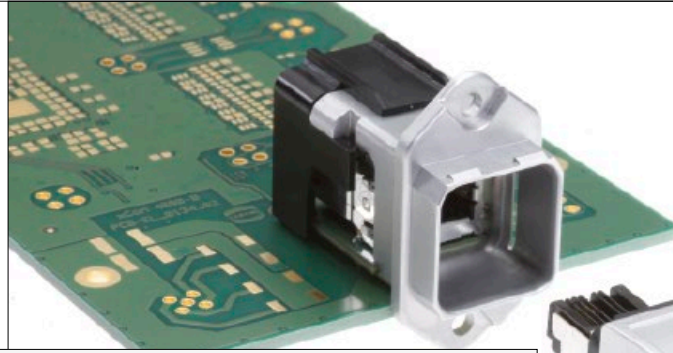


# 02. PushPull Connectors



A distributed automation system does not contain any central automated control cabinets. Controls, sensors and actuators are designed for a high degree of protection (IP65 / IP67) and are installed directly in the field. In connection with these innovative installation concepts with distributed devices, users are demanding a standard connector family that is compatible with all interfaces. In response to these needs, the HARTING PushPull series has set the respective new appliance connection standard. PushPull technology is available for data, signal and power applications. Other interfaces accommodating USB or fiber optics (LC, SCRJ) supplement the universal range of the PushPull solutions. The integration of communication and power lines in a hybrid PushPull connector is a genuine trend-setting advance. In view of these strengths, the PushPull container has become the standard for current and future appliance interfaces. The German automotive industry, for example, has opted for the implementation of the PushPull connector family.

### Application profile:

CONNECTION TYPE		ENVIRONMENT		APPLICATION						
Board to Board	Cable/Wire to Board	IP20	IP65 / IP67	Data	Signal	Power	high performance			
							Data transfer rate	Shielding	Number of contacts, contact density	Voltage, working current
Cable termination			PCB termination			Application standard				
<i>Han-Quick Lock®</i>	<i>IDC HARAX®</i>	<i>Crimp</i>	<i>THT</i>	<i>SMC</i>	<i>SMT</i>					
		<sup>1)</sup>								
Housing integration			Press-in							
<i>Screw</i>	<i>Cage clamp</i>	<i>Axial screw</i>	<i>Press-in</i>							
						Separate housing		Integrated housing		

<sup>1)</sup> Piercing contacts

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The PushPull connector housing is a function container with degree of protection IP65 / IP67 and is available in two standardized housing sizes. These containers are equipped with standard RJ45, FOC or power contacts for operation at 5 x 16 A, depending on application requirements. The PushPull connector can be delivered either as plastic, or as metal variant, depending on the installation environment.

### THE PushPull PRINCIPLE

PushPull connector applications combine two basic advantages:

1. Simple operation
2. Safe and vibration resistant sealed IP65 / IP67 connection.

The innovative PushPull lock mechanism dispenses with the need for a latching bracket. The connector can be inserted with one hand, minimum force and an audible click for safe operation. The connection can be removed again just as easily for service work.

### COPPER, FOC AND POWER – IN THE SAME DESIGN

HARTING offers two series of the PushPull connector system, which differ in terms of their outer dimensions and module inserts.

#### Han® PushPull (IEC 61 076-3-117 VARIANT 14)

This series represents the standard PROFINET device interface for the IP67 environment of the German automobile manufacturing industry.

The connector is available as metal and as plastic version. The RJ45 module for copper conductors and the SCRJ module for FOCs are available as data connectors. The RJ45 variant is realized by means of the RJ Industrial module equipped with HARAX® quick connection technology. The power module which is installed in the same container can be assembled on-site, either with crimp contacts or with innovative Quick Lock® technology in order to wire the distributed field devices to 230/400 V (16 A) power. This 5-pole connector enables the transfer of two independent 24 V control



circuits with functional ground, or the transfer of a three-phase voltage of 400 V (16 A).

## HARTING PushPull (IEC 61 076-3-106 VARIANT 4)

This extremely compact and space-saving series provides an Ethernet appliance connection with degree of protection IP65 / IP67 that requires no more installation space than a M12 connector. The RJ45 variant for copper conductors and the LC variant for FOCs are available as modules for data connectors. The RJ45 variant is realized by means of *HARAX*<sup>®</sup> quick connection technology as used with HARTING RJ Industrial<sup>®</sup>. The 4-pole module for 48 V (12 A) or the 3-pole module for 250 V (16 A) can be used to supply power to the distributed field devices.

## HARTING PushPull HYBRID

The migration from Fieldbus to Ethernet within communication technology has simplified machine installation options. This

simplification is attained by combining the data and the 24 V power lines in a single hybrid cable with hybrid connector, in connection with the spatial requirements of an M12 connector. The HARTING PushPull Hybrid offers trend-setting connection technology for this new method of machine installation.

The PushPull Hybrid reduces everything by half: the number of connection points and cables, and spatial requirements for the connection technology.

The PushPull Hybrid makes everything easier: machine installation, the wiring of connectors and safe insertion.

## APPLIANCE INTEGRATION:

In order to support the implementation of appliances with degree of protection IP65 / IP67, HARTING offers panel feed-through devices with integrated couplings and female contact modules for direct mounting on PCBs.

### HARTING PushPull

#### ONE CONCEPT FOR DATA, SIGNAL AND POWER

The internationally standardized PushPull connector represents the latest generation of appliance connection technology with high degree of protection IP65 / IP67, easy insertion and snap-action engagement with audible click.

The PushPull housing family is designed for the integration of a wide range of contact inserts for data, signal and power lines.

#### INSTALLATION IN PLANTS

##### WITH Han<sup>®</sup> PushPull CONNECTORS:

- The standard for PROFINET communication
- One housing for the electrical and optical data transfer and for power supply
- Plastic or metal housing variants

#### INSTALLATION IN MACHINES

##### WITH HARTING PushPull HYBRID CONNECTORS:

- Combined data lines and appliance power supply up to 5 A in the same connector
- Compact size (comparable with M12)

#### POWER SUPPLY TO DISTRIBUTED DEVICES

##### USING PushPull CONNECTORS:

- Variant 4: 48 V (12 A), 4-pole or 250 V (16 A), 3-pole
- Variant 14: 400 V (12 A) 5-pole, or 24 V (16 A) 5-pole
- Latest connection technology QuickLock<sup>®</sup> for on-site assembly without special auxiliary tools





HARTING PushPull Technology acc. to IEC 61 076-3-106 variant 4 housing bulkhead mounting for device integration of RJ45-, USB- and Power-jacks

## Advantages

- PushPull housing bulkhead mounting with HARTING PushPull technology
  - Compact, space-saving design for device integration of RJ45-, USB-, Signal- or Power-pcb female
- Housing bulkhead mounting EasyInstall
- for simple device integration round panel cut out
- Housing bulkhead mounting Compact
- high packing density (spacing 27 x 21 mm)

## Technical characteristics

Locking	PushPull Technology acc. to IEC 61 076-3-106 variant 4
Shielding	fully shielded, 360° shielding contact
Mating cycles	min. 750
Degree of protection	IP65 / IP67
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black Zinc die-cast, shining
Flammability acc. to UL 94	V0
	UL approval (E102079)

Identification	Part number	Drawing	Dimensions in mm
<p><b>Components device side</b></p> <p><b>Housing bulkhead mounting – EasyInstall</b> with integrated seal board drillings for M3</p> <p>without fixing clip</p> <p>with fixing clip</p> <p>with fixing clip, for all HIFF compatible modules</p>	<p>09 45 545 0030<sup>1)</sup> 09 45 595 0030<sup>2)4)</sup></p> <p>09 45 545 0031<sup>3)</sup> 09 45 595 0031<sup>3)4)</sup> 09 45 545 0032</p>	<p>Panel cut out</p>	<p>max. 36 max. 18 max. 11,9 max. 31 max. 19,55 max. 16,2 0,8 to 10 mm Panel thickness housing clips max. 4,05</p>
<p><b>Housing bulkhead mounting – Compact</b> Board drillings for M2.5</p> <p>without fixing clip (incl. flat seal)</p> <p>without fixing clip (with integrated seal)</p> <p>with fixing clip (incl. flat seal)</p> <p>with fixing clip (with integrated seal)</p> <p>with fixing clip (with integrated seal) for vertical RJ jack 09 45 551 1103</p> <p>with fixing clip, for all HIFF compatible modules</p>	<p>09 45 545 0023<sup>2)</sup> 09 45 545 0033<sup>2)</sup></p> <p>09 45 545 0021<sup>3)</sup> 09 45 545 0029<sup>3)</sup> 09 45 545 0027</p> <p>09 45 545 0028</p>		<p>max. 22,3 25,2 max. 18</p> <p>max. 15,7 after screwing 3,6 (1) max. 15,8 max. 20,5 7,45 13,24 18,4 ± 0,1 25,2 M2,5 16,2 ± 0,1 max. R1 21 mm 27 mm</p>

1) suitable RJ45 jacks: 09 45 551 1100 / ... 1110 / ... 1102 / ... 1103 / ... 1130 / ... 1530  
 2) suitable RJ45 jacks: 09 45 551 1100 / ... 1110 / ... 1102 / ... 1130 / ... 1530  
 3) suitable RJ45 jacks: 09 45 551 1100 / ... 1110 / ... 1102  
 4) Metal version



HARTING PushPull Technology acc. to IEC 61 076-3-106 variant 4  
RJ45 jacks and accessories

## Advantages

- HARTING PushPull technology
- Low-profile jacks for space-saving PCB integration
- Category of transmission Cat. 5
- Suitable for PoE (IEEE 802.3af) and PoE+ (IEEE 802.3at)

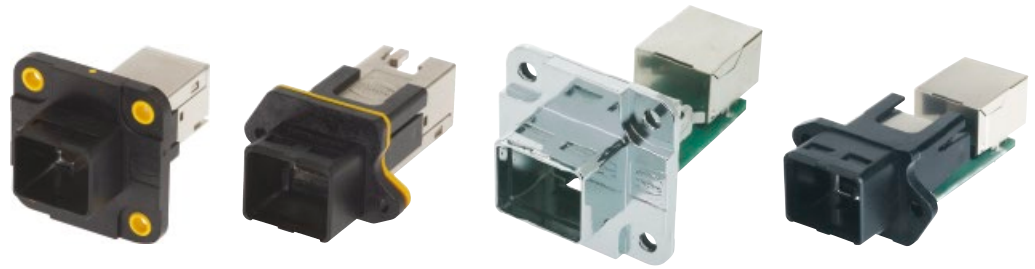
## Technical characteristics

Locking	PushPull Technology acc. to IEC 61 076-3-106 variant 4
Transmission rate	10/100/1000 Mbit/s
Shielding	fully shielded, 360° shielding contact
Mating cycles	min. 750
Degree of protection	IP65 / IP67
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0
	UL approval (E102079)

Identification	Part number	Drawing	Dimensions in mm pcb layout
Components device side			
RJ45 jacks Cat. 5			
Solder variant SMD, 90° angled	09 45 551 1100 <sup>1)</sup> 09 45 551 1110 <sup>2)</sup>		
Solder variant overmolded, 90° angled	09 45 551 1102 <sup>1)</sup>		
Solder variant overmolded, straight	09 45 551 1103 <sup>3)</sup>		

1) Packaging: Blister à 120 pieces  
2) Packaging: Tape & Reel à 130 pieces  
3) Packaging: Tape & Reel à 80 pieces





HARTING PushPull Technology acc. to IEC 61 076-3-106 variant 4  
RJ45-panel feed-throughs and accessories

## Advantages

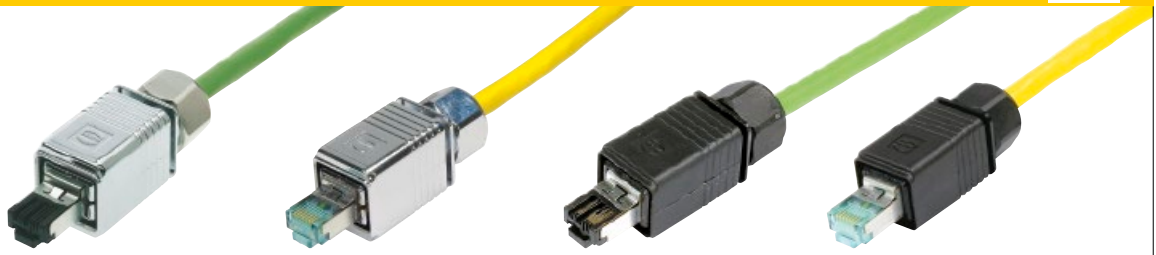
- Small, space-saving PushPull Interfaces in IP65 / IP67
- Easy handling of RJ45 patch cords in switch cabinets or sets
- Mounting to casings

## Technical characteristics

Locking	PushPull Technology acc. to IEC 61 076-3-106 variant 4
Transmission rate cat. 5 versions	10/100/1000 Mbit/s
Transmission rate cat. 6 versions	10/100 Mbit/s / 1/10 Gbit/s
Shielding	fully shielded, 360° shielding contact
Mating cycles	min. 750
Degree of protection	IP65 / IP67
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black Zinc die-cast, shining
Flammability acc. to UL 94	V0 UL approval (E102079)

Identification	Part number	Drawing	Dimensions in mm
<b>Panel feed-through set category of transmission Cat. 5</b>  incl. housing bulkhead mounting EasyInstall with integrated seal, 2 x RJ45-jack board drillings for M3  incl. housing bulkhead mounting Compact, flat seal, 2 x RJ45-jack board drillings for M2.5	09 45 245 1130 09 45 295 1130 (metal version)  09 45 245 1102		
<b>Panel feed-through set category of transmission Cat. 6</b>  incl. housing bulkhead mounting EasyInstall with integrated seal, 2 x RJ45-jack board drillings for M3  incl. housing bulkhead mounting Compact, with integrated seal, 2 x RJ45-jack	09 45 245 1590  09 45 245 1560		






HARTING PushPull Technology acc. to IEC 61 076-3-106 variant 4 RJ45-connector

## Advantages

- Ethernet connector based on RJ45
- Fully shielded, 360° shielding contact
- Field-assembly connector with IDC contacts (Cat. 5 versions) or piercing contacts (Cat. 6<sub>A</sub> versions)

## Technical characteristics

Locking	PushPull Technology acc. to IEC 61076-3-106 variant 4
Degree of protection	IP65 / IP67
Mating face	RJ45 acc. to IEC 60603-7
Cable diameter	4.9 ... 8.6 mm
Termination cross section	
Cat. 5	AWG 24/7 ... AWG 22/7 (stranded) AWG 23/1 ... AWG 22/1 (solid)
Cat. 6 <sub>A</sub>	AWG 24/7 ... AWG 28/7 (stranded)
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black Zinc die-cast, shining
Flammability acc. to UL 94	V0
	UL approval (E102079)

Identification	Part number	Drawing	Dimensions in mm
<p>Connector, 4-poles Cat. 5</p> <p>incl. housing with RJ45 connector, shielding and cable gland</p>	<p>09 45 145 1100</p> <p>09 45 195 1100 (metal version)</p>		
<p>Connector, 8-poles Cat. 6<sub>A</sub></p> <p>incl. housing with RJ45 connector, shielding and cable gland</p>	<p>09 45 145 1520</p> <p>09 45 145 1520 XL<sup>1)</sup></p> <p>09 45 195 1520 (metal version)</p>		
<p>suitable assembly tool</p>	<p>09 45 800 0520</p>		

<sup>1)</sup> Packaging with 100 sets




## HARTING PushPull RJ45 – bulkhead

### Advantages

- Small, space-saving PushPull Interfaces in IP65 / IP67
- Easy connection of PushPull RJ45 system cords
- Screwable with 2 x M3 screws

### Technical characteristics

Locking	PushPull Technology acc. to IEC 61 076-3-106 variant 4
Number of contacts	8
Transmission category	Cat. 6, performance class EA, suitable for 1/10 Gigabit Ethernet
Transmission rate	10/100 Mbit/s / 1/10 Gbit/s
Shielding	fully shielded, 360° shielding contact
Mating cycles	min. 750
Degree of protection	IP65 / IP67
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0
	UL approval (E102079)

Identification

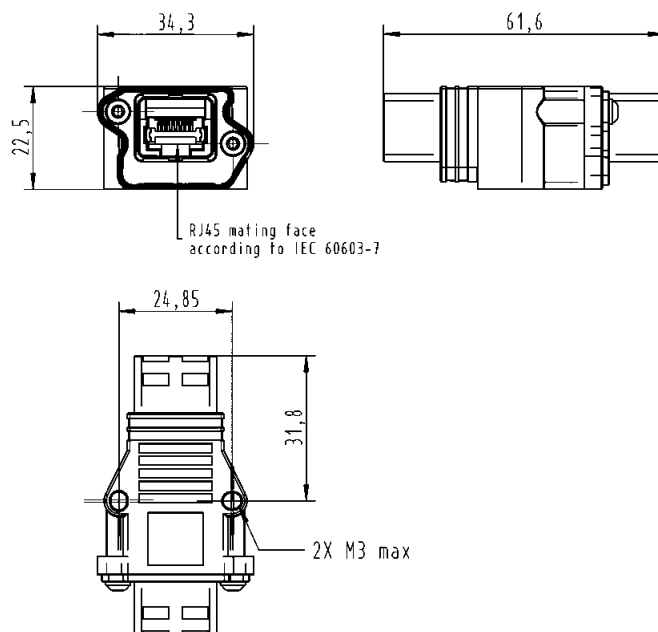
Part number

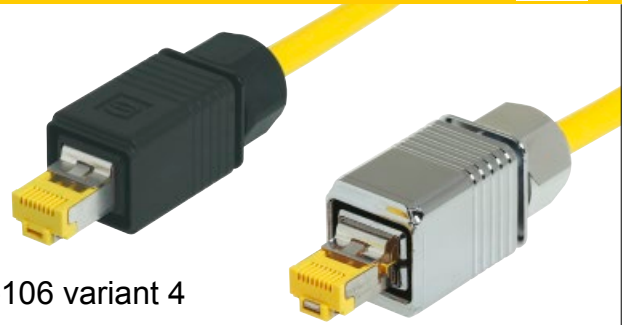
Drawing

Dimensions in mm

HARTING PushPull RJ45 –  
bulkhead

09 45 345 1560






HARTING PushPull Technology acc. to IEC 61 076-3-106 variant 4 RJ45-connector

## Advantages

- Ethernet connector based on RJ45
- Fully shielded, 360° shielding contact
- Field-assembly connector with IDC contacts
- Category of transmission: Cat. 6 / class E<sub>A</sub> suitable for 1/10 Gbit Ethernet

## Technical characteristics

Locking	PushPull Technology acc. to IEC 61076-3-106 variant 4
Mating face	RJ45 acc. to IEC 60603-7
Cable diameter	4.9 ... 8.6 mm
Termination cross section	AWG 27/7 ... AWG 22/7 (stranded) AWG 24/1 ... AWG 22/1 (solid)
Conductor diameter	max. 1.6 mm (incl. insulation)
Mating cycles	min. 750
Degree of protection	IP65 / IP67
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black Zinc die-cast, shining
Flammability acc. to UL 94	V0
	UL approval (E102079)

Identification	Part number	Drawing	Dimensions in mm
<p>Connector, 8-poles Cat. 6 incl. housing with RJ45 connector, shielding and cable gland</p> <p>Colour clips for colour coding the HARTING PushPull connectors</p>	<p>09 45 145 1560 09 45 145 1560 XL<sup>1)</sup> 09 45 195 1560 (metal version)</p> <p>White 09 45 840 0011 Yellow 09 45 840 0013 Red 09 45 840 0017 Blue 09 45 840 0018 Green 09 45 840 0019</p>		

<sup>1)</sup> Packaging with 100 sets



HARTING PushPull type acc. to IEC 61076-3-106 variant 4  
LC duplex panel feed-through and connector

PushPull

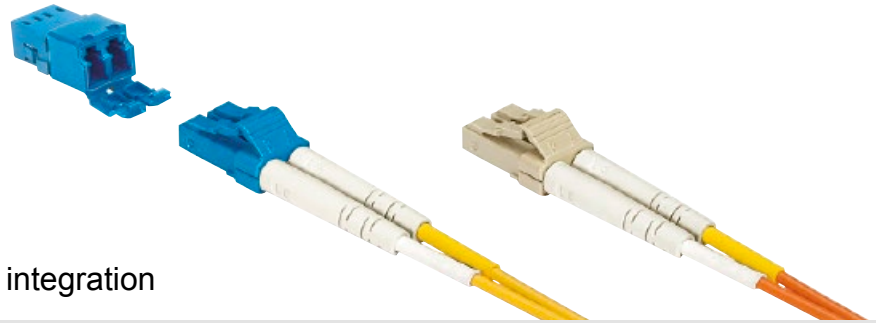
## Advantages

- Optical PushPull connector based on LC with small form factor (requires 50 % compared to SC and ST)
- EasyInstall and Compact panel feed-through for simple device integration
- Optical module with inserts acc. to IEC 61754-20
- One-piece LC body assures high mechanical stability
- A & B parts identification for Duplex according TIA 568 standard

## Technical characteristics

Locking	PushPull Technology acc. to IEC 61076-3-106 variant 4
Degree of protection	IP65 / IP67
Mating face	LC acc. to IEC 61754-20
Cable diameter	5.8 ... 7.2 mm
Mating cycles	min. 200
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black Zinc die-cast, shining
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
<b>HARTING PushPull LC duplex</b>			
Cable side			
Multimode GOF	09 57 402 0500 000		
(metal version)	09 57 409 0500 000		
Singlemode GOF	09 57 402 0501 000		
(metal version)	09 57 409 0501 000		
Device side EasyInstall version			
Multimode GOF	09 57 441 0500 000		
(metal version)	09 57 468 0500 000		
Singlemode GOF	09 57 441 0501 000		
(metal version)	09 57 468 0501 000		
Device side Compact version			
Multimode GOF	09 57 442 0502 001		
Singlemode GOF	09 57 442 0503 001		



LC duplex IP20 adapter for device integration

## Advantages

- Small form factor requires 50 % (compared to SC and ST)
- Compact, space-saving design
- High packing density
- A & B parts identification according TIA 568 standard
- Complement adapter for IP67 connector on device side

## Technical characteristics

Degree of protection	IP20
Mating interface	LC duplex with two fibres
Temperature range	-40 °C ... +70 °C

Identification	Part number	Drawing	Dimensions in mm
Device side			
Adapter			
Multimode GOF	09 57 400 0003 000		
Singlemode GOF	09 57 400 0004 000		
Connector LC duplex			
Multimode GOF	09 57 400 0001 000		
Singlemode GOF	09 57 400 0002 000		

	min.	max.
G	26.60	26.80
H	9.35	9.45
J	12.80	12.90
K	15.24	15.34



Identification	Part number	Drawing	Dimensions in mm
<p>Fibre optic cable, double ended, multi mode, 62.5 µm overmolded</p> <p>Length: a = 1 m</p> <p>a = 5 m</p> <p>a = 10 m</p> <p>a = 20 m</p> <p>a = 40 m</p> <p>a = 50 m</p> <p>a = 60 m</p> <p>a = 100 m</p> <p>a = 300 m</p>	<p>33 58 231 0010 016</p> <p>33 58 231 0050 016</p> <p>33 58 231 0100 016</p> <p>33 58 231 0200 016</p> <p>33 58 231 0400 016</p> <p>33 58 231 0500 016</p> <p>33 58 231 0600 016</p> <p>33 58 231 1000 016</p> <p>33 58 231 3000 016</p>	<p>double ended</p> <p>a = length</p>	
<p>Fibre optic breakout cable, multi mode, 62.5 µm</p> <p>Length: 10 m</p> <p>Length: 20 m</p> <p>Length: 100 m</p>	<p>33 58 751 0100 001</p> <p>33 58 751 0200 001</p> <p>33 58 751 1000 001</p>	<p>PUR jacket</p> <p>2-fibre multi mode 62.5 µm</p> <p>Outer diameter: 7 mm</p> <p>Min. bending radius: Installation: 10.5 cm Operating: 7.0 cm</p>	

Further cable lengths are available on request





Identification	Part number	Drawing	Dimensions in mm						
<p>Fibre optic cable, double ended, single mode overmolded</p> <p>Length: a = 1 m</p> <p>a = 5 m</p> <p>a = 10 m</p> <p>a = 20 m</p> <p>a = 40 m</p> <p>a = 50 m</p> <p>a = 60 m</p> <p>a = 100 m</p> <p>a = 300 m</p>	<p>33 58 231 0010 015</p> <p>33 58 231 0050 015</p> <p>33 58 231 0100 015</p> <p>33 58 231 0200 015</p> <p>33 58 231 0400 015</p> <p>33 58 231 0500 015</p> <p>33 58 231 0600 015</p> <p>33 58 231 1000 015</p> <p>33 58 231 3000 015</p>	<p>double ended</p> <p>a = length</p> <table border="1"> <tr> <td>A</td> <td>blue</td> <td>B</td> </tr> <tr> <td>B</td> <td>orange</td> <td>A</td> </tr> </table>	A	blue	B	B	orange	A	
A	blue	B							
B	orange	A							
<p>Fibre optic breakout cable, single mode</p> <p>Length: 10 m</p> <p>Length: 20 m</p> <p>Length: 100 m</p>	<p>33 58 751 0100 002</p> <p>33 58 751 0200 002</p> <p>33 58 751 1000 002</p>	<p>PUR jacket</p> <p>2-fibre single mode</p> <p>Outer diameter: 6.5 mm</p> <p>Min. bending radius: 10.4 cm</p> <p>Installation: 10.4 cm</p> <p>Operating: 5.2 cm</p>							

Further cable lengths are available on request







HARTING PushPull Hybrid  
type acc. to IEC 61076-3-106 variant 4

## Advantages

HARTING PushPull Hybrid

In the future all new machine generations will be equipped with Fast Ethernet, no matter if PROFINET, Ethernet/IP, Powerlink, Ethercat, Varan or other Ethernet profiles.

With the change of the communication technology also the possibility is offered of simplifying the machine installation and of introducing an innovative Hybrid installation concept. This simplification will unite by data and 24 V (5 A)-supply in a Hybrid cable, at least with the space requirement of a M12-connector.

For this new installation solution HARTING with the HARTING PushPull Hybrid offers the trend-setting installation technology.

Everything is halved: the number of pluggings, the number of cables and the space requirement for the connection technology. Everything becomes simpler: the installation, attaching and safe plugging.

The Hybrid connectors were developed particular under the criteria of simple attaching in the field and the particular safe data communication with the patented omega screen concept. As contacts D-Sub and HDD Sub contacts worked world-wide are used. This socket pin contact system ensures highest reliability and optimal shock and vibration stability.

With the optional available coding pins 6 different codings can be realized.

## Technical characteristics

### Advantages

- Compact, space-saving design
- Very compact housing with high degree of protection
- Polarisation with nose
- Sixfold codable

### Typical application areas

- Factory and building automation
- Industrial electronics
- Telecommunication and wireless networks
- Transportation
- Industrial monitoring and camera systems
- Lighting and display technology
- Access control systems

### Recommended pin assignment

- Power contacts

Contact	Function	Conductor colour
1	V +	Red
2	Ground	Brown
3	V + (switched)	Yellow

- Data contacts

Contact	Signal	Function	Conductor colour
4	RD -	Receiver Data -	Blue
5	RD +	Receiver Data +	White
6	TD -	Transmission Data -	Orange
7	TD +	Transmission Data +	Yellow



Structure Hybrid cable

Data: 4x AWG26/7

Power: 3x AWG20/7



HARTING PushPull Hybrid, type acc. to IEC 61076-3-106 variant 4 device side

## Advantages

- Combined data- and power-supply up to 5 A/48 V included to one connector
- HARTING PushPull technology
- Compact design
- High packing density
- Sixfold codable
- Suitable for all Fast-Ethernet variants

## Technical characteristics

Locking	PushPull Technology acc. to IEC 61076-3-106 variant 4
Degree of protection	IP65 / IP67
Termination	Solder pins
Transmission performance	Category 5 / Class D up to 100 MHz acc. to ISO/IEC 11801:2002, EN ISO 50 173-1
Transmission rate	10 / 100 Mbit/s
Number of contacts	Data: 4, shielded (Ethernet) Power: 3, (5 A / 48 V)
Housing material	Plastic, black
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
<b>Components device side</b>			
<b>Set straight</b> HARTING PushPull Hybrid housing bulkhead mounting and pcs female shielded, IP65 / IP67, black, 180° straight	09 45 245 1300		
<b>Set angled</b> HARTING PushPull Hybrid housing bulkhead mounting and pcs female shielded, IP65 / IP67, black, 90° angled	09 45 245 1310		
<b>Female insert</b> PCB jack shielded 180° straight	09 45 545 1300		
PCB jack shielded 90° angled	09 45 545 1305		
<b>Housing bulkhead mounting</b> for female insert straight for female insert angled	09 45 545 1320 09 45 545 1325		
<b>Panel feed-through</b> 1 x Hybrid female IP65 / IP67 on 1 x RJ45 female and 3 pcb clamps, board drillings for M2.5	09 45 245 1320		



HARTING PushPull Hybrid, type acc. to IEC 61076-3-106 variant 4  
Hybrid connector

## Advantages

- Combined data- and power-supply up to 5 A / 48 V included to one connector
- HARTING PushPull technology
- Compact design
- High packing density
- Sixfold condable
- Suitable for all Fast-Ethernet variants

## Technical characteristics

Locking	PushPull Technology acc. to IEC 61076-3-106 variant 4
Degree of protection	IP65 / IP67
Termination	Crimp
Cable diameter	AWG 26 for Ethernet AWG 20 for Power
Transmission performance	Category 5 / Class D up to 100 MHz acc. to ISO/IEC 11801:2002, EN ISO 50173-1
Number of contacts	Data: 4, shielded (Ethernet) Power: 3, (5 A / 48 V)
Housing material	Plastic, black
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
<b>Connector</b> HARTING PushPull Hybrid connector, IP65/ 67, black, with cable gland and crimp contacts  straight	09 45 145 1300		
<b>Accessories – Coding pin set</b> to avoid accidental incorrect mating a coding system is required. This coding pins are inserted without loss of contact.	09 45 845 1300		
<b>Tools</b> Crimping tool for data contacts	09 99 000 0535		
Crimping tool for power contacts	09 99 000 0175		
<b>Insertion and removal tool</b> for data contacts	09 99 000 0513		
for power contacts	09 99 000 0171		



HARTING PushPull Hybrid, type acc. to IEC 61076-3-106 variant 4 overmoulded Hybrid system cables

## Advantages

- Combined data- and power-supply up to 5 A / 48 V included to one connector
- HARTING PushPull technology
- Robust design, suitable for industrial applications
- High packing density
- Sixfold codable
- Suitable for all Fast-Ethernet variants

## Technical characteristics

Cable construction:	Twisted Pair shielded + 3 Power cables
Core structure	Data: 4x AWG 26/7 Power: 3x AWG 20/7
Transmission performance	Category 5 / Class D up to 100 MHz acc. to ISO/IEC 11801:2002, EN ISO 50173-1
Sheath material	FRNC
Cable-outer diameter	ø (7.0 ±0.4) mm
Shielding	Shielding foil and shielding braid
Temperature range	-40 °C ... +80 °C
Colour	black

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

### System cables 2x HARTING PushPull Hybrid

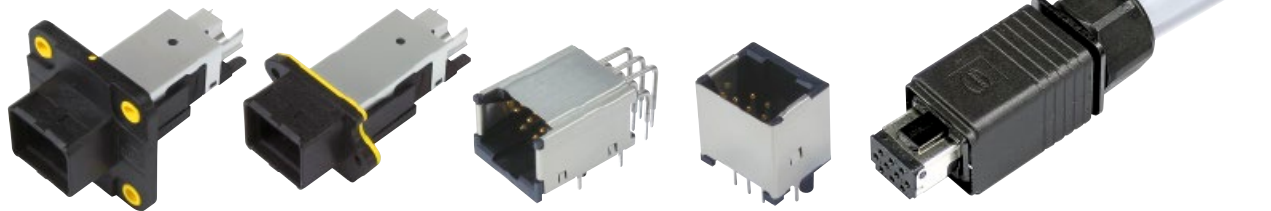
Length	0.5 m	09 47 616 1005
	0.8 m	09 47 616 1008
	1 m	09 47 616 1010
	2 m	09 47 616 1020
	3 m	09 47 616 1030
	5 m	09 47 616 1050
	10 m	09 47 616 1100
	20 m	09 47 616 1200

### Hybrid cable

ring	20 m	09 45 600 0331
ring	50 m	09 45 600 0341
ring	100 m	09 45 600 0301
reel	500 m	09 45 600 0321



Structure Hybrid cable



HARTING PushPull, type acc. to IEC 61 076-3-106 variant 4  
10-poles 50 V / 5 A

## Features

- HARTING PushPull technology
- For the transmission of analog, low voltage and bus signals
- Fully shielded
- 10 contacts
- Touch-proof
- Easy and fast cable installation

## Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-106 variant 4
Degree of protection	IP65 / IP67
Mating face	acc. to IEC/PAS 61 076-3-11x
Number of contacts	10
Electrical data acc. to DIN EN 61984	5 A 50 V 1.5 kV 3
Contact resistance	10 mΩ
Termination	Crimp or solder
Conductor cross section	AWG 24 ... 18; 0.25 ... 0.82 mm <sup>2</sup>
Conductor diameter	max. 2.1 mm
Outer cable diameter	4.9 ... 8.6 mm
Shielding	Fully shielded, 360° shielding contact
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
<p><b>HARTING PushPull Signal</b></p> <p>Connector set 10-poles incl. plastic housing and female insert</p> <p>Order D-Sub crimp female contacts separately</p>	09 45 145 9010	<p>Gesamtlänge montiert ca. 61 total length assembled of approx. 61</p>	
<p><b>D-Sub crimp contacts for cable side</b></p> <p>female, turned AWG 24-20; 0.25 - 0.52 mm<sup>2</sup></p>	09 67 000 8476 <sup>1)</sup>		
<p>female, turned AWG 22-18; 0.33 - 0.82 mm<sup>2</sup></p>	09 67 000 3476 <sup>1)</sup>		
<p>female, stamped AWG 24-20; 0.25 - 0.56 mm<sup>2</sup></p>	09 67 000 8278 <sup>2)</sup>		

<sup>1)</sup> To be used with crimp tool 09 99 000 0501. Suitable locator: 09 99 000 0531

<sup>2)</sup> To be used with crimp tool 09 99 000 0175.











HARTING PushPull USB System cables

## Advantages

- HARTING PushPull technology
- Compact, space-saving design for the device integration of USB jacks
- USB 2.0 and 3.0 compatible
- Fully shielded, 360° shielding contact
- Robust design, suitable for industrial applications

## Technical characteristics

Mating face	USB 2.0 type B and USB 2.0 / 3.0 type A
Number of contacts	USB 2.0: 4 and USB 3.0: 9
Degree of protection	IP65 / IP67
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C

Identification	Part number	Drawing	Dimensions in mm
<b>System cables</b> 2 x PushPull USB			
USB 2.0 type B-B	Length: 1.5 m 5.0 m	09 45 145 3902 09 45 145 3905	
USB 2.0 type A-A	Length: 1.5 m 5.0 m	09 45 145 1902 09 45 145 1905	
USB 3.0 type A-A	Length: 1.5 m 5.0 m	09 45 145 2902 09 45 145 2905	
<b>System cables</b> 1 x PushPull USB 1 x IP20 USB			
USB 2.0 type B-B	Length: 1.5 m 5.0 m	09 45 145 3912 09 45 145 3915	
USB 2.0 type A-A	Length: 1.5 m 5.0 m	09 45 145 1912 09 45 145 1915	
USB 3.0 type A-A	Length: 1.5 m 5.0 m	09 45 145 2912 09 45 145 2915	
Other types and lengths on request			

HARTING offers with the HARTING PushPull Power connector an universal solution for the power supply in compact and robust applications. It is in its element wherever small dimensions are combined with a high protection class.

The connector is available in a 4-pole 48 V and a 2-pole 250 V version. The power contacts can carry up to 12 resp. 16 A each (see deratings). In spite of this high current carrying capacity the connector gets by with minimal dimensions and fulfils the industrial requirements for clearances and creepage distances at the same time (pollution degree 3 and overvoltage category III).

Additionally the HARTING PushPull Power connector offers the protection class of IP67 and 65. Beside numerous industrial use cases it is thereby suited for diverse applications in the fields of transportation and telecommunication.

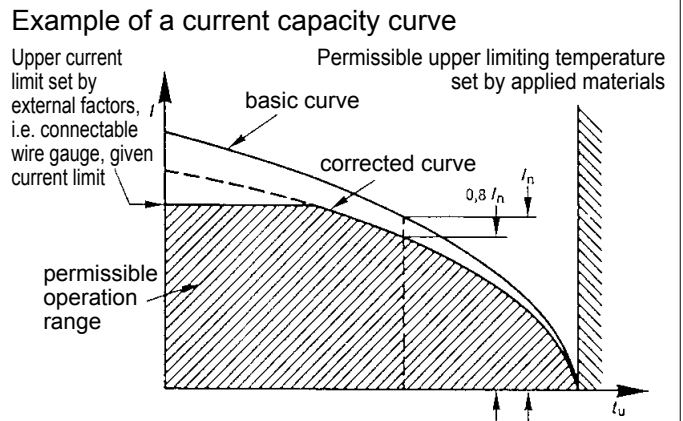
The cable side of the HARTING PushPull Power is terminated with crimping technology. For the receptacle several solutions with different termination technologies are offered.

- Regulations**
- VDE 0110
  - DIN EN 61984

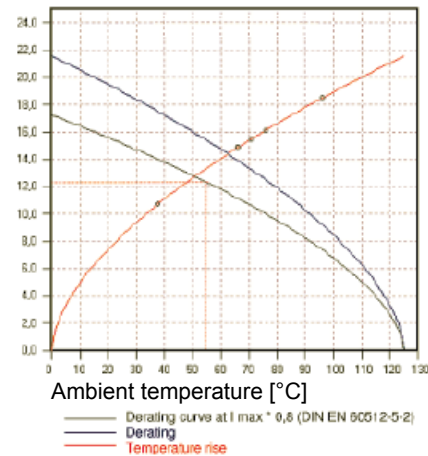
- Advantages**
- Minimum space requirements in spite of high current carrying capacity
  - Very compact housing in a high protection class
  - Protection against contact on plug AND receptacle side enables an easy and safe installation
  - For low voltage (48 V) and for power supply (250 V) available
  - Codeable without losing contacts
  - Different termination technologies for individual device integration

- Typical application areas**
- Factory and building automation
  - Industrial electronics
  - Telecommunication and wireless networks
  - Transportation
  - Industrial monitoring and camera systems
  - Lighting and display technology
  - Access control systems

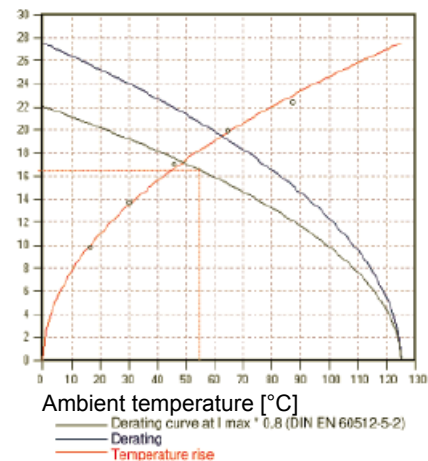
**Current carrying capacity**  
 The current carrying capacity is determined in tests which are conducted on the basis of the DIN IEC 60512-5-2. The current carrying capacity is limited by the thermal properties of materials which are used for inserts as well as by the insulating materials. These components have a limiting temperature which should not be exceeded.



Derating-Diagram for low voltage, 48 V; 4x 12 A



Derating-Diagram for power supply, 250 V; 2x 16 A





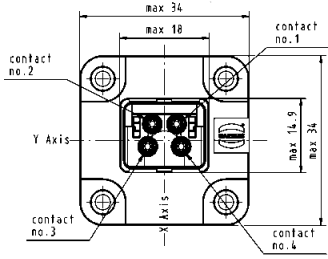
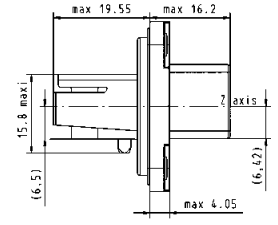
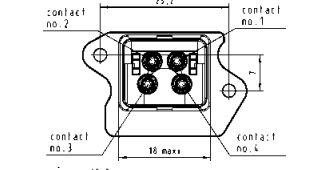
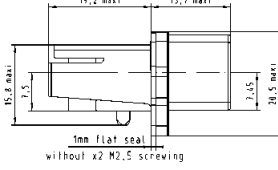
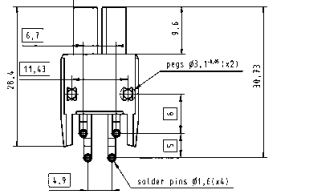
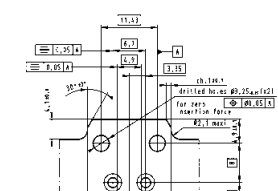
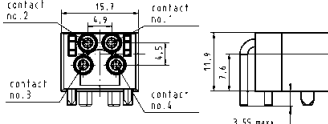
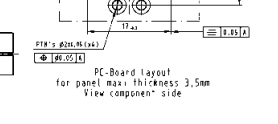
HARTING PushPull Power 4/0, type acc. to IEC 61076-3-106 variant 4  
panel feed-throughs 4-poles 48 V / 12 A

## Advantages

- Power connectors for devices
- EasyInstall and Compact panel feed-through and females for simple device integration
- Compact, space-saving design
- Touch-proof according to IEC DIN EN 60 529
- Polarisation with nose
- Device side: female with cable cage, crimp or solder termination
- 4 different coding variants without loss of contact

## Technical characteristics

Locking	PushPull Technology acc. to IEC 61076-3-106 variant 4
Degree of protection	IP65 / IP67
Number of contacts	4
Electrical data acc. to EN 61984	12 A 48 V 1.5 kV 3
Termination	Crimp
Termination cross section	0.75 - 2.5 mm <sup>2</sup> (AWG 20 - 12) stranded
Termination	Solder pins
Termination diameter	1.6 mm
Termination	Cable cage
Termination cross section	0.75 - 2.5 mm <sup>2</sup> (AWG 20 - 12) stranded
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
<b>Panel feed-through set</b>			
<b>Housing bulkhead mounting EasyInstall</b> with 4 turned female contacts and insulation body with crimp termination for 1.5 mm <sup>2</sup> with solder termination, 90° angled with cage clamp terminal on pcb	09 46 245 4430 09 46 295 4430 <sup>1)</sup> 09 46 245 4030 09 46 245 4031 09 46 295 4031 <sup>1)</sup>		
<b>Housing bulkhead mounting Compact</b> with 4 turned female contacts and insulation body with crimp termination for 1.5 mm <sup>2</sup> with solder termination, 90° angled with cage clamp terminal on pcb	09 46 245 4400 09 46 245 4000 09 46 245 4001		
<b>Power-female with solder termination</b> 4-poles, 48 V / 12 A, 90° angled 4-poles, 48 V / 12 A, straight	09 46 500 4400 <sup>2)</sup> 09 46 500 4402 <sup>3)</sup>		
<b>Power-female with crimp termination</b>	09 46 500 4401		

Panel cut outs see page 02.04

1) Metal version (without contacts)

2) Suitable housings: 09 45 545 0029 / ... 0030 / ... 0031

3) Suitable housing: 09 45 545 0027



HARTING PushPull Power 4/0, type acc. to IEC 61076-3-106 variant 4 connector 4-poles 48 V / 12 A

## Advantages

- Power connectors for devices
- EasyInstall panel feed-through for simple device integration
- Compact, space-saving design
- Touch-proof according to IEC DIN EN 60529
- Polarisation with nose
- Cable side: Male with crimp termination
- 4 different coding variants without loss of contact

## Technical characteristics

Locking	PushPull Technology acc. to IEC 61076-3-106 variant 4
Degree of protection	IP65 / IP67
Number of contacts	4
Electrical data acc. to EN 61984	12 A 48 V 1.5 kV 3
Cable diameter	4.9 ... 8.6 mm
Termination	Crimp
Termination cross section	0.75 - 2.5 mm <sup>2</sup> (AWG 20 - 12) stranded
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
<b>Connector set</b> incl. 4 turned crimp contacts (male) for 1.5 mm <sup>2</sup> , insulation body, housing, cable gland	09 46 145 4400 09 46 195 4400 <sup>1)</sup>		
<b>Connector set</b> without contacts	09 46 145 4401		
<b>Accessories – crimp contacts male</b> 0.75 mm <sup>2</sup> (AWG 20 - 18) 1.0 mm <sup>2</sup> (AWG 18) 1.5 mm <sup>2</sup> (AWG 16 - 14) 2.5 mm <sup>2</sup> (AWG 12)	09 46 500 0403 09 46 500 0407 09 46 500 0401 09 46 500 0405		
<b>Accessories – crimp contacts female</b> 0.75 mm <sup>2</sup> (AWG 20 - 18) 1.0 mm <sup>2</sup> (AWG 18) 1.5 mm <sup>2</sup> (AWG 16 - 14) 2.5 mm <sup>2</sup> (AWG 12)	09 46 500 0404 09 46 500 0408 09 46 500 0402 09 46 500 0406		
<b>Accessories – Coding pin set</b> to avoid accidental incorrect mating a coding system is required. This coding pins are inserted without loss of contact.	09 46 840 0000		

<sup>1)</sup> Metal version (without contacts)



HARTING PushPull Power 2/0, type acc. to IEC 61076-3-106 variant 4 panel feed-through and connector, 3-poles, 250 V / 16 A

## Advantages

- Power connectors for devices
- EasyInstall panel feed-through for simple device integration
- Compact, space-saving design
- Touch-proof according to IEC DIN EN 60529
- Polarisation with nose
- Cable side: Male with crimp termination
- Device side: female with crimp termination
- 4 different coding variants without loss of contact

## Technical characteristics

Locking	PushPull Technology acc. to IEC 61076-3-106 variant 4
Degree of protection	IP65 / IP67
Number of contacts	2 + PE
Electrical data acc. to EN 61984	16 A 250 V 4 kV 3
Cable diameter	4.9 ... 8.6 mm
Termination	Crimp
Termination cross section	0.75 - 2.5 mm <sup>2</sup> (AWG 20 - 12) stranded
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
<b>HARTING PushPull Power 2/0</b>			
<b>Panel feed-through set</b> incl. 3 turned crimp contacts (female) for 1.5 mm <sup>2</sup> , insulation body (black), housing bulkhead mounting EasyInstall	09 46 245 3430		
<b>Panel feed-through set</b> incl. 3 turned contacts (female) for 1.5 mm <sup>2</sup> , insulation body (black), housing bulkhead mounting, with crimp termination	09 46 245 3410		
<b>Power-female with solder termination<sup>1)</sup></b> angled	09 46 500 3400		
<b>Power-female with crimp termination</b> without contacts	09 46 500 3401		
<b>Connector set</b> incl. 3 turned crimp contacts (male) for 1.5 mm <sup>2</sup> , insulation body (black), housing, cable gland	09 46 145 3410		
<b>Connector set</b> without contacts	09 46 145 3411		
<b>Coding pin set</b> to avoid accidental incorrect mating a coding system is required. This coding pins are inserted without loss of contact.	09 46 840 0000		

Crimp contacts see page 02.28

Panel cut outs see page 02.04

<sup>1)</sup> Suitable housings: 09 45 545 0029 / ... 0031

Identification Part number

HARTING PushPull Power 8-indent crimping tool incl. positioner	09 46 800 0000
Locator HARTING PushPull Power contacts for Buchanan crimping tool (09 99 000 0001)	09 46 800 0010



For wire gauges  
0.08 ... 4.0 mm<sup>2</sup>  
(AWG 28 ... 12).

Insertion tool	09 46 800 0099
Extraction tool	09 46 800 0098



For an easy insertion and  
extraction of the male and  
female crimp contacts into /  
out of the insulator body.

### Crimp connection

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

The economic and technical advantages are:

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

Requirements for crimp connectors are laid down in DIN IEC 60352-2, Amend. 2, as illustrated in the table.

#### Pull out force of stranded wire

The main criterion to judge the quality of a crimp connection is the retention force achieved by the wire conductor in the terminal section of the contact. DIN IEC 60352, part 2, defines the extraction force in relation to the cross-section of the conductor. When fitted using HARTING crimping tools and subject to their utilization in an approved manner, our crimp connectors comply with the required extraction forces.

### Crimping tools

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

A ratchet in the tool performs 2 functions:

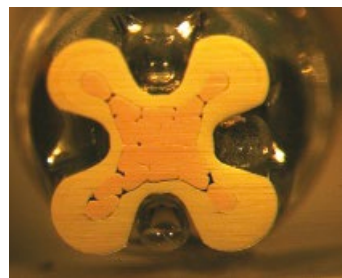
- ① It prevents insertion of the crimp into the tool for crimping before the jaws are fully open
- ② It prevents the tool being opened before the crimping action is completed

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

### Tensile strength of crimped connections

Conductor cross-section		Tensile strength
mm <sup>2</sup>	AWG	N
0.08	28	11
0.12	26	15
0.14		18
0.22	24	28
0.25		32
0.32	22	40
0.5	20	60
0.75		85
0.82	18	90
1.0		108
1.3	16	135
1.5		150
2.1	14	200
2.5		230
3.3	12	275
4.0		310

Extract from DIN IEC 60352-2, Amend. 2, Table IV



Crimp-cross section  
HARTING crimp profile







HARTING PushPull, type acc. to IEC 61 076-3-106 variant 4  
cable to cable housing

### Features

- HARTING PushPull technology
- Ideal for prototyping
- Can be combined with panel feed-throughs for power, data and signal

### Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-106 variant 4
Degree of protection	IP65 / IP67
Outer cable diameter	6.5 ... 9.5 mm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
<b>HARTING PushPull cable to cable housings, plastic</b> (Order housing bulkhead mounting and insert separately)  for outer cable diameter 6.5 ... 9.5 mm	09 45 345 0000	2X M2.5x10 self tapping screws according to EN ISO 7092 	
<b>HARTING PushPull bulkhead housings, plastic</b> (Order housing bulkhead mounting and insert separately)	09 45 345 0001	2X M2.5x10 self tapping screws according to EN ISO 7092 	
<b>Suitable bulkhead housing, plastic</b>  for RJ45 / Signal	09 45 545 0028		
<b>Inserts for RJ45 / Signal</b> RJ 45: 8-poles, Cat. 6 / class E <sub>A</sub> Ha-Vis preLink® set AWG 22/23 HARTING RJ Industrial® cable jack with IDC termination AWG 22-24, 8-poles AWG 24-28, 8-poles AWG 22-24, 4-poles, Cat. 5	20 82 001 0001  09 45 545 1562 09 45 545 1561 09 45 545 1120		
Signal: 10-poles, 50 V / 5 A*	09 45 545 9010		

\* Order D-Sub crimp male contacts separately (see pages 02.19 and 02.20)



Han® PushPull, type acc. to IEC 61 076-3-117 variant 14  
Housing bulkhead mounting for device integration and RJ45 jacks

## Features

- HARTING PushPull technology
- Compact design
- High packing density
- Device integration via RJ45 PCB connectors

## Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117
Degree of protection	IP65 / IP67
Mating face	RJ45 acc. to IEC 60 603-7
Termination type	Jack with solder termination
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

### Identification

### Part number

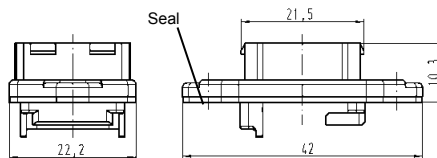
### Drawing

### Dimensions in mm

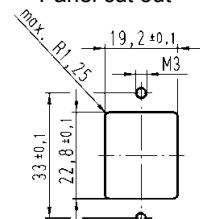
Components device side

Housing bulkhead mounting plastic

09 35 002 0321

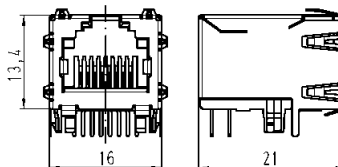


Panel cut out

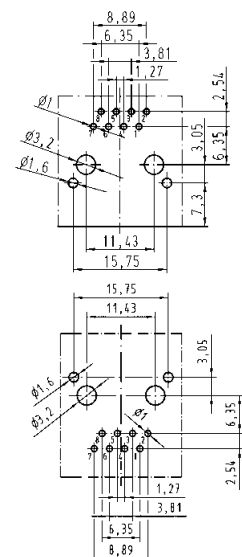


Protection cover IP65 / IP67

09 35 002 5402



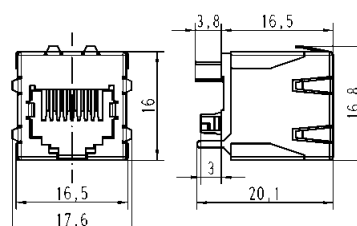
PCB layout



RJ45 jack

Solder variant, 90° angled

09 35 002 2101<sup>1)</sup>



Solder variant, 180° straight

09 35 002 2102<sup>2)</sup>

<sup>1)</sup> Packaging: Blister à 90 pieces

<sup>2)</sup> Packaging: Blister à 100 pieces





Han® PushPull, type acc. to IEC 61 076-3-117 variant 14  
RJ45 connector

## Features

- HARTING PushPull technology
- Field-assembly connector with IDC contacts
- Fully shielded

## Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117
Degree of protection	IP65 / IP67
Mating face	RJ45 acc. to IEC 60 603-7
Shielding	Fully shielded, 360° shielding contact
Number of contacts	4 respectively 8
Transmission performance	acc. to ISO/IEC 11 801:2002, EN 50 173-1, category 5 / class D up to 100 MHz, category 6 / class E <sub>A</sub> up to 500 MHz
Transmission rate	10/100 Mbit/s and 1/10 Gbit/s
Termination for Cat. 5	with IDC contacts, no tools needed / field-assembly
	Conductor cross section AWG 24/7 - 22/7 (stranded) AWG 23/1 - 22/1 (solid)
	Cable diameter 1.6 mm
for Cat. 6	Conductor cross section AWG 22/7 - 27/7 (stranded) AWG 22/1 - 27/1 (solid)
	Cable diameter 1.6 mm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black, UL 94 V0

### Identification

### Part number

### Drawing

### Dimensions in mm

#### Connector set, plastic

incl. housing and male insert

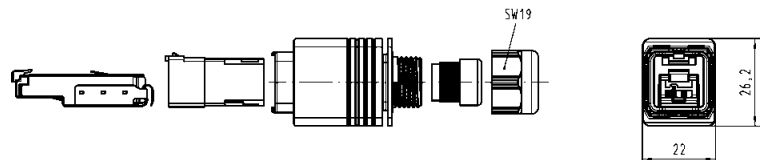
Han® RJ Industrial  
Category 5, 4-poles, IDC contacts

6.5 - 9.5 mm clamp range

5 - 8 mm clamp range

09 35 221 0421

09 35 222 0421

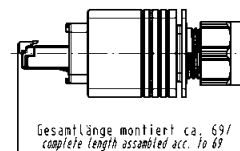


Han® RJ Industrial PN  
Category 5, 4-poles, IDC contacts

6.5 - 9.5 mm clamp range

PROFINET-Identification:  
PROFINET O-Plug RJ45

09 35 226 0421



Han® RJ Industrial 10G  
Category 6, 8-poles, IDC contacts

6.5 - 9.5 mm clamp range

5 - 8 mm clamp range

09 35 225 0421

09 35 228 0421



Han® PushPull, type acc. to IEC 61 076-3-117 variant 14 RJ45 connector

## Features

- HARTING PushPull technology
- Field-assembly connector with piercing contacts
- Fully shielded

## Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117
Degree of protection	IP65 / IP67
Mating face	RJ45 acc. to IEC 60 603-7
Shielding	Fully shielded, 360° shielding contact
Number of contacts	8
Transmission performance	acc. to ISO/IEC 11 801:2002, EN 50 173-1, category 6 <sub>A</sub> / class E <sub>A</sub> up to 500 MHz
Transmission rate	10/100 Mbit/s and 1/10 Gbit/s
Termination	with piercing contacts
Conductor cross section	AWG 24/7 - 27/7 (stranded)
Cable diameter	1.05 mm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black, UL 94 V0

## Identification

## Part number

## Drawing

## Dimensions in mm

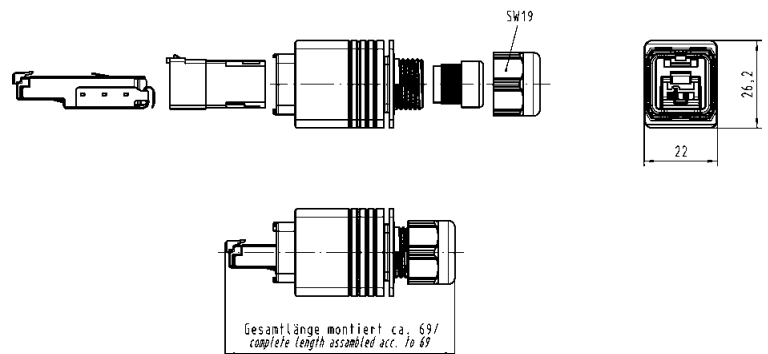
Connector set, plastic  
incl. housing and male insert  
5 - 8 mm clamp range

Han® RJ Industrial  
Category 6<sub>A</sub>, 8-poles,  
piercing contacts

suitable assembly tool

09 35 227 0421

09 45 800 0520





Han® PushPull, type acc. to IEC 61 076-3-117 variant 14  
Housing bulkhead mounting for device integration and RJ45 jacks

## Features

- HARTING PushPull technology
- Compact design
- High packing density
- Device integration via RJ45 PCB connectors

## Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117
Degree of protection	IP65 / IP67
Mating face	RJ45 acc. to IEC 60 603-7
Termination type	Jack with solder termination
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel plated

### Identification

### Part number

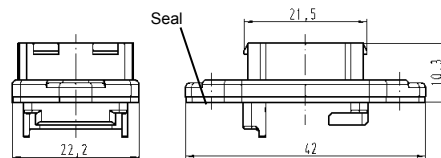
### Drawing

### Dimensions in mm

Components device side

Housing bulkhead mounting metal

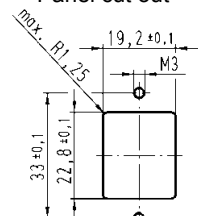
09 35 002 0301



Protection cover IP65 / IP67

09 35 002 5402

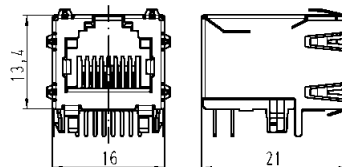
Panel cut out



RJ45 jack

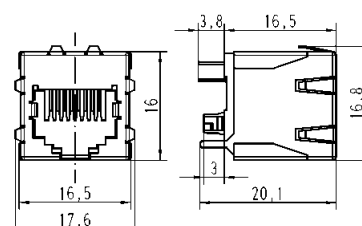
Solder variant, 90° angled

09 35 002 2101<sup>1)</sup>

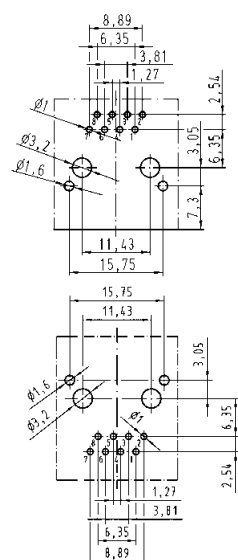


Solder variant, 180° straight

09 35 002 2102<sup>2)</sup>



PCB layout



1) Packaging: Blister à 90 pieces  
2) Packaging: Blister à 100 pieces



Han® PushPull, type acc. to IEC 61 076-3-117 variant 14  
RJ45 10G panel feed through

## Features

- HARTING PushPull technology
- Compact and robust design
- 360° shielding
- RJ45 mating compatible
- Transmission category 6, performance class E<sub>A</sub>, suitable for 1/10 Gigabit Ethernet
- PROFINET conform

## Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14
Mating face	RJ45 acc. to IEC 60 603-7
Transmission performance	Category 6 / class E <sub>A</sub> acc. to ISO/IEC 11 801:2002, EN 50 173-1
Transmission rate	10/100 Mbit/s and 1/10 Gbit/s
Shielding	Fully shielded, 360° shielding contact
Mounting	Screwable to cover plates
Degree of protection	IP65 / IP67
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel-plated

### Identification

### Part number

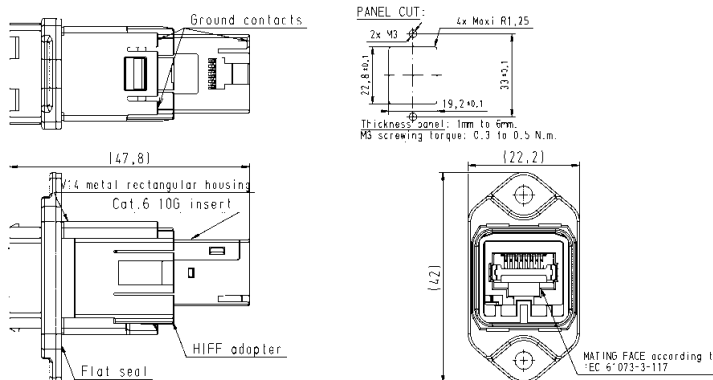
### Drawing

### Dimensions in mm

#### Han® PushPull RJ45 10G

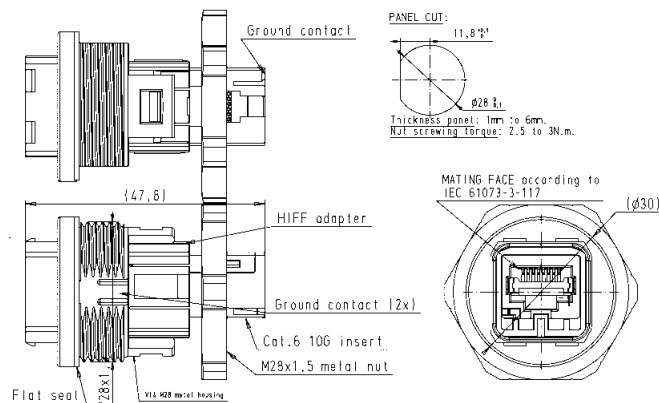
Panel feed through, Cat. 6 including bulkhead housing for rectangular panel cut out, flat seal and HARTING RJ Industrial® 10G RJ45 bulkhead, isolated bulkhead fixture

09 35 225 0311



Panel feed through, Cat. 6 including bulkhead housing for circular panel cut out, flat seal and HARTING RJ Industrial® 10G RJ45 bulkhead, isolated bulkhead fixture

09 35 225 0312









Han® PushPull RJ45 Genderchanger Metal  
Cat. 6 / Class E<sub>A</sub>

## Features

- High degree of protection IP65 / IP67
- Robust metal housing
- Standard PROFINET component of the German automotive production
- Allows usage of different cable types (Type B, C) e.g. in robots application
- Extension of cords according to PROFINET guideline
- Can be count as one connection acc. to IEC 11 801 Chapter 10.2.4

## Technical characteristics

Transmission performance	Cat. 6 / Class E <sub>A</sub> up to 500 MHz
Connector	Han® PushPull RJ45 (PROFINET conform)
Locking	PushPull technology acc. to IEC 61076-3-117 variant 14
Mating face	RJ45 acc. to IEC 60603-7
Mating cycles	min. 750
Housing material	Aluminium anodized
Dimensions	61.2 x 62 x 25.2 mm (unmated)
Degree of protection acc. to DIN 60529	IP65 / IP67 (mated)
Mounting	Wall mountable with 4 screws (type M5)
Temperature range	-40 °C ... +70 °C
Maximum permissible humidity	30 % ... 95 % (no condensation)

Identification

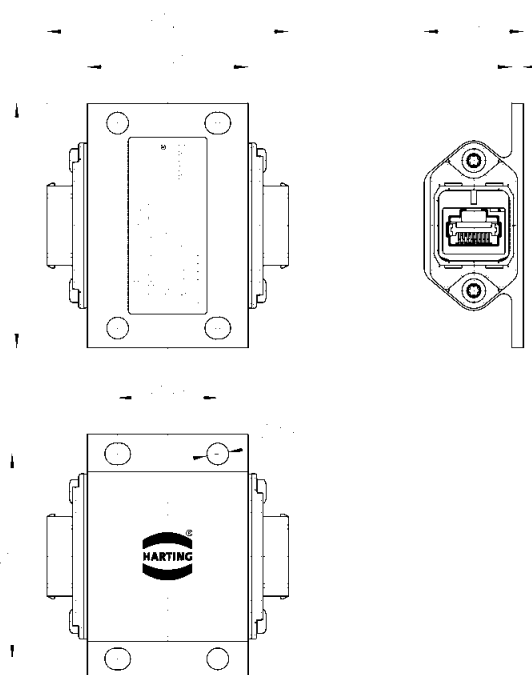
Part number

Drawing

Dimensions in mm

Han® PushPull RJ45  
Genderchanger metal

09 35 221 0501





## Han® PushPull RJ45 Coupling Metal Cat. 6 / Class E<sub>A</sub>

### Features

- High degree of protection IP65 / IP67
- Robust metal housing
- Standard PROFINET component of the German automotive production
- Extension of cords according to PROFINET guideline
- Can be count as one connection acc. to IEC 11 801 Chapter 10.2.4
- For an easy robot termination and a fast exchange of tube packages

### Technical characteristics

Transmission performance	Cat. 6 / Class E <sub>A</sub> up to 500 MHz
Transmission rate	10/100 Mbit/s and 1/10 Gbit/s
Locking	PushPull technology acc. to IEC 61076-3-117 variant 14
Mating face	RJ45 acc. to IEC 60603-7
Number of contacts	8
Usable cables	
Termination cross section	AWG 22-24 stranded/solid
Cable diameter	5 ... 9 mm
Conductor diameter	1.3 ... 1.6 mm
Mating cycles	min. 750
Housing material	Aluminium die-cast
Degree of protection acc. to DIN 60 529	IP65 / IP67
Temperature range	-40 °C ... +70 °C

#### Identification

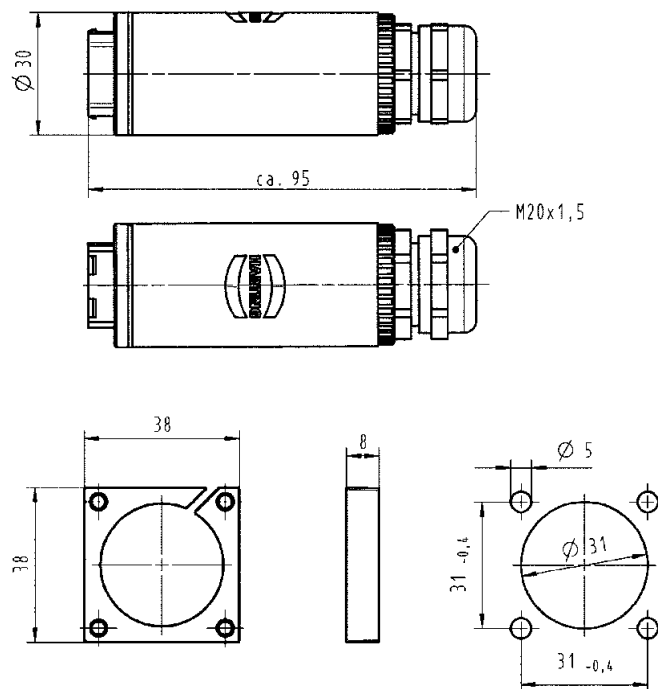
#### Part number

#### Drawing

#### Dimensions in mm

Han® PushPull RJ45  
Coupling metal  
including housing,  
Ha-VIS preLink® RJ45 jack,  
bulkhead housing and cable gland

61 04 201 1084



Fixing flange

61 04 600 0182



PushPull



Han® PushPull, type acc. to IEC 61 076-3-117 variant 14 RJ45 connector

## Features

- HARTING PushPull technology
- Field-assembly connector with IDC contacts
- Fully shielded

## Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117
Degree of protection	IP65 / IP67
Mating face	RJ45 acc. to IEC 60 603-7
Shielding	Fully shielded, 360° shielding contact
Number of contacts	4 respectively 8
Transmission performance	acc. to ISO/IEC 11 801:2002, EN 50 173-1, category 5 / class D up to 100 MHz category 6 / class E <sub>A</sub> up to 500 MHz
Transmission rate	10/100 Mbit/s and 1/10 Gbit/s
Termination	with IDC contacts, no tools needed / field-assembly
for Cat. 5	
Conductor cross section	AWG 24/7 - 22/7 (stranded) AWG 23/1 - 22/1 (solid)
Cable diameter	1.6 mm
for Cat. 6	
Conductor cross section	AWG 22/7 - 27/7 (stranded) AWG 22/1 - 27/1 (solid)
Cable diameter	1.6 mm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel-plated

Identification      Part number      Drawing      Dimensions in mm

Connector set, metal  
incl. housing and male insert  
4 - 11 mm clamp range

Han® RJ Industrial  
Category 5, 4-poles, IDC contacts

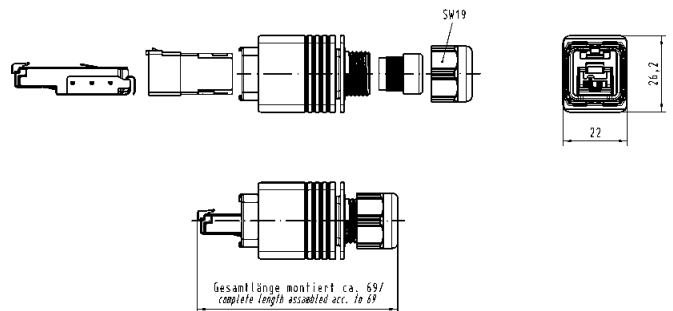
09 35 221 0401

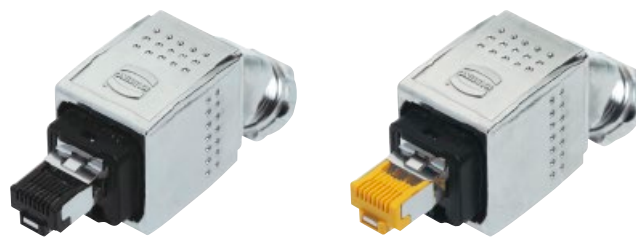
Han® RJ Industrial PN  
Category 5, 4-poles, IDC contacts  
PROFINET-Identification:  
PROFINET O-Plug RJ45

09 35 226 0401

Han® RJ Industrial 10G  
Category 6, 8-poles, IDC contacts

09 35 225 0401





Han® PushPull, type acc. to IEC 61 076-3-117 variant 14  
RJ45 connector angled

## Features

- HARTING PushPull technology
- Angled cable exit 45° to the top / bottom for a space saving cabling
- Field-assembly connector with IDC contacts
- Fully shielded

## Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117
Degree of protection	IP65 / IP67
Mating face	RJ45 acc. to IEC 60 603-7
Shielding	Fully shielded, 360° shielding contact
Number of contacts	4 respectively 8
Transmission performance	acc. to ISO/IEC 11 801:2002, EN 50 173-1, category 5 / class D up to 100 MHz category 6 / class E <sub>A</sub> up to 500 MHz
Transmission rate	10/100 Mbit/s and 1/10 Gbit/s
Termination	with IDC contacts, no tools needed / field-assembly
for Cat. 5	
Conductor cross section	AWG 24/7 - 22/7 (stranded) AWG 23/1 - 22/1 (solid)
Cable diameter	1.6 mm
for Cat. 6	
Conductor cross section	AWG 22/7 - 27/7 (stranded) AWG 22/1 - 27/1 (solid)
Cable diameter	1.6 mm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel-plated

Identification	Part number	Drawing	Dimensions in mm
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Connector set,  
metal

incl. housing  
and male insert

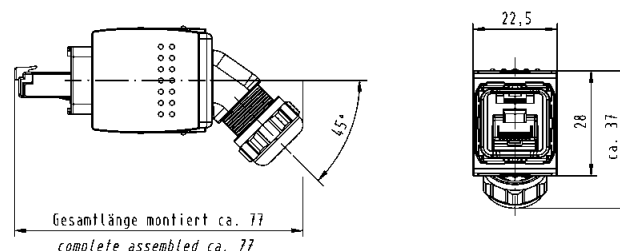
Han® RJ Industrial PN  
Category 5, 4-poles, IDC contacts,  
6.5 - 9.5 mm clamp range

Cable exit bottom side

09 35 226 0402

Cable exit top side

09 35 226 0403



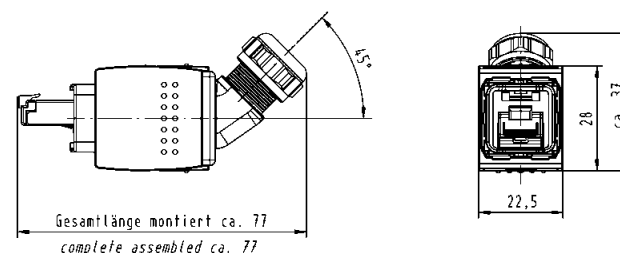
Han® RJ Industrial 10G  
Category 6, 8-poles, IDC contacts,  
6.5 - 9.5 mm clamp range

Cable exit bottom side

09 35 225 0402

Cable exit top side

09 35 225 0403





Han® PushPull, type acc. to IEC 61 076-3-117 variant 14 RJ45 connector

## Features

- HARTING PushPull technology
- Compact design
- For space saving fitting conditions
- Connector with piercing contacts
- 360° shielding

## Technical characteristics

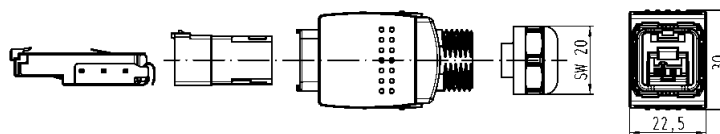
Locking	PushPull technology acc. to IEC 61 076-3-117
Degree of protection	IP65 / IP67
Mating face	RJ45 acc. to IEC 60 603-7
Shielding	Fully shielded, 360° shielding contact
Number of contacts	8
Transmission performance	acc. to ISO/IEC 11 801:2002, EN 50 173-1, category 6 <sub>A</sub> / class E <sub>A</sub> up to 500 MHz
Transmission rate	10/100 Mbit/s and 1/10 Gbit/s
Termination	with piercing contacts
Conductor cross section	AWG 24/7 - 27/7 (stranded)
Cable diameter	1.05 mm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel-plated

Identification	Part number	Drawing	Dimensions in mm
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**Connector set, metal**  
incl. housing and male insert  
4 - 11 mm clamp range

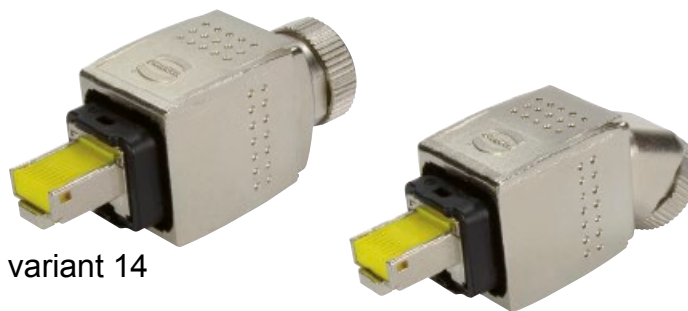
Han® RJ Industrial  
Category 6, 8-poles,  
piercing contacts

09 35 227 0401



suitable assembly tool

09 45 800 0520



Han® PushPull, type acc. to IEC 61076-3-117 variant 14 preLink® RJ45-connector, straight and angled

## Advantages

- HARTING PushPull technology
- 45° angled cable entry, bottom side, for space saving cabling
- 360° shielding
- Category of transmission Cat. 6A
- Suitable for solid and stranded wires
- Suitable for PoE (IEEE 802.3af) and PoE+ (IEEE 802.3at)

## Technical characteristics

Locking	PushPull technology acc. to IEC 61076-3-117
Degree of protection	IP65 / IP67
Mating face	RJ45 acc. to IEC 60603-7
Number of contacts	8
Transmission category	Category 6A, Class E <sub>A</sub> , suitable for 1/10 Gigabit Ethernet
Transmission performance	Category 6A / Class E <sub>A</sub> up to 500 MHz acc. to ISO/IEC 11801:2002, EN 50173-1
Transmission rate	10/100 Mbit/s and 1/10 Gbit/s
Shielding	fully shielded, 360° shielding contact
Mounting	IDC termination
Cable termination for preLink® Connectable cables	terminal module, yellow, 20 82 000 0001
– Conductor cross section	AWG 23 ... AWG 22 (solid and stranded)
– Conductor diameter	1.3 ... 1.6 mm
Cable termination for preLink® Connectable cables	terminal module, white, 20 82 000 0003
– Conductor cross section	AWG 27 ... AWG 26 (solid and stranded)
– Conductor diameter	0.8 ... 1.1 mm
Cable diameter	6.3 ... 8.8 mm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel-plated

### Identification

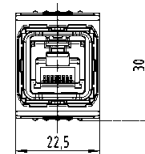
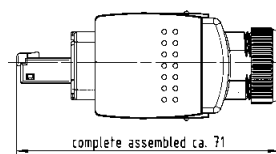
### Part number

### Drawing

### Dimensions in mm

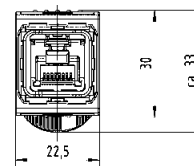
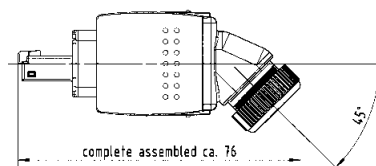
Han® PushPull preLink® RJ45 connector, straight

20 82 104 0001



Han® PushPull preLink® RJ45 connector, angled

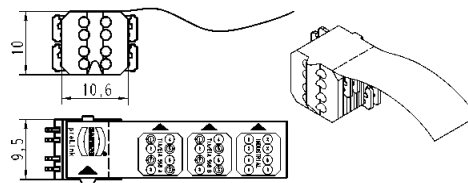
20 82 104 0045



Ha-VIS preLink® RJ45 terminal module

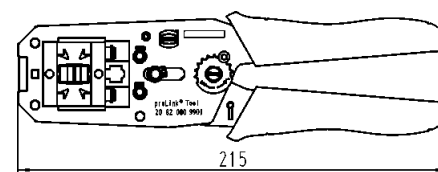
AWG 22/23, yellow<sup>1)</sup>  
AWG 26/27, white<sup>1)</sup>

20 82 000 0001  
20 82 000 0003



Ha-VIS preLink® assembly tool

20 82 000 9901



<sup>1)</sup> Packaging with 10 pieces



Han® PushPull, type acc. to IEC 61076-3-117 variant 14 cable to cable housing

## Features

- HARTING PushPull technology
- Ideal for prototyping
- Can be combined with panel feed-throughs for power, data and signal

## Technical characteristics

Locking	PushPull technology acc. to IEC 61076-3-117 variant 14
Degree of protection	IP65 / IP67
Outer cable diameter	6.5 ... 9.5 mm / 9 ... 13 mm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

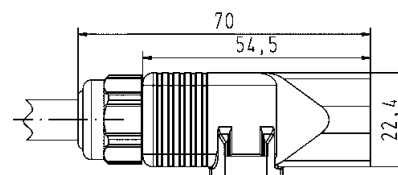
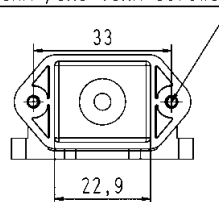
Identification	Part number	Drawing	Dimensions in mm
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**Han® PushPull cable to cable housings, plastic**  
(Order housing bulkhead mounting and insert separately)

for outer cable diameter 6.5 ... 9.5 mm

09 35 002 0431

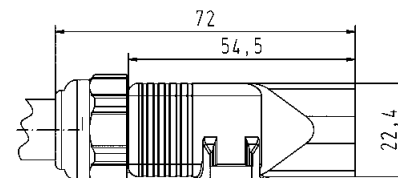
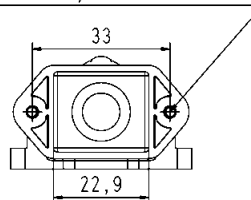
2X REMFORM  $\phi 3 \times 8$  TORX screws



for outer cable diameter 9 ... 13 mm

09 35 002 0433

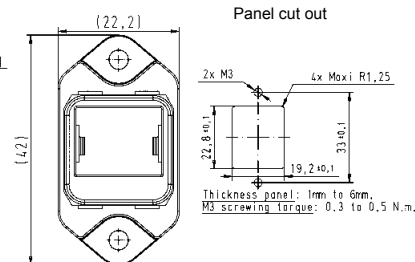
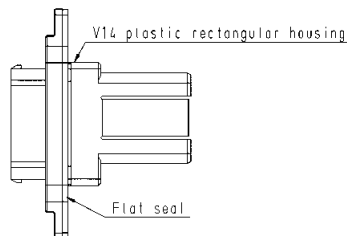
2X REMFORM  $\phi 3 \times 8$  TORX screws



**Suitable bulkhead housing, plastic**

for RJ45

09 35 012 0331



**Inserts for RJ45**

- RJ 45: 8-poles, Cat. 6 / class E<sub>A</sub>  
 Ha-Vis preLink® set AWG 22/23  
 HARTING RJ Industrial® cable jack with IDC termination
- AWG 22-24, 8-poles
  - AWG 24-28, 8-poles
  - AWG 22-24, 4-poles, Cat. 5



20 82 001 0001

09 45 545 1562

09 45 545 1561

09 45 545 1120

## Han® PushPull, type acc. to IEC 61076-3-117 variant 14 Accessories

Identification	Part number	Drawing	Dimensions in mm
<p><b>Han® PushPull protection cover IP65 / IP67</b> for device side</p> <p>without fixing cord</p> <p>with fixing cord</p> <p>with nylon fixing cord</p>	<p>09 35 002 5403 XL<sup>1)</sup></p> <p>09 35 002 5402 09 35 002 5402 XL<sup>1)</sup></p> <p>09 35 002 5404 09 35 002 5404 XL<sup>2)</sup></p>		
<p><b>Han® PushPull protection cover IP65 / IP67</b> for cable side</p> <p>without fixing cord</p> <p>with nylon fixing cord</p>	<p>09 35 002 5411</p> <p>09 35 002 5413</p>		

<sup>1)</sup> Packaging with 100 pieces

<sup>2)</sup> Packaging with 250 pieces





Han® PushPull, type acc. to IEC 61 076-3-117 variant 14  
 Housing bulkhead mounting for device integration  
 Optical connector based on SCRJ

## Features

- HARTING PushPull technology
- Compact design
- High packing density
- Device integration via transceiver
- Han® PushPull SCRJ for POF is according the requirements of AIDA (German Domestic Automobile Manufacturers)

## Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67
Mating face	SCRJ acc. to IEC 61 754-24
Fiber Typen	POF <sup>1)</sup> 1 mm HCS <sup>2)</sup> 200 µm / 230 µm MM 62.5 µm / 125 µm MM 50 µm / 125 µm SM 10 µm / 125 µm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

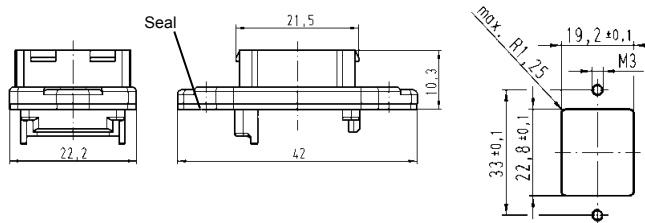
Identification	Part number	Drawing	Dimensions in mm
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### Components device side

Housing bulkhead mounting  
 Optical transceiver  
 not included

plastic

09 35 002 0323



Protection cover IP65 / IP67

09 35 002 5402

Reference for transceiver  
 as well as mounting instruction  
 on request

1) POF = Polymer-Optical Fibre  
 2) HCS® = Hard Clad Silica (registered trademark of SpecTran Corporation)



PushPull

Han® PushPull, type acc. to IEC 61 076-3-117 variant 14  
RJ45 panel feed through  
for optical connector based on SCRJ

## Features

- HARTING PushPull technology
- Compact design
- High packing density
- Han® PushPull SCRJ for POF is according the requirements of AIDA (German Domestic Automobile Manufacturers)

## Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67
Mating face	SCRJ acc. to IEC 61 754-24
Fiber Typen	POF <sup>1)</sup> 1 mm HCS <sup>2)</sup> 200 µm / 230 µm MM 62.5 µm / 125 µm MM 50 µm / 125 µm SM 10 µm / 125 µm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

### Identification

### Part number

### Drawing

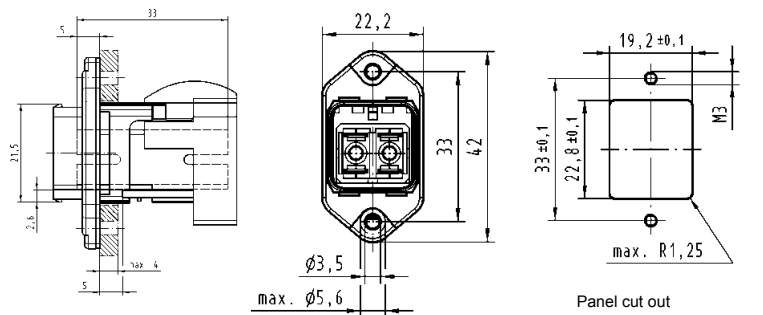
### Dimensions in mm

#### Han® PushPull SCRJ

Panel feed through

09 35 242 0333

SC contacts order separately



#### SCRJ IP20

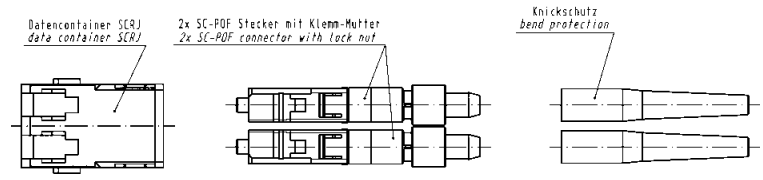
#### POF connector

with fast termination

09 35 002 4002

with crimp termination

09 35 002 4003



#### Contacts

SC POF contact, 1 mm

20 10 001 5217

SC 125 GI contact

20 10 125 5211

SC 230 HCS contact

20 10 230 5211

<sup>1)</sup> POF = Polymer-Optical Fibre

<sup>2)</sup> HCS® = Hard Clad Silica (registered trademark of SpecTran Corporation)



PushPull



Han® PushPull, type acc. to IEC 61 076-3-117 variant 14 SCRJ connector

## Features

- HARTING PushPull technology
- Compact design
- High packing density
- Han® PushPull SCRJ for POF is according the requirements of AIDA (German Domestic Automobile Manufacturers)
- Field installable

## Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67
Mating face	SCRJ acc. to IEC 61 754-24
Fiber Typen	POF <sup>1)</sup> 1 mm HCS <sup>®2)</sup> 200 µm / 230 µm MM 62.5 µm / 125 µm MM 50 µm / 125 µm SM 10 µm / 125 µm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0
Cable diameter	6.5 - 9.5 mm

Identification	Part number	Drawing	Dimensions in mm
<b>Connector set, plastic</b> incl. housing and SCRJ insert, POF contacts  PROFINET-Identification: PROFINET O-Plug SCRJ  incl. housing and SCRJ insert SC contacts order separately	09 35 241 0421  09 35 241 0422		
<b>SCRJ IP20 POF connector</b>	09 35 002 4002		
<b>Protection cover IP65 / IP67</b>	09 35 002 5411		
<b>Contacts</b>  SC POF contact, 1 mm SC 125 GI contact SC 230 HCS contact	20 10 001 5217 20 10 125 5211 20 10 230 5211		



Han® PushPull, type acc. to IEC 61076-3-117 variant 14  
 Housing bulkhead mounting for device integration  
 Optical connector based on SCRJ

PushPull

## Features

- HARTING PushPull technology
- Compact design
- High packing density
- Device integration via transceiver
- Han® PushPull SCRJ for POF is according the requirements of AIDA (German Domestic Automobile Manufacturers)

## Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67
Mating face	SCRJ acc. to IEC 61754-24
Fiber Typen	POF <sup>1)</sup> 1 mm HCS <sup>2)</sup> 200 µm / 230 µm MM 62.5 µm / 125 µm MM 50 µm / 125 µm SM 10 µm / 125 µm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel plated

### Identification

### Part number

### Drawing

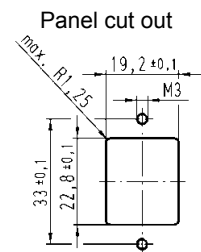
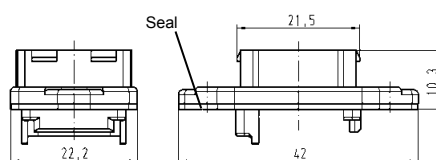
### Dimensions in mm

#### Components device side

Housing bulkhead mounting  
 Optical transceiver  
 not included

metal

09 35 002 0303



Protection cover IP65 / IP67

09 35 002 5402

Reference for transceiver  
 as well as mounting instruction  
 on request

1) POF = Polymer-Optical Fibre

2) HCS® = Hard Clad Silica (registered trademark of SpecTran Corporation)



Han® PushPull, type acc. to IEC 61 076-3-117 variant 14  
RJ45 panel feed through  
for optical connector based on SCRJ

## Features

- HARTING PushPull technology
- Compact design
- High packing density
- Han® PushPull SCRJ for POF is according the requirements of AIDA (German Domestic Automobile Manufacturers)

## Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67
Mating face	SCRJ acc. to IEC 61 754-24
Fiber Typen	POF <sup>1)</sup> 1 mm HCS <sup>2)</sup> 200 µm / 230 µm MM 62.5 µm / 125 µm MM 50 µm / 125 µm SM 10 µm / 125 µm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel plated

Identification	Part number	Drawing	Dimensions in mm
<b>Han® PushPull SCRJ</b> Panel feed through SC contacts order separately	09 35 242 0313		Panel cut out 
<b>SCRJ IP20 POF connector</b> with fast termination	09 35 002 4002		
with crimp termination	09 35 002 4003		
<b>Contacts</b> SC POF contact, 1 mm	20 10 001 5217		
SC 125 GI contact	20 10 125 5211		
SC 230 HCS contact	20 10 230 5211		

1) POF = Polymer-Optical Fibre

2) HCS® = Hard Clad Silica (registered trademark of SpecTran Corporation)



PushPull

Han® PushPull, type acc. to IEC 61 076-3-117 variant 14  
SCRJ connector with fast termination

## Features

- HARTING PushPull technology
- Compact design
- High packing density
- Han® PushPull SCRJ for POF is according the requirements of AIDA (German Domestic Automobile Manufacturers)
- Field installable

## Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67
Mating face	SCRJ acc. to IEC 61 754-24
Fiber Typen	POF <sup>1)</sup> 1 mm HCS <sup>2)</sup> 200 µm / 230 µm MM 62.5 µm / 125 µm MM 50 µm / 125 µm SM 10 µm / 125 µm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel plated
Flammability acc. to UL 94	V0
Cable diameter	6.5 - 9.5 mm

Identification	Part number	Drawing	Dimensions in mm
<b>Connector set, metal</b> incl. housing and SCRJ insert, POF contacts  PROFINET-Identification: PROFINET O-Plug SCRJ  incl. housing and SCRJ insert SC contacts order separately	09 35 241 0401   09 35 241 0402		34,19
<b>SCRJ IP20 POF connector</b>	09 35 002 4002		
<b>Protection cover IP65 / IP67</b>	09 35 002 5411		
<b>Contacts</b>  SC POF contact, 1 mm SC 125 GI contact SC 230 HCS contact	20 10 001 5217 20 10 125 5211 20 10 230 5211		

Tooling see page 02.57

<sup>1)</sup> POF = Polymer-Optical Fibre

<sup>2)</sup> HCS® = Hard Clad Silica (registered trademark of SpecTran Corporation)



Han® PushPull, type acc. to IEC 61 076-3-117 variant 14  
SCRJ crimp connector

## Features

- HARTING PushPull technology
- Compact design
- High packing density
- Han® PushPull SCRJ for POF is according the requirements of AIDA (German Domestic Automobile Manufacturers)

## Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67
Mating face	SCRJ acc. to IEC 61 754-24
Fiber Typen	POF <sup>1)</sup> 980 µm / 1000 µm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel plated
Flammability acc. to UL 94	V0
Cable diameter	6.5 - 9.5 mm

### Identification

### Part number

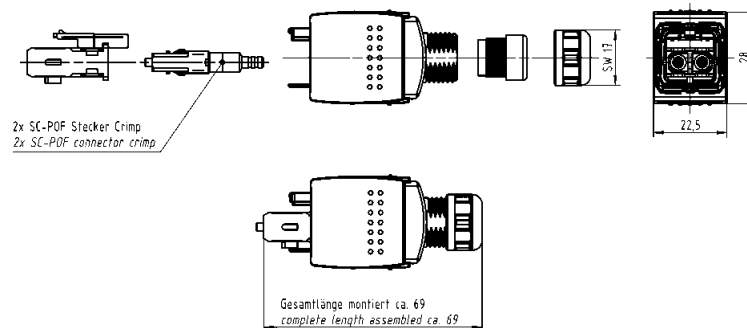
### Drawing

### Dimensions in mm

#### Connector set, metal

incl. housing and SCRJ insert,  
POF crimp contacts

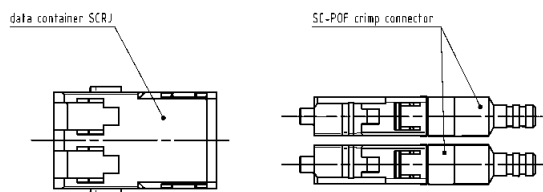
09 35 242 0401



#### SCRJ IP20

POF crimp connector

09 35 002 4003



#### Protection cover

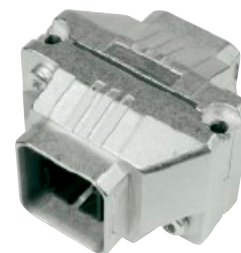
IP65 / IP67

09 35 002 5411

#### Contacts

SC POF crimp contact

20 10 001 5211



PushPull

## Han® PushPull SCRJ Genderchanger Metal

### Features

- High degree of protection IP65 / IP67
- Robust metal housing
- Standard PROFINET component of the German automotive production
- Allows usage of different cable types (Type B, C) e.g. in robots application
- Extension of cords according to PROFINET guideline

### Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67 (mated)
Mating face	SCRJ acc. to IEC 61 754-24
Fibre types	POF, GOF, HCS
Number of contacts	2
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel-plated
Dimensions	43.3 x 42 x 29 mm (unmated)
Mounting	Wall mountable with 2 screws (type M3)

Identification

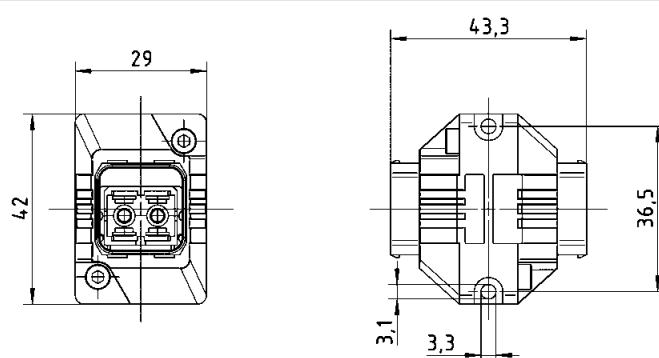
Part number

Drawing

Dimensions in mm

Han® PushPull SCRJ Genderchanger metal

09 35 241 0501







Han® PushPull SCRJ POF crimp  
Assembly tools for polymer-optical fibres

## Features

- Cable insulation (PUR / PVC) is stripped without damage
- The 'crimping' and 'precision cutting' operations are completed within the one tool
- Specialized cutting method with an automatically advancing round blade for an accurate cutting result requiring no final polishing
- Optical display indicating remaining operations
- Simultaneous crimping of two contacts (duplex handling)

## Technical characteristics

Connector type	SCRJ crimp connector acc. to IEC 61754-24
Locking	PushPull technology acc. to IEC 61076-3-117 variant 14 (AIDA compliant)
Insertion loss	typically 1.5 to 2.0 dB
Termination SC contacts	Crimp termination technique
Fibre dimensions	POF 980 / 1000 µm
Fibre outer diameter	2.2 mm
Cable outer diameter	7 to 8.5 mm
No. of cutting operations	Maximum 1260

Identification	Part number	Drawing	Dimensions in mm
<p>Assembly tool set for POF crimp cutting, without final polishing</p> <p>The set contains</p> <ul style="list-style-type: none"> <li>- one crimping and cutting tool for 1260 operations</li> <li>- one sheath stripping tool</li> <li>- one Kevlar shear</li> <li>- one loading device for SC contacts</li> </ul> <p>Supplied in a robust plastic case</p>	09 35 000 9915		
Replacement cutting tool	09 35 000 9914		



## Han® PushPull SCRJ POF Assembly tools for polymer-optical fibres

### Features

- Cable insulation (PUR / PVC) is stripped without damage
- The 'stripping' and 'precision cutting' operations are completed within the one tool
- Specialized cutting method with an automatically advancing round blade for an accurate cutting result requiring no final polishing
- Optical display indicating remaining operations
- Simultaneous handling of twin fibers (duplex mode)

### Technical characteristics

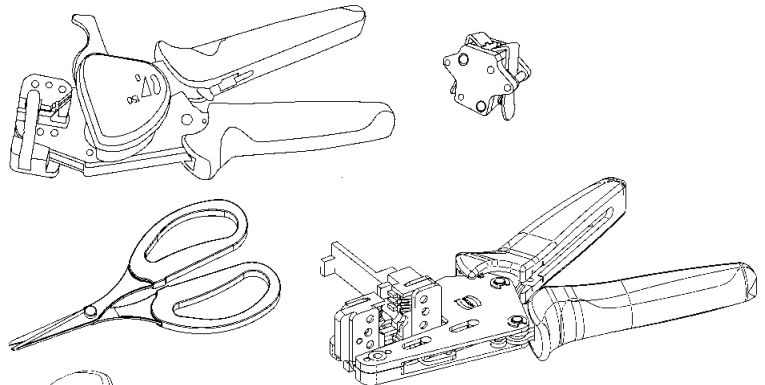
Connector type	SCRJ connector acc. to IEC 61 754-24
Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14 (AIDA compliant)
Insertion loss	typically 1.5 to 2.0 dB
Termination SC contacts	Fast termination technique, reusable
Fibre dimensions	POF 980 / 1000 µm
Fibre outer diameter	2.2 mm
Cable outer diameter	7 to 8.5 mm
No. of cutting operations	Maximum 1260

Identification	Part number	Drawing	Dimensions in mm
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#### Assembly tool set for POF cutting, without final polishing

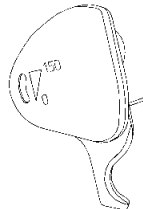
- The set contains
- one stripping and cutting tool for 1260 operations
  - one sheath stripping tool
  - one Kevlar shear
  - one positioner for SCRJ contacts
- Supplied in a robust plastic case

09 35 000 9913



#### Replacement cutting tool for 1260 operations

09 35 000 9914



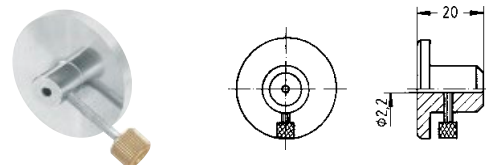
#### Assembly tool set for POF cutting, with final polishing

- Without an optical meter
- With an optical meter

20 99 000 3016  
20 99 000 3013

#### Polishing wheel (grinding wheel) for POF cables 2.2

20 99 000 1099



#### Sand paper for POF, grain size 1000

20 80 001 9911



Han® PushPull, type acc. to IEC 61 076-3-117 variant 14  
10-poles 50 V / 5 A

## Features

- HARTING PushPull technology
- For the transmission of analog, low voltage and bus signals
- Fully shielded
- 10 contacts
- Touch-proof
- Easy and fast cable installation

## Technical characteristics

Locking	PushPull technology acc. to IEC 61076-3-117 variant 14
Degree of protection	IP65 / IP67
Mating face	acc. to IEC/PAS 61076-3-119
Number of contacts	10
Electrical data acc. to DIN EN 61984	5 A 50 V 1.5 kV 3
Contact resistance	10 mΩ
Termination	Crimp
Conductor cross section	AWG 24 ... 18; 0.25 ... 0.82 mm <sup>2</sup>
Conductor diameter	max. 2.1 mm
Outer cable diameter	6.5 ... 9.5 mm / 4 ... 11 mm
Shielding	Fully shielded, 360° shielding contact
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black Zinc die-cast, nickel-plated
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
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### Han® PushPull Signal Insert

for panel feed-through HIFF,  
10-poles  
incl. male insert

Order D-Sub crimp male  
contacts separately

### D-Sub crimp contacts for device side<sup>3)</sup>

male, turned  
AWG 24-20; 0.25-0.56 mm<sup>2</sup>

male, turned  
AWG 22-18; 0.33-0.82 mm<sup>2</sup>

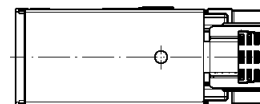
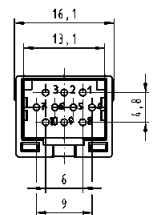
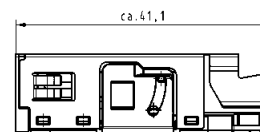
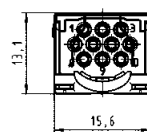
male, stamped  
AWG 24-20; 0.25-0.56 mm<sup>2</sup>

09 45 545 9010

09 67 000 8576<sup>1)</sup>

09 67 000 3576<sup>1)</sup>

09 67 000 8178<sup>2)</sup>



<sup>1)</sup> To be used with crimp tool 09 99 000 0501. Suitable locator: 09 99 000 0531

<sup>2)</sup> To be used with crimp tool 09 99 000 0175.

<sup>3)</sup> For all usable D-Sub contacts please see chapter 05.





Han® PushPull, type acc. to IEC 61 076-3-117 variant 14  
10-poles 50 V / 5 A

## Features

- HARTING PushPull technology
- For the transmission of analog, low voltage and bus signals
- Fully shielded
- 10 contacts
- Touch-proof
- Easy and fast cable installation

## Technical characteristics

Locking	PushPull technology acc. to IEC 61076-3-117 variant 14
Degree of protection	IP65 / IP67
Mating face	acc. to IEC/PAS 61076-3-119
Number of contacts	10
Electrical data acc. to DIN EN 61984	5 A 50 V 1.5 kV 3
Contact resistance	10 mΩ
Termination	Crimp
Conductor cross section	AWG 24 ... 18; 0.25 ... 0.82 mm <sup>2</sup>
Conductor diameter	max. 2.1 mm
Outer cable diameter	6.5 ... 9.5 mm / 4 ... 11 mm
Shielding	Fully shielded, 360° shielding contact
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black Zinc die-cast, nickel-plated
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
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### Han® PushPull Signal

Connector set 10-poles  
incl. metal housing  
and female insert

4 ... 7 / 7 ... 11 mm clamp range  
7 ... 11 mm clamp range

09 35 261 0401  
09 35 262 0401

Connector set 10-poles  
incl. plastic housing  
and female insert

6.5 ... 9.5 mm clamp range

09 35 261 0421

Order D-Sub crimp female  
contacts separately

### D-Sub crimp contacts for cable side<sup>3)</sup>

female, turned  
AWG 24-20; 0.25 - 0.52 mm<sup>2</sup>

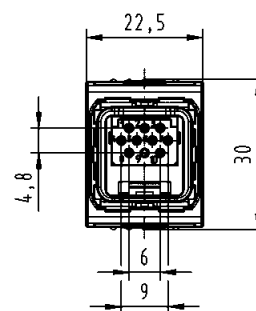
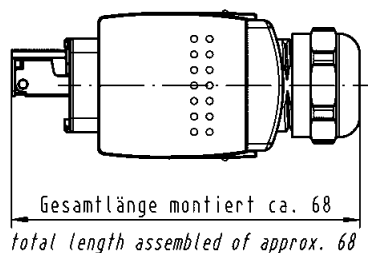
09 67 000 8476<sup>1)</sup>

female, turned  
AWG 22-18; 0.33 - 0.82 mm<sup>2</sup>

09 67 000 3476<sup>1)</sup>

female, stamped  
AWG 24-20; 0.25 - 0.56 mm<sup>2</sup>

09 67 000 8278<sup>2)</sup>



<sup>1)</sup> To be used with crimp tool 09 99 000 0501. Suitable locator: 09 99 000 0531

<sup>2)</sup> To be used with crimp tool 09 99 000 0175.

<sup>3)</sup> For all usable D-Sub contacts please see chapter 05.



Han® PushPull, type acc. to IEC 61 076-3-118  
Housing bulkhead mounting and power females for device integration

## Features

- HARTING PushPull technology
- Compact, space-saving design
- Touch-proof
- Device side: male
  - Solder variant, angled and straight
- 4 times coding without contact loss

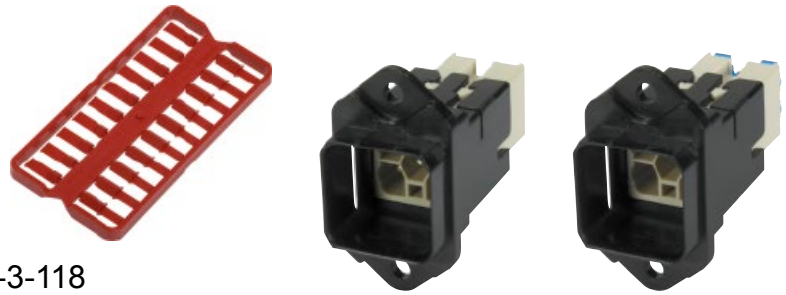
## Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-118
Degree of protection	IP65 / IP67
Number of contacts	4 + PE
Electrical data acc. to DIN EN 61984	16 A 230/400 V 4 kV 3
Termination	Male insert with solder termination
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
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### Components device side

Housing bulkhead mounting plastic	09 35 002 0323	
Protection cover IP65 / IP67	09 35 002 5402	
Coding pins	09 35 000 6190	
Male insert with solder termination angled	09 35 002 3003	
Male insert with solder termination straight	09 35 002 3004	



Han® PushPull, type acc. to IEC 61 076-3-118  
Panel feed-through, 5-poles, 690 V, 16 A

Features

- HARTING PushPull technology
- Compact, space-saving design
- Touch-proof
- Panel feed-through: male
  - crimp termination
  - Han-Quick Lock® termination technology
- 4 times coding without contact loss
- NEW: Larger termination cross section for conductors 0.25 - 1.5 mm<sup>2</sup>

Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14 acc. to IEC 61 076-3-118
Mating face	IP65 / IP67
Degree of protection	4 + PE
Number of contacts	16 A 690 V 4 kV 3
Electrical data	0.25 – 2.5 mm <sup>2</sup>
acc. to DIN EN 61 984	min. 500
Termination cross section	-40 °C ... +70 °C
Mating cycles	Plastic, black
Temperature range	V0
Housing material	
Flammability acc. to UL 94	

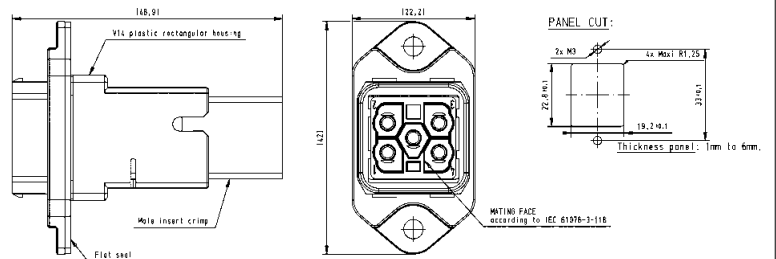
Identification	Part number	Drawing	Dimensions in mm
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Han® PushPull Power 4/0  
Panel feed-through

5-poles, 690 V / 16 A  
incl. bulkhead housing and male insert

with crimp termination  
(Order crimp male contacts separately)

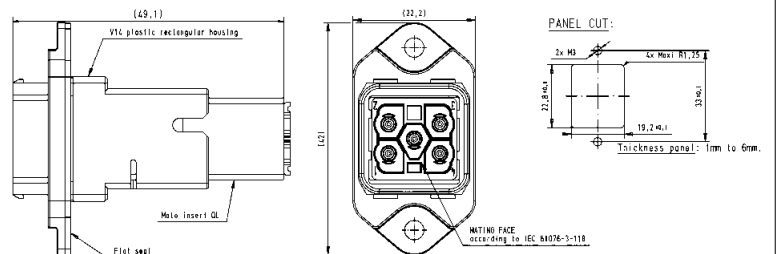
09 35 231 0331



with Han-Quick Lock® termination

0.5 ... 2.5 mm<sup>2</sup>  
0.25 ... 1.5 mm<sup>2</sup>

09 35 232 0331  
09 35 234 0331



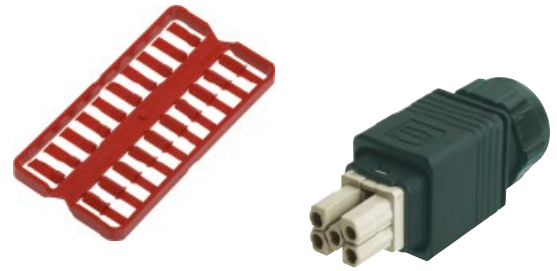
Coding element

10 pieces each for device and cable side  
enables 4 times coding without contact loss

09 35 000 6190







Han® PushPull, type acc. to IEC 61 076-3-118  
Connector, 5-poles, 690 V, 16 A

**Features**

- HARTING PushPull technology
- Compact, space-saving design
- Touch-proof
- Cable side: female
  - crimp termination
  - Han-Quick Lock® termination technology
 Field-assembly without special tools
- 4 times coding without contact loss
- NEW: Larger termination cross section for conductors 0.25 - 1.5 mm<sup>2</sup>

**Technical characteristics**

Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14
Mating face	acc. to IEC 61 076-3-118
Degree of protection	IP65 / IP67
Number of contacts	4 + PE
Electrical data	
acc. to DIN EN 61 984	16 A 690 V 4 kV 3
Termination cross section	0.25 – 2.5 mm <sup>2</sup>
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

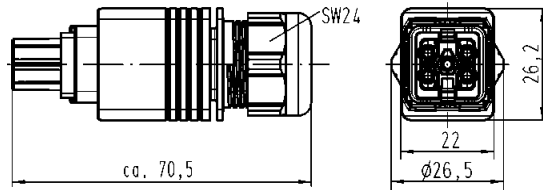
Identification	Part number	Drawing	Dimensions in mm
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**Connector set, plastic**

incl. housing and female insert

with crimp termination  
9 – 13 mm clamp range  
Han® P crimp contacts  
order separately

09 35 231 0423

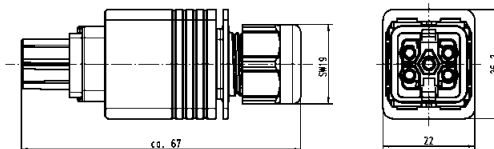


with Han-Quick Lock® termination  
9 – 13 mm clamp range  
for termination cross section 0.5 - 2.5 mm<sup>2</sup>

09 35 232 0423

with Han-Quick Lock® termination  
6.5 – 9.5 mm clamp range  
for termination cross section 0.5 - 2.5 mm<sup>2</sup>  
for termination cross section 0.25 - 1.5 mm<sup>2</sup>

09 35 232 0421  
09 35 234 0421



Protection cover IP65 / IP67

09 35 002 5411

Coding pins

09 35 000 6190



Han® PushPull, type acc. to IEC 61076-3-118  
Housing bulkhead mounting and power females for device integration

## Features

- HARTING PushPull technology
- Compact, space-saving design
- Touch-proof
- Device side: male
  - Solder variant, angled and straight
- 4 times coding without contact loss

## Technical characteristics

Locking	PushPull technology acc. to IEC 61076-3-118
Degree of protection	IP65 / IP67
Number of contacts	4 + PE
Electrical data acc. to DIN EN 61984	16 A 690 V 4 kV 3
Termination	Male insert with solder termination
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Flammability acc. to UL 94	V0
Housing material	Zinc die-cast, nickel plated Plastic, black (female)

### Identification

### Part number

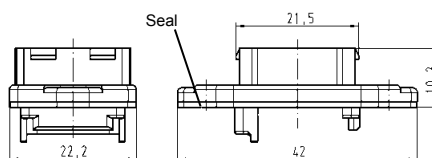
### Drawing

### Dimensions in mm

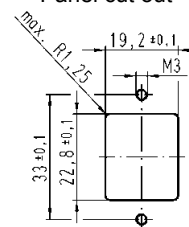
#### Components device side

Housing bulkhead mounting metal

09 35 002 0303



#### Panel cut out



Protection cover IP65 / IP67

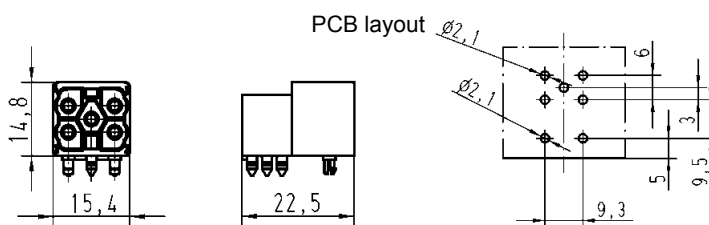
09 35 002 5402

Coding pins

09 35 000 6190

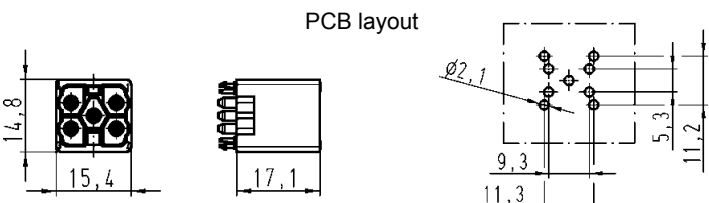
Male insert with solder termination angled

09 35 002 3003



Male insert with solder termination straight

09 35 002 3004





Han® PushPull, type acc. to IEC 61 076-3-118  
Panel feed-through, 5-poles, 690 V, 16 A

## Features

- HARTING PushPull technology
- Compact, space-saving design
- Touch-proof
- Panel feed-through: male
  - crimp termination
  - Han-Quick Lock® termination technology
- 4 times coding without contact loss
- NEW: Larger termination cross section for conductors 0.25 - 1.5 mm<sup>2</sup>

## Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14
Mating face	acc. to IEC 61 076-3-118
Degree of protection	IP65 / IP67
Number of contacts	4 + PE
Electrical data	
acc. to DIN EN 61 984	16 A 690 V 4 kV 3
Termination cross section	0.25 – 2.5 mm <sup>2</sup>
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel-plated
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
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### Han® PushPull Power 4/0 Panel feed-through

5-poles, 690 V / 16 A  
incl. bulkhead housing and male insert

Rectangular panel cut out  
with crimp termination  
(Order crimp male contacts separately)

09 35 231 0311

with Han-Quick Lock® termination

0.5 ... 2.5 mm<sup>2</sup>  
0.25 ... 1.5 mm<sup>2</sup>

09 35 232 0311  
09 35 234 0311

Circular panel cut out  
with crimp termination  
(Order crimp male contacts separately)

09 35 231 0312

with Han-Quick Lock® termination

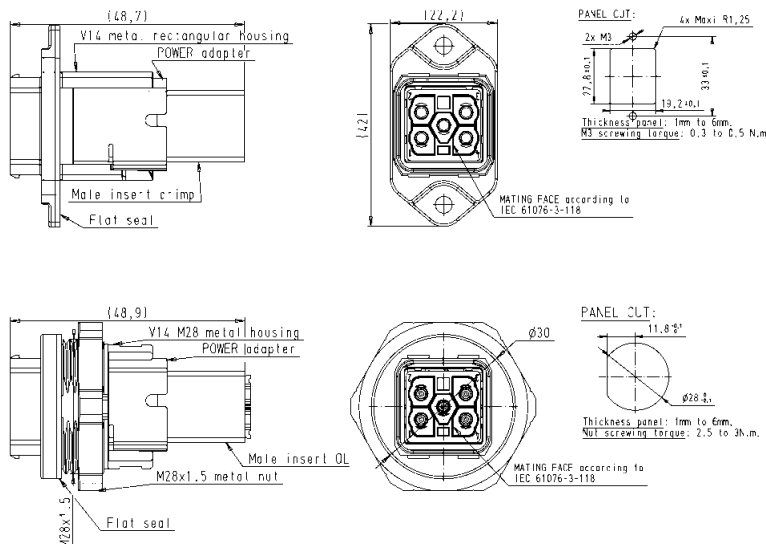
0.5 ... 2.5 mm<sup>2</sup>  
0.25 ... 1.5 mm<sup>2</sup>

09 35 232 0312  
09 35 234 0312

### Coding element

10 pieces each for device and cable side  
enables 4 times coding without contact loss

09 35 000 6190





PushPull

Han® PushPull, type acc. to IEC 61 076-3-118  
Connector, 5-poles, 690 V, 16 A

**Features**

- HARTING PushPull technology
- Compact, space-saving design
- Touch-proof
- Cable side: female
  - crimp termination
  - Han-Quick Lock® termination technology
 Field-assembly without special tools
- 4 times coding without contact loss
- NEW: Larger termination cross section for conductors 0.25 - 1.5 mm<sup>2</sup>

**Technical characteristics**

Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14
Mating face	acc. to IEC 61 076-3-118
Degree of protection	IP65 / IP67
Number of contacts	4 + PE
Electrical data	16 A 690 V 4 kV 3
acc. to DIN EN 61 984	0.25 – 2.5 mm <sup>2</sup>
Termination cross section	min. 500
Mating cycles	-40 °C ... +70 °C
Temperature range	Zinc die-cast, nickel-plated
Housing material	V0
Flammability acc. to UL 94	

Identification	Part number	Drawing	Dimensions in mm
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**Connector set, metal**

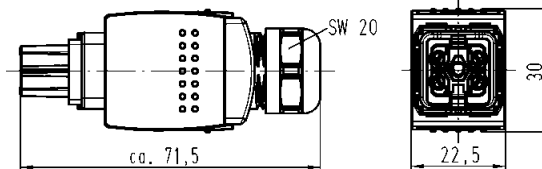
incl. housing and female insert

with crimp termination  
4 – 11 mm clamp range  
Han® P crimp contacts  
order separately

09 35 231 0401

with Han-Quick Lock® termination  
4 – 11 mm clamp range  
for termination cross section 0.5 - 2.5 mm<sup>2</sup>  
for termination cross section 0.25 - 1.5 mm<sup>2</sup>

09 35 232 0401  
09 35 234 0401



Protection cover IP65 / IP67

09 35 002 5411

Coding pins

09 35 000 6190

## Han® PushPull, type acc. to IEC 61 076-3-118 variant 14 Accessories

Identification	Part number	Drawing	Dimensions in mm
Crimping tool	09 99 000 0888		
Locator Han P® for crimping tool 09 99 000 0888	09 99 000 0886		
Removal tool Han P®	09 99 000 0319		
Coding pins for 4 times coding without contact loss	09 35 000 6190		

Identification	Part number		Drawing	Dimensions in mm																								
	Male contact	Female contact																										
<b>Crimp contacts Han® P</b> silver plated	for 0.5 mm <sup>2</sup>	09 35 000 6103	09 35 000 6203	<table border="1"> <thead> <tr> <th colspan="2">Wire gauge</th> <th>Ø</th> <th>Stripping length</th> </tr> </thead> <tbody> <tr> <td>for 0.5 mm<sup>2</sup></td> <td>AWG 20</td> <td>1.15 mm</td> <td>6 mm</td> </tr> <tr> <td>for 0.75 mm<sup>2</sup></td> <td>AWG 18</td> <td>1.30 mm</td> <td>6 mm</td> </tr> <tr> <td>for 1.0 mm<sup>2</sup></td> <td>AWG 18</td> <td>1.45 mm</td> <td>6 mm</td> </tr> <tr> <td>for 1.5 mm<sup>2</sup></td> <td>AWG 16</td> <td>1.75 mm</td> <td>6 mm</td> </tr> <tr> <td>for 2.5 mm<sup>2</sup></td> <td>AWG 14</td> <td>2.25 mm</td> <td>6 mm</td> </tr> </tbody> </table>	Wire gauge		Ø	Stripping length	for 0.5 mm <sup>2</sup>	AWG 20	1.15 mm	6 mm	for 0.75 mm <sup>2</sup>	AWG 18	1.30 mm	6 mm	for 1.0 mm <sup>2</sup>	AWG 18	1.45 mm	6 mm	for 1.5 mm <sup>2</sup>	AWG 16	1.75 mm	6 mm	for 2.5 mm <sup>2</sup>	AWG 14	2.25 mm	6 mm
	Wire gauge		Ø		Stripping length																							
	for 0.5 mm <sup>2</sup>	AWG 20	1.15 mm		6 mm																							
	for 0.75 mm <sup>2</sup>	AWG 18	1.30 mm		6 mm																							
	for 1.0 mm <sup>2</sup>	AWG 18	1.45 mm		6 mm																							
	for 1.5 mm <sup>2</sup>	AWG 16	1.75 mm		6 mm																							
for 2.5 mm <sup>2</sup>	AWG 14	2.25 mm	6 mm																									
for 0.75 mm <sup>2</sup>	09 35 000 6104	09 35 000 6204																										
for 1.0 mm <sup>2</sup>	09 35 000 6105	09 35 000 6205																										
for 1.5 mm <sup>2</sup>	09 35 000 6106	09 35 000 6206																										
for 2.5 mm <sup>2</sup>	09 35 000 6107	09 35 000 6207																										



Han® PushPull, type acc. to IEC 61076-3-117 variant 14 cable to cable housing

## Features

- HARTING PushPull technology
- Ideal for prototyping
- Can be combined with panel feed-throughs for power, data and signal

## Technical characteristics

Locking	PushPull technology acc. to IEC 61076-3-117 variant 14
Degree of protection	IP65 / IP67
Outer cable diameter	6.5 ... 9.5 mm / 9 ... 13 mm
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

Identification	Part number	Drawing	Dimensions in mm
<p><b>Han® PushPull cable to cable housings, plastic</b> (Order housing bulkhead mounting and insert separately)</p> <p>for outer cable diameter 6.5 ... 9.5 mm</p>	09 35 002 0431	<p>2X REMFORM <math>\phi</math>3x8 TORX screws</p>	
<p>for outer cable diameter 9 ... 13 mm</p>	09 35 002 0433	<p>2X REMFORM <math>\phi</math>3x8 TORX screws</p>	
<p><b>Suitable bulkhead housing, plastic</b></p> <p>for power, 5-poles, 690 V / 16 A, incl. housing bulkhead mounting and insert</p> <p>with crimp termination (Order Han® P crimp male contacts separately)</p>	09 35 231 0331		
<p>with Han-Quick Lock® termination</p> <p>0.5 ... 2.5 mm<sup>2</sup></p> <p>0.25 ... 1.5 mm<sup>2</sup></p>	09 35 232 0331 09 35 234 0331		
<p><b>Coding element power</b></p> <p>10 pieces each for device and cable side</p>	09 35 000 6190		



Housing bulkhead mounting and power females for device integration

## Features

- HARTING PushPull technology
- Touch-proof
- Device side: male
  - Solder variant, angled and straight
- AIDA-conform (German Domestic Automobile Manufactures)

## Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67
Number of contacts	4 + PE
Electrical data	16 A 24 V 4 kV 3
acc. to DIN EN 61984	Male insert with solder termination
Termination	min. 500
Mating cycles	-40 °C ... +70 °C
Temperature range	Plastic, black
Housing material	V0
Flammability acc. to UL 94	

### Identification

### Part number

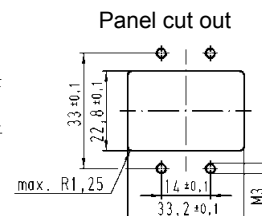
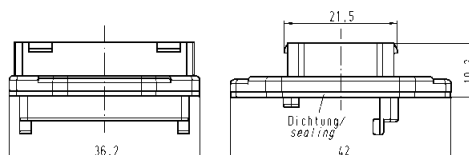
### Drawing

### Dimensions in mm

#### Components device side

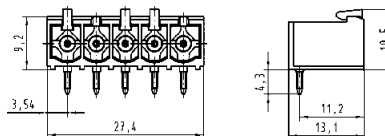
Housing bulkhead mounting plastic

09 35 004 0321



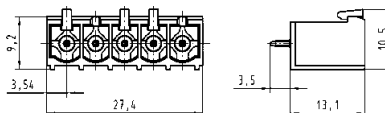
Male insert with solder termination angled

09 35 004 3003



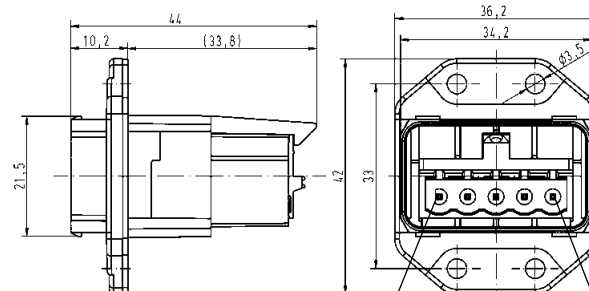
Male insert with solder termination straight

09 35 004 3004



Panel feed-through, plastic  
incl. housing and male insert with spring force connection

09 35 431 0331



Protection cover IP65 / IP67

09 35 004 5411

Pin 1 14 Pin 5



Connector, 5-poles, 24 V, 16 A

## Features

- HARTING PushPull technology
- Touch-proof
- Cable side: female
  - spring force connection
- AIDA-conform (German Domestic Automobile Manufactures)

## Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67
Number of contacts	4 + PE
Electrical data	
acc. to DIN EN 61984	16 A 24 V 4 kV 3
Termination	Spring force connection
Termination cross section	0.75 ... 2.5 mm <sup>2</sup>
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Cable diameter	9 – 13 mm
Housing material	Plastic, black
Flammability acc. to UL 94	V0

### Identification

### Part number

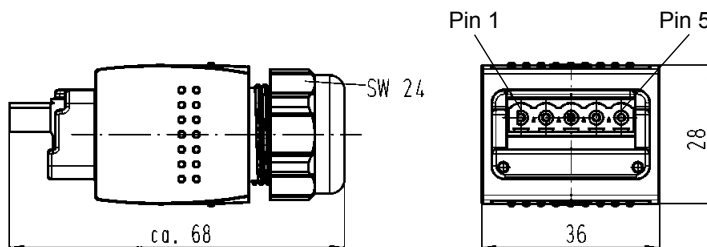
### Drawing

### Dimensions in mm

#### Connector set, plastic

incl. housing and female insert with spring force connection

09 35 431 0421



#### Protection cover IP65 / IP67

09 35 002 5411





Housing bulkhead mounting and power females for device integration

## Features

- HARTING PushPull technology
- Touch-proof
- Device side: male
  - Solder variant, angled and straight
- AIDA-conform (German Domestic Automobile Manufactures)

## Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67
Number of contacts	4 + PE
Electrical data	16 A 24 V 4 kV
acc. to DIN EN 61984	Male insert with solder termination
Termination	min. 500
Mating cycles	-40 °C ... +70 °C
Temperature range	Zinc die-cast, nickel plated
Housing material	Plastic, black (female)

Identification	Part number	Drawing	Dimensions in mm
<b>Components device side</b>  Housing bulkhead mounting metal	09 35 004 0301		<b>Panel cut out</b> 
Male insert with solder termination angled and with fixed coding	09 35 004 3003		
Male insert with solder termination straight and with fixed coding	09 35 004 3004		
<b>Panel feed-through, metal</b> incl. housing and male insert with spring force connection and with fixed coding with variable coding	09 35 431 0311 09 35 431 0313		
Protection cover IP65 / IP67	09 35 004 5401		



PushPull

Han® PushPull L Power 4/0 Genderchanger Metal  
 Han® PushPull L Power 4/0 H-distributor Metal

## Features

- High degree of protection IP65 / IP67
- Robust metal housing
- Standard PROFINET component of the German automotive production
- Allows usage of different cable types (Type B,C) e.g. in robots application
- Extension of cords according to PROFINET guideline
- 4-way-distribution of power signals

## Technical characteristics

Connector	Han® PushPull L Power 4/0
Locking	PushPull technology
Electrical transmission	16 A / 24 V
Number of contacts	5
Mating cycles	min. 500
Housing material	Aluminium anodized
Dimensions	83.4 x 62 x 40.7 mm (unmated)
Degree of protection acc. to DIN 60529	IP65 / IP67 (mated)
Mounting	Wall mountable with 4 screws (type M5)
Temperature range	-20 °C ... +50 °C
Maximum permissible humidity	30 % ... 95 % (no condensation)

Identification

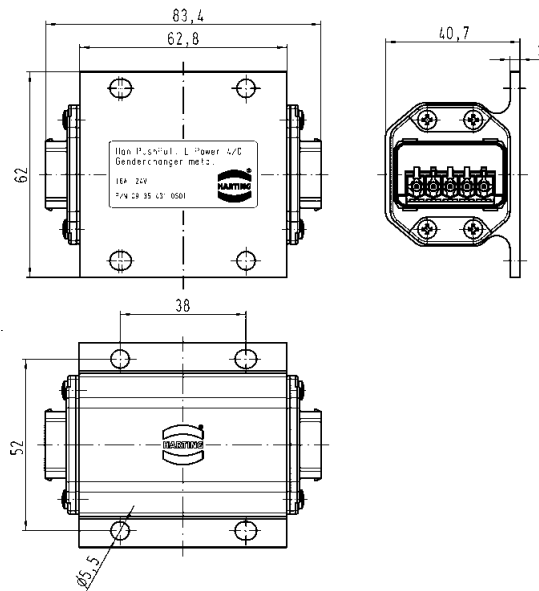
Part number

Drawing

Dimensions in mm

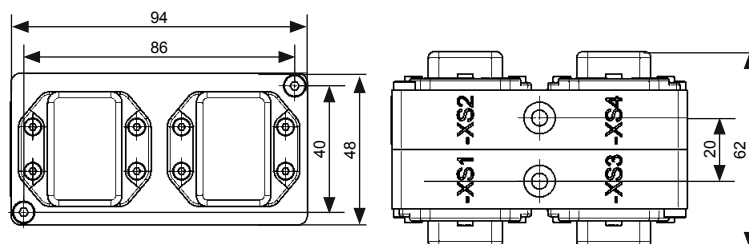
Han® PushPull L Power 4/0 Genderchanger metal  
 including housing and printed board with 2 x male insert with solder termination

09 35 431 0501



Han® PushPull L Power 4/0 AIDA H-distributor 4-way metal  
 including housing and printed board with 4 x male insert with solder termination

61 12 204 0001





## Han® PushPull L Power 4/0 Coupling Metal

### Features

- High degree of protection IP65 / IP67
- Robust metal housing
- Standard PROFINET component of the German automotive production
- Extension of cords according to PROFINET guideline
- For an easy robot termination and a fast exchange of tube packages

### Technical characteristics

Locking	PushPull technology
Electrical transmission	16 A / 24 V
Number of contacts	5
Mating cycles	min. 500
Housing material	Aluminium die-cast
Degree of protection acc. to DIN 60529	IP65 / IP67
Temperature range	-40 °C ... +70 °C

#### Identification

#### Part number

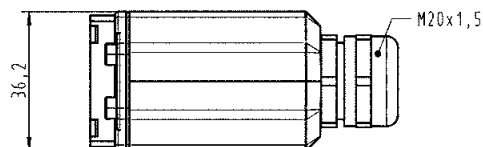
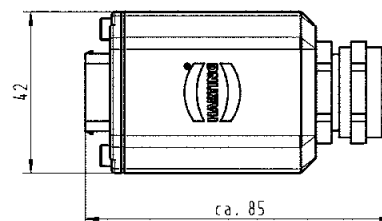
#### Drawing

#### Dimensions in mm

Han® PushPull L Power 4/0 Coupling metal

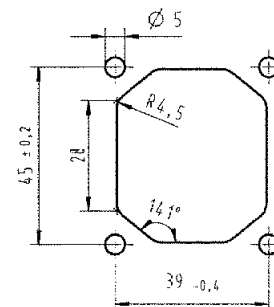
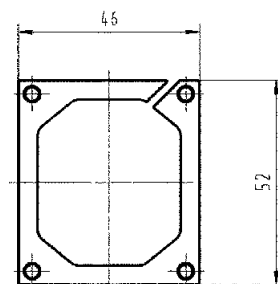
including housing, contact insert Power L, bulkhead housing and cable gland

61 04 201 1085



Fixing flange

61 04 600 0183





Connector, 5-poles, 24 V, 16 A

## Features

- HARTING PushPull technology
- Robust design
- Cable side: female
  - spring force connection
- AIDA-conform (German Domestic Automobile Manufactures)
- Enlarged size for an optimized connection of 2.5 mm<sup>2</sup> conductor cross sections

## Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67
Number of contacts	4 + PE
Electrical data	
acc. to DIN EN 61984	16 A 24 V 4 kV 3
Termination	Spring force connection
Termination cross section	0.75 ... 2.5 mm <sup>2</sup>
Mating cycles	min. 100
Temperature range	-40 °C ... +70 °C
Cable diameter	9 - 13 mm
Housing material	Zinc die-cast, nickel plated

Identification	Part number	Drawing	Dimensions in mm
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### Connector set, metal

incl. housing and female insert with spring force connection and

with fixed coding  
9 - 13 mm clamp range

09 35 433 0401

with variable coding  
9 - 13 mm clamp range

09 35 434 0401

### Protection cover IP65 / IP67

09 35 002 5411

