm)



Han  
1A

## Technical characteristics

Material (accessories) Polycarbonate (PC), Polyamide (PA)

## Technical characteristics

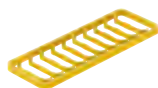
Colour (accessories) Black, Red, Blue, Green, Yellow, Violet compliant  
RoHS

### Identification

Han® 1A,  
Dummy plugs,  
for single wire seal for a partial assembly,  
Polycarbonate (PC),  
Pack contents:  
20 pieces per frame



Han® 1A,  
Coding element,  
Polyamide (PA),  
Pack contents:  
10 pieces per frame



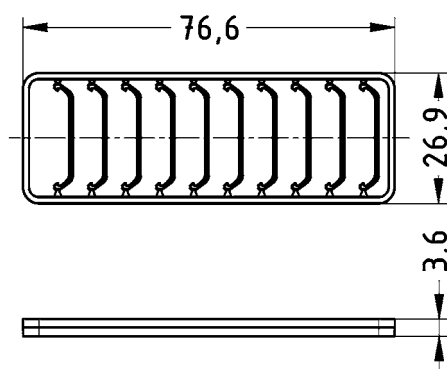
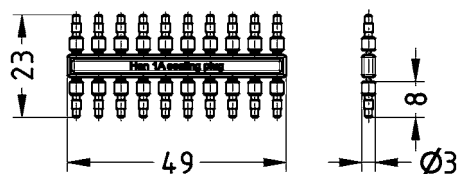
Blue  
Green  
Red  
Violet  
Yellow

### Part number

09 10 000 9909

09 10 000 9902  
09 10 000 9903  
09 10 000 9901  
09 10 000 9905  
09 10 000 9904

### Drawing (dimensions in mm)





Pushing Performance

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