HARTING®

Pushing Performance

HARTING Han® 1A
Versatile compact connector series

Transforming customer wishes into concrete solutions

The HARTING Technology Group is skilled in the fields of electrical, electronic and optical connection, transmission and networking technology, as well as in manufacturing, mechatronics and software creation. The Group uses these skills to develop customized solutions and products such as connectors for energy and data-transmission/data-networking applications, including, for example, mechanical engineering, rail technology, wind energy plants, factory automation and the telecommunications sector. In addition, HARTING also produces electro-magnetic components for the automobile industry and offers solutions in the field of housing technology and shop systems.

The HARTING Group currently comprises 58 sales companies and production plants worldwide employing a total of about 5,000 staff.

HARTING Subsidiary

HARTING Representation

We aspire to top performance.

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

Wherever our customers are, we're there.

Increasing industrialization is creating growing markets that are characterized by widely diverging demands and requirements. What these markets all share in common is the quest for perfection, increasingly efficient processes and reliable technologies. **HARTING** is providing these technologies – in Europe, the Americas and Asia. In order to implement customer requirements in the best possible manner, the **HARTING** professionals at our international subsidiaries engage in up-close, partnership-based interaction with our customers, right from the very early product development phase.

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

Our claim: Pushing Performance.

HARTING provides more than optimally attuned components. In order to offer our customers the best possible solutions, on request **HARTING** contributes a great deal more and is tightly integrated into the value-creation process.

From ready-assembled cables through to control racks or ready-to-go control desks. Our aim is to generate maximum benefit for our customers – with no compromises!

Quality creates reliability – and warrants trust.

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

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

HARTING technology creates added value for customers.

Technologies by **HARTING** are at work worldwide. **HARTING's** presence stands for smoothly functioning systems powered by intelligent connectors, smart infrastructure solutions and sophisticated network systems. Over the course of many years of close, trust-based cooperation with its customers, the **HARTING** Technology Group has become one of the leading specialists globally for connector technology. We offer individual customers specific and innovative solutions that go beyond the basic standard functionalities. These tailored solutions deliver sustained results, ensure investment security and enable customers to achieve significant added value.

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

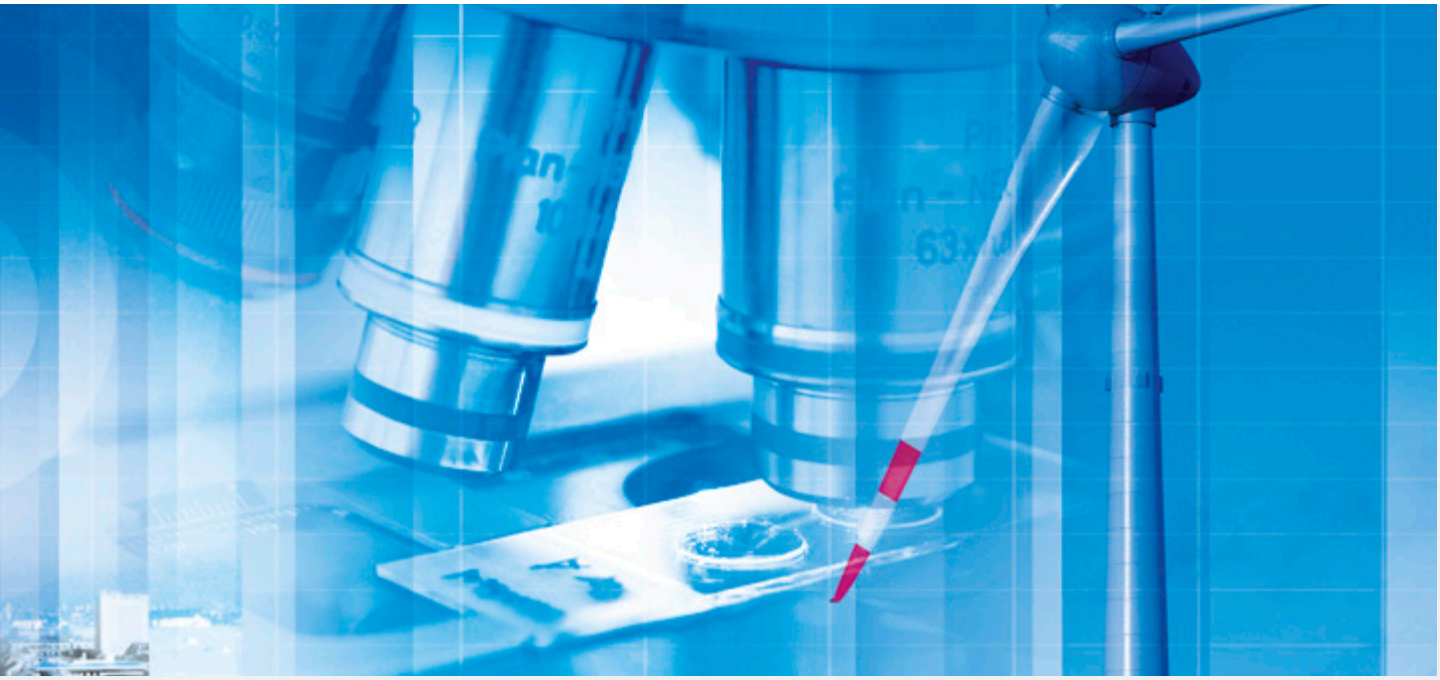
In order to develop and produce connectivity and network solutions serving an exceptionally wide range of connector applications in a professional and cost-effective manner, **HARTING** not only commands the full array of conventional tools and basic technologies. Above and beyond these capabilities, **HARTING** is constantly harnessing and refining its broad base of knowledge and experience to create new solutions that also ensure continuity. To secure its lead in know-how, HARTING draws on a wealth of sources from its in-house research and applications.

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

HARTING overcomes technological limitations.

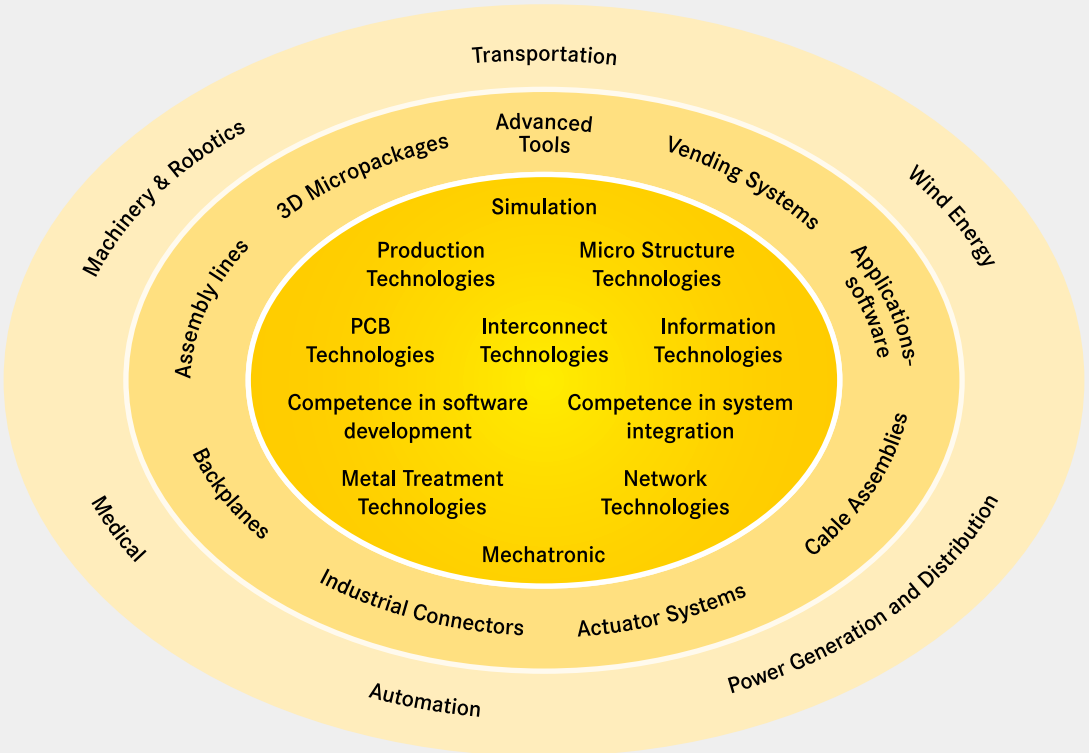
Drawing on the comprehensive resources of the group's technology pool, **HARTING** devises practical solutions for its customers. Whether this involves industrial networks for manufacturing automation, or hybrid interface solutions for wireless telecommunication infrastructures, 3D circuit carriers with microstructures, or cable assemblies for high-temperature applications in the automotive industry – **HARTING** technologies offer not only components, but comprehensive solutions attuned to individual customer requirements and preferences. The range of cost-effective solutions covers ready-to-use cable configurations, completely assembled backplanes and board system carriers, as well as fully wired and tested control panels.

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



HARTING's knowledge is practical know-how that generates synergy effects.

HARTING commands decades of experience with regard to the applications conditions involved in connections in telecommunications, computer, network and medical technologies, as well as industrial automation technologies, e.g. in the mechanical engineering and plant engineering areas, in addition to the power generation industry and the transportation sector. **HARTING** is highly conversant with the specific application areas in all of these technology fields. In every solution approach, the key focus is on the application. In this context, uncompromising, superior quality is our hallmark. Every new solution found invariably flows back into the **HARTING** technology pool, thereby enriching our resources. And every new solution we go on to create will draw on this wealth of resources in order to optimize each and every individual solution. **HARTING** is synergy in action.



HARTING eCatalogue

The **HARTING eCatalogue / eShop** can be found on our homepage at **www.HARTING.com** or at the direct link **www.eCatalogue.HARTING.com**.

The HARTING e-Catalogue is your platform for conveniently selecting individual products as well as configuring complete solutions. Our comprehensive product pages provide you with all necessary technical information and CAD files in various formats for downloading. You may also contact our technical sales department directly.

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Contents	Page

Han® 1A - Versatile compact connector series

Markets and applications

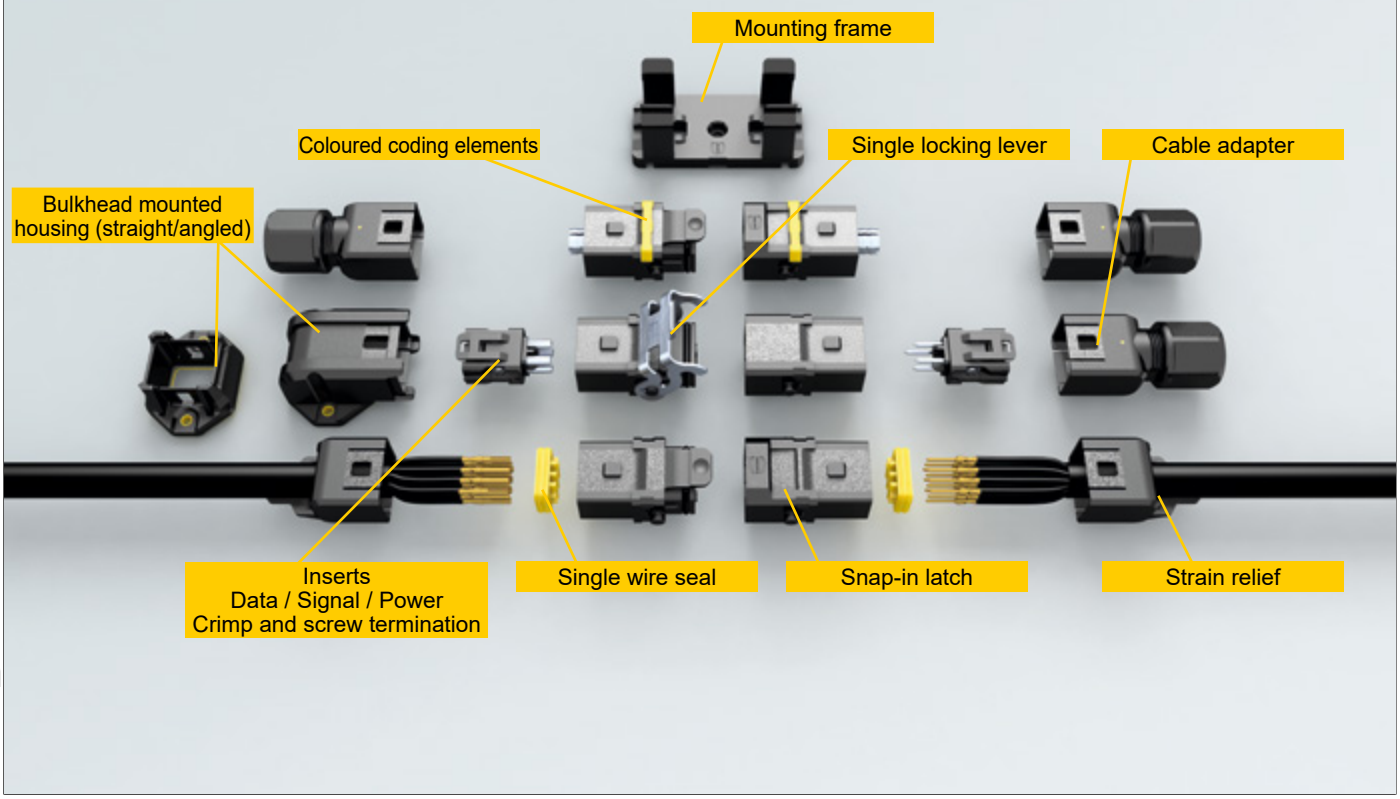
- **Transportation**
  - Can be used in: door systems and ramps, illumination, headlights, speakers, indicating lights, warning lights, screens, door opener, push buttons, buzzers, windscreen wiper systems,...
- **Wind energy**
  - Can be used in: tower lightning, emergency stops, sensors, indicating sounds, ventilators,...
- **Energy storage systems**
  - Can be used in: battery storage sytems, solar inverters, power plant control sytems 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 beeing 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

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	$>10^8$ Ω
Limiting temperature	-30 ... +90 °C
Mating cycles	≥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
RoHS	compliant

Specifications and approvals

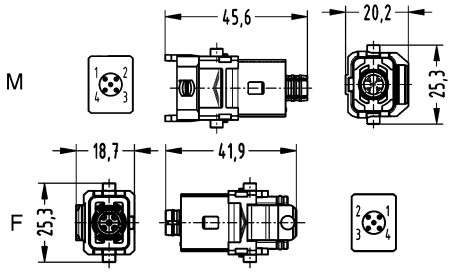
DIN EN 45545-2 R22: HL1, HL2, HL3
DIN EN 45545-2 R23: HL1, HL2, HL3
DIN EN 45545-2 R24: HL1, HL2, HL3
IEC 61373 Category 1 Class B
EN 60664-1
IEC 61984
DNV GL

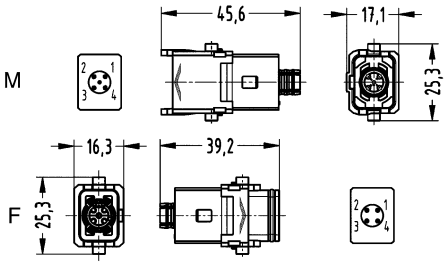
Details

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.

Contact inserts must not be coupled or decoupled under electrical load.

Contact inserts must not be powered-up in the un-mated condition.

Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han® 1A, Crimp termination, With cable tie, Snap-in latches, IP20  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)	0.13 ... 0.82	09 10 004 3001	09 10 004 3101	

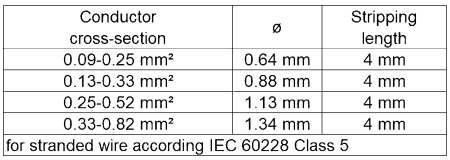
Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han® 1A, Crimp termination, With cable tie, Single locking lever, IP20  Please order crimp contacts separately. Please order locking lever separately. Order separately the hoods/ housings for an IP65 performance. Contact insert not compatible with 09 10 000 0800 (bulkhead mounted housing, angled)	0.13 ... 0.82	09 10 004 3006	09 10 004 3106	

Technical characteristics

Contact resistance	≤10 mΩ

Technical characteristics

Material (contacts)	Copper alloy
RoHS	compliant with exemption

Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
D-Sub, Standard, Crimp contact 	0.13 ... 0.33 0.25 ... 0.52 0.33 ... 0.82	09 67 000 5576 09 67 000 8576 09 67 000 3576	09 67 000 5476 09 67 000 8476 09 67 000 3476	

Conductor cross-section	ø	Stripping length
0.09-0.25 mm²	0.64 mm	4 mm
0.13-0.33 mm²	0.88 mm	4 mm
0.25-0.52 mm²	1.13 mm	4 mm
0.33-0.82 mm²	1.34 mm	4 mm
for stranded wire according IEC 60228 Class 5		

Han 1A

Number of contacts

8

0.5 A 48 V 0.8 kV 3
+ shielding
Cat. 6_A

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	$>10^8$ Ω
Limiting temperature	-30 ... +90 °C
Mating cycles	≥100
Degree of protection acc. to IEC 60529	IP20
Transmission characteristics	Cat. 6_A, Class E_A 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
RoHS	compliant

Specifications and approvals

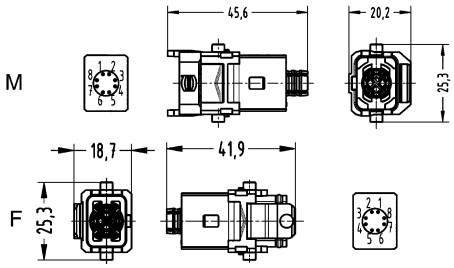
DIN EN 45545-2 R22: HL1, HL2, HL3
DIN EN 45545-2 R23: HL1, HL2, HL3
DIN EN 45545-2 R24: HL1, HL2, HL3
IEC 61373 Category 1 Class B
EN 60664-1
IEC 61984
DNV GL

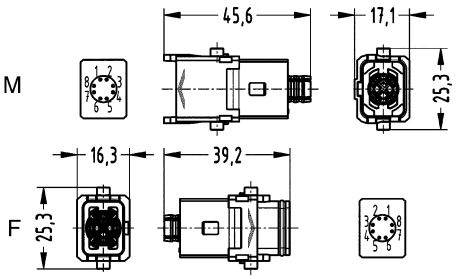
Details

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.

Contact inserts must not be coupled or decoupled under electrical load.

Contact inserts must not be powered-up in the un-mated condition.

Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han® 1A, Crimp termination, With cable tie, Snap-in latches, IP20  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)	0.08 ... 0.25	09 10 008 3001	09 10 008 3101	

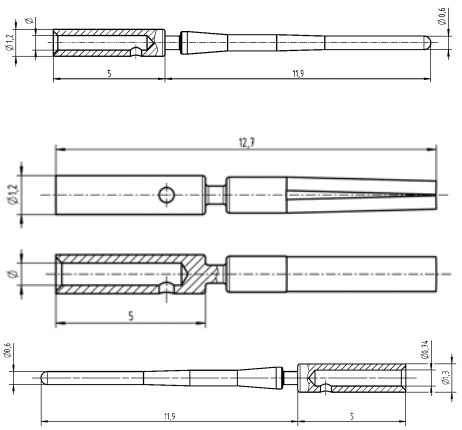
Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han® 1A, Crimp termination, With cable tie, Single locking lever, IP20  Please order crimp contacts separately. Please order locking lever separately. Order separately the hoods/ housings for an IP65 performance. Contact insert not compatible with 09 10 000 0800 (bulkhead mounted housing, angled)	0.08 ... 0.25	09 10 008 3006	09 10 008 3106	

Technical characteristics

Material (contacts)	Copper alloy

Technical characteristics

RoHS	compliant with exemption

Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
har-speed, Crimp contact, Contact surface: Gold plated 	0.08 ... 0.22 0.13 ... 0.25	21 01 100 9014 21 01 100 9019	21 01 100 9023 21 01 100 9021	

Number of contacts

12

6.5 A 50 V 0.8 kV 3

Technical characteristics

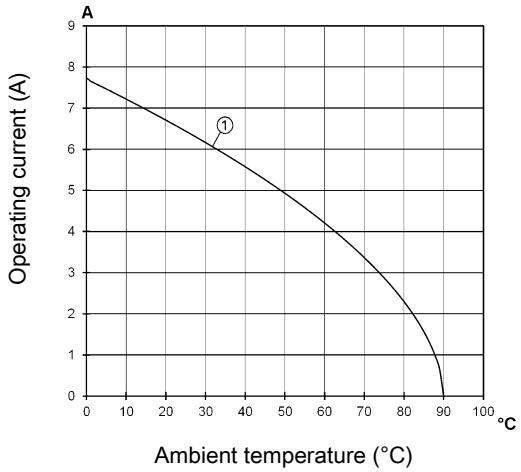
Number of contacts	12
Rated current	6.5 A
Rated voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Insulation resistance	>10^8 Ω
Limiting temperature	-30 ... +90 °C
Mating cycles	≥100
Degree of protection acc. to IEC 60529	IP20
Material (insert)	Polyamide (PA)
Colour (insert)	RAL 9005 (jet 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 0.52 mm²

Specifications and approvals

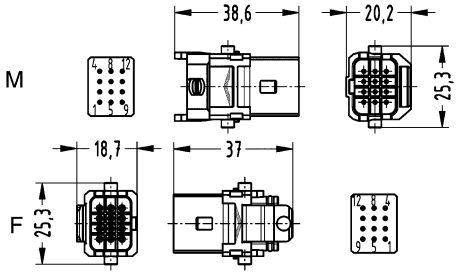
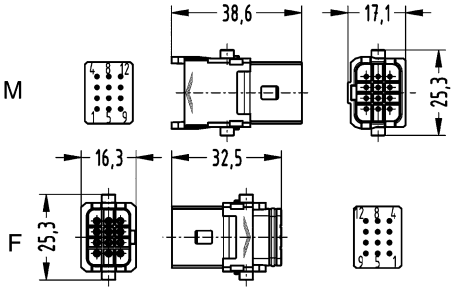
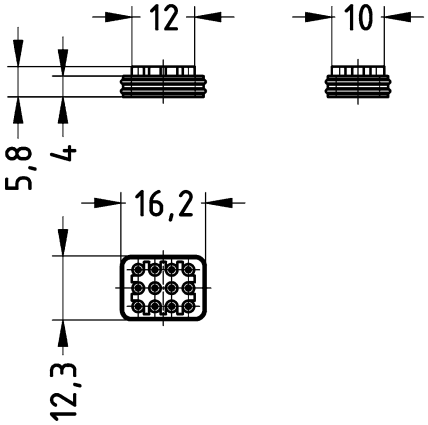
DIN EN 45545-2 R22: HL1, HL2, HL3
DIN EN 45545-2 R23: HL1, HL2, HL3
DIN EN 45545-2 R24: HL1, HL2, HL3
IEC 61373 Category 1 Class B
EN 60664-1
IEC 61984
DNV GL

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.

Contact inserts must not be coupled or decoupled under electrical load.

Contact inserts must not be powered-up in the un-mated condition.

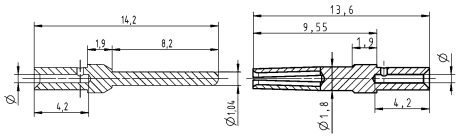
Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han® 1A, Crimp termination, Snap-in latches, IP20  Please order crimp contacts separately. Order separately the single wire seal or the hoods/housings for an IP65 performance.	0.09 ... 0.52	09 10 012 3001	09 10 012 3101	
Han® 1A, Crimp termination, Single locking lever, IP20  Please order crimp contacts separately. Please order locking lever separately. Order separately the single wire seal or the hoods/housings for an IP65 performance.	0.09 ... 0.52	09 10 012 3006	09 10 012 3106	
Single wire seal, Silicone, for 12 contacts 		09 10 012 9900	09 10 012 9900	

Technical characteristics

Contact resistance	≤10 mΩ

Technical characteristics

Material (contacts)	Copper alloy
RoHS	compliant with exemption

Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
D-Sub, Standard, Crimp contact 	0.09 ... 0.25 0.13 ... 0.33 0.25 ... 0.52 0.33 ... 0.82	09 67 000 7576 09 67 000 5576 09 67 000 8576 09 67 000 3576	09 67 000 7476 09 67 000 5476 09 67 000 8476 09 67 000 3476	

Conductor cross-section	ø	Stripping length
0.09-0.25 mm²	0.64 mm	4 mm
0.13-0.33 mm²	0.88 mm	4 mm
0.25-0.52 mm²	1.13 mm	4 mm
0.33-0.82 mm²	1.34 mm	4 mm
for stranded wire according IEC 60228 Class 5		

Number of contacts

2+ ⏚

10 A 230/400 V 4 kV 3

Technical characteristics

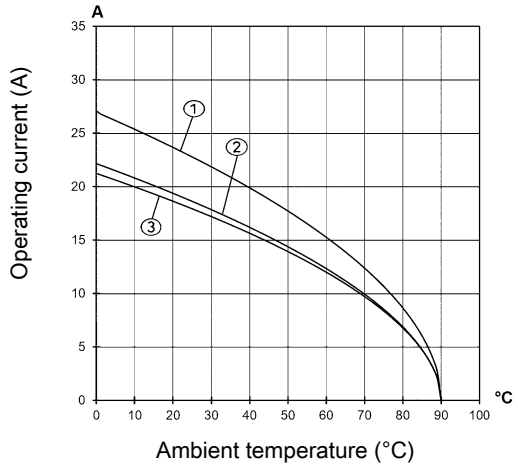
Number of contacts	2
Rated current	10 A
Rated voltage conductor-earth	230 V
Rated voltage conductor-conductor	400 V
Rated impulse voltage	4 kV
Pollution degree	3
Insulation resistance	>10^8 Ω
Limiting temperature	-30 ... +90 °C
Mating cycles	≥100
Degree of protection acc. to IEC 60529	IP20
Material (insert)	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 mm²
② Conductor cross-section 1 mm²
③ Conductor cross-section 0.75 mm²

Specifications and approvals

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

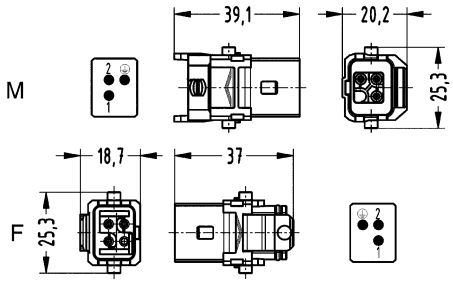
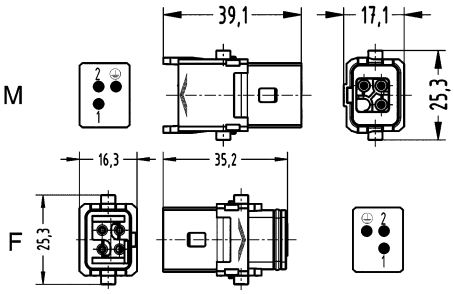
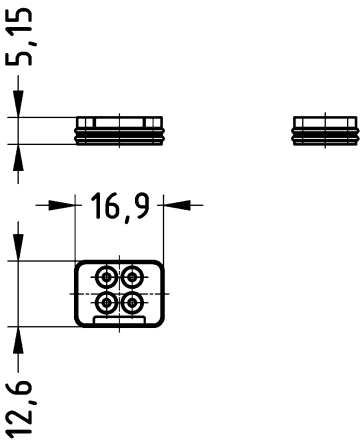
Details

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).

Contact inserts must not be coupled or decoupled under electrical load.

Contact inserts must not be powered-up in the un-mated condition.

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 (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han® 1A, Screw termination, Snap-in latches, IP20 Contact surface: Silver plated  Order separately the single wire seal or the hoods/housings for an IP65 performance.	0.75 ... 1.5	09 10 002 2601	09 10 002 2701	
Han® 1A, Screw termination, Single locking lever, IP20 Contact surface: Silver plated  Please order locking lever separately. Order separately the single wire seal or the hoods/housings for an IP65 performance.	0.75 ... 1.5	09 10 002 2606	09 10 002 2706	
Single wire seal, Silicone, for 4 contacts 		09 10 004 9900	09 10 004 9900	

Han 1A

Number of contacts

3+ ⏚

16 A 400 V 6 kV 3

Technical characteristics

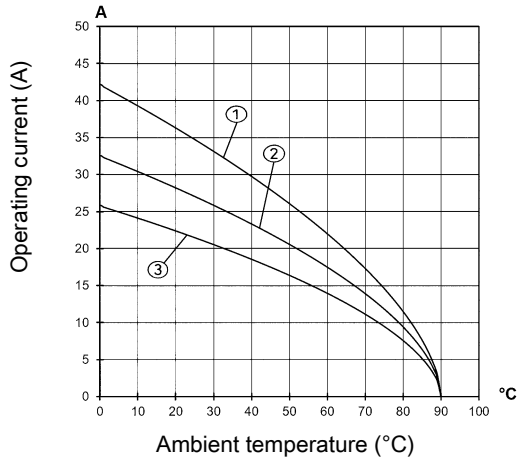
Number of contacts	3
Rated current	16 A
Rated voltage	400 V
Rated impulse voltage	6 kV
Pollution degree	3
Insulation resistance	>10^8 Ω
Limiting temperature	-30 ... +90 °C
Mating cycles	≥100
Degree of protection acc. to IEC 60529	IP20
Material (insert)	Polyamide (PA)
Colour (insert)	RAL 9005 (jet black)
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 4 mm²
② Conductor cross-section 2.5 mm²
③ Conductor cross-section 1.5 mm²

Specifications and approvals

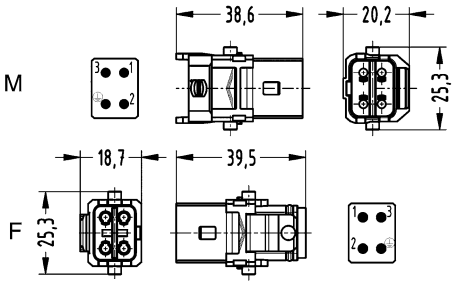
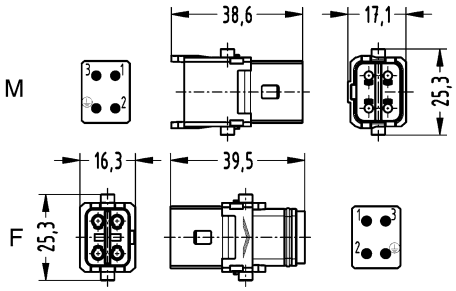
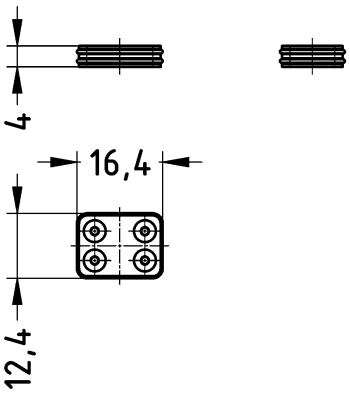
DIN EN 45545-2 R22: HL1, HL2, HL3
DIN EN 45545-2 R23: HL1, HL2, HL3
DIN EN 45545-2 R24: HL1, HL2, HL3
IEC 61373 Category 1 Class B
EN 60664-1
IEC 61984
DNV GL

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.

Contact inserts must not be coupled or decoupled under electrical load.

Contact inserts must not be powered-up in the un-mated condition.

Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han® 1A, Crimp termination, Snap-in latches, IP20  Please order crimp contacts separately. Order separately the single wire seal or the hoods/housings for an IP65 performance.	0.14 ... 4	09 10 003 3201	09 10 003 3301	
Han® 1A, Crimp termination, Single locking lever, IP20  Please order crimp contacts separately. Please order locking lever separately. Order separately the single wire seal or the hoods/housings for an IP65 performance.	0.14 ... 4	09 10 003 3206	09 10 003 3306	
Single wire seal, Silicone, for 4 contacts 		09 10 004 9901	09 10 004 9901	

Technical characteristics

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

Specifications and approvals

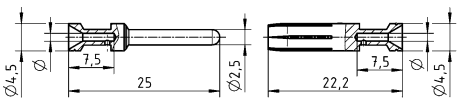
EN 60664-1
IEC 61984

Details

Crimping tools see chapter Han 90

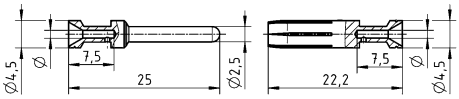
Remarks on the crimp technique

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

Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han E®, Crimp contact, Contact surface: Silver plated 	0.14 ... 0.37 0.5 0.75 1 1.5 2.5 3 4	09 33 000 6127 09 33 000 6121 09 33 000 6114 09 33 000 6105 09 33 000 6104 09 33 000 6102 09 33 000 6106 09 33 000 6107	09 33 000 6227 09 33 000 6220 09 33 000 6214 09 33 000 6205 09 33 000 6204 09 33 000 6202 09 33 000 6206 09 33 000 6207	

Conductor cross-section		Identification
0.14-0.37 mm²	AWG 26-22	no groove
0.5 mm²	AWG 20	no groove
0.75 mm²	AWG 18	1 groove*
1 mm²	AWG 18	1 groove
1.5 mm²	AWG 16	2 groove
2.5 mm²	AWG 14	3 groove
3 mm²	AWG 12	wide groove
4 mm²	AWG 12	no groove
* on the back crimp collar		

Stripping length 7.5 mm

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	

Conductor cross-section		Identification
0.14-0.37 mm²	AWG 26-22	no groove
0.5 mm²	AWG 20	no groove
0.75 mm²	AWG 18	1 groove*
1 mm²	AWG 18	1 groove
1.5 mm²	AWG 16	2 groove
2.5 mm²	AWG 14	3 groove
3 mm²	AWG 12	wide groove
4 mm²	AWG 12	no groove
* on the back crimp collar		

Stripping length 7.5 mm

Number of contacts

3+ ⏚

10 A 230/400 V 4 kV 3

Technical characteristics

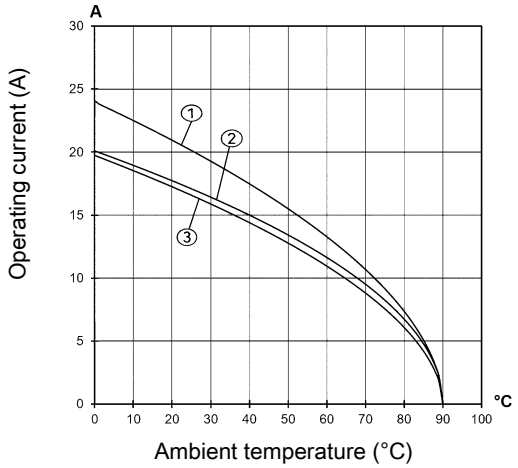
Number of contacts	3
Rated current	10 A
Rated voltage conductor-earth	230 V
Rated voltage conductor-conductor	400 V
Rated impulse voltage	4 kV
Pollution degree	3
Insulation resistance	>10^8 Ω
Limiting temperature	-30 ... +90 °C
Mating cycles	≥100
Degree of protection acc. to IEC 60529	IP20
Material (insert)	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 mm²
② Conductor cross-section 1 mm²
③ Conductor cross-section 0.75 mm²

Specifications and approvals

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

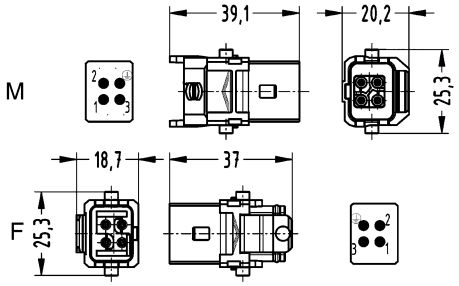
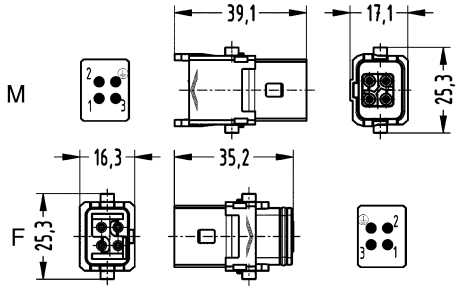
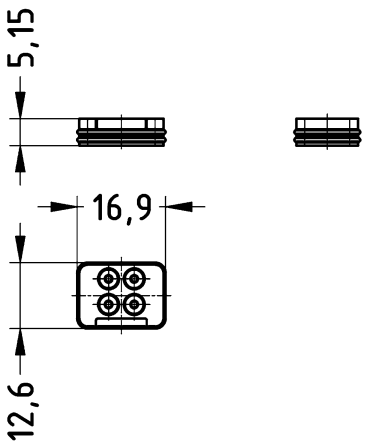
Details

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).

Contact inserts must not be coupled or decoupled under electrical load.

Contact inserts must not be powered-up in the un-mated condition.

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 (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han® 1A, Screw termination, Snap-in latches, IP20 Contact surface: Silver plated  Order separately the single wire seal or the hoods/housings for an IP65 performance.	0.75 ... 1.5	09 10 003 2601	09 10 003 2701	
Han® 1A, Screw termination, Single locking lever, IP20 Contact surface: Silver plated  Please order locking lever separately. Order separately the single wire seal or the hoods/housings for an IP65 performance.	0.75 ... 1.5	09 10 003 2606	09 10 003 2706	
Single wire seal, Silicone, for 4 contacts 		09 10 004 9900	09 10 004 9900	

Number of contacts

3+ ⏚

10 A 400 V 6 kV 3
+ shielding

Technical characteristics

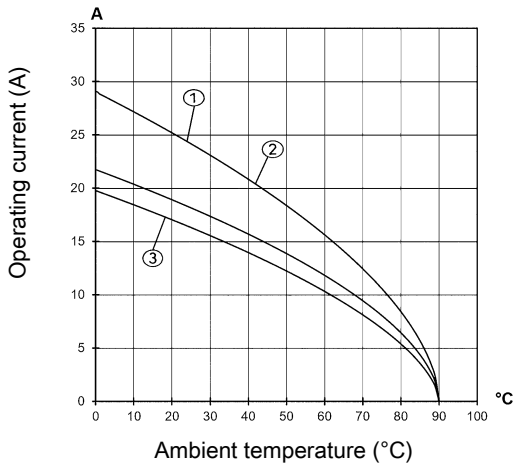
Number of contacts	3
Additional contacts	+ shielding
Rated current	10 A
Rated voltage	400 V
Rated impulse voltage	6 kV
Pollution degree	3
Insulation resistance	>10^8 Ω
Limiting temperature	-30 ... +90 °C
Mating cycles	≥100
Degree of protection acc. to IEC 60529	IP20
Material (insert)	Polyamide (PA)
Colour (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 mm²
② Conductor cross-section 1.5 mm²
③ Conductor cross-section 1 mm²

Specifications and approvals

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

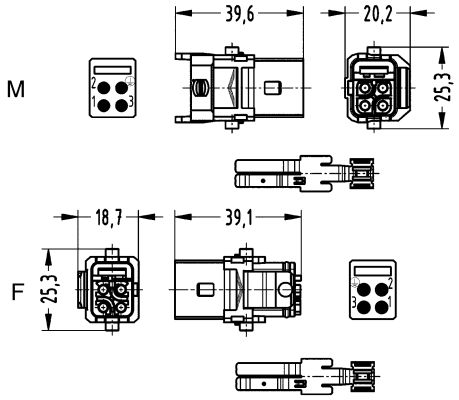
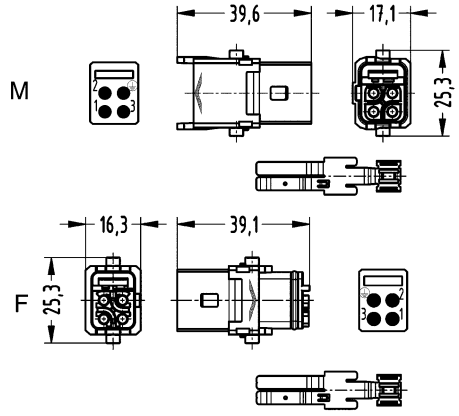
Details

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).

Contact inserts must not be coupled or decoupled under electrical load.

Contact inserts must not be powered-up in the un-mated condition.

Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han® 1A, Crimp termination, With cable tie, Snap-in latches, IP20 Pack contents: Shielding element is included within the delivery  Please order crimp contacts separately. Order separately the hoods/ housings for an IP65 performance.	0.14 ... 2.5	09 10 003 3001	09 10 003 3101	
Han® 1A, Crimp termination, With cable tie, Single locking lever, IP20 Pack contents: Shielding element is included within the delivery  Please order crimp contacts separately. Please order locking lever separately. Order separately the hoods/ housings for an IP65 performance.	0.14 ... 2.5	09 10 003 3006	09 10 003 3106	

Technical characteristics

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

Specifications and approvals

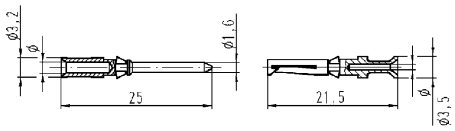
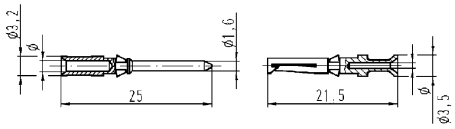
EN 60664-1
IEC 61984

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 (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han D®, Crimp contact, Contact surface: Silver plated	0.14 ... 0.37 0.5 0.75 1 1.5 2.5	09 15 000 6104 09 15 000 6103 09 15 000 6105 09 15 000 6102 09 15 000 6101 09 15 000 6106	09 15 000 6204 09 15 000 6203 09 15 000 6205 09 15 000 6202 09 15 000 6201 09 15 000 6206	
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	

Conductor cross-section		ø	Stripping length
0.14-0.37 mm²	AWG 26-22	0.9 mm	8 mm
0.5 mm²	AWG 20	1.1 mm	8 mm
0.75 mm²	AWG 18	1.3 mm	8 mm
1 mm²	AWG 18	1.45 mm	8 mm
1.5 mm²	AWG 16	1.75 mm	8 mm
2.5 mm²	AWG 14	2.25 mm	6 mm

Conductor cross-section		ø	Stripping length
0.14-0.37 mm²	AWG 26-22	0.9 mm	8 mm
0.5 mm²	AWG 20	1.1 mm	8 mm
0.75 mm²	AWG 18	1.3 mm	8 mm
1 mm²	AWG 18	1.45 mm	8 mm
1.5 mm²	AWG 16	1.75 mm	8 mm
2.5 mm²	AWG 14	2.25 mm	6 mm

Number of contacts

5+ ⏚

10 A 400 V 6 kV 3

Technical characteristics

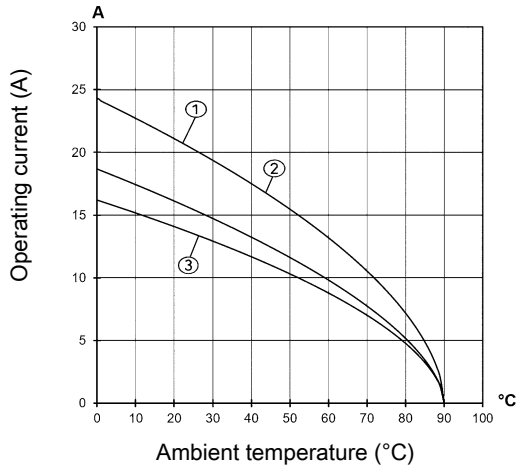
Number of contacts	5
Rated current	10 A
Rated voltage	400 V
Rated impulse voltage	6 kV
Pollution degree	3
Insulation resistance	>10^8 Ω
Limiting temperature	-30 ... +90 °C
Mating cycles	≥100
Degree of protection acc. to IEC 60529	IP20
Material (insert)	Polyamide (PA)
Colour (insert)	RAL 9005 (jet black)
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 mm²
② Conductor cross-section 1.5 mm²
③ Conductor cross-section 1 mm²

Specifications and approvals

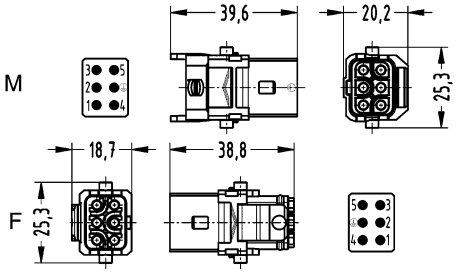
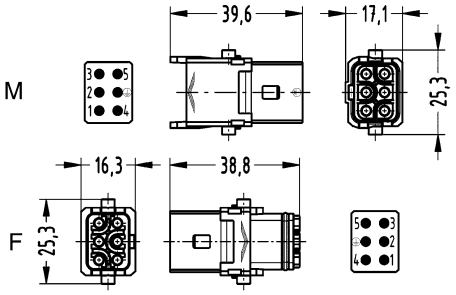
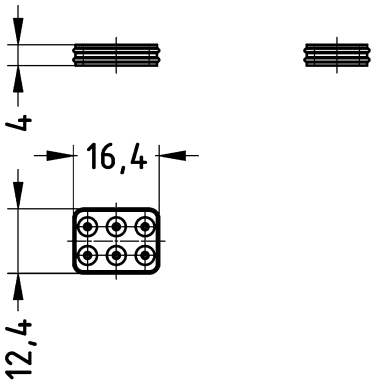
DIN EN 45545-2 R22: HL1, HL2, HL3
DIN EN 45545-2 R23: HL1, HL2, HL3
DIN EN 45545-2 R24: HL1, HL2, HL3
IEC 61373 Category 1 Class B
EN 60664-1
IEC 61984
DNV GL

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.

Contact inserts must not be coupled or decoupled under electrical load.

Contact inserts must not be powered-up in the un-mated condition.

Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han® 1A, Crimp termination, Snap-in latches, IP20  Please order crimp contacts separately. Order separately the single wire seal or the hoods/housings for an IP65 performance.	0.14 ... 2.5	09 10 005 3001	09 10 005 3101	
Han® 1A, Crimp termination, Single locking lever, IP20  Please order crimp contacts separately. Please order locking lever separately. Order separately the single wire seal or the hoods/housings for an IP65 performance.	0.14 ... 2.5	09 10 005 3006	09 10 005 3106	
Single wire seal, Silicone, for 6 contacts 		09 10 006 9900	09 10 006 9900	

Technical characteristics

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

Specifications and approvals

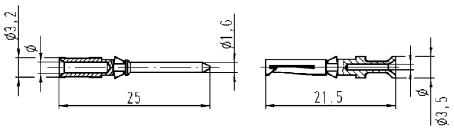
EN 60664-1
IEC 61984

Details

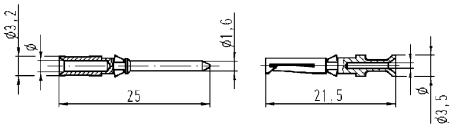
Crimping tools see chapter Han 90

Remarks on the crimp technique

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

Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
Han D®, Crimp contact, Contact surface: Silver plated 	0.14 ... 0.37 0.5 0.75 1 1.5 2.5	09 15 000 6104 09 15 000 6103 09 15 000 6105 09 15 000 6102 09 15 000 6101 09 15 000 6106	09 15 000 6204 09 15 000 6203 09 15 000 6205 09 15 000 6202 09 15 000 6201 09 15 000 6206	

Conductor cross-section		ø	Stripping length
0.14-0.37 mm²	AWG 26-22	0.9 mm	8 mm
0.5 mm²	AWG 20	1.1 mm	8 mm
0.75 mm²	AWG 18	1.3 mm	8 mm
1 mm²	AWG 18	1.45 mm	8 mm
1.5 mm²	AWG 16	1.75 mm	8 mm
2.5 mm²	AWG 14	2.25 mm	6 mm

Identification	Conductor cross-section (mm²)	Part number Male	Part number Female	Drawing (dimensions in mm)
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	

Conductor cross-section		ø	Stripping length
0.14-0.37 mm²	AWG 26-22	0.9 mm	8 mm
0.5 mm²	AWG 20	1.1 mm	8 mm
0.75 mm²	AWG 18	1.3 mm	8 mm
1 mm²	AWG 18	1.45 mm	8 mm
1.5 mm²	AWG 16	1.75 mm	8 mm
2.5 mm²	AWG 14	2.25 mm	6 mm

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

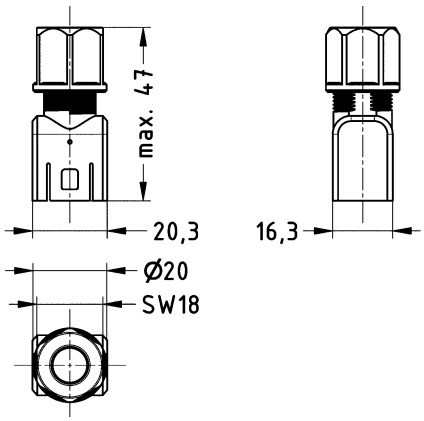
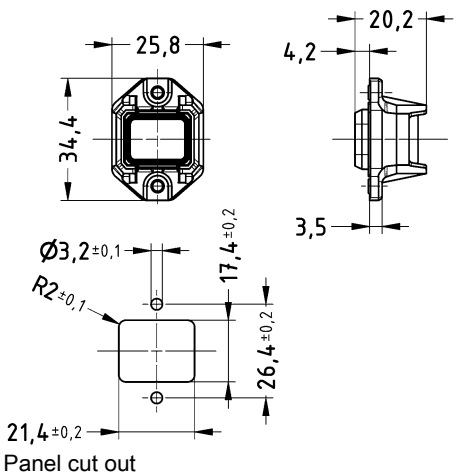
Technical characteristics

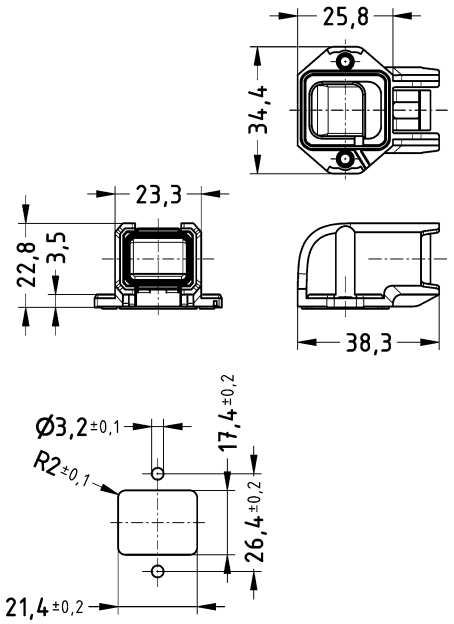
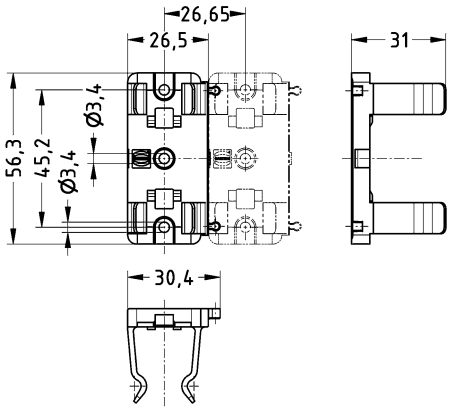
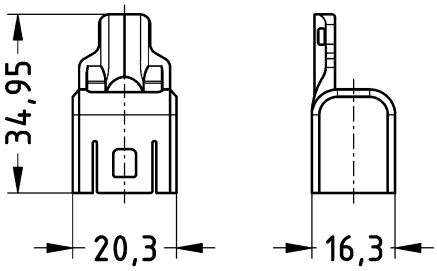
RoHS	compliant

Specifications and approvals

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

CE

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	 Panel cut out

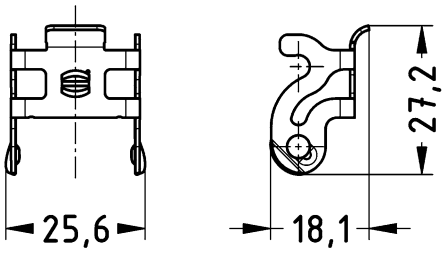
Identification	Cable entry	Cable diameter (mm)	Part number	Drawing (dimensions in mm)
Han® 1A, Bulkhead mounted housing, Angled, IP65 			09 10 000 0800	 Panel cut out
Han® 1A, Mounting frames, for wall mounting 			09 10 000 9908	
Han® 1A, Strain relief, IP20, IP20 Pack contents: Cable tie is included within the delivery  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.			09 10 000 5300	

Technical characteristics

Number of relockings	≥100

Technical characteristics

Material (accessories)	Stainless steel
RoHS	compliant

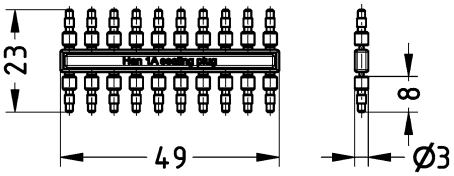
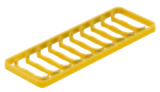
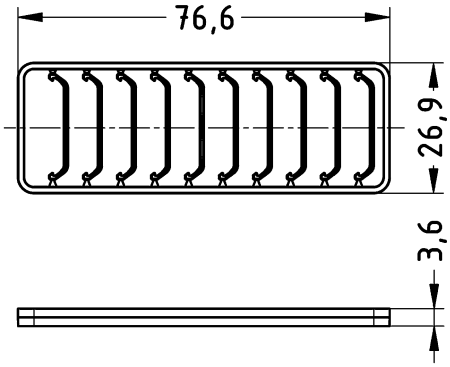
Identification	Part number	Drawing (dimensions in mm)
Han® 1A, Locking levers, for Han® 1A inserts with single locking lever 	09 10 000 5200	

Technical characteristics

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

Technical characteristics

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

Identification		Part number	Drawing (dimensions in mm)
Han® 1A, Dummy plugs, for single wire seal for a partial assembly, Polycarbonate (PC), Pack contents: 20 pieces per frame 		09 10 000 9909	
Han® 1A, Coding element, Polyamide (PA), Pack contents: 10 pieces per frame 	Blue Green Red Violet Yellow	09 10 000 9902 09 10 000 9903 09 10 000 9901 09 10 000 9905 09 10 000 9904	

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