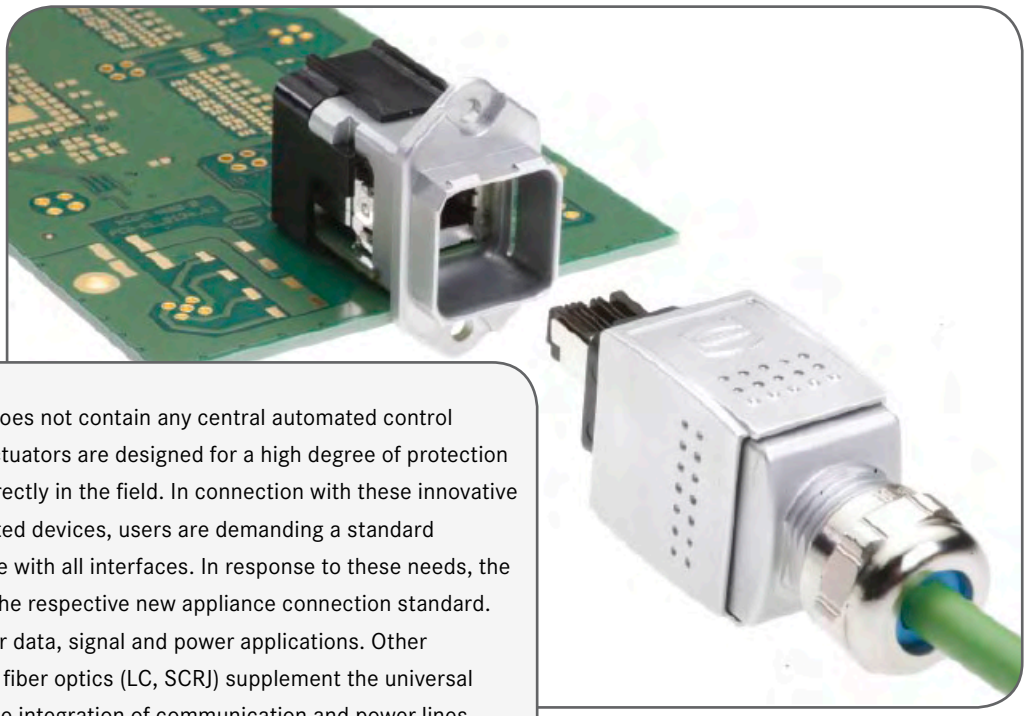


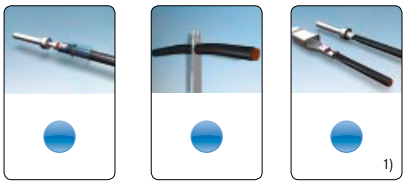
A distributed automation system does not contain any central automated control cabinets. Controls, sensors and actuators are designed for a high degree of protection (IP 65 / IP 67) and are installed directly in the field. In connection with these innovative installation concepts with distributed devices, 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	IP 20	IP 65 / IP 67	Data	Signal	Power	high performance			
							Data transfer rate	Shielding	Number of contacts, contact density	Voltage, working current
	●		●	●	●	●	●	●		●

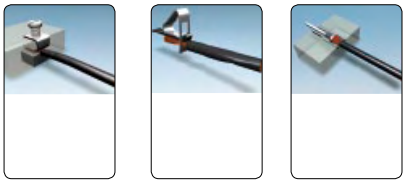
Cable termination

Han-Quick Lock® | *IDC HARAX®* | *Crimp*



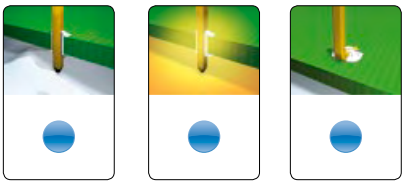
1) Piercing contacts

Screw | *Cage clamp* | *Axial screw*

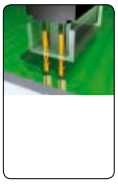


PCB termination

THT | *SMC* | *SMT*



Press-in

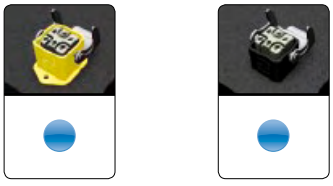


Application standard

PROFINET | PROFIBUS | ISO IEC 24702 | EtherCAT Technology Group | ETHERNET POWERLINK

Housing integration

Separate housing | *Integrated housing*



CONTENTS

The PushPull connector housing is a function container with degree of protection IP 65 / IP 67 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 IP 65 / IP 67 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 IP 67 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 IP 65 / IP 67 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*® quick connection technology as used with HARTING RJ Industrial®. 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 IP 65 / IP 67, 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 IP 65 / IP 67, 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® 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)
- Straight and angled connector design, suitable for on-site assembly and overmolded

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® for on-site assembly without special auxiliary tools

HARTING PushPull

HARTING PushPull Technology acc. to IEC 61076-3-106 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- or Power-pcb female

Housing bulkhead mounting EasyInstall

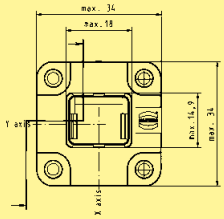
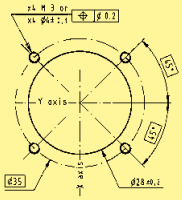
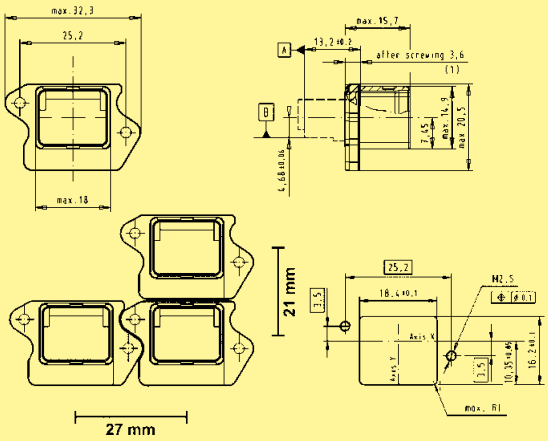
- for simple device integration round panel cut out

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
Transmission rate	10/100/1000 Mbit/s
Shielding	fully shielded, 360° shielding contact
Mating cycles	min. 750
Degree of protection	IP 65 / IP 67
Temperature range	-40 °C … +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V 0
	UL approval (E102079)

Identification	Part No.	Drawing	Dimensions in mm
Components device side			
Housing bulkhead mounting – EasyInstall			
with integrated seal board drillings for M3			
without fixing clip	09 45 545 0030[1)] 09 45 595 0030[2)3)]		
with fixing clip	09 45 545 0031[2)] 09 45 595 0031[2)3)]		Panel cut out
with fixing clip, for all HIFF compatible modules	09 45 545 0032		
Housing bulkhead mounting – Compact			
Board drillings for M2.5			
without fixing clip (incl. flat seal)	09 45 545 0023[2)]		
without fixing clip (with integrated seal)	09 45 545 0033[2)]		
with fixing clip (incl. flat seal)	09 45 545 0021[2)]		
with fixing clip (with integrated seal)	09 45 545 0029[2)]		
with fixing clip (with integrated seal) for vertical RJ jack 09 45 551 1103	09 45 545 0027		
with fixing clip, for all HIFF compatible modules	09 45 545 0028		

[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)] Metal version

HARTING PushPull RJ45

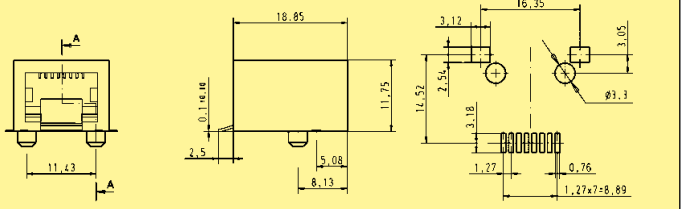
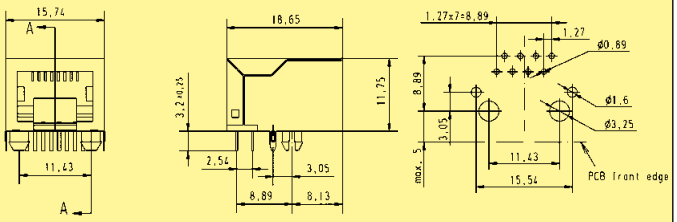
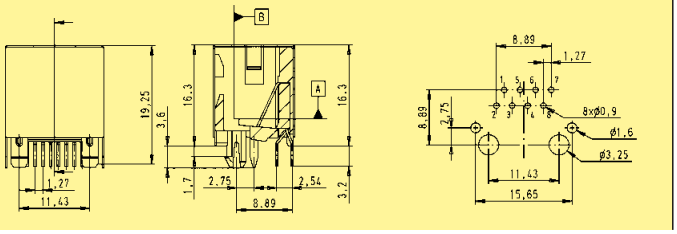
HARTING PushPull Technology acc. to IEC 61076-3-106 variant 4
RJ45 jacks and accessories

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)

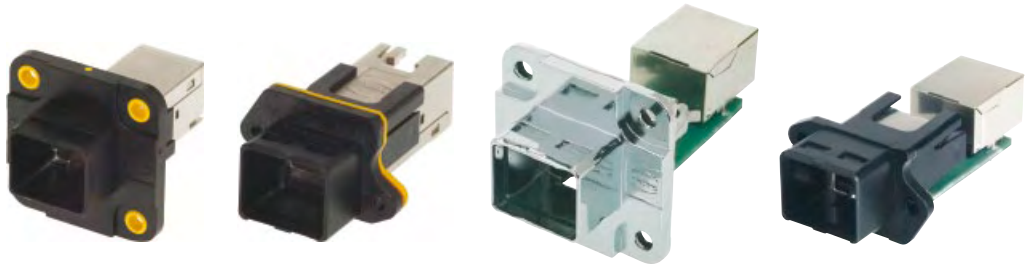
Technical characteristics

Locking	PushPull Tecgnology 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	IP 65 / IP 67
Temperature range	-40 °C … +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V 0
	UL approval (E102079)

Identification	Part No.	Drawing	Dimensions in mm
Components device side			pcb layout
RJ45 jacks Cat. 5			
Solder variant SMD, 90° angled	09 45 551 1100[1] 09 45 551 1110[2]		
Solder variant overmolded, 90° angled	09 45 551 1102[1]		
Solder variant overmolded, straight	09 45 551 1103[3]		

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

HARTING PushPull RJ45



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

PushPull

Advantages

- Small, space-saving PushPull Interfaces in IP 65 / IP 67
- 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	IP 65 / IP 67
Temperature range	-40 °C … +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V 0
	UL approval (E102079)

Identification	Part No.	Drawing	Dimensions in mm
Panel feed-through set category of transmission Cat. 5			
incl. housing bulkhead mounting EasyInstall with integrated seal, 2 x RJ45-jack board drillings for M3	09 45 245 1130 09 45 295 1130 (metal version)		
incl. housing bulkhead mounting Compact, flat seal, 2 x RJ45-jack board drillings for M2.5	09 45 245 1102		
Panel feed-through set category of transmission Cat. 6			
incl. housing bulkhead mounting EasyInstall with integrated seal, 2 x RJ45-jack board drillings for M3	09 45 245 1590		
incl. housing bulkhead mounting Compact, with integrated seal, 2 x RJ45-jack	09 45 245 1560		

Panel cut outs see page 02.04

HARTING PushPull RJ45

HARTING PushPull Technology acc. to IEC 61076-3-106 variant 4
RJ45-connector

Advantages

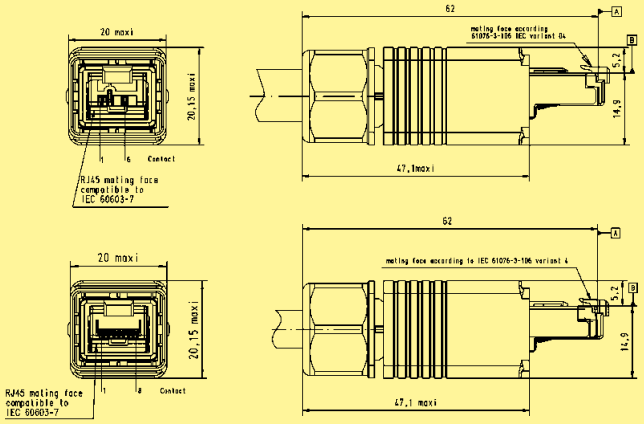
- Ethernet connector based on RJ45
- Fully shielded, 360° shielding contact
- Field-assembly connector
  with IDC contacts (Cat. 5 versions)
  or piercing contacts (Cat. 6 versions)

Technical characteristics

Locking	PushPull Technology acc. to IEC 61 076-3-106 variant 4
Degree of protection	IP 65 / IP 67
Mating face	RJ45 acc. to IEC 60 603-7
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	AWG 24/7 ... AWG 28/7 (stranded)
Mating cycles	min. 750
Temperature range	-40 °C … +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V 0
	UL approval (E102079)

Identification	Part No.
Connector, 4-poles Cat. 5	
incl. housing with RJ45 connector, shielding and cable gland	09 45 145 1100 09 45 195 1100 (metal version)
Connector, 8-poles Cat. 6	
incl. housing with RJ45 connector, shielding and cable gland	
Wire manager white	09 45 145 1500 09 45 195 1500 (metal version)
Wire manager blue	09 45 145 1510 09 45 195 1510 (metal version)
New Cat. 6_A version (available Q3/2012)	09 45 145 1520 09 45 195 1520 (metal version)
System cables in different versions	

Drawing — Dimensions in mm

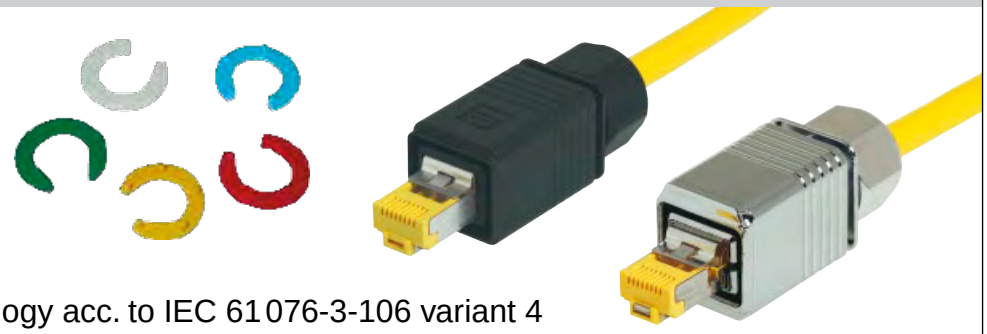


Reference note:
For cat. 6 patch cords it is recommended to use one connector with a white wire manager and one with an blue cable manager, in order to optimise the crosstalk between different signal pairs.

see catalogue “Intelligent Network Solutions”

Tools see page 01.16

HARTING PushPull RJ45



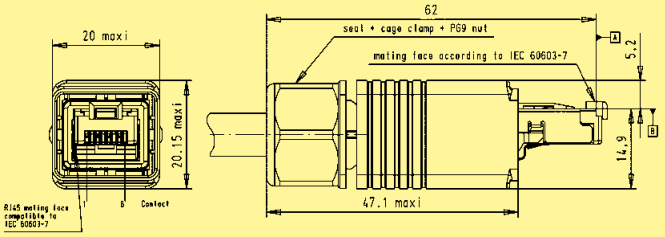
HARTING PushPull Technology acc. to IEC 61 076-3-106 variant 4
RJ45-connector

Advantages

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

Technical characteristics

Locking	PushPull Technology acc. to IEC 61 076-3-106 variant 4
Mating face	RJ45 acc. to IEC 60 603-7
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	IP 65 / IP 67
Temperature range	-40 °C … +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V 0
	UL approval (E102079)

Identification		Part No.	Drawing	Dimensions in mm
Connector, 8-poles Cat. 6 incl. housing with RJ45 connector, shielding and cable gland		09 45 145 1560 09 45 195 1560 (metal version)		
Colour clips for colour coding the HARTING PushPull connectors	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		
System cables in different versions			see catalogue “Intelligent Network Solutions”	

HARTING PushPull LC duplex

HARTING PushPull type acc. to IEC 61 076-3-106 variant 4
LC duplex panel feed-through and connector

Advantages

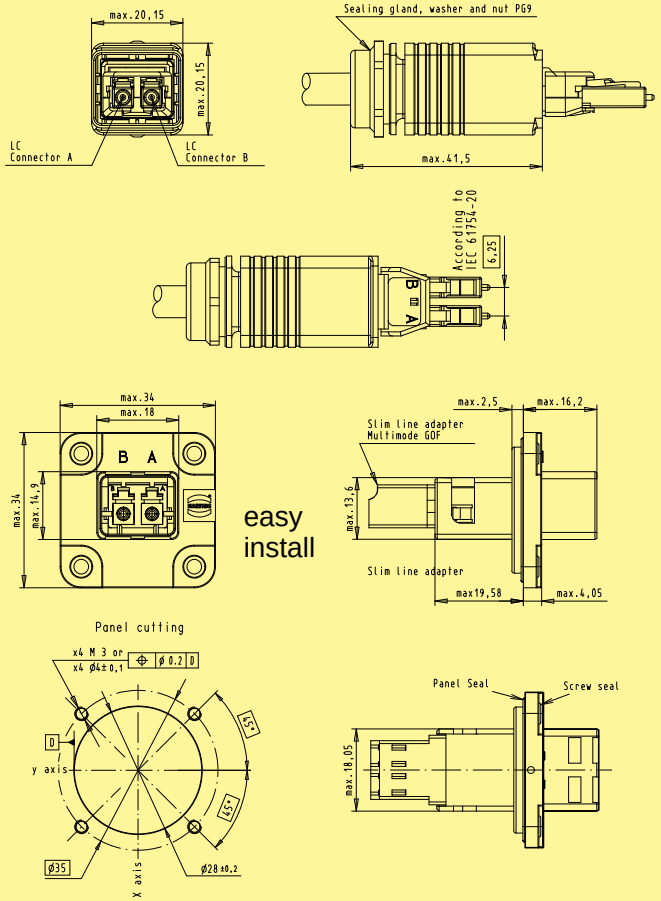
- Optical PushPull connector based on LC with small form factor (requires 50 % compared to SC and ST)
- EasyInstall and Compact panel feed-through for simple device integration
- Optical module with inserts acc. to IEC 61 754-20
- One-piece LC body assures high mechanical stability
- A & B partsidentification for Duplex according TIA 568 standard

Technical characteristics

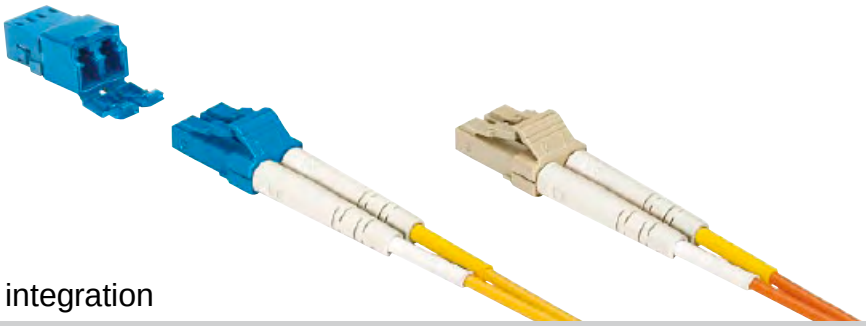
Locking	PushPull Technology acc. to IEC 61 076-3-106 variant 4
Degree of protection	IP 65 / IP 67
Mating face	LC acc. to IEC 61 754-20
Cable diameter	5.8 ... 7.2 mm
Mating cycles	min. 200
Temperature range	-40 °C … +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V 0

Identification	Part No.
HARTING PushPull LC duplex	
Cable side	
Multimode GOF	09 57 402 0500 000
	09 57 409 0500 000 (metal version)
Singlemode GOF	09 57 402 0501 000
	09 57 409 0501 000 (metal version)
Device side EasyInstall version	
Multimode GOF	09 57 441 0500 000
	09 57 468 0500 000 (metal version)
Singlemode GOF	09 57 441 0501 000
	09 57 468 0501 000 (metal version)
Device side Compact version	
Multimode GOF	09 57 442 0502 001
Singlemode GOF	09 57 442 0503 001

Drawing — Dimensions in mm



HARTING PushPull LC duplex



LC duplex IP 20 adapter for device integration

Advantages

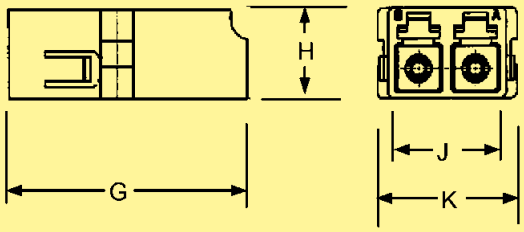
- Small form factor requires 50 % (compared to SC and ST)
- Compact, space-saving design
- High packing density
- A & B partsidentification according TIA 568 standard
- Complement adapter for IP 67 connector on device side

Technical characteristics

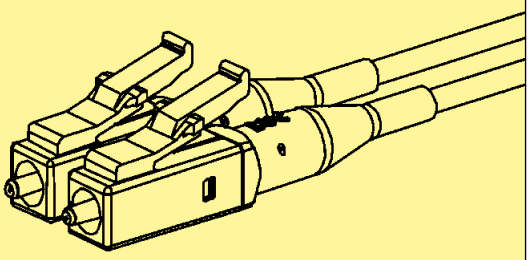
Degree of protection	IP 20
Mating interface	LC duplex with two fibres
Temperature range	-40 °C … +70 °C

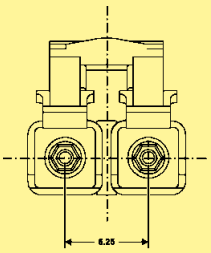
Identification	Part No.
Device side	
Adapter	
Multimode GOF	09 57 400 0003 000
Singlemode GOF	09 57 400 0004 000
Connector LC duplex	
Multimode GOF	09 57 400 0001 000
Singlemode GOF	09 57 400 0002 000

Drawing — Dimensions in mm



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





HARTING PushPull Hybrid

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 Ethernetprofiles.

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.

This connector is available in the variants straight or angled as well as for field assembling or overmolded.

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

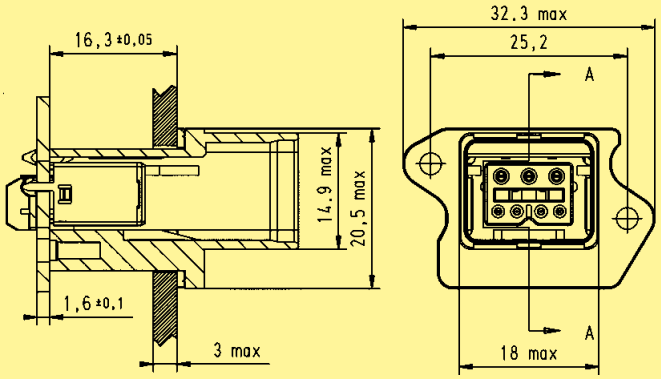
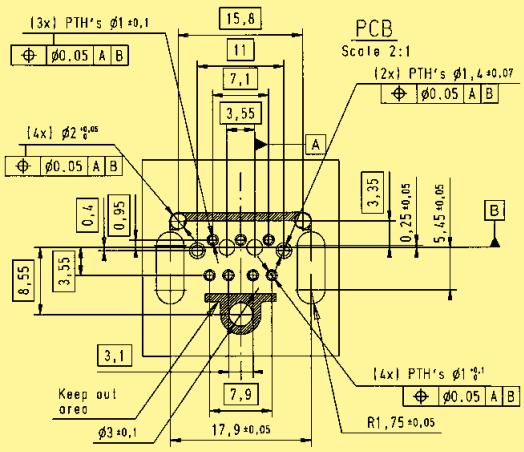
HARTING PushPull Hybrid, type acc. to IEC 61076-3-106 variant 4
device side

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 61 076-3-106 variant 4
Degree of protection	IP 65 / IP 67
Termination	Solder pins
Transmission performance	Category 5 / Class D up to 100 MHz acc. to ISO/IEC 11801:2002, EN ISO 50173-1
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	V 0

Identification	Part No.	Drawing	Dimensions in mm
Components device side			
Set straight HARTING PushPull Hybrid housing bulkhead mounting and pcbs female shielded, IP 65 / IP 67, black, 180° straight	09 45 245 1300		
Set angled HARTING PushPull Hybrid housing bulkhead mounting and pcbs female shielded, IP 65 / IP 67, black, 90° angled	09 45 245 1310		
Female insert			
PCB jack shielded 180° straight	09 45 545 1300		
PCB jack shielded 90° angled	09 45 545 1305		
Housing bulkhead mounting			
for female insert straight	09 45 545 1320		
for female insert angled	09 45 545 1325		
Panel feed-through 1 x Hybrid female IP 65 / IP 67 on 1 x RJ45 female and 3 pcb clamps, board drillings for M2.5	09 45 245 1320		

HARTING PushPull Hybrid

HARTING PushPull Hybrid, type acc. to IEC 61 076-3-106 variant 4
Hybrid connector

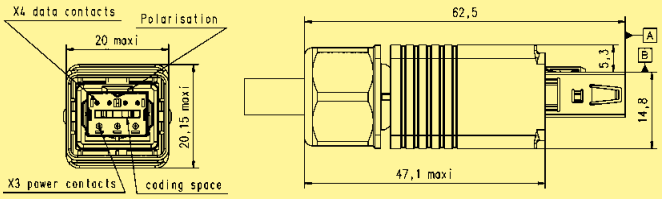
Advantages

- 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 61 076-3-106 variant 4
Degree of protection	IP 65 / IP 67
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 11 801:2002, EN ISO 50 173-1
Number of contacts	Data: 4, shielded (Ethernet) Power: 3, (5 A / 48 V)
Housing material	Plastic, black
Flammability acc. to UL 94	V 0

Identification	Part No.	Drawing	Dimensions in mm
Connector HARTING PushPull Hybrid connector, IP 65/ 67, black, with cable gland and crimp contacts			
straight	09 45 145 1300		
Accessories – Coding pin set to avoid accidental incorrect mating a coding system is required. This coding pins are inserted without loss of contact.	09 45 845 1300		
Tools			
Crimping tool for data contacts	09 99 000 0596		
Crimping tool for power contacts	09 99 000 0175		
Insertion and removal tool			
for data contacts	09 99 000 0513		
for power contacts	09 99 000 0171		



HARTING PushPull Hybrid

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 No.
System cables **2x HARTING PushPull Hybrid**		
Length	0.5 m	09 47 616 1005
	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
System cables **1x HARTING PushPull Hybrid,** **second side open**		
Length	0.5 m	09 47 610 0005
	1 m	09 47 610 0010
	2 m	09 47 610 0020
	3 m	09 47 610 0030
	5 m	09 47 610 0050
	10 m	09 47 610 0100
	20 m	09 47 610 0200
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

Drawing — Dimensions in mm

Structure Hybrid cable

HARTING PushPull Signal

available Q3 / 2012

HARTING PushPull, type acc. to IEC 61 076-3-106 variant 4
10-poles 100 V / 5 A

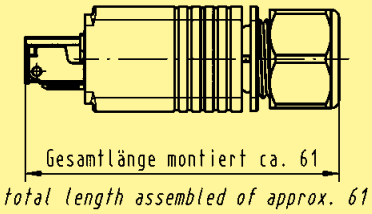
Features

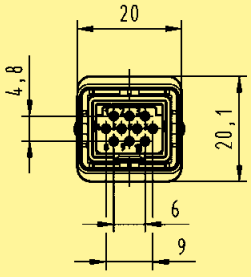
- HARTING PushPull technology
- For the transmission of analog, low voltage and bus signals
- Fully shielded
- 10 contacts
- Touch-proof
- Easy and fast cable installation

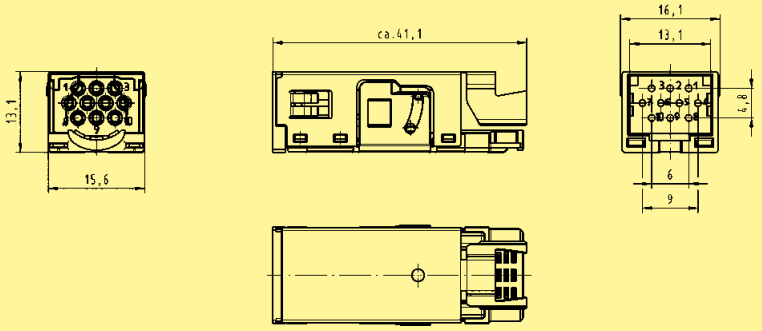
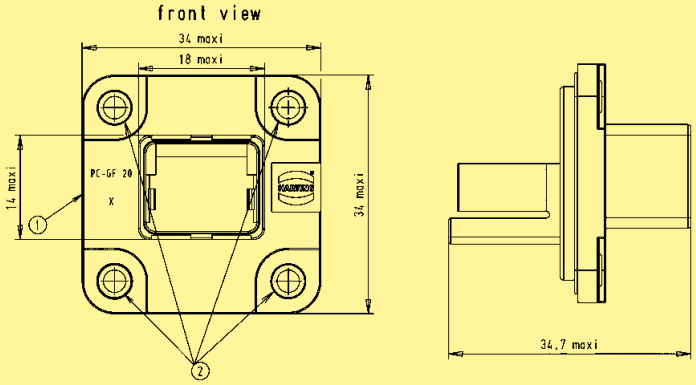
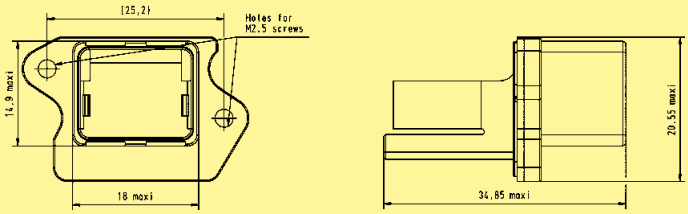
Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-106 variant 4
Degree of protection	IP 65 / IP 67
Mating face	acc. to IEC/PAS 61 076-3-11x
Number of contacts	10
Electrical data acc. to DIN EN 61 984	5 A 100 V 1.5 kV 3
Contact resistance	10 mΩ
Termination	Crimp
Conductor cross section	0.75 mm²
Conductor diameter	max. 2.1 mm
Outer cable diameter	6.5 … 9.5 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	V 0

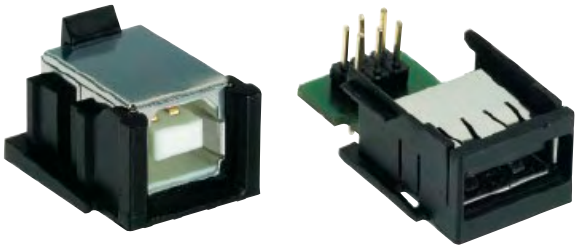
Identification	Part No.	Drawing	Dimensions in mm
HARTING PushPull Signal Connector set 10-poles incl. plastic housing and female insert	09 45 145 9010		
Order D-Sub crimp female contacts separately			





Identification	Part No.	Drawing	Dimensions in mm
HARTING PushPull Signal			
Insert for panel feed-through HIFF, 10-poles incl. male insert	09 45 545 9010		
Order D-Sub crimp male contacts separately			
HARTING PushPull			
housing bulkhead mounting, plastic			
EasyInstall	09 45 545 0032		
Compact	09 45 545 0028		
D-Sub crimp contacts			
(Female)			
for AWG 24-20; 0.25-0.56 mm²	09 67 000 8278[1)]		
for AWG 22-18; 0.33-0.82 mm²	09 67 000 3476[2)]		
(Male)			
for AWG 24-20; 0.25-0.56 mm²	09 67 000 8178[1)]		
for AWG 22-18; 0.33-0.82 mm²	09 67 000 3576[2)]		

[1)] To be used with crimp tool 09 99 000 0175
[2)] To be used with crimp tool 09 99 000 0501. Suitable locator: 61 03 600 0531



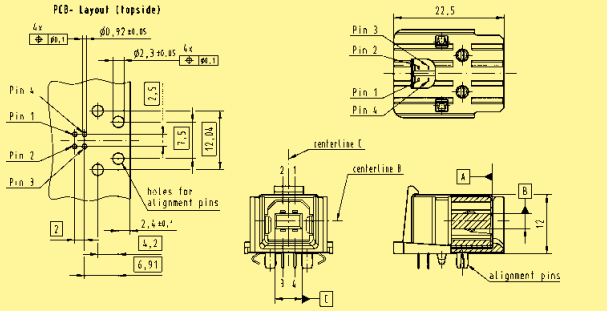
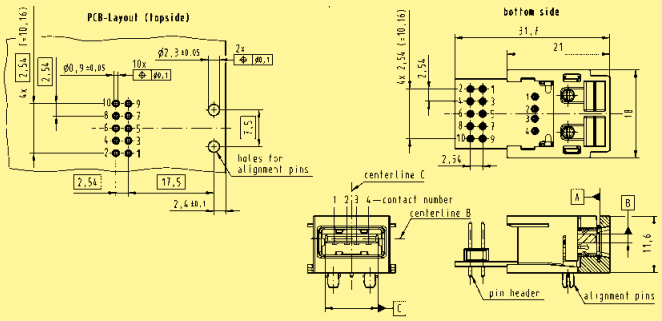
HARTING PushPull USB
Components device side and panel feed-throughs

Advantages

- HARTING PushPull technology
- Compact, space-saving design for the device integration of USB jacks
- USB 2.0 and 3.0 compatible

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	IP 65 / IP 67
Mating cycles	min. 750
Temperature range	-40 °C … +70 °C

Identification	Part No.	Drawing	Dimensions in mm
Components device side			
USB 2.0 type B Solder jack, angled 90°, THT	09 45 541 1900		
Adapter PCB USB 2.0 type A Jack to pin header	09 45 541 1902		
Adapter PCB USB 3.0 type A Jack to pin header	09 45 541 1905		

All solder jacks and adapter PCB's are suitable for the HARTING PushPull bulkhead mounting housings
09 45 545 0021 / … 0023 / … 0029 / … 0030 / … 0031 / … 0033 (see page 02.04)

HARTING PushPull USB

HARTING PushPull USB
Panel feed-throughs

Advantages

- HARTING PushPull technology
- Compact, space-saving design for the device integration of USB jacks
- USB 2.0 and 3.0 compatible

Technical characteristics

Mating face	USB 2.0 / 3.0 type A
Number of contacts	USB 2.0: 4 and USB 3.0: 9
Degree of protection	IP 65 / IP 67
Mating cycles	min. 750
Temperature range	-40 °C … +70 °C

Identification	Part No.	Drawing	Dimensions in mm
Panel feed-throughs			
EasyInstall style			
USB 2.0 type A 2 x jack	09 45 245 1903		
USB 3.0 type A 2 x jack	09 45 245 1905		
Compact style			
USB 2.0 type A 2 x jack	09 45 245 1902		
USB 3.0 type A 2 x jack	09 45 245 1904		

HARTING PushPull USB

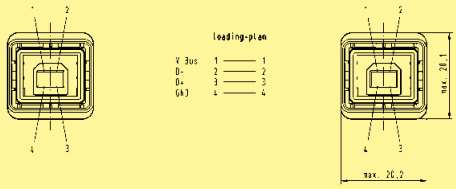
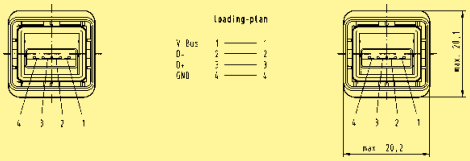
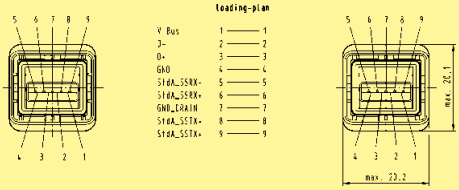
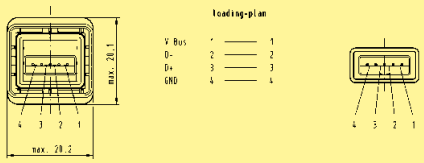
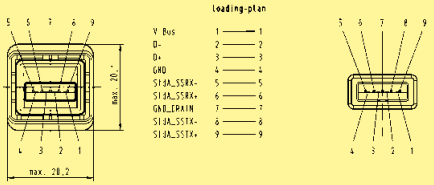
HARTING PushPull USB
System cables

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	IP 65 / IP 67
Mating cycles	min. 750
Temperature range	-40 °C … +70 °C

Identification	Part No.	Drawing	Dimensions in mm
System cables 2 x PushPull USB Length 1.5 m			
USB 2.0 type B	09 45 145 3902		
USB 2.0 type A	09 45 145 1902		
USB 3.0 type A	09 45 145 2902		
System cables 1 x PushPull USB 1 x IP 20 USB Length 1.5 m			
USB 2.0 type B	09 45 145 3912		
USB 2.0 type A	09 45 145 1912		
USB 3.0 type A	09 45 145 2912		
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 whereever 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 rsp. 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 eht same time (pollution degree 3 and overvoltage category III).

Additionally the HARTING PushPull Power connector offers the protection class of IP 67 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

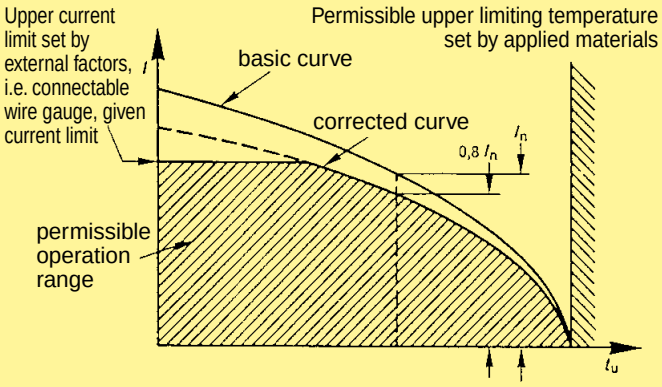
Typical application areas

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

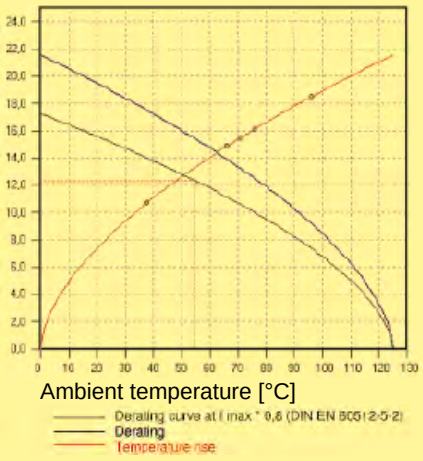
Current carrying capacity

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 in 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.

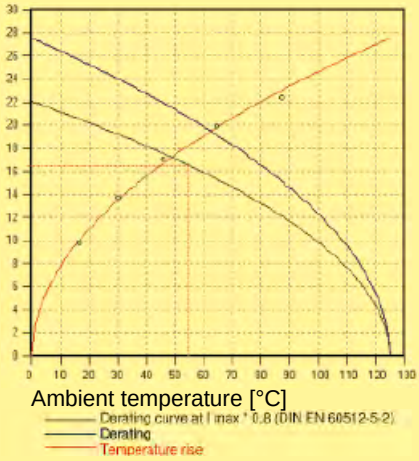
Example of a current capacity curve



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



Derating-Diagramm 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

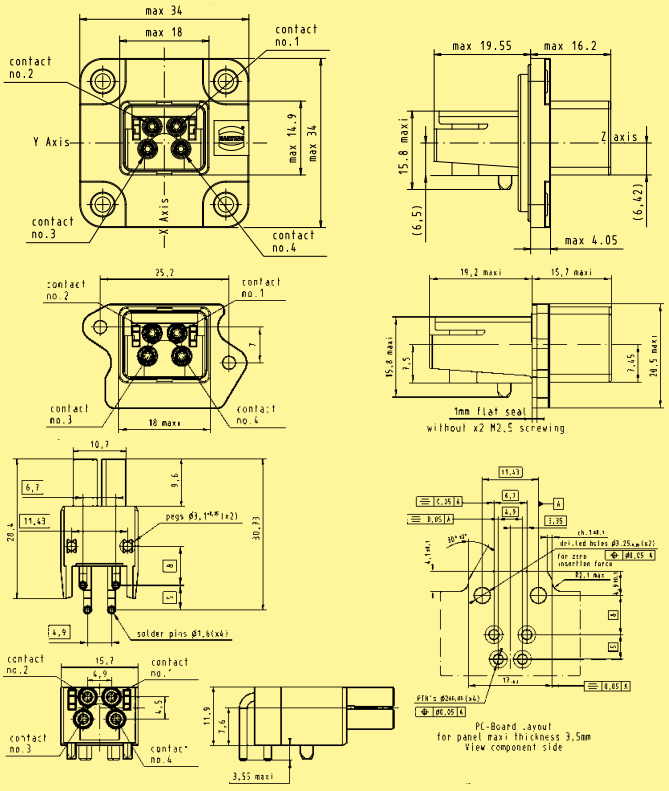
- Power connectors for devices
- EasyInstall and Compact panel feed-through and females for simple device integration
- Compact, space-saving design
- Touch-proof according to IEC DIN EN 60 529
- Polarisation with nose
- Device side: female with cable cage, crimp or solder termination
- 4 different coding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

Technical characteristics

Locking	PushPull Technology acc. to IEC 61 076-3-106 variant 4
Degree of protection	IP 65 / IP 67
Number of contacts	4
Electrical data acc. to EN 61 984	12 A 48 V 1.5 kV 3
Termination Termination cross section	Crimp 0.75 - 2.5 mm² (AWG 20 - 12) stranded
Termination Termination diameter	Solder pins 1.6 mm
Termination Termination cross section	Cable cage 0.75 - 2.5 mm² (AWG 20 - 12) stranded
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V 0

Identification	Part No.
Panel feed-through set	
Housing bulkhead mounting **EasyInstall**	
with 4 turned female contacts and insulation body	
with crimp termination for 1.5 mm²	09 46 245 4430
	09 46 295 4430[1)]
with solder termination, 90° angled	09 46 245 4030
	09 46 295 4030[1)]
with cage clamp terminal on pcb	09 46 245 4031
	09 46 295 4031[1)]
Housing bulkhead mounting **Compact**	
with 4 turned female contacts and insulation body	
with crimp termination for 1.5 mm²	09 46 245 4400
with solder termination, 90° angled	09 46 245 4000
with cage clamp terminal on pcb	09 46 245 4001
Power-female with solder termination	
4-poles, 48 V / 12 A, 90° angled	09 46 500 4400
4-poles, 48 V / 12 A, 90° straight	09 46 500 4402
Power-female with crimp termination	09 46 500 4401

Drawing — Dimensions in mm



Panel cut outs see page 02.04

[1)] Metal version (without contacts)

HARTING PushPull Power

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

Advantages

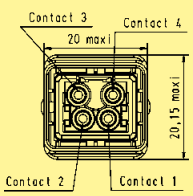
- Power connectors for devices
- EasyInstall panel feed-through for simple device integration
- Compact, space-saving design
- Touch-proof according to IEC DIN EN 60 529
- Polarisation with nose
- Cable side: Male with crimp termination
- 4 different coding variants without loss of contact

Technical characteristics

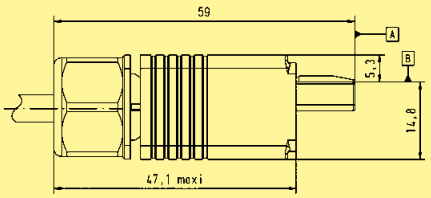
Locking	PushPull Technology acc. to IEC 61 076-3-106 variant 4
Degree of protection	IP 65 / IP 67
Number of contacts	4
Electrical data acc. to EN 61 984	12 A 48 V 1.5 kV 3
Cable diameter	4.9 ... 8.6 mm
Termination	Crimp
Termination cross section	0.75 - 2.5 mm² (AWG 20 - 12) stranded
Mating cycles	min. 750
Temperature range	-40 °C … +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V 0

Identification	Part No.
Connector set	
incl. 4 turned crimp contacts (male) for 1.5 mm², insulation body, housing, cable gland	09 46 145 4400 09 46 195 4400[1)]
Connector set	
without contacts	09 46 145 4401
Accessories – crimp contacts male	
0.75 mm² (AWG 20 - 18)	09 46 500 0403
1.5 mm² (AWG 16 - 14)	09 46 500 0401
2.5 mm² (AWG 12)	09 46 500 0405
Accessories – crimp contacts female	
0.75 mm² (AWG 20 - 18)	09 46 500 0404
1.5 mm² (AWG 16 - 14)	09 46 500 0402
2.5 mm² (AWG 12)	09 46 500 0406
Accessories – Coding pin set	
to avoid accidental incorrect mating a coding system is required. This coding pins are inserted without loss of contact.	09 46 840 0000

Drawing



Dimensions in mm



[1)] 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

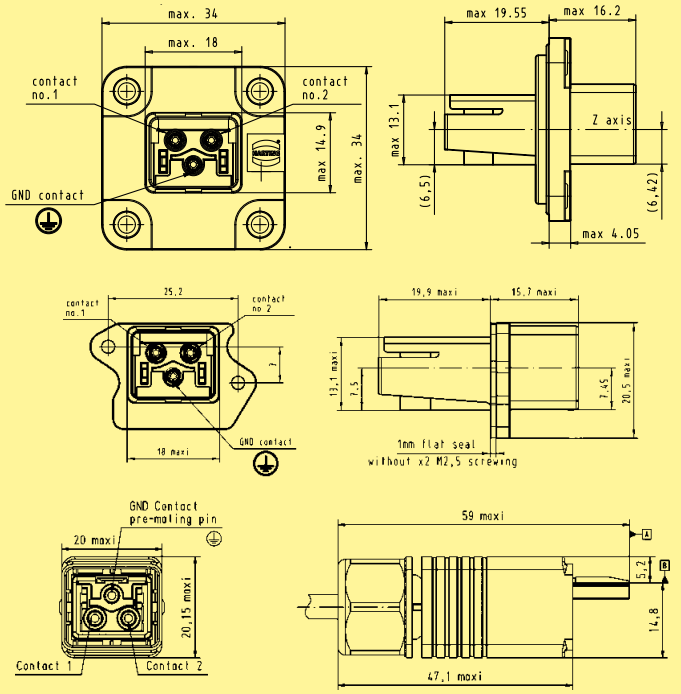
Advantages

- Power connectors for devices
- EasyInstall panel feed-through for simple device integration
- Compact, space-saving design
- Touch-proof according to IEC DIN EN 60 529
- 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 61 076-3-106 variant 4
Degree of protection	IP 65 / IP 67
Number of contacts	2 + PE
Electrical data acc. to EN 61 984	16 A 250 V 4 kV 3
Cable diameter	4.9 ... 8.6 mm
Termination	Crimp
Termination cross section	0.75 - 2.5 mm² (AWG 20 - 12) stranded
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V 0

Identification	Part No.	Drawing	Dimensions in mm
HARTING PushPull Power 2/0			
Panel feed-through set incl. 3 turned crimp contacts (female) for 1.5 mm², insulation body (black), housing bulkhead mounting EasyInstall	09 46 245 3430		
Panel feed-through set incl. 3 turned contacts (female) for 1.5 mm², insulation body (black), housing bulkhead mounting, with crimp termination	09 46 245 3410		
Power-female with crimp termination without contacts	09 46 500 3401		
Connector set incl. 3 turned crimp contacts (male) for 1.5 mm², insulation body (black), housing, cable gland	09 46 145 3410		
Connector set without contacts	09 46 145 3411		
Coding pin set 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 02.22
Panel cut outs see page 02.04

Identification	Part No.		
HARTING PushPull Power 8-indent crimping tool incl. positioner	09 46 800 0000		For wire gauges 0.08 … 4.0 mm² (AWG 28 … 12).
Locator HARTING PushPull Power contacts for Buchanan crimping tool (09 99 000 0001)	09 46 800 0010		
Insertion tool	09 46 800 0099		For an easy insertion and extraction of the male and female crimp contacts into / out of the insulator body.
Extraction tool	09 46 800 0098		

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 60 352-2, 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 60 352, 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.

Tensile strength of crimped connections

Conductor cross-section		Tensile strength
mm²	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 60 352-2, Amend. 2, Table IV

Crimping tools

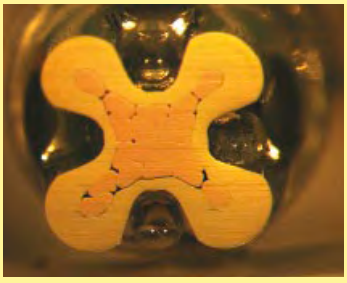
Crimping tools (hand operated or automatic) are carefully designed to produce with high pressure forming parts a symmetrical connection of the crimping part of the contact and the wire being connected with the minimum increase in size at the connection point. The positioner automatically locates the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

A ratchet in the tool performs 2 functions:

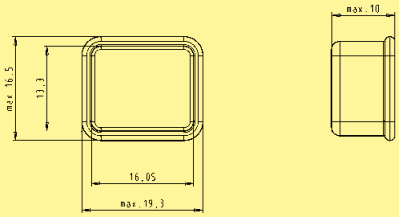
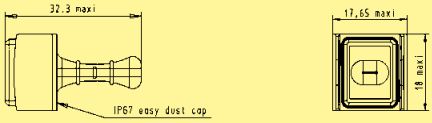
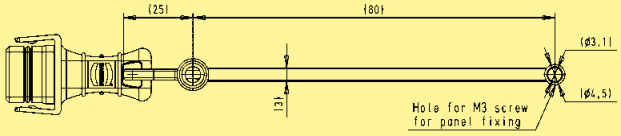
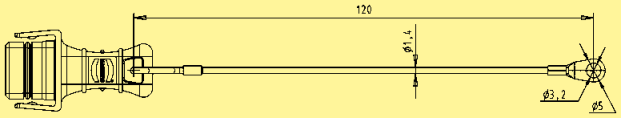
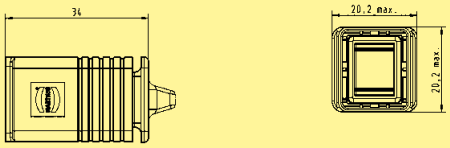
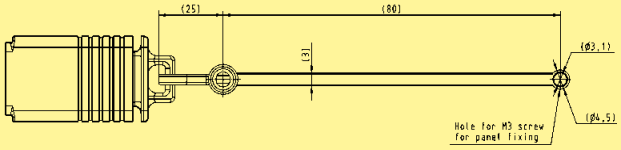
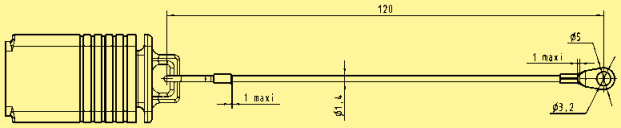
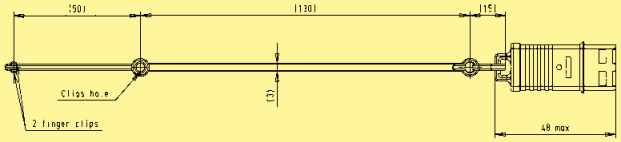
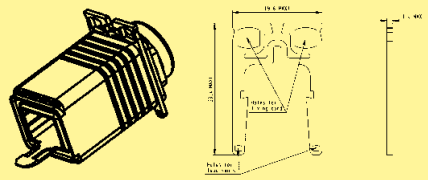
① It prevents insertion of the crimp into the tool for crimping before the jaws are fully open

② It prevents the tool being opened before the crimping action is completed

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



Crimp-cross section
HARTING crimp profile

Identification	Part No.	Drawing	Dimensions in mm
Transport protecion for device side IP 40	09 45 845 0003		
Protection cover for device side IP 65 / IP 67			
Version with passive locking without cord	09 45 845 0009 024		
Version with passive locking with plastic cord for fixing screw M3	09 45 845 0009		
Version with passive locking with nylon cord for fixing screw M2.5 / M3	09 45 845 0011 024		
Version with active locking without cord	09 45 845 0015		
Version with active locking with plastic cord for fixing screw M3	09 45 845 0014		
Version with active locking with nylon cord for fixing screw M2.5 / M3	09 45 845 0013		
Protection cover for connectors IP 65 / IP 67	09 45 845 0010		
Security clip for connectors can be sealed and protects against unauthorized unplugging	09 45 845 0020		

available Q2 / 2012

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

Features

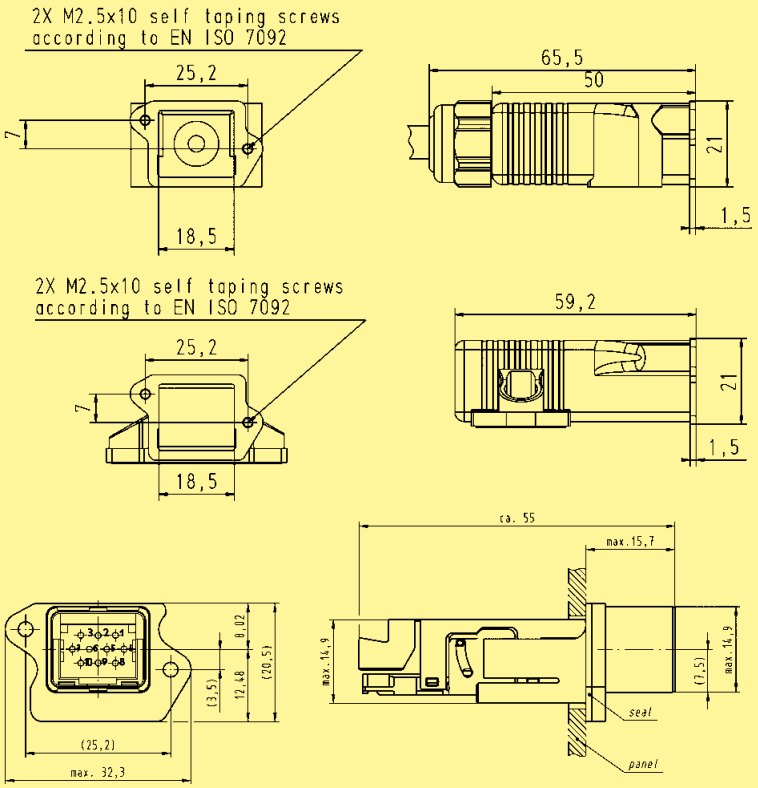
- HARTING PushPull technology
- Ideal for prototyping
- Can be combined with panel feed-throughs for power, data and signal

Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-106 variant 4
Degree of protection	IP 65 / IP 67
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	V 0

Identification	Part No.
HARTING PushPull cable to cable housings, plastic (Order housing bulkhead mounting and insert separately)	
for outer cable diameter 6.5 … 9.5 mm	09 45 345 0000
HARTING PushPull bulkhead housings, plastic (Order housing bulkhead mounting and insert separately)	09 45 345 0001
Suitable HARTING PushPull Signal panel feed-through	09 45 245 9010
Suitable bulkhead housing, plastic	
for RJ45 / Signal	09 45 545 0028
Inserts for RJ45 / Signal	
RJ 45: 8-poles, Cat. 6 / class E_A	
Ha-Vis preLink® set AWG 22/23	20 82 001 0001
HARTING RJ Industrial® cable jack with IDC termination	
AWG 22-24, 8-poles	09 45 545 1562
AWG 24-28, 8-poles	09 45 545 1561
AWG 22-24, 4-poles, Cat. 5	09 45 545 1120
Signal: 10-poles, 60 V / 3 A*	09 45 545 9010

Drawing / Dimensions in mm



* Order D-Sub crimp male contacts separately (see page 02.16)

Han® PushPull RJ45 Plastic

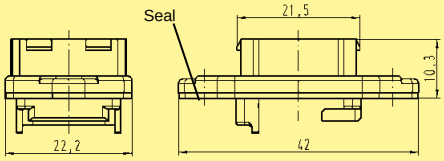
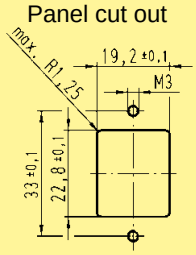
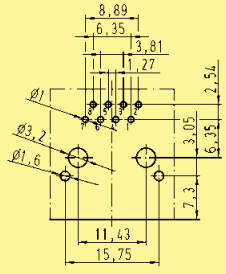
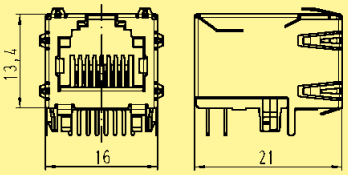
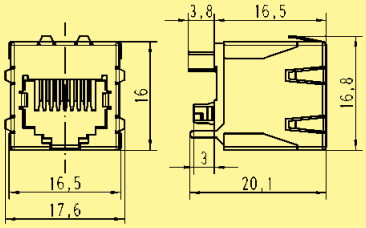
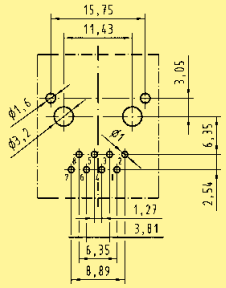
Han® PushPull, type acc. to IEC 61 076-3-117 variant 14
Housing bulkhead mounting for device integration and RJ45 jacks

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	IP 65 / IP 67
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	V 0

Identification	Part No.	Drawing	Dimensions in mm
Components device side			
Housing bulkhead mounting plastic	09 35 002 0321		Panel cut out 
Dust protection cover IP 40 rubber (NBR)	09 35 002 5401		
Protection cover IP 65 / IP 67	09 35 002 5402		PCB layout 
RJ45 jack Solder variant, 90° angled	09 35 002 2101		
Solder variant, 180° straight	09 35 002 2102		

Han® PushPull RJ45 Plastic

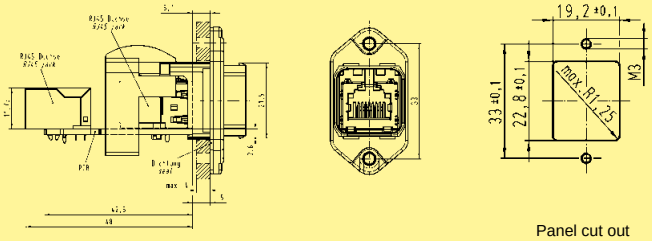
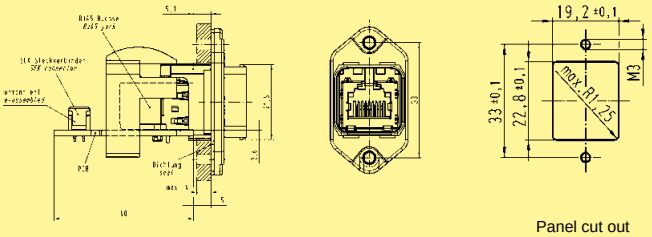
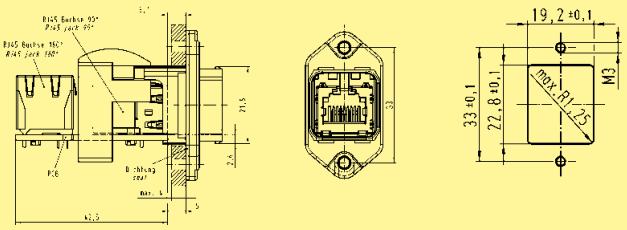
Han® PushPull, type acc. to IEC 61 076-3-117 variant 14
RJ45 panel feed through

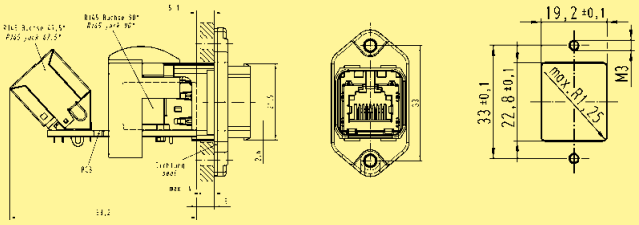
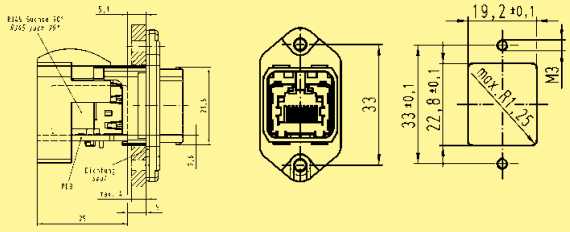
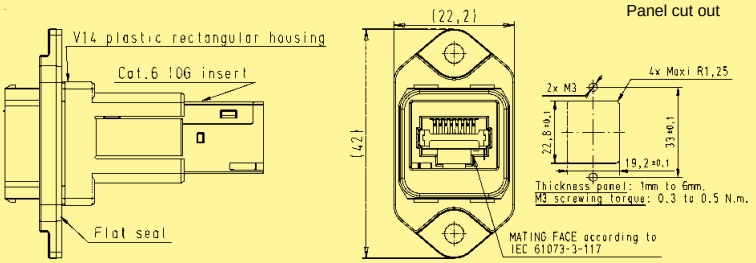
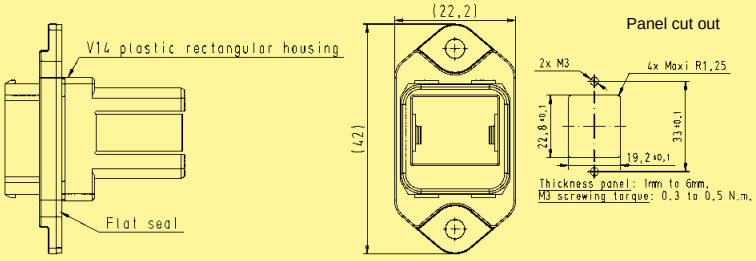
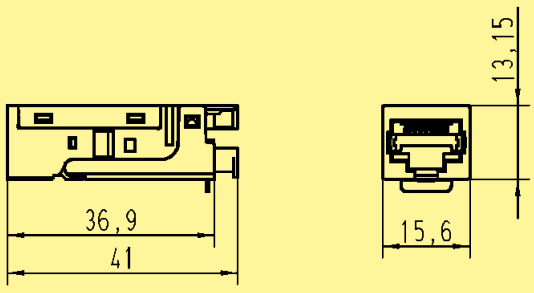
Features

- 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	IP 65 / IP 67
Mating face	RJ45 acc. to IEC 60 603-7
Transmission performance	acc. to ISO/IEC 11 801:2002, EN 50 173-1, category 5 / class D up to 100 MHz resp. category 6 / class E_A up to 500 MHz
Transmission rate	10 / 100 Mbit/s and 1 / 10 Gbit/s
Number of contacts	8
Shielding	Fully shielded, 360° shielding contact (Cat. 6)
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V 0

Identification	Part No.	Drawing	Dimensions in mm
Han® PushPull RJ45			
Panel feed through Cat. 5 including housing and printed board with 2 x RJ45 jack horizontally mounted	09 35 221 0331		Panel cut out
Panel feed through Cat. 5 including housing and printed board with RJ45 jack and SEK board	09 35 222 0331		Panel cut out
Panel feed through Cat. 5 including housing and printed board with RJ45 jack and RJ45 jack vertically mounted in the IP20 range	09 35 223 0331		Panel cut out

Identification	Part No.	Drawing	Dimensions in mm
Panel feed through Cat. 5 including housing and printed board with RJ45 jack and 47° jack vertically mounted in the IP 20 range	09 35 224 0331		Panel cut out
Panel feed through Cat. 5 including housing and printed board with RJ45 jack and solder termination in the IP 20 range	09 35 226 0331		Panel cut out
Panel feed through Cat. 6 including housing and HARTING RJ Industrial® 10G RJ45 bulkhead	09 35 225 0331		Panel cut out
Panel feed through to mount HIFF inserts, e.g. Ha-VIS preLink® RJ45-module Order inserts separately	09 35 012 0331		Panel cut out
Ha-VIS preLink® set RJ45 jack AWG 22/23 consists of: • 1x Ha-VIS preLink® module RJ45 jack • 1x Ha-VIS preLink® terminal module • 1x cable tie	20 82 001 0001	 see page 01.10	
HARTING RJ Industrial® cable jack			
AWG 22-24, 8-poles, Cat. 6	09 45 545 1562		
AWG 24-28, 8-poles, Cat. 6	09 45 545 1561		
AWG 22-24, 4-poles, Cat. 5	09 45 545 1120		

Recommendation for female insert and assembly manual on request.

Han® PushPull RJ45 Plastic

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

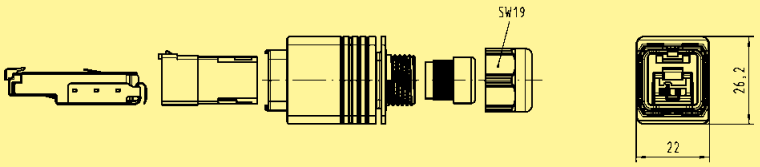
Features

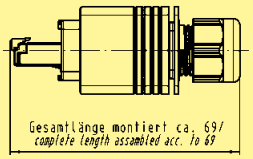
- HARTING PushPull technology
- Field-assembly connector with IDC contacts
- Fully shielded

Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117	
Degree of protection	IP 65 / IP 67	
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_A 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	Plastic, black, UL 94 V-0	

Identification	Part No.	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	09 35 221 0421		
5 - 8 mm clamp range	09 35 222 0421		
Han® RJ Industrial PN Category 5, 4-poles, IDC contacts			
6.5 - 9.5 mm clamp range	09 35 226 0421		
PROFINET-Identification: PROFINET O-Plug RJ45			
Han® RJ Industrial 10G Category 6, 8-poles, IDC contacts			
6.5 - 9.5 mm clamp range	09 35 225 0421		





Han® PushPull RJ45 Plastic

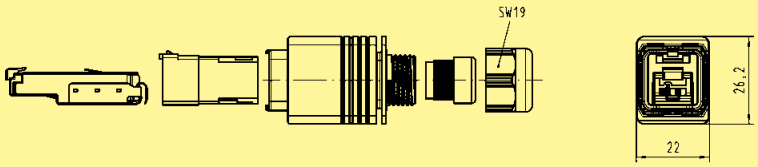
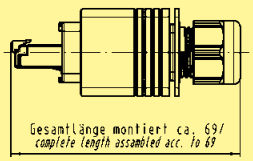
Han® PushPull, type acc. to IEC 61 076-3-117 variant 14
RJ45 connector

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	IP 65 / IP 67
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 / class E up to 250 MHz
Transmission rate	10/100/1000 Mbit/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 V-0

Identification	Part No.	Drawing	Dimensions in mm
Connector set, plastic incl. housing and male insert 5 - 8 mm clamp range			
Han® RJ Industrial Category 6, 8-poles, piercing contacts			
Wire manager, white	09 35 223 0421		
Wire manager, blue	09 35 224 0421		
New Cat. 6_A version (available Q3/2012)	09 35 227 0421		

Han® PushPull RJ45 Metal

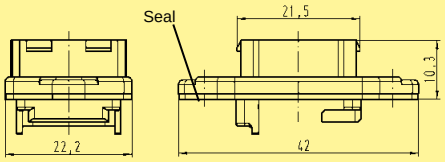
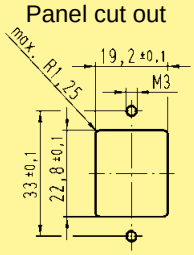
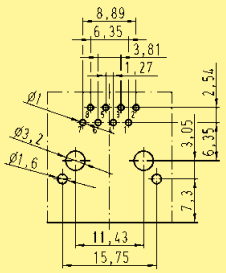
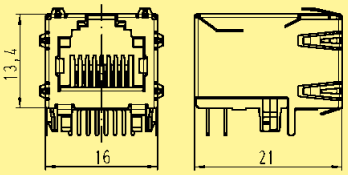
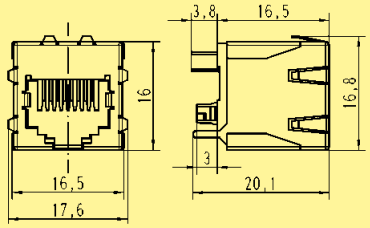
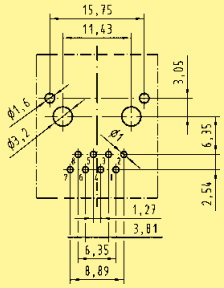
Han® PushPull, type acc. to IEC 61 076-3-117 variant 14
Housing bulkhead mounting for device integration and RJ45 jacks

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	IP 65 / IP 67
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 No.	Drawing	Dimensions in mm
Components device side			
Housing bulkhead mounting metal	09 35 002 0301		Panel cut out 
Dust protection cover IP 40 rubber (NBR)	09 35 002 5401		
Protection cover IP 65 / IP 67	09 35 002 5402		PCB layout 
RJ45 jack Solder variant, 90° angled	09 35 002 2101		
Solder variant, 180° straight	09 35 002 2102		

Han® PushPull RJ45 Metal

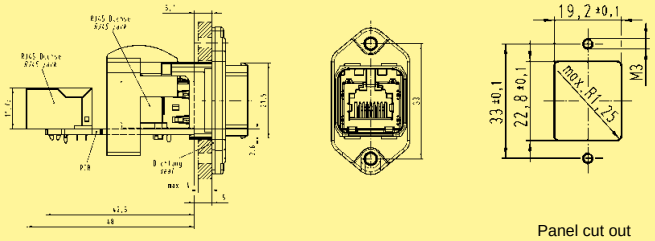
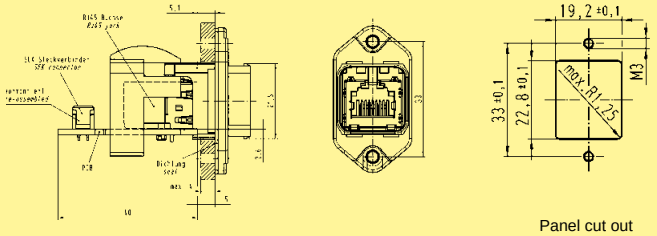
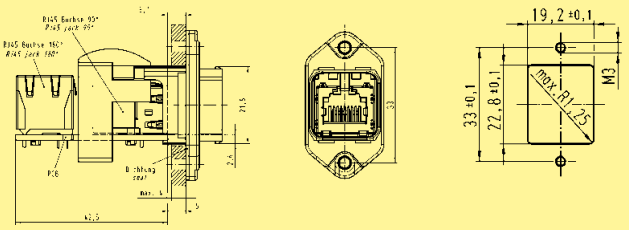
Han® PushPull, type acc. to IEC 61 076-3-117 variant 14
RJ45 panel feed through

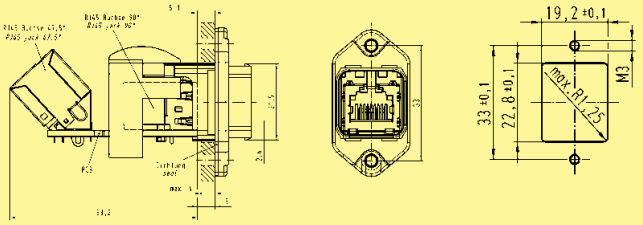
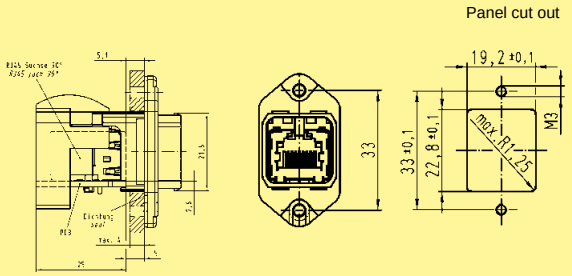
Features

- 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	IP 65 / IP 67
Mating face	RJ45 acc. to IEC 60 603-7
Transmission performance	acc. to ISO/IEC 11 801:2002, EN 50 173-1, category 5 / class D up to 100 MHz
Transmission rate	10 / 100 Mbit/s
Number of contacts	8
Shielding	Fully shielded, 360° shielding contact (Cat. 6)
Termination type	Female with solder termination
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel plated

Identification	Part No.	Drawing	Dimensions in mm
Han® PushPull RJ45			
Panel feed through Cat. 5 including housing and printed board with 2 x RJ45 jack horizontally mounted	09 35 221 0311		Panel cut out
Panel feed through Cat. 5 including housing and printed board with RJ45 jack and SEK board	09 35 222 0311		Panel cut out
Panel feed through Cat. 5 including housing and printed board with RJ45 jack and RJ45 jack vertically mounted in the IP20 range	09 35 223 0311		Panel cut out

Identification	Part No.	Drawing	Dimensions in mm
Panel feed through Cat. 5 including housing and printed board with RJ45 jack and 47° jack vertically mounted in the IP 20 range	09 35 224 0311		
Panel feed through Cat. 5 including housing and printed board with RJ45 jack and solder termination in the IP 20 range	09 35 226 0311		

Recommendation for female insert and assembly manual on request.

Han® PushPull RJ45 10G Metal

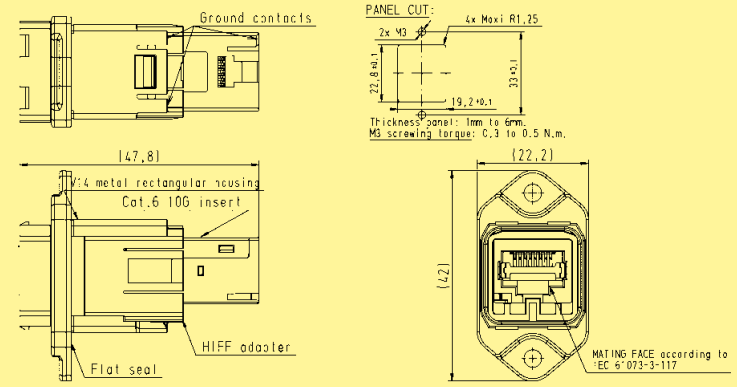
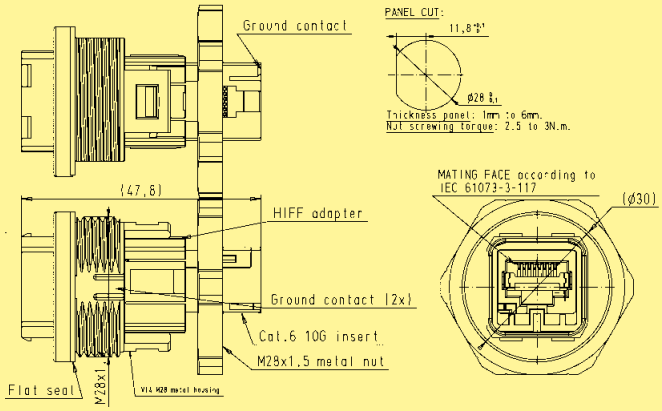
Han® PushPull, type acc. to IEC 61076-3-117 variant 14
RJ45 10G panel feed through

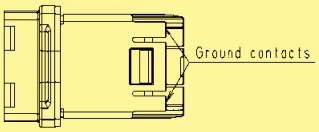
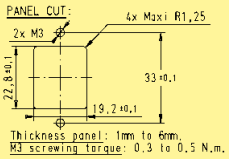
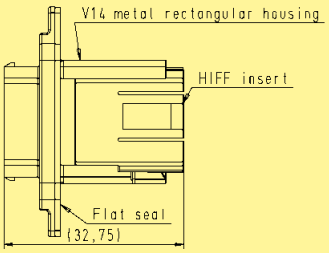
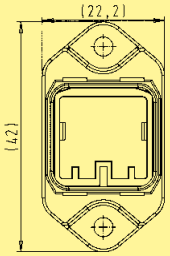
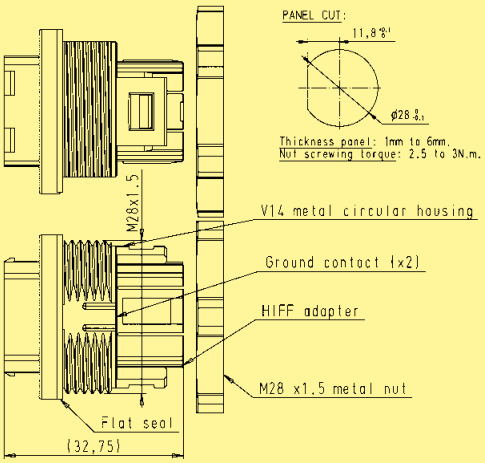
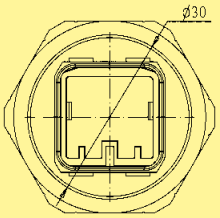
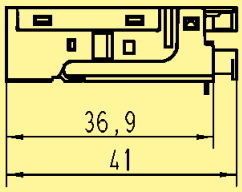
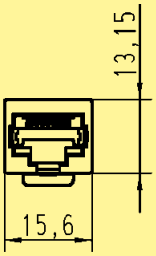
Features

- HARTING PushPull technology
- Compact and robust design
- 360° shielding
- RJ45 mating compatible
- Transmission category 6, performance class E_A, 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_A 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	IP 65 / IP 67
Mating cycles	min. 750
Temperature range	-40 °C … +70 °C
Housing material	Zinc die-cast, nickel-plated

Identification	Part No.	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		

Identification	Part No.	Drawing	Dimensions in mm
Han® PushPull RJ45 10G			
Panel feed-through to mount HIFF inserts, e.g. Ha-VIS preLink® RJ45-module, RJ Industrial cable jack Order inserts separately			
Bulkhead housing for rectangular panel cut out, incl. plastic adapter	09 35 012 0311		
Bulkhead housing for circular panel cut out, incl. plastic adapter and fixing nut	09 35 012 0312		
Ha-VIS preLink® set RJ45 jack AWG 22/23 consists of: • 1x Ha-VIS preLink® module RJ45 jack • 1x Ha-VIS preLink® terminal module • 1x cable tie	20 82 001 0001		
HARTING RJ Industrial® cable jack			
AWG 22-24, 8-poles, Cat. 6	09 45 545 1562		
AWG 24-28, 8-poles, Cat. 6	09 45 545 1561		
AWG 22-24, 4-poles, Cat. 5	09 45 545 1120		

Han® PushPull RJ45 Metal

Han® PushPull RJ45 Genderchanger Metal
Cat. 6 / Class E

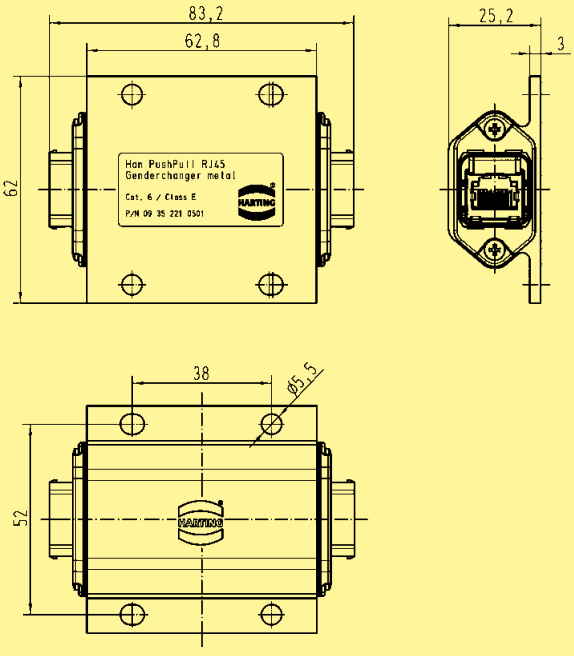
Features

- High degree of protection IP 65 / IP 67
- 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 11801 Chapter 10.2.4

Technical characteristics

Transmission performance	Cat. 6 / Class E up to 250 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	83.2 x 62 x 25.2 mm (unmated)
Degree of protection acc. to DIN 60529	IP 65 / IP 67 (mated)
Mounting	Wall mountable with 4 screws (type M5)
Temperature range	-20 °C ... +70 °C
Maximum permissible humidity	30 % ... 95 % (no condensation)

Identification	Part No.	Drawing	Dimensions in mm
Han® PushPull RJ45 Genderchanger metal including housing and printed board with 2 x RJ45 jack	09 35 221 0501		



Han® PushPull RJ45 Metal

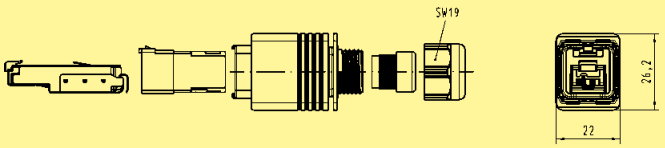
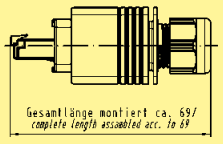
Han® PushPull, type acc. to IEC 61 076-3-117 variant 14
RJ45 connector

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	IP 65 / IP 67
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_A 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 No.	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 RJ45 Metal

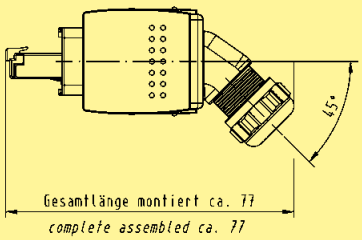
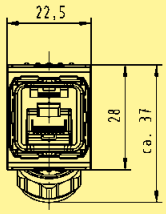
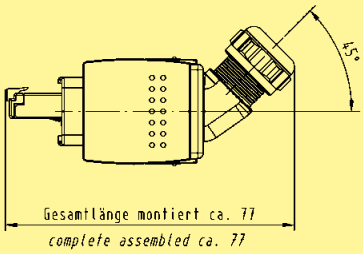
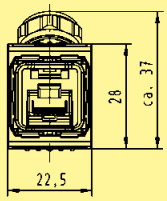
Han® PushPull, type acc. to IEC 61 076-3-117 variant 14
RJ45 connector angled

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	IP 65 / IP 67
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_A 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 No.	Drawing	Dimensions in mm
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 RJ45 Metal

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

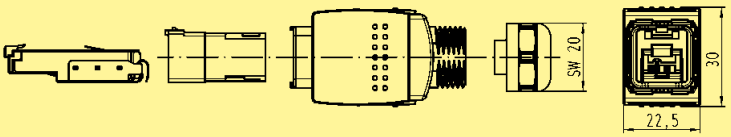
Features

- 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	IP 65 / IP 67
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 / class E up to 250 MHz
Transmission rate	10/100/1000 Mbit/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 No.	Drawing	Dimensions in mm
Connector set, metal incl. housing and male insert 4 - 11 mm clamp range			
Han® RJ Industrial Category 6, 8-poles, piercing contacts			
Wire manager, white	09 35 223 0401		
Wire manager, blue	09 35 224 0401		
New Cat. 6_A version (available Q3/2012)	09 35 227 0401		



Han® PushPull RJ45 Accessories

available Q2 / 2012

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

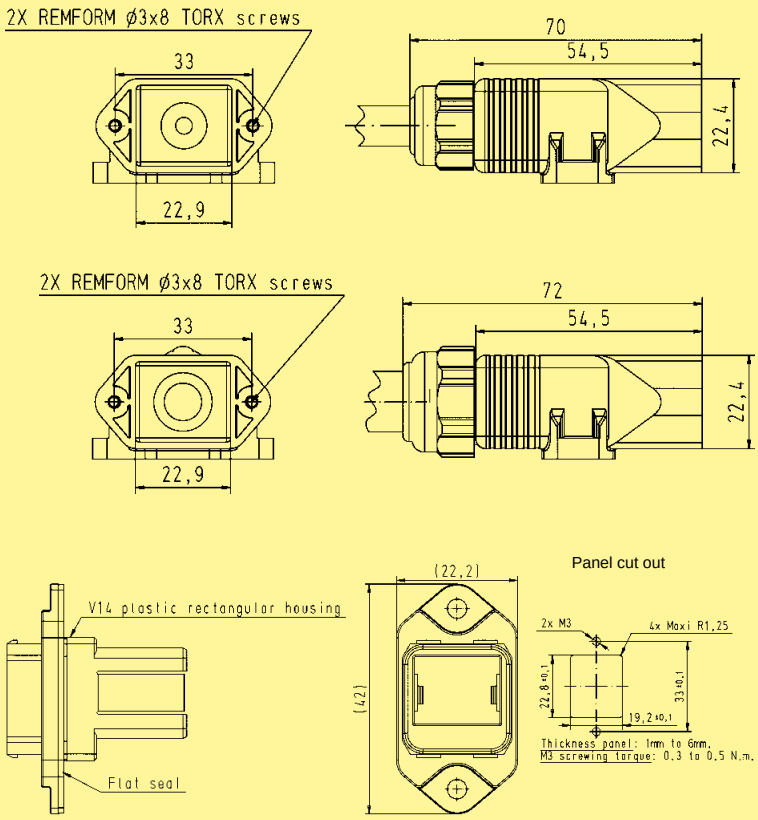
Features

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

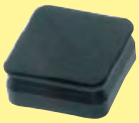
Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14
Degree of protection	IP 65 / IP 67
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	V 0

Identification	Part No.	Drawing	Dimensions in mm
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		
for outer cable diameter 9 … 13 mm	09 35 002 0433		
Suitable bulkhead housing, plastic			
for RJ45	09 35 012 0331		
Inserts for RJ45			
RJ 45: 8-poles, Cat. 6 / class E_A			
Ha-Vis preLink® set AWG 22/23	20 82 001 0001		
HARTING RJ Industrial® cable jack with IDC termination			
AWG 22-24, 8-poles	09 45 545 1562		
AWG 24-28, 8-poles	09 45 545 1561		
AWG 22-24, 4-poles, Cat. 5	09 45 545 1120		



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

Identification	Part No.	Drawing	Dimensions in mm
Han® PushPull dust protection cover IP 40 rubber (NBR)			
for device side	09 35 002 5401		
Han® PushPull protection cover IP 65 / IP 67			
for device side with fixing cord			
1 piece	09 35 002 5402		
100 pieces	09 35 002 5402 XL		
without fixing cord			
100 pieces	09 35 002 5403 XL		
Han® PushPull dust protection cover IP 40			
for cable side	09 35 002 5412		
Han® PushPull protection cover IP 65 / IP 67			
for cable side	09 35 002 5411		

Han® PushPull SCRJ Plastic

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

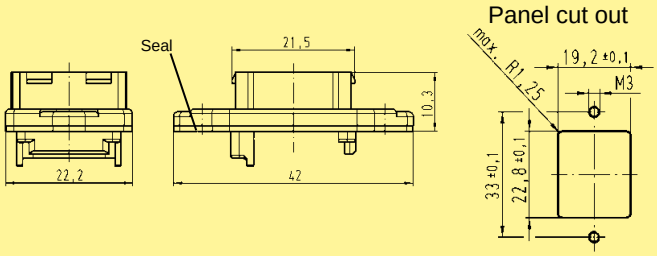
Features

- 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	IP 65 / IP 67
Mating face	SCRJ acc. to IEC 61 754-24
Fiber Typen	POF[1] 1 mm
	HCS®[2] 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	V 0

Identification	Part No.	Drawing	Dimensions in mm
Components device side			
Housing bulkhead mounting Optical transceiver not included			
plastic	09 35 002 0323		
Dust protection cover IP 40 rubber (NBR)	09 35 002 5401		
Protection cover IP 65 / IP 67	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 SCRJ Plastic

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

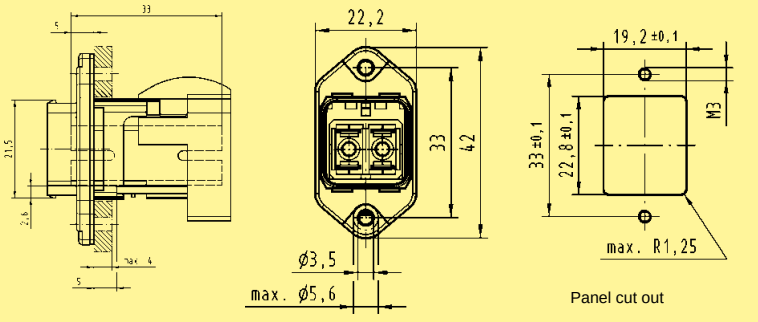
Features

- 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	IP 65 / IP 67
Mating face	SCRJ acc. to IEC 61 754-24
Fiber Typen	POF[1)] 1 mm
	HCS®[2)] 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	V 0

Identification	Part No.	Drawing	Dimensions in mm
Han® PushPull SCRJ			
Panel feed through	09 35 242 0333		
SC contacts order separately			
SCRJ IP 20 POF connector	09 35 002 4002		
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		



Han® PushPull SCRJ Plastic

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

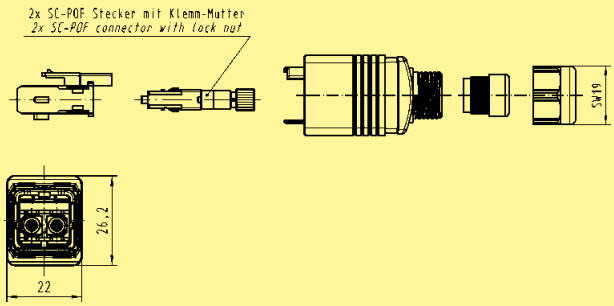
Features

- 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	IP 65 / IP 67
Mating face	SCRJ acc. to IEC 61 754-24
Fiber Typen	POF[1)] 1 mm
	HCS®[2)] 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	V 0
Cable diameter	6.5 - 9.5 mm

Identification	Part No.	Drawing	Dimensions in mm
Connector set, plastic incl. housing and SCRJ insert, POF contacts	09 35 241 0421		
PROFINET-Identification: PROFINET O-Plug SCRJ			
incl. housing and SCRJ insert SC contacts order separately	09 35 241 0422		
SCRJ IP 20 POF connector	09 35 002 4002		
Dust protection cover IP 40	09 35 002 5412		
Protection cover IP 65 / IP 67	09 35 002 5411		
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		



Tooling see page 02.49

Han® PushPull SCRJ Metal

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

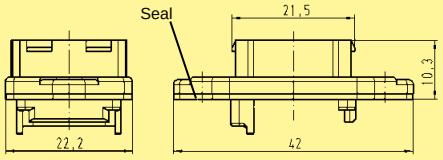
Features

- 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)

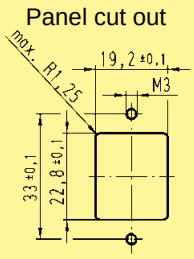
Technical characteristics

Locking	PushPull technology
Degree of protection	IP 65 / IP 67
Mating face	SCRJ acc. to IEC 61 754-24
Fiber Typen	POF[1] 1 mm
	HCS®[2] 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 No.	Drawing	Dimensions in mm
Components device side			
Housing bulkhead mounting Optical transceiver not included			
metal	09 35 002 0303		
Dust protection cover IP 40 rubber (NBR)	09 35 002 5401		
Protection cover IP 65 / IP 67	09 35 002 5402		
Reference for transceiver as well as mounting instruction on request			



Panel cut out



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

Han® PushPull SCRJ Metal

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

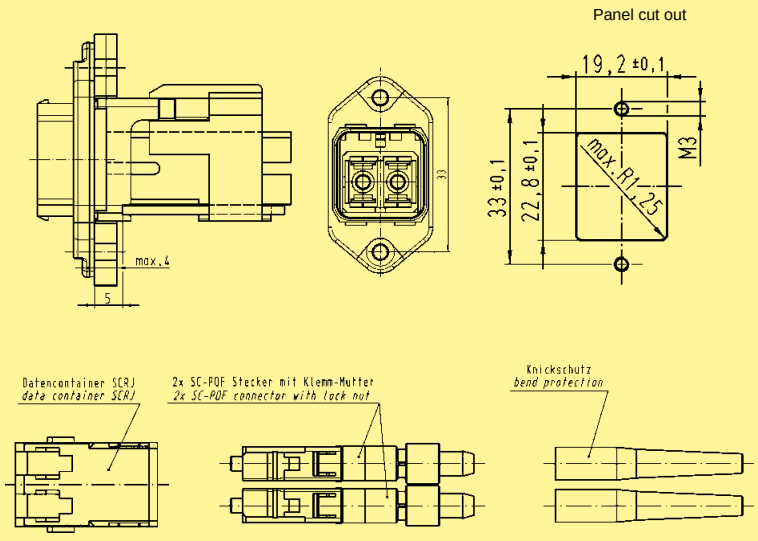
Features

- 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	IP 65 / IP 67
Mating face	SCRJ acc. to IEC 61 754-24
Fiber Typen	POF[1)] 1 mm
	HCS®[2)] 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 No.	Drawing	Dimensions in mm
Han® PushPull SCRJ			
Panel feed through	09 35 242 0313		
SC contacts order separately			
SCRJ IP 20 POF connector	09 35 002 4002		
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		



Han® PushPull SCRJ Metal

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

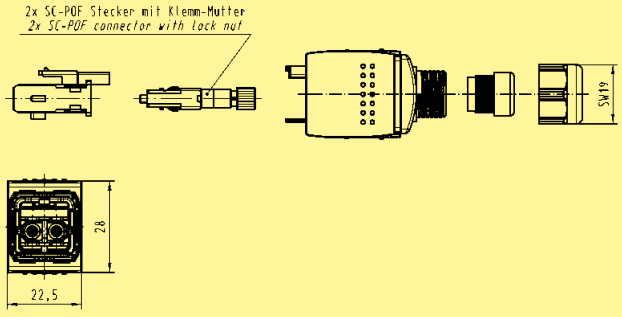
Features

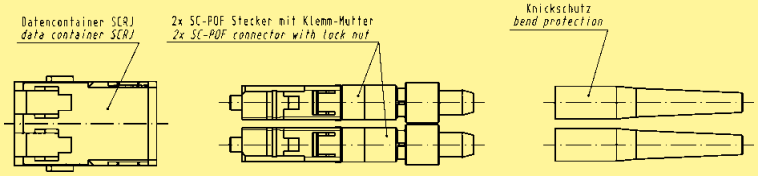
- HARTING PushPull technology
- Compact design
- High packing density
- Han® PushPull SCRJ for POF is according the requirements of AIDA (German Domestic Automobile Manufacturers)
- Field installable

Technical characteristics

Locking	PushPull technology
Degree of protection	IP 65 / IP 67
Mating face	SCRJ acc. to IEC 61 754-24
Fiber Typen	POF[1)] 1 mm
	HCS®[2)] 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	V 0
Cable diameter	6.5 - 9.5 mm

Identification	Part No.	Drawing	Dimensions in mm
Connector set, metal incl. housing and SCRJ insert, POF contacts			
PROFINET-Identification: PROFINET O-Plug SCRJ	09 35 241 0401		
incl. housing and SCRJ insert SC contacts order separately	09 35 241 0402		
SCRJ IP 20 POF connector	09 35 002 4002		
Dust protection cover IP 40	09 35 002 5412		
Protection cover IP 65 / IP 67	09 35 002 5411		
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		





Tooling see page 02.49

Han® PushPull SCRJ

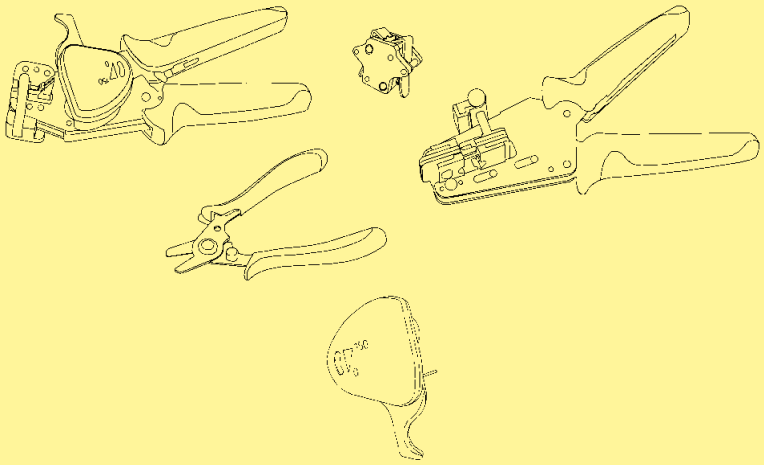
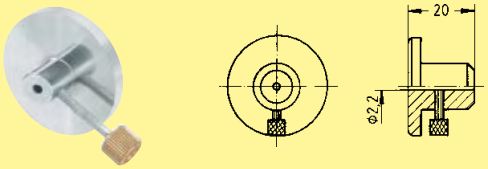
Han® PushPull SCRJ POF
Assembly tools for polymer-optical fibres

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 No.	Drawing	Dimensions in mm
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 Signal

available Q3 / 2012

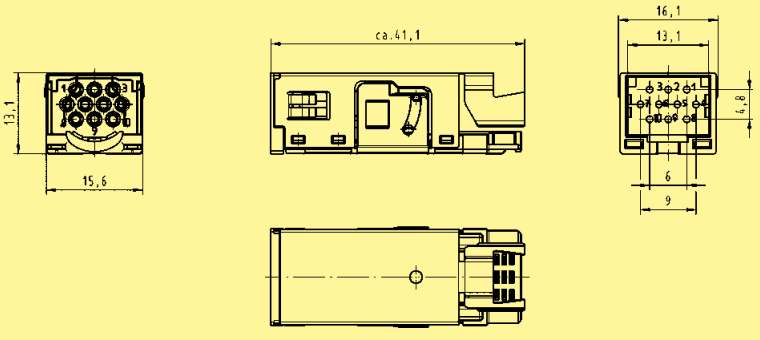
Han® PushPull, type acc. to IEC 61 076-3-117 variant 14
10-poles 100 V / 5 A

Features

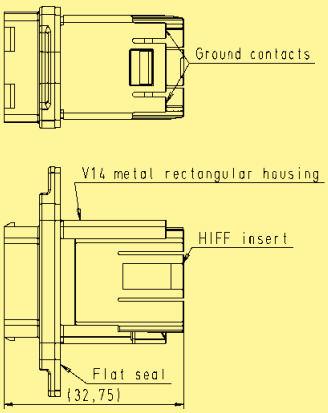
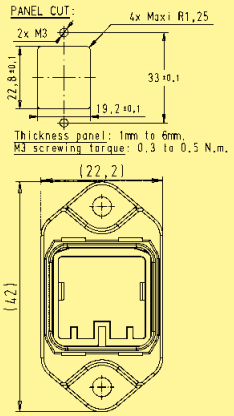
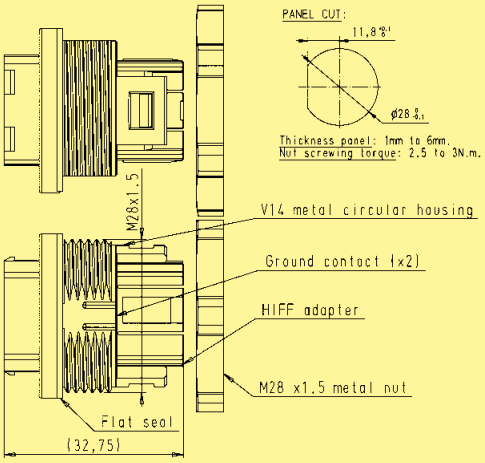
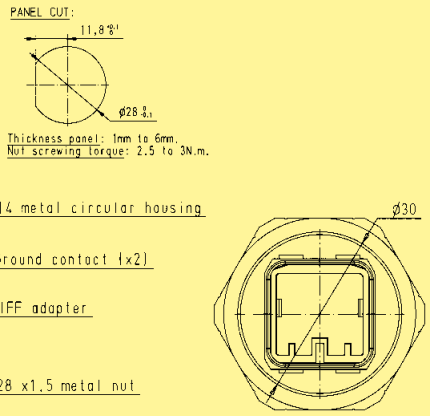
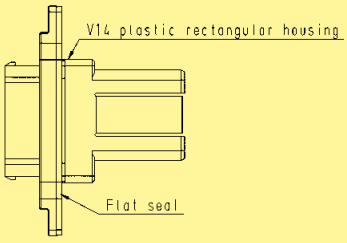
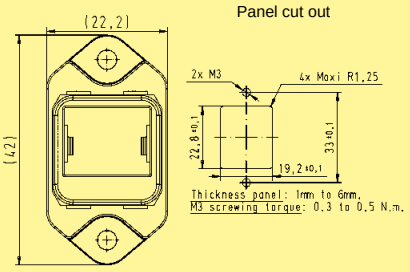
- HARTING PushPull technology
- For the transmission of analog, low voltage and bus signals
- Fully shielded
- 10 contacts
- Touch-proof
- Easy and fast cable installation

Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14
Degree of protection	IP 65 / IP 67
Mating face	acc. to IEC/PAS 61 076-3-11x
Number of contacts	10
Electrical data acc. to DIN EN 61 984	5 A 100 V 1.5 kV 3
Contact resistance	10 mΩ
Termination	Crimp
Conductor cross section	AWG 24 … 18; 0.25 … 0.82 mm²
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	V 0

Identification	Part No.	Drawing	Dimensions in mm
Han® PushPull Signal Insert for panel feed-through HIFF, 10-poles incl. male insert	09 45 545 9010		
Order D-Sub crimp male contacts separately			
D-Sub crimp contacts (Device side)			
for AWG 24-20; 0.25-0.56 mm²	09 67 000 8178[1)]		
for AWG 22-18; 0.33-0.82 mm²	09 67 000 3576[2)]		

[1)] To be used with crimp tool 09 99 000 0175
[2)] To be used with crimp tool 09 99 000 0501. Suitable locator: 61 03 600 0531

Identification	Part No.	Drawing	Dimensions in mm
Han® PushPull panel feed-through HIFF to hold the 10-poles insert			
Metal rectangular	09 35 012 0311		
Metal circular	09 35 012 0312		
Plastic rectangular	09 35 012 0331		
D-Sub crimp contacts			
(Connector side)			
for AWG 24-20; 0.25-0.56 mm²	09 67 000 8278[1)]		
for AWG 22-18; 0.33-0.82 mm²	09 67 000 3476[2)]		
(Device side)			
for AWG 24-20; 0.25-0.56 mm²	09 67 000 8178[1)]		
for AWG 22-18; 0.33-0.82 mm²	09 67 000 3576[2)]		

[1)] To be used with crimp tool 09 99 000 0175
[2)] To be used with crimp tool 09 99 000 0501. Suitable locator: 61 03 600 0531

Han® PushPull Signal

available Q3 / 2012

Han® PushPull, type acc. to IEC 61 076-3-117 variant 14
10-poles 100 V / 5 A

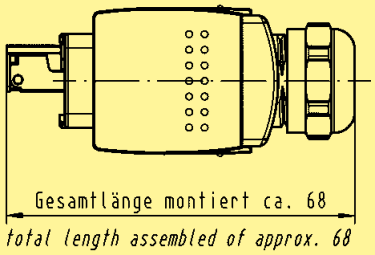
Features

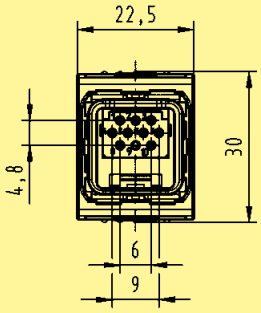
- HARTING PushPull technology
- For the transmission of analog, low voltage and bus signals
- Fully shielded
- 10 contacts
- Touch-proof
- Easy and fast cable installation

Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14
Degree of protection	IP 65 / IP 67
Mating face	acc. to IEC/PAS 61 076-3-11x
Number of contacts	10
Electrical data acc. to DIN EN 61 984	5 A 100 V 1.5 kV 3
Contact resistance	10 mΩ
Termination	Crimp
Conductor cross section	AWG 24 … 18; 0.25 … 0.82 mm²
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	V 0

Identification	Part No.	Drawing	Dimensions in mm
Han® PushPull Signal			
Connector set 10-poles incl. metal housing and female insert 4 … 11 mm	09 35 261 0401		
Connector set 10-poles incl. plastic housing and female insert 6.5 … 9.5 mm	09 35 261 0421		
Order D-Sub crimp female contacts separately			
D-Sub crimp contacts			
(Connector side)			
for AWG 24-20; 0.25-0.56 mm²	09 67 000 8278[1)]		
for AWG 22-18; 0.33-0.82 mm²	09 67 000 3476[2)]		





[1)] To be used with crimp tool 09 99 000 0175
[2)] To be used with crimp tool 09 99 000 0501. Suitable locator: 61 03 600 0531

Han® PushPull Power 4/0 Plastic



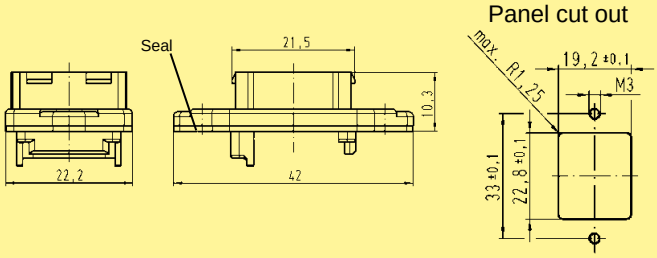
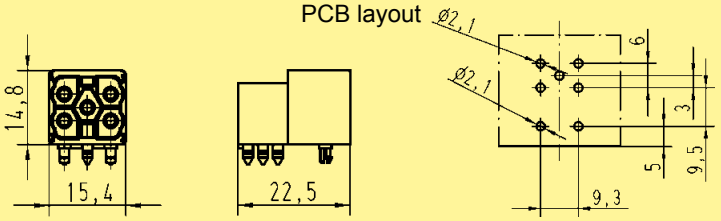
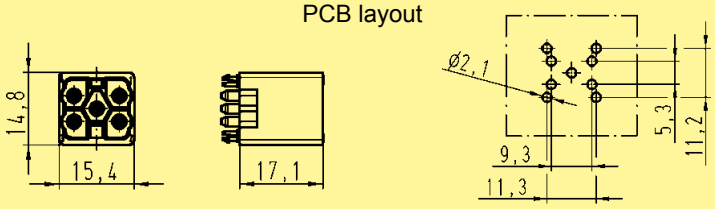

Han® PushPull, type acc. to IEC 61 076-3-118
Housing bulkhead mounting and power females for device integration

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	IP 65 / IP 67
Number of contacts	4 + PE
Electrical data acc. to DIN EN 61 984	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	V 0

Identification	Part No.	Drawing	Dimensions in mm
Components device side			
Housing bulkhead mounting plastic	09 35 002 0323		
Dust protection cover IP 40, rubber (NBR)	09 35 002 5401		
Protection cover IP 65 / IP 67	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 Power 4/0 Plastic

Han-Quick Lock®

HARTING

available Q2 / 2012

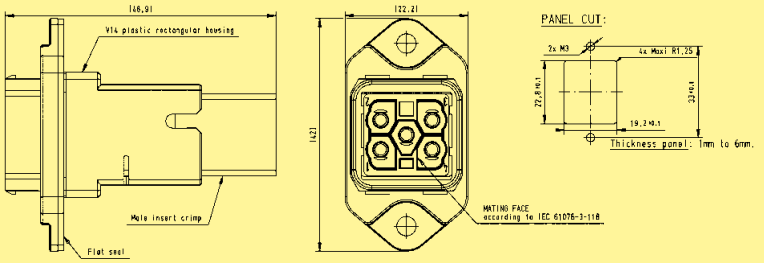
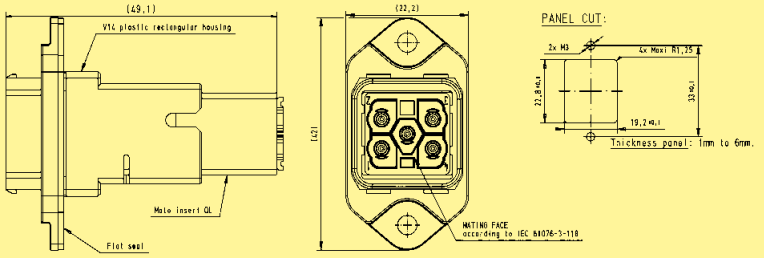
Han® PushPull, type acc. to IEC 61 076-3-118
Panel feed-through, 5-poles, 230/400 V, 16 A

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 mm²

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	IP 65 / IP 67
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 mm²
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V 0

Identification	Part No.	Drawing	Dimensions in mm
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 mm²	09 35 232 0331		
0.25 … 1.5 mm²	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, 230/400 V, 16 A

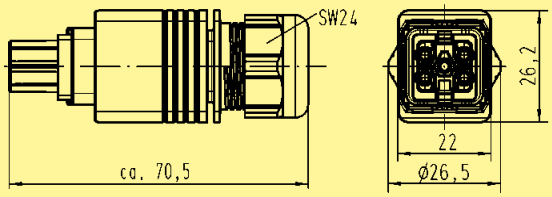
Features

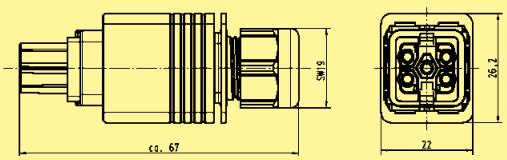
- HARTING PushPull technology
- Compact, space-saving design
- Touch-proof
- Cable side: female
  - crimp termination
  - Han-Quick Lock® termination technology
    Field-assembly without special tools
- 4 times coding without contact loss
- NEW: Larger termination cross section
  for conductors 0.25 - 1.5 mm²

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	IP 65 / IP 67
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 mm²
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V 0

Identification	Part No.	Drawing	Dimensions in mm
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 mm²	09 35 232 0423		
with Han-Quick Lock® termination 6.5 – 9.5 mm clamp range for termination cross section 0.5 - 2.5 mm² for termination cross section 0.25 - 1.5 mm²	09 35 232 0421 09 35 234 0421		
Dust protection cover IP 40	09 35 002 5412		
Protection cover IP 65 / IP 67	09 35 002 5411		
Coding pins	09 35 000 6190		





Han® PushPull Power 4/0 Metal

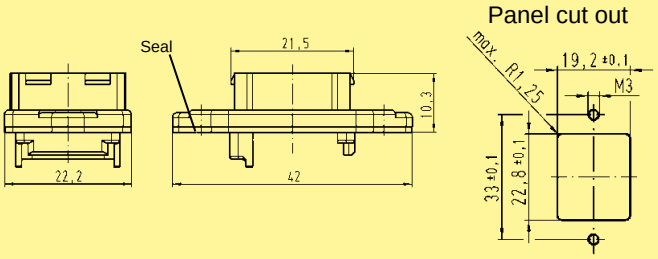
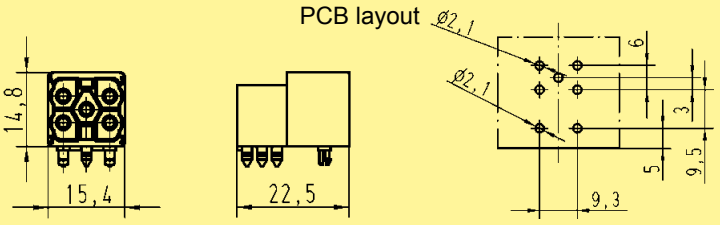
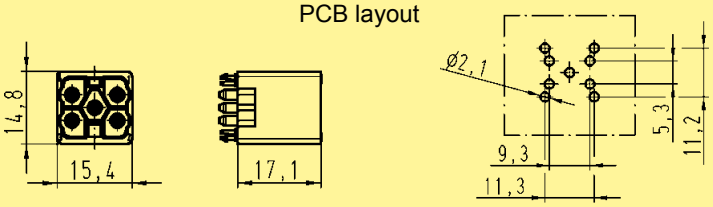
Han® PushPull, type acc. to IEC 61 076-3-118
Housing bulkhead mounting and power females for device integration

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	IP 65 / IP 67
Number of contacts	4 + PE
Electrical data acc. to DIN EN 61 984	16 A 230/400 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	V 0
Housing material	Zinc die-cast, nickel plated Plastic, black (female)

Identification	Part No.	Drawing	Dimensions in mm
Components device side			
Housing bulkhead mounting metal	09 35 002 0303		
Dust protection cover IP 40, rubber (NBR)	09 35 002 5401		
Protection cover IP 65 / IP 67	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		

available Q2 / 2012

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

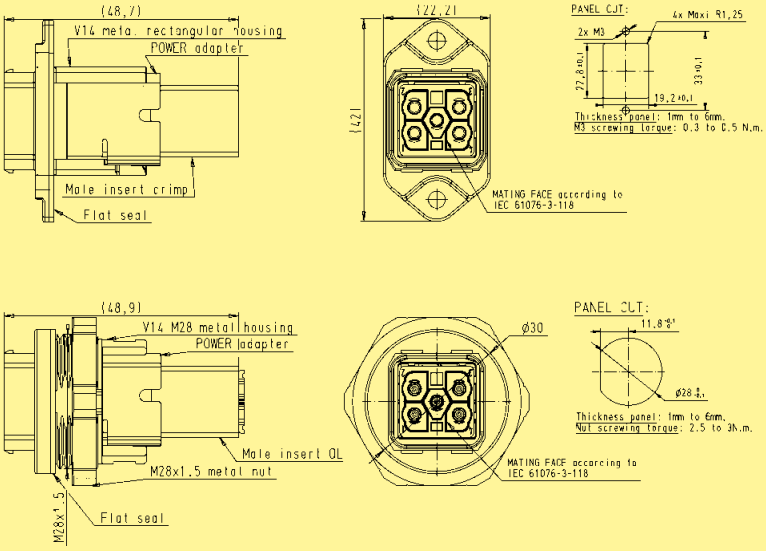
Features

- 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 mm²

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	IP 65 / IP 67
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 mm²
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel-plated
Flammability acc. to UL 94	V 0

Identification	Part No.	Drawing	Dimensions in mm
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 mm²	09 35 232 0311		
0.25 … 1.5 mm²	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 mm²	09 35 232 0312		
0.25 … 1.5 mm²	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		



Han® PushPull Power 4/0 Metal

Han-Quick Lock®

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

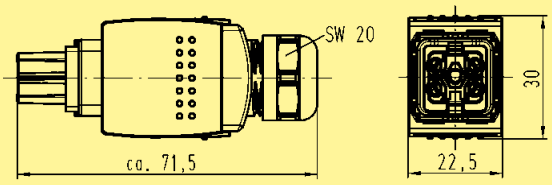
Features

- 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 mm²

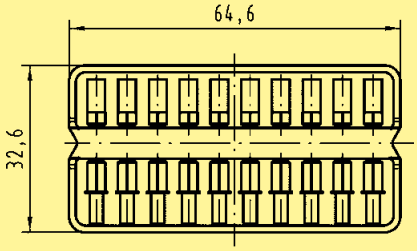
Technical characteristics

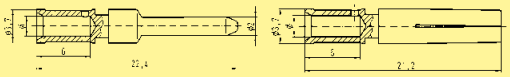
Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14
Mating face	acc. to IEC 61 076-3-118
Degree of protection	IP 65 / IP 67
Number of contacts	4 + PE
Electrical data acc. to DIN EN 61 984	16 A 690 V 4 kV 3
Termination cross section	0.25 – 2.5 mm²
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel-plated
Flammability acc. to UL 94	V 0

Identification	Part No.	Drawing	Dimensions in mm
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 mm²	09 35 232 0401		
for termination cross section 0.25 - 1.5 mm²	09 35 234 0401		
Dust protection cover IP 40	09 35 002 5412		
Protection cover IP 65 / IP 67	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 No.	Drawing	Dimensions in mm
BUCHANAN-crimping tool	09 99 000 0001		
Locator Han P®			
for crimping tool 09 99 000 0001	09 99 000 0329		
Multiple crimping tool depth adjustment gauge	09 99 000 0379	Wire gauge 0.5 - 1 mm² ø 1.55 1.5 - 2.5 mm² ø 1.80	
Removal tool Han P®	09 99 000 0319		
Coding pins			
for 4 times coding without contact loss	09 35 000 6190		

Identification	Part No. Male contact	Part No. Female contact	Drawing	Dimensions in mm
Crimp contacts Han® P				
silver plated				
for 0.5 mm²	09 35 000 6103	09 35 000 6203		
for 0.75 mm²	09 35 000 6104	09 35 000 6204		
for 1.0 mm²	09 35 000 6105	09 35 000 6205		
for 1.5 mm²	09 35 000 6106	09 35 000 6206		
for 2.5 mm²	09 35 000 6107	09 35 000 6207		

Wire gauge		Ø	Stripping length
for 0.5 mm²	AWG 20	1.15 mm	6 mm
for 0.75 mm²	AWG 18	1.30 mm	6 mm
for 1.0 mm²	AWG 18	1.45 mm	6 mm
for 1.5 mm²	AWG 16	1.75 mm	6 mm
for 2.5 mm²	AWG 14	2.25 mm	6 mm

Han® PushPull Power 4/0

available Q2 / 2012

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

Features

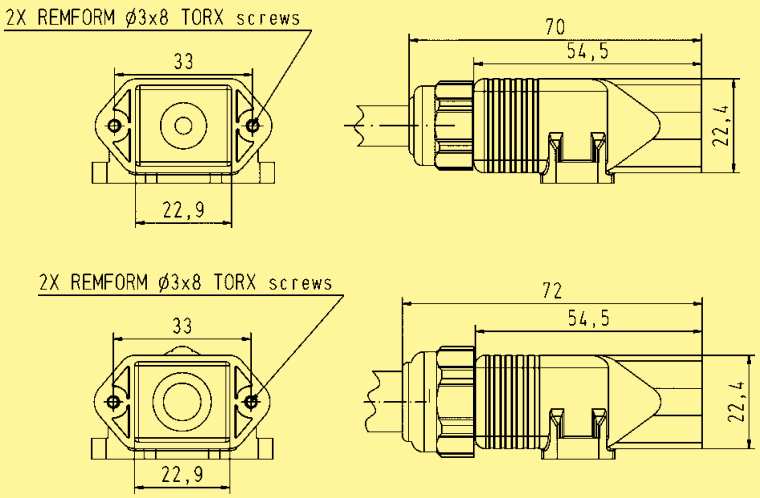
- HARTING PushPull technology
- Ideal for prototyping
- Can be combined with panel feed-throughs for power, data and signal

Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14
Degree of protection	IP 65 / IP 67
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	V 0

Identification	Part No.
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
for outer cable diameter 9 … 13 mm	09 35 002 0433
Suitable bulkhead housing, plastic	
for power, 5-poles, 690 V / 16 A, incl. housing bulkhead mounting and insert	
with crimp termination (Order Han® P crimp male contacts separately)	09 35 231 0331
with Han-Quick Lock® termination	
0.5 … 2.5 mm²	09 35 232 0331
0.25 … 1.5 mm²	09 35 234 0331
Coding element power	
10 pieces each for device and cable side	09 35 000 6190

Drawing — Dimensions in mm



* Order D-Sub crimp male contacts separately (see page 02.51)

Han® PushPull L Power 4/0 Plastic

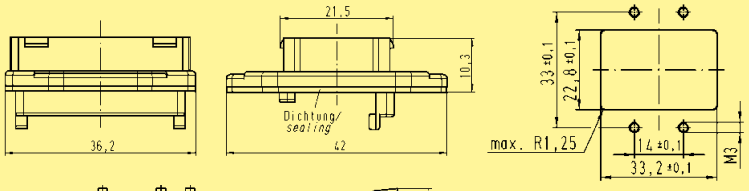
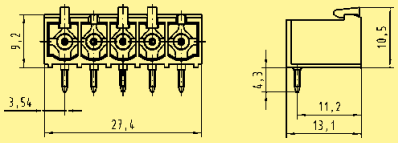
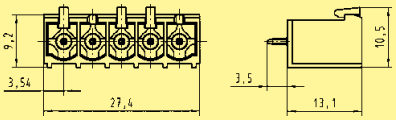
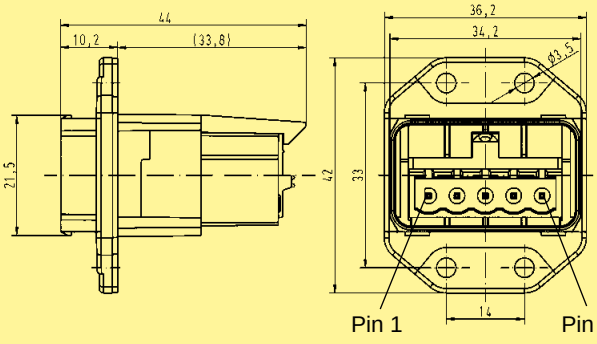
Housing bulkhead mounting and power females for device integration

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	IP 65 / IP 67
Number of contacts	4 + PE
Electrical data acc. to DIN EN 61 984	16 A 24 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	V 0

Identification	Part No.	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 IP 65 / IP 67	09 35 004 5401		

Han® PushPull L Power 4/0 Plastic

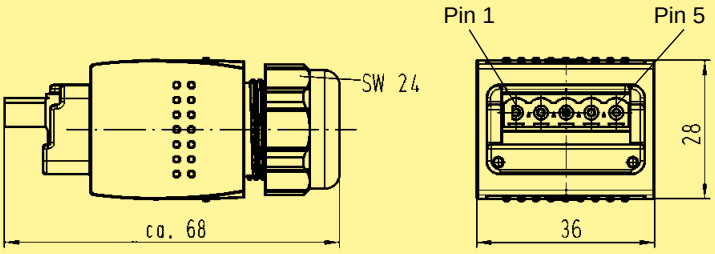
Connector, 5-poles, 24 V, 16 A

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	IP 65 / IP 67
Number of contacts	4 + PE
Electrical data	
acc. to DIN EN 61 984	16 A 24 V 4 kV 3
Termination	Spring force connection
Termination cross section	0.75 ... 2.5 mm²
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Cable diameter	9 – 13 mm
Housing material	Plastic, black
Flammability acc. to UL 94	V 0

Identification	Part No.	Drawing	Dimensions in mm
Connector set, plastic incl. housing and female insert with spring force connection	09 35 431 0421		

Han® PushPull L Power 4/0 Metal

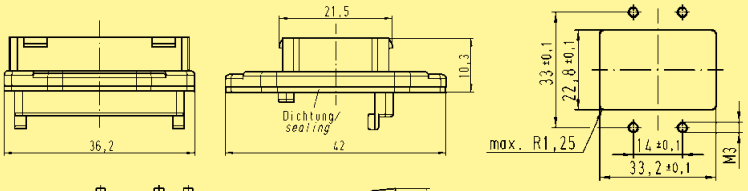
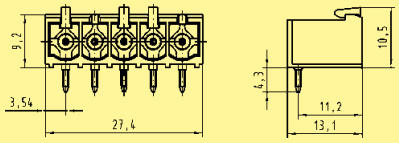
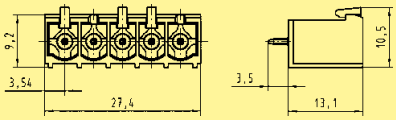
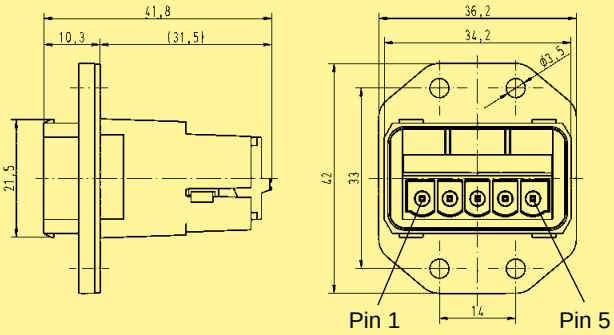
Housing bulkhead mounting and power females for device integration

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	IP 65 / IP 67
Number of contacts	4 + PE
Electrical data acc. to DIN EN 61 984	16 A 24 V 4 kV
Termination	Male insert with solder termination
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel plated Plastic, black (female)

Identification	Part No.	Drawing	Dimensions in mm
Components device side			
Housing bulkhead mounting metal	09 35 004 0301		
Male insert with solder termination angled	09 35 004 3003		
Male insert with solder termination straight	09 35 004 3004		
Panel feed-through, metal incl. housing and male insert with spring force connection	09 35 431 0311		
Protection cover IP 65 / IP 67	09 35 004 5401		

Han® PushPull L Power 4/0 Metal

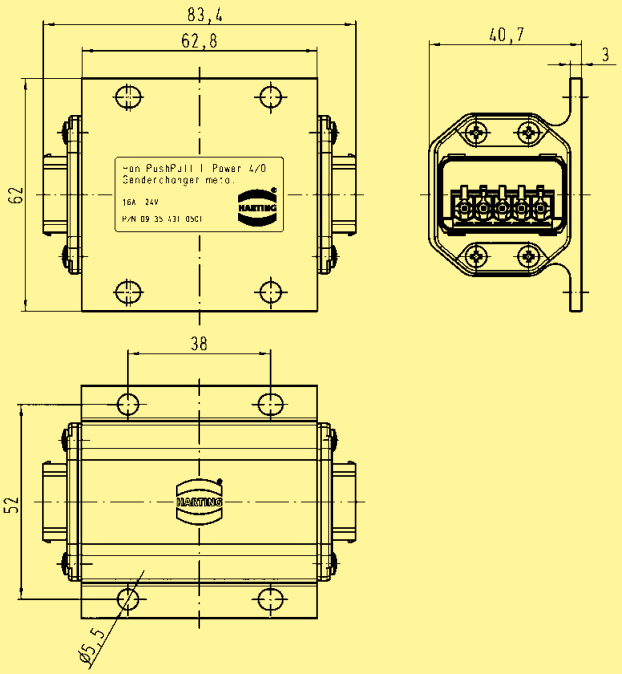
Han® PushPull L Power 4/0 Genderchanger Metal

Features

- High degree of protection IP 65 / IP 67
- 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

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	IP 65 / IP 67 (mated)
Mounting	Wall mountable with 4 screws (type M5)
Temperature range	-20 °C … +50 °C
Maximum permissible humidity	30 % ... 95 % (no condensation)

Identification	Part No.	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 Metal

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	IP 65 / IP 67
Number of contacts	4 + PE
Electrical data	
acc. to DIN EN 61 984	16 A 24 V 4 kV 3
Termination	Spring force connection
Termination cross section	0.75 ... 2.5 mm²
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Cable diameter	9 – 13 mm
Housing material	Zinc die-cast, nickel plated

Identification	Part No.	Drawing	Dimensions in mm
Connector set, metal incl. housing and female insert with spring force connection	09 35 431 0401