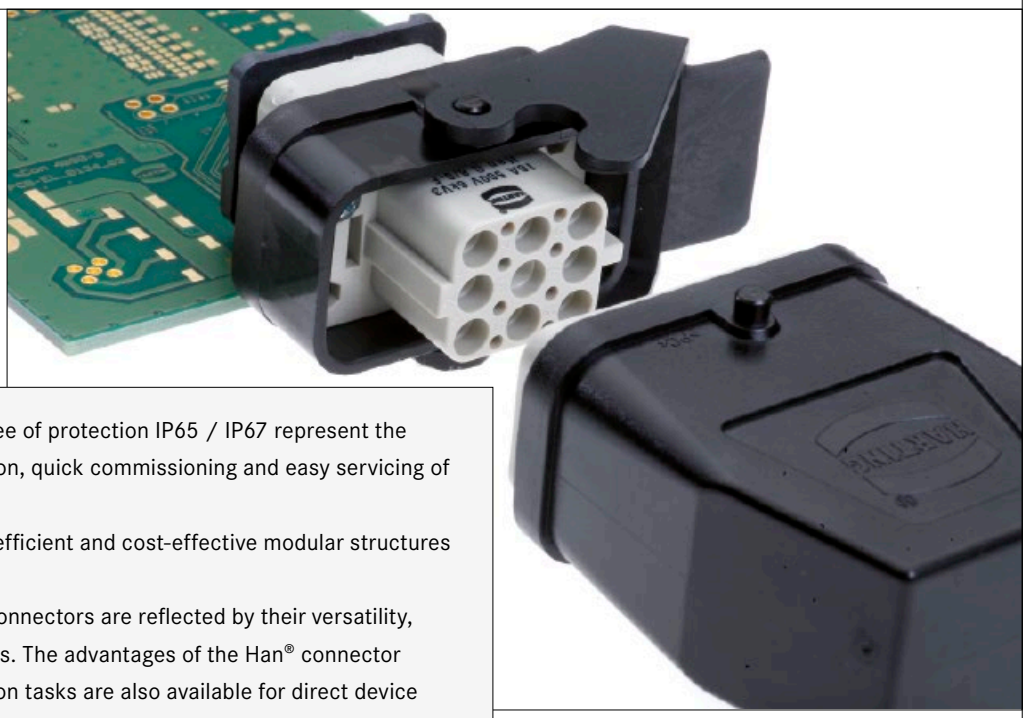
04. Industrial Connector Han®

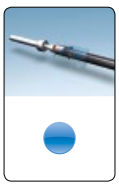
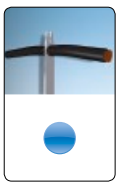
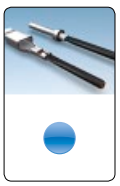


Han® industrial connectors with degree of protection IP65 / IP67 represent the worldwide standard for safe installation, quick commissioning and easy servicing of machines and plants.
The use of Han® connectors enables efficient and cost-effective modular structures of machines and plants.
The outstanding properties of Han® connectors are reflected by their versatility, application bandwidth and ruggedness. The advantages of the Han® connector family that users know from installation tasks are also available for direct device connections. The Han® connectors support the installation of automation systems in control cabinets and of IP65 / IP67 distributed devices using identical connectors.
Key user benefits: Investment and operational security.

Application profile:

CONNECTION TYPE		ENVIRONMENT		APPLICATION						
Board to Board	Cable/ Wire to Board	IP20	IP65 / IP67	Data	Signal	Power	high performance			
							Data transfer rate	Shielding	Number of contacts, contact density	Voltage, working current
	●		●	●	●	●		●	●	●

Cable termination

Han-Quick Lock®	*IDC*	*Crimp*
		
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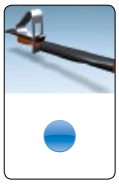
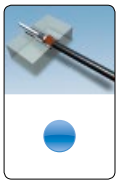
Screw	*Cage clamp*	*Axial screw*
		
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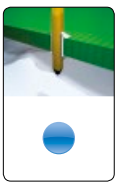
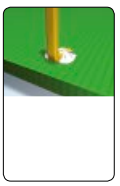
PCB termination

THT	*SMC*	*SMT*
		
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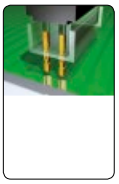
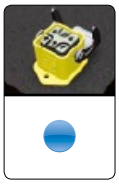
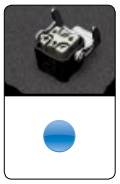
Press-in


Application standard

PROFINET PROFIBUS ECOFAST

Housing integration

separate housing	*integrated housing*
	
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Contents

04. Industrial Connector Han®

Han® connectors with degree of protection IP65 / IP67 are established as the worldwide standard for industrial connectors. This standard connector can also be used directly as appliance connector.
The rugged housings are equipped with secure interlock mechanisms that protect the contact inserts from external negative influences such as dust, dampness and mechanical stress. On the appliance side, the connector contacts are routed in the bulkhead mount module, soldered directly onto the PCB and are aligned precisely to the bulkhead frame. This results in appliance connections that are resistant to any environmental stress.
The Han® appliance connectors offer comprehensive solutions based on connector inserts for data, signal and power lines up to 32 A per contact. The Han® 3 A housing can be equipped for communication applications with copper-bound RJ45 modules, 4-pole (Cat. 5) and 8-pole (Cat. 6) and optical LC modules.
The power contact inserts are available for the Han® 3 A, Han® Compact and Han® B housing variants. The cables can be wired to the contact inserts by way of crimp, screw or cage clamp terminals, or using the patented Quick-Lock® quick connection technology for on-site assembly.
HARTING highlights its Han® 3 A appliance connector series with versatile hybrid contact inserts for wiring data and power lines using a single connector and cable. This functionality results in a reduction of insertion points and cabling by more than 50%.
Han® connectors with high degree of protection can be used for wiring appliances, terminal boxes and control cabinets.

Special series features

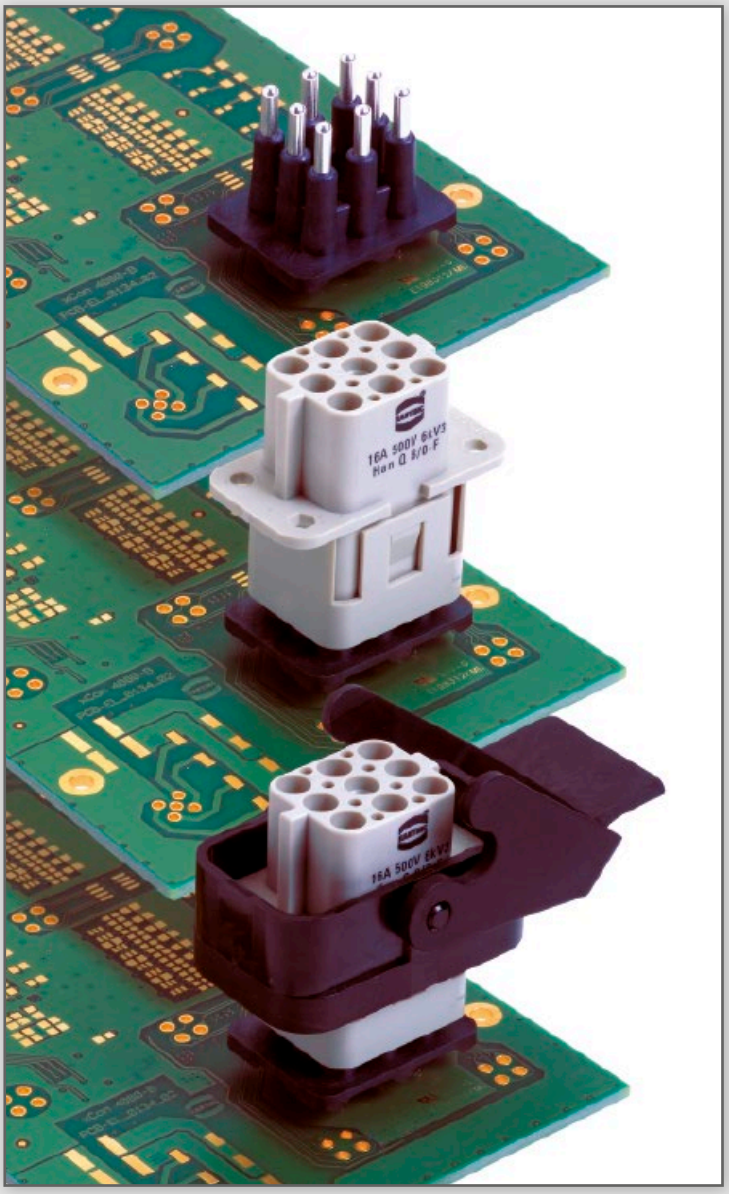
Han® APPLIANCE CONNECTORS:

The PCB-Adapter of HARTING can be used to convert Han® industrial connectors into fully-fledged PCB connectors.
The modular PCB adapters enable the implementation of various Han® contact inserts.

The PCB Adapter concept:

- The PCB adapter is processed as component in a standard soldering process and is a fixed part of the PCB.
- The contact insert of the Han® industrial connector is simply plugged in after the soldering process has been completed.
- The bulkhead mount housing with the bracket interlock is mounted to the appliance housing.

This modularity guarantees the availability of a wide range of contact inserts and connector housings for the assembly of a multitude of rugged IP65 / IP67 appliance connectors for data, signal and power lines.



SCALABLE HYBRID APPLIANCE CONNECTION USING Han® CONNECTORS:

The hybrid appliance connector series enable the cost-effective combination of Fieldbus/Ethernet communication and power supply lines in a single cable and connector.
The contact insert combination for communication and for the power supply to the appliance is soldered directly to the PCB. The bulkhead mount housing can be adapted directly to the housing shape, or be mounted as separate unit to the appliance housing.
HARTING offers cable solutions for smaller batches which can be used to connect the contact insert to the PCB.
Key user benefits: A tailored appliance connection is always available for small- and large-scale appliance series.

Han® 3 A RJ45



Han® 3 A RJ45 device side

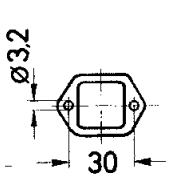
Advantages

- Simple mounting
- RJ45 plug-compatible
- Different versions cover all applications
- Coding (4 variants) possible

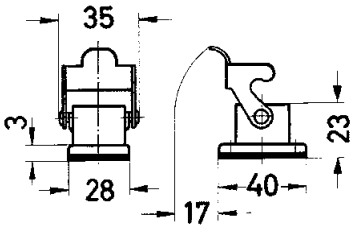
Technical characteristics

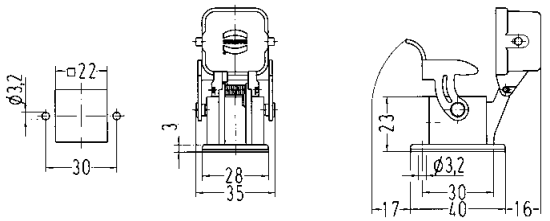
Number of ports Copper / termination	2 / 1x Han® 3 A RJ45 (IP65 / IP67) 1x RJ45 (IP20)
Transmission performance	Category 5 / Class D up to 100 MHz acc. to ISO/IEC 11801:2002, EN 50173-1
Transmission rate	10/100/1000 Mbit/s
Shielding	fully shielded, 360° shielding contact
Mounting	screw-on type on steel plate walls
Degree of protection	IP65 / IP67
Mating cycles	min. 500
Temperature range	-40 °C … +70 °C
Housing material Plastic version Metal version	 Polycarbonate, black, UL 94 V0 Zinc die-cast, powder coating, grey

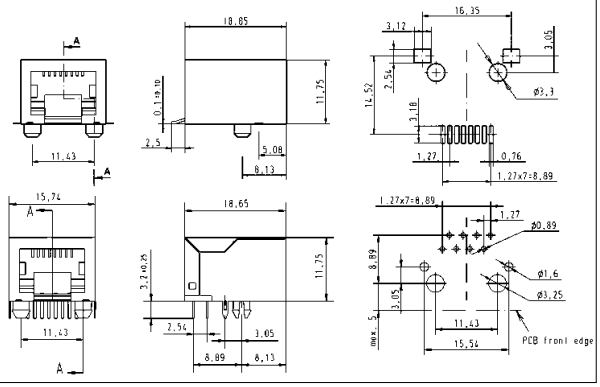
Identification	Part number	Drawing	Dimensions in mm
Housing bulkhead mounting			
			
Plastic version, black	09 20 003 0327		
Metal version Standard	09 20 003 0301		
Metal version M	09 37 003 0301		
			
with fixed cover and with seal			
Metal version Standard	09 20 003 0306		
Metal version M	09 37 003 0306		
Adapter			
for fixing of RJ45 jack			
with fixing clip	09 45 515 0020		
without fixing clip	09 45 515 0022		
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]		



Dimensions valid for Metal version Standard

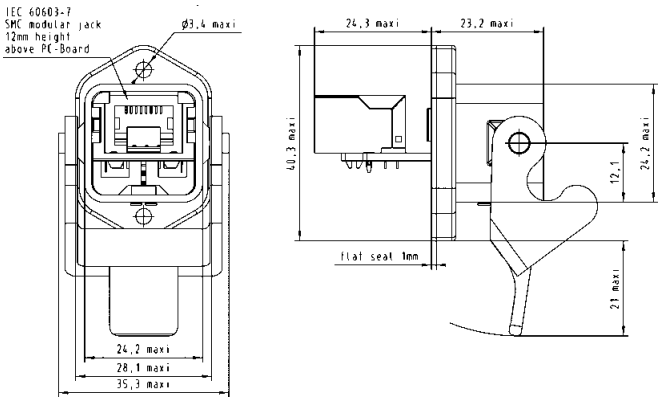
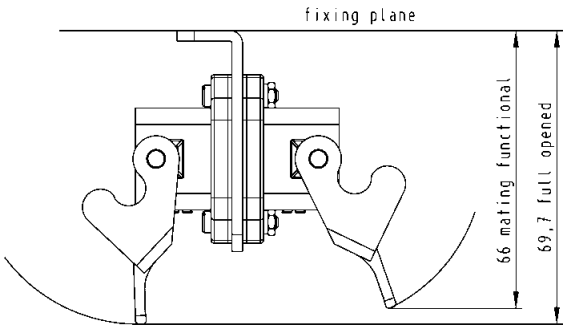
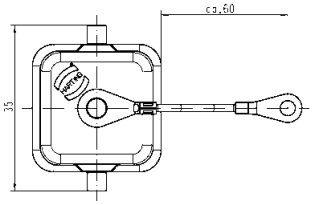






[1] Packaging: Blister à 120 pieces
[2] Packaging: Tape & Reel à 130 pieces

Han® 3 A RJ45-panel feed-throughs and couplings Cat. 5

Identification		Part number	Drawing	Dimensions in mm
Panel feed-through set, 8-poles				
Plastic version, black	straight	09 45 225 1100		
	angled	09 45 225 1108		
Metal version Standard, grey	straight	09 45 215 1100		
	straight, inner vertical jack	09 45 215 1101		
	angled	09 45 215 1108		
Metal version Standard, grey with self-closing protective cap	straight	09 45 215 1103		
Metal version M, black	straight	09 45 215 1102		
	angled	09 45 215 1109		
Coding pin set for 4 different codings		09 45 820 0000		
				Dimensions valid for plastic version, straight
Double coupling, 8-poles incl. installation frame metal				
Plastic version, black		09 45 225 1107		
Metal version Standard, grey		09 45 215 1107		
Metal version M, black		09 45 215 1110		
Coding pin set for 4 different codings		09 45 820 0000		
				Dimensions valid for plastic version
Protection cover for panel feed-through IP65 / IP67 with seal				
Plastic version, black		09 20 003 5449		
Metal version Standard, grey		09 20 003 5425		
Metal version M, black		09 37 003 5405		
				Dimensions valid for plastic version

Han® 3 A RJ45

Han® 3 A RJ45 10G Cat. 6 – panel feed-throughs

Advantages

- Compact and robust design
- 360° shielding
- Easy mounting
- Transmission category 6, performance class E_A, suitable for 1/10 Gigabit Ethernet
- RJ45 mating compatible
- Coding (4 variants) possible

Technical characteristics

Number of ports	2 / 1x Han® 3 A RJ45 (IP65 / IP67) 1x RJ45 (IP20)
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	IP65 / IP67
Mating cycles	min. 500
Temperature range	-40 °C ... + 70 °C
Housing material	
Plastic version	Polycarbonate, black, UL 94 V0
Metal version	Zinc die-cast, powder-coated

Identification	Part number	Drawing	Dimensions in mm
Panel feed-through set, 8-poles			
Plastic version, black	09 45 225 1560		
Metal version Standard, grey	09 45 215 1560		
Metal version M, black	09 45 215 1561		
Metal version Standard, grey, with self-closing protective cap	09 45 215 1562		
Han® 3 A RJ45 10G insert Cat. 6 (for Han® 3 A housings)	09 45 200 1560		
Han® 3 A RJ45 HIFF adapter to mount HIFF inserts (e.g. HARTING RJ Industrial® 10G RJ45 bulkhead or Ha-VIS preLink® RJ45) in Han® 3 A housings	09 45 515 0024		

Han® 3 A RJ45

Han® 3 A connector RJ45, 4-poles, Cat. 5

Advantages

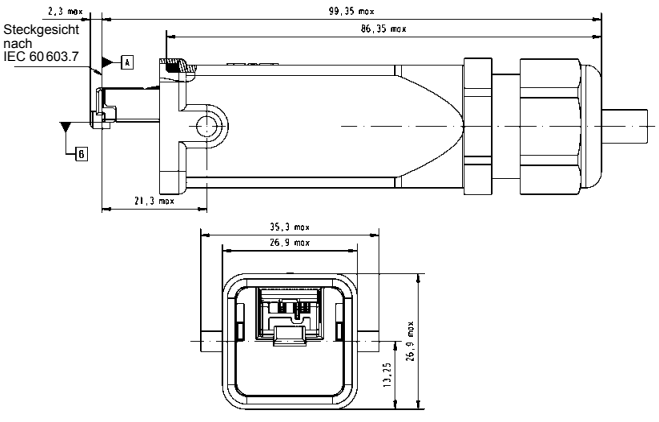
- RJ45 Ethernet-Data connector suitable for industry
- Tool-less field-assembly with *HARAX*® rapid termination in IDC technology
- Category of transmission Cat. 5
- Compact design and very robust housing
- Suitable for termination of solid and stranded cables
- Up to 10 x reconductable
- PROFINET compatible
- Min. 500 mating cycles

Technical characteristics

Connector type	Han® 3 A Connector RJ45 acc. to IEC 61076-3-106 variant 5
Number of contacts	4
Transmission performance	Category 5 / Class D up to 100 MHz acc. to ISO/IEC 11801:2002, EN 50173-1
Transmission rate	10/100 Mbit/s
Shielding	fully shielded, 360° shielding contact
Cable termination	tool-less with IDC contacts
Conductor cross section	
stranded	AWG 24/7 - AWG 22/7
solid	AWG 23/1 - AWG 22/1
Conductor diameter	max. 1.6 mm
Cable outer diameter	6.5 mm – 9.5 mm
Degree of protection	IP65 / IP67
Temperature range	-40 °C … +70 °C
Housing material	
Plastic version	Polycarbonate, UL 94 V0, black
Metal versions	
Standard	Zinc die-cast, powder coating grey
M-version	Zinc die-cast, powder coating black

Identification		Part number
Han® 3 A connector set RJ45, 4-poles incl. housing, cable gland and instruction manual		
Plastic version, black	straight	09 45 125 1100
	angled	09 45 125 1104
Metal version Standard, grey	straight	09 45 115 1100
	angled	09 45 115 1104
Metal version M, black	straight	09 45 115 1102
	angled	09 45 115 1106
Coding pin set		09 45 820 0000

Drawing — Dimensions in mm



Dimensions valid for plastic version, straight

Assembled system cables see catalogue “Intelligent Network Solutions”

Han® 3 A RJ45

Han® 3 A connector set RJ45, 8-poles, Cat. 6_A

Advantages

- RJ45 Ethernet-Data connector suitable for industry
- Field-assembly with mounting tool
- Category of transmission Cat. 6_A
- Compact design and very robust housing
- Min. 500 mating cycles

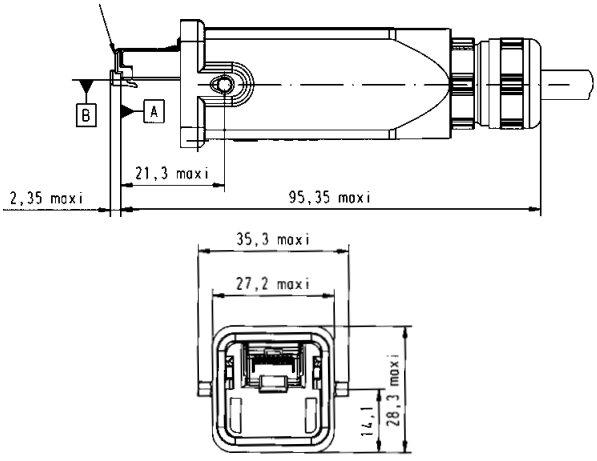
Technical characteristics

Connector type	Han® 3 A Connector RJ45
Number of contacts	8
Transmission performance	Category 6_A / Class E_A up to 500 MHz 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
Cable termination	with piercing contacts
Conductor cross section	AWG 28/7 - AWG 24/7, stranded
Conductor diameter	max. 1.05 mm
Cable outer diameter	6.5 mm – 9.5 mm
Degree of protection	IP65 / IP67
Temperature range	-40 °C … +70 °C
Housing material	
Plastic version	Polycarbonate, UL 94 V0, black
Metal versions	
Standard	Zinc die-cast, powder coating grey
M-version	Zinc die-cast, powder coating black

Identification	Part number
Han® 3 A connector set RJ45, 8-poles, Cat. 6 incl. housing, cable gland and instruction manual	
Plastic version, black	09 45 125 1520
Metal version Standard, grey	09 45 115 1520
Metal version M, black	09 45 115 1522
Han® 3 A RJ45 connector insert can be combined with Han® 3 A housing	09 45 100 1520
Coding pin set	09 45 820 0000
suitable assembly tool	09 45 800 0520

Drawing — Dimensions in mm

Mating face acc. to IEC 60 603-7



Dimensions valid for metal version Standard

Han® 3 A RJ45

Han® 3 A RJ45 10G connector, 8-poles, Cat. 6

Advantages

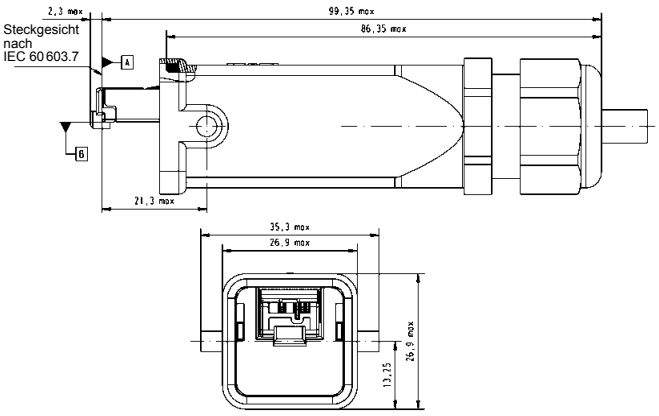
- RJ45 Ethernet-Data connector suitable for industry
- Tool-less field-assembly with *HARAX*® rapid termination in IDC technology
- Category of transmission Cat. 6
- Compact design and very robust housing
- Suitable for termination of solid and stranded cables
- PROFINET compatible
- Min. 500 mating cycles

Technical characteristics

Connector type	Han® 3 A Connector RJ45 acc. to IEC 61076-3-106 variant 5
Number of contacts	8
Transmission performance	Category 6 / Class E_A up to 500 MHz acc. to ISO/IEC 11801:2002, EN 50173-1
Transmission rate	10/100 Mbit/s and 1/10 Gbit/s
Shielding	fully shielded, 360° shielding contact
Cable termination	tool-less with IDC contacts
Conductor cross section	
stranded	AWG 27/7 - AWG 22/7
solid	AWG 24/1 - AWG 22/1
Conductor diameter	max. 1.6 mm
Cable outer diameter	6.5 mm – 9.5 mm
Degree of protection	IP65 / IP67
Temperature range	-40 °C … +70 °C
Housing material	
Plastic version	Polycarbonate, UL 94 V0, black
Metal versions	
Standard	Zinc die-cast, powder coating grey

Identification		Part number
Han® 3 A RJ45 connector, 8-poles incl. housing, cable gland and instruction manual		
Plastic version, black	straight	09 45 125 1560
Metal version Standard, grey	straight	09 45 115 1560
Han® 3 A RJ45 connector insert can be combined with Han® 3 A housing	straight	09 45 100 1560
Coding pin set		09 45 820 0000

Drawing — Dimensions in mm



Dimensions valid for plastic version, straight

Assembled system cables see catalogue “Intelligent Network Solutions”

Han® 3 A 2 x LC duplex

Han® 3 A 2 x LC duplex

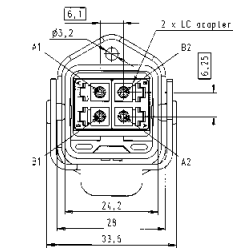
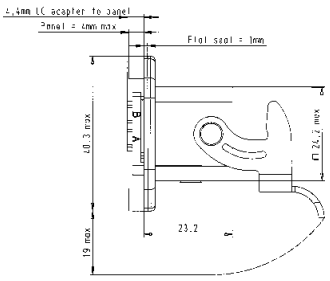
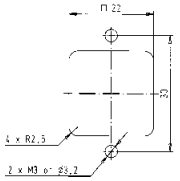
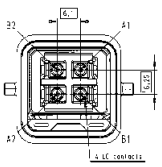
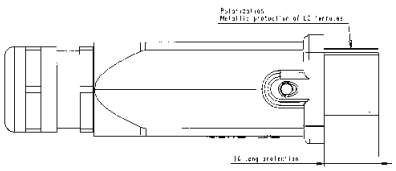
Han

Advantages

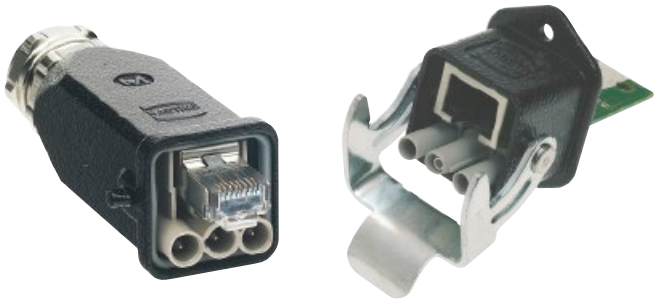
- Compact, space-saving Design
- Just one LWL modul for high mechanical load
- High packing density
- A & B parts identification according to TIA 568 standard

Technical characteristics

Degree of protection	IP65 / IP67
Temperature range	-40 °C … +70 °C
Housing material	Zinc die-cast powder coating black

Identification	Part number	Drawing	Dimensions in mm
Components device side			
Multimode GOF	09 57 467 0004 000		
Singlemode GOF	09 57 467 0005 000		
Connector			
Multimode GOF	09 57 407 0001 000		
Singlemode GOF	09 57 407 0002 000		

Han® 3 A RJ45 Hybrid



Han® 3 A RJ45 Hybrid

Advantages

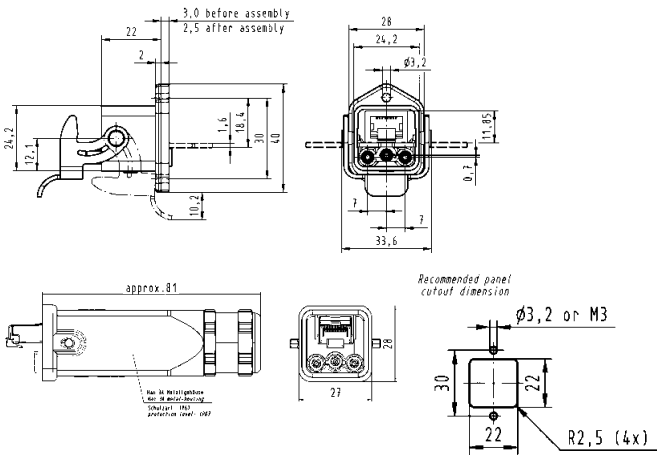
- RJ45 Ethernet-Data connector suitable for industry with Power contacts for hybrid applications
- Field-assembly with mounting tool
- Category of transmission Cat. 5
- Compact design and very robust housing
- Suitable for termination with solid and stranded cables
- Protection against direct contact on cable and device side according to EN 60529

Reference note:
For cat. 6 patch cords it is recommended to use 1 connector with a white cable manager and one with a blue cable manager, in order to optimise the crosstalk between different signal pairs.

Technical characteristics

Degree of protection	IP65 / IP67
Mating interface	RJ45, 8-poles acc. to IEC 60603-7 plus 3x power
Temperature range	-40 °C … +70 °C
Housing material	Zinc die-cast, powder coating black
Data	
Transmission performance	Category 5 / Class D up to 100 MHz acc. to ISO/IEC 11801:2002, EN 50173-1
Transmission rate	10/100/1000 Mbit/s
Shielding	fully shielded, 360° shielding contact
Cable diameter stranded	AWG 28/7 - AWG 24/7
Power	
Number of contacts	3 (AC: L1, PE, N / DC: V+, GND, V-)
Working voltage	300 V AC/DC
Working current	12 A @ 70 °C (see current carrying capacity Han D® contacts)
Cable diameter	2.5 mm²

Identification	Part number	Drawing	Dimensions in mm
Components device side			
incl. 3x Han D® female contacts			
AC version	09 57 368 0500 000		
DC version	09 57 368 0501 000		
Cable side			
Connector incl. 3x Han D® male contacts			
AC version	09 57 308 0500 000		
DC version	09 57 308 0501 000		
suitable assembly tool	09 45 800 0520		



Hybrid cable assembly

Identification	Part number	Drawing	Dimensions in mm
Hybrid cable, double ended, 4 x 2 x AWG 26/7 + 3 x 2.5 mm²		double ended	
Length: 1 m			
AC version	33 57 211 0010 001		
DC version	33 57 211 0010 002		
Length: 5 m			
AC version	33 57 211 0050 001		
DC version	33 57 211 0050 002		
Length: 10 m			
AC version	33 57 211 0100 001		
DC version	33 57 211 0100 002		
Length: 20 m			
AC version	33 57 211 0200 001		
DC version	33 57 211 0200 002		
Hybrid cable, single ended, 4 x 2 x AWG 26/7 + 3 x 2.5 mm²			
Length: 1 m			
AC version	33 57 111 0010 002	Protection level: IP65 / IP67	
DC version	33 57 111 0010 001		
Length: 5 m		Data part: Transmission properties in accordance with ISO/IEC 11801:2002: Class D	
AC version	33 57 111 0050 002		
DC version	33 57 111 0050 001		
Length: 10 m			
AC version	33 57 111 0100 002		
DC version	33 57 111 0100 001		
Length: 20 m			
AC version	33 57 111 0200 002		
DC version	33 57 111 0200 001		
Hybrid outdoor cable			
Length: 10 m	33 57 851 0100 001	PVC jacket	
Length: 20 m	33 57 851 0200 001	4 x 2 x AWG 26/7 + 3 x 2.5 mm²	
Length: 500 m	33 57 851 5000 001	Outer diameter: 12 mm	
		Min. bending radius: single: 5 x OD, repeated: 10 x OD	

a = length

Y
87654321
28
2(L1) PE 1(N)
27

single ended

a = length

Han® 3 A LC duplex Hybrid

Han® 3 A LC duplex Hybrid

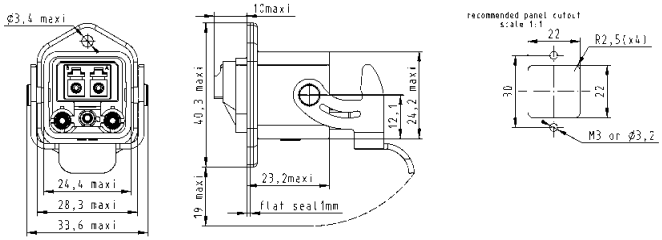
Advantages

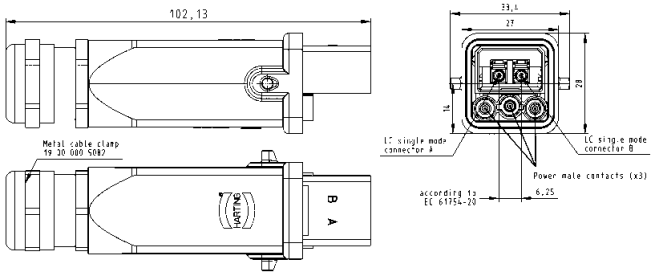
- Small form factor (compared to SC and ST®)
- Compact, space-saving Design
- Combined to only one LWL-module for high mechanical load
- High packing density
- A & B parts identification according to TIA 568 standard

Technical characteristics

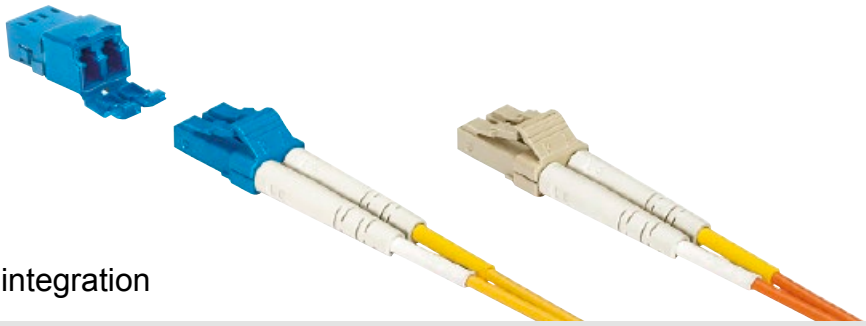
Degree of protection	IP65 / IP67
Temperature range	-40 °C … +70 °C
Data	
Mating module	LC duplex (2 fibres)
Cable diameter	6.0 … 9.0 mm
Power	
Number of contacts	3 (AC: L1, PE, N / DC: V+, GND, V-)
Working voltage	300 V AC/DC
Working current	12 A @ 70°C
Housing material	Aluminium die-cast, black

Identification		Part number	Drawing	Dimensions in mm
Components device side				
Power: 3x Han D® male contacts				
Data: Multimode GOF	AC	09 57 568 0500 000		
	DC	09 57 568 0510 000		
Data: Singlemode GOF	AC	09 57 568 0501 000		
	DC	09 57 568 0511 000		
Connector				
Power: 3x Han D® female contacts				
Data: Multimode GOF	AC	09 57 508 0500 000		
	DC	09 57 508 0510 000		
Data: Singlemode GOF	AC	09 57 508 0501 000		
	DC	09 57 508 0511 000		





Han® 3 A LC duplex



LC duplex IP20 adapter for device integration

Advantages

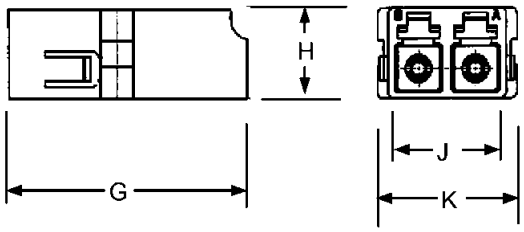
- Small form factor (compared to SC and ST®)
- Compact, space-saving Design
- High packing density
- A & B partsidentification according to TIA 568 standard
- Complement adapter for IP67 connector on device side

Technical characteristics

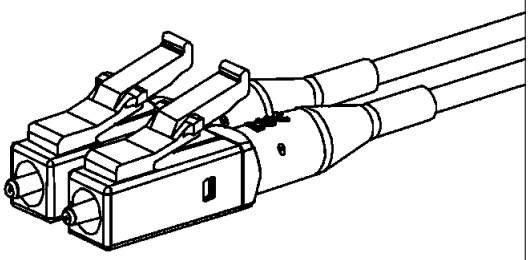
Degree of protection	IP20
Mating interface	LC duplex with two fibres
Temperature range	-40 °C … +70 °C

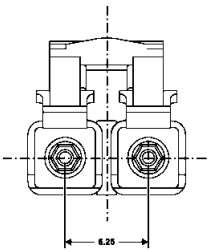
Identification	Part number
Device side Adapter	
Multimode GOF	09 57 400 0003 000
Singlemode GOF	09 57 400 0004 000
Connector LC duplex	
Multimode GOF	09 57 400 0001 000
Singlemode GOF	09 57 400 0002 000

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





Han® 3 A RJ45 Hybrid

Han® 3 A RJ45, Hybrid

General information

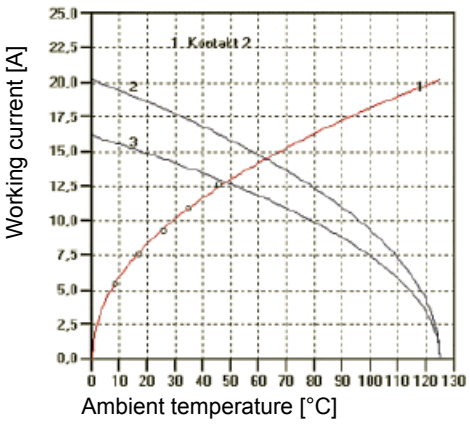
With the RJ Industrial Hybrid connector, HARTING has developed an interface solution that integrates the data lines and the power supply into one connector for hybrid Ethernet networks. The connector's geometry nevertheless maintains a clear separation between the data and the power contacts. This brings a significant reduction in the costs of installation and of field devices suitable for industrial application with hybrid cabling.

The panel feed-through is compatible with RJ45 connectors, which means that the standard patch cables for service and test purposes can be used. The data lines are connected at the rear via an RJ45 jack, while the power lines use a cage clamp terminal.

Optional the hybrid interface can be integrated in the device directly, thus preventing the use of rear side data lines.

The four power contacts of the hybrid module have also been designed with HARAX® rapid termination technology, allowing stranded cables of up to 1.5 mm² to be connected.

Current carrying capacity „Power contacts“



1 Temperature rise

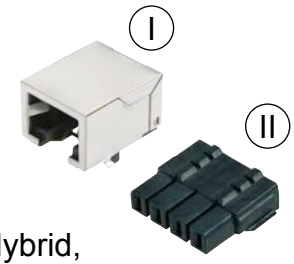
2 Derating

3 Derating curve at I_{max} * 0.8 (DIN IEC 512)

Technical characteristics

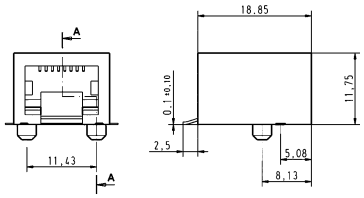
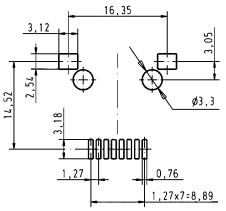
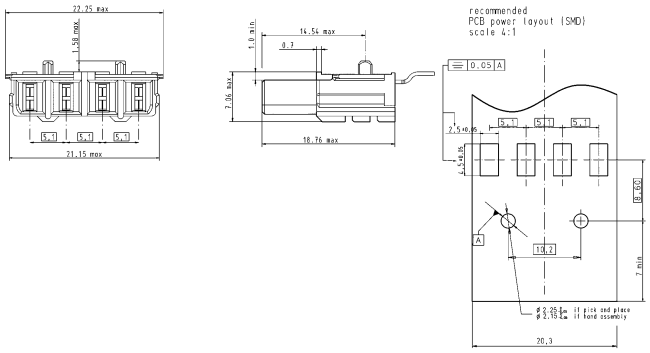
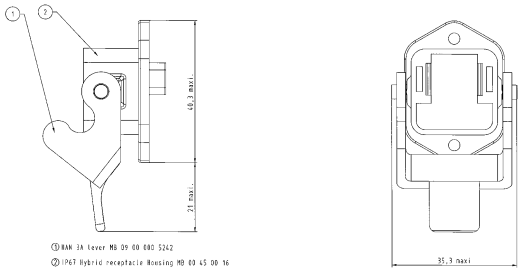
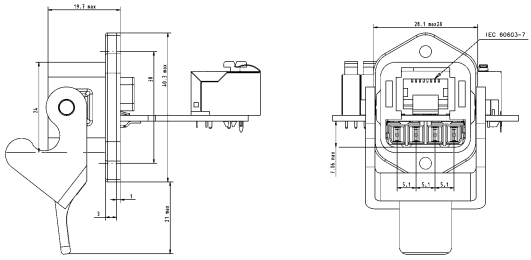
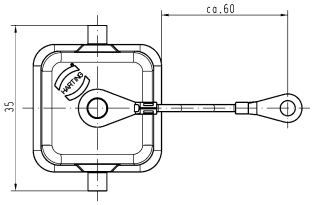
Connector	
Degree of protection	IP65 / IP67
Mating interface	RJ45, 4-poles acc. to IEC 60603-7 plus 4x power
Temperature range	-40 °C … +70 °C
Housing material	
Plastic version	UL 94 V0, black
Metal version	Zinc die-cast, grey
Mating cycles	min. 500
Mounting	field-assembly
Data Cat. 5, 4-poles	
Transmission performance	Category 5 / Class D up to 100 MHz acc. to ISO/IEC 11801:2002, prEN 50173-1
Transmission rate	10/100 Mbit/s
Cable diameter	
stranded	AWG 24/7 - AWG 22/7
solid	AWG 23/1 - AWG 22/1
Data Cat. 6, 8-poles	
Transmission performance	Category 6 / Class E_A up to 500 MHz acc. to ISO/IEC 11801:2002, prEN 50173-1
Transmission rate	10/100 Mbit/s / 1 Gbit/s
Cable diameter	
stranded / solid	AWG 27 - AWG 22
Both, data Cat. 5 and Cat. 6	
Shielding	fully shielded, 360° shielding contact
Cable outer diameter	10.0 mm – 11.0 mm
Power	
Number of contacts	4 for cable diameter 1.5 mm² stranded
Working voltage	48 V
Working current	16 A, see current carrying capacity
	UL approved (E102079)
Panel feed-through	
Mating interface extern:	RJ45 female acc. to IEC 60603-7 plus 4 x power
Mating interface intern:	RJ45 female acc. to IEC 60603-7 4 x power via cable cage clamp 1.5 mm²

Han® 3 A RJ45 Hybrid



Han® 3 A, Hybrid, components device side panel feed-throughs

Han

Identification	Part number	Drawing	Dimensions in mm
RJ45 female for direct device integration solder variant SMD 90° angled (I)	 09 45 551 1100[1)] 09 45 551 1110[2)]		pcb layout 
Power module with 4 contacts for direct device integration Reel with 100 pieces (II)	 09 45 525 0040 09 45 525 0041		
Housing bulkhead mounting **separate** incl. flat seal for direct device integration Plastic version, black Metal version Standard, grey Metal version M, black Metal version EMC, unpainted (III)	 09 45 525 0021 10 12 005 1004 09 45 515 0027 09 45 515 0028		Dimensions valid for plastic version
Panel feed-through set Plastic version, black, Cat. 5 Metal version Standard, grey, Cat. 5 Metal version M, black, Cat. 5 Metal version Standard, grey, Cat. 6 Metal version M, black, Cat. 6 (IV)	 09 45 225 1300 10 12 005 1002 09 45 215 1301 09 45 215 1760 09 45 215 1761		
Protection cover for panel feed-through IP65 / IP67 Plastic version, black Metal version Standard, grey Metal version M, black	 09 20 003 5449 09 20 003 5425 09 37 003 5405		

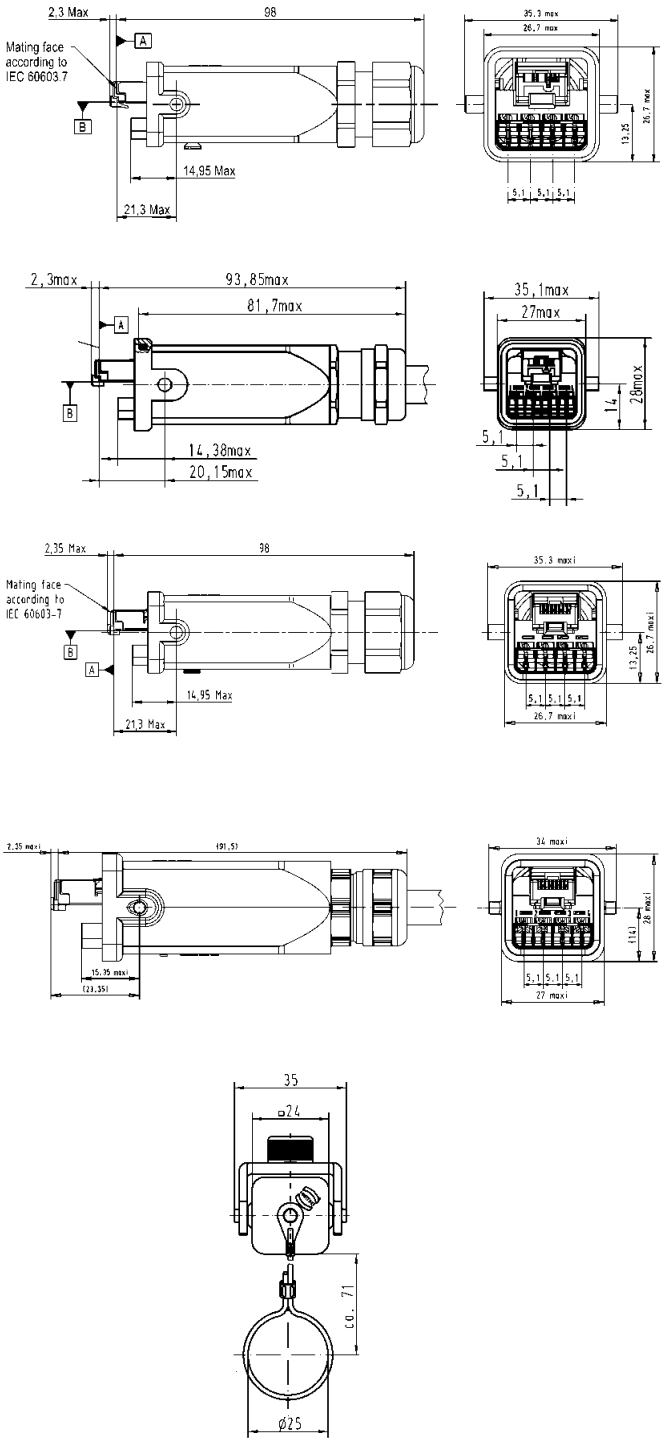
[1)] Packaging: Blister à 120 pieces
[2)] Packaging: Tape & Reel à 130 pieces

Technical characteristics and general informations see page 04.15

Han® 3 A RJ45, Hybrid

Identification	Part number
Connector, Cat. 5, 4 + 4-poles (IDC termination for RJ45 insert)	
Plastic version, black	09 45 125 1300
Metal version Standard, grey	10 12 005 2001
Connector, Cat. 6, 8 + 4-poles (IDC termination for RJ45 insert)	
Plastic version, black	09 45 125 1760
Metal version Standard, grey	09 45 115 1760
Connector insert for Han® 3 A housings	09 45 100 1760
Connector, Cat. 6, 8 + 4-poles (with piercing connection AWG 28/7 - 24/7)	
Plastic version, black	09 45 125 1720
Metal version Standard, grey	09 45 115 1720
Connector insert for Han® 3 A housings	09 45 100 1720
suitable assembly tool	09 45 800 0520
Protection cover for connector IP65 / IP67 without seal	
Plastic version, black	09 20 003 5442
Metal version Standard, grey	09 20 003 5422
Metal version M	09 37 003 5402

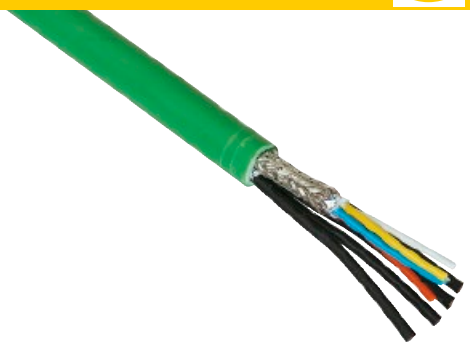
Drawing / Dimensions in mm



Dimensions valid for plastic version

Technical characteristics and general informations see page 04.15

Han® 3 A RJ45 Hybrid



PROFINET Type B cable, Hybrid
Industrial Cat. 5 Hybrid cable, 4-wire + 4x Power
to make up Hybrid system cables

Advantages

- Robust design for industrial environment
- PROFINET-conform
- Additional power supply
- Hybrid Cat. 5 cable, 4-wire + 4x Power

Technical characteristics

Cable construction	Star quad + 4 Power cables, double shielded
Core structure	4 x AWG 22/7 + 4 x 1.5 mm² (conductor 84 x 0.15 mm²)
Sheath material	FRNC
Cable outer diameter	9.7 mm
Transmission performance	Category 5 / Class D up to 100 MHz acc. to ISO/IEC 11801:2002, EN 50173-1
Transmission rate	10/100 Mbit/s
Shielding	Shielding foil and shielding braid
Temperature range	-20 °C … +70 °C
Standard lengths	10 m / 20 m / 50 m / 100 m
Colour	green

Identification	Part number	Drawing	Dimensions in mm
PROFINET Type B cable, Hybrid Industrial Cat. 5 Hybrid cable, 4-wire + 4x Power			
10 m ring	09 45 600 0310		
20 m ring	09 45 600 0330		
50 m ring	09 45 600 0340		
100 m ring	09 45 600 0300		
500 m reel	09 45 600 0320		

Assembled system cables see catalogue “Intelligent Network Solutions”

Han® 3 A RJ45 Hybrid

Industrial Cat. 6 Hybrid
Installation cable, 8-wire

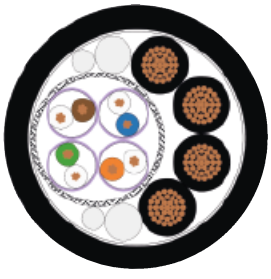
Advantages

- Robust design for industrial environment
- PROFINET-conform
- Additional power supply
- Hybrid Cat. 6 cable, 4-wire + 4x Power

Technical characteristics

Cable structure	4 x 2, Twisted Pair, shielded, PIMF 4 power cores
Core structure	4 x 2 x AWG 26/7, stranded 4x 84 * 0.15 mm (cord 1.5 mm²), stranded
Sheath material	PUR
Cable sheath diameter	10 ... 10.6 mm
Transmission performance	Category 6 / Class E up to 250 MHz according to ISO/IEC 11 801:2002, EN 50 173-1
Transmission rate	10/100/1000 Mbit/s
Shielding	Paired shielded with additional cable shield
Operating temperature range	–20 °C … +80 °C
Supply lengths	20 m / 50 m / 100 m other lengths on request
Colour	black

Identification	Part number	Drawing	Dimensions in mm
Industrial Cat. 6 Hybrid installation cable, 8-wire PUR			
20 m ring	09 45 600 0332		
50 m ring	09 45 600 0342		
100 m drum	09 45 600 0302		



Assembled system cables see catalogue “Intelligent Network Solutions”

Features

General Description

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

- Han-Brid® F.O. for plastic (POF) or for HCS®* optical fibre
- Han-Brid® Cu for shielded twisted pair.
- Han-Brid® Quintax 3 A for shielded 4 wire bus systems (2 pair STP)
- Han-Brid® RJ45 C for Ethernet application
- Han-Brid® USB / Firewire for fast data transmission

Han-Brid® inserts fit to the standard plastic as well as metal hoods and housings with seal of the Han® 3A series offering a degree of protection IP65 according to DIN EN 60 529. For harsher environments Han® 3 HPR hoods and housings with a degree of protection of IP68 can be used.

Power supply

- Han D® male and female with standard crimp contacts
- Rated current 10 A
- Rated voltage 50 V
- Wire gauge 0.14 - 2.5 mm²
- Approval

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

Data interfaces

Han-Brid® F.O.

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

Han-Brid® Cu

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

Bus Terminator

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

Han-Brid® Quintax 3 A

- Possibility to terminate shielded 4 wires conductors (2 pair STP)
- Suitable for all 4-wire bus systems
- Suitable for shielded cable conductor diameter 3 – 9.5 mm
- Transmission of shielding separately from the hood's ground
- Connections are carried out acc. to DIN EN 50 173, Cat. 5
- Temperature range -40 °C ... +70 °C

Han-Brid® RJ45 C

- Suitable for standard RJ45 Plug and Jack, shielded version
- Connections provided for conductors acc. to DIN EN 50 173, Cat. 5
- Termination from the device side is carried out via a PCB, two versions are possible: modular version or as part of the appliance PCB
- Assembly with standard tools
- Insert for 2 Han-D® male or female contacts offers the combination with electrical bus connector
- Rated current 10 A
- Rated voltage 24 V
- Wire gauge 0.14 - 2.5 mm²

Han-Brid® USB

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

Han-Brid® FireWire

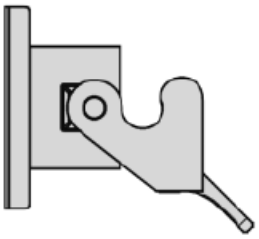
- Insert for all Han® 3 A hoods and housings
- Hood with glued sealing
- Simple and low-cost termination via insert of a patch cable
- Strain-relief via cable tie
- Compatible to IEEE 1394

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

Overview (Sample: Han-Brid® Cu)

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

Metal
09 20 003 0301

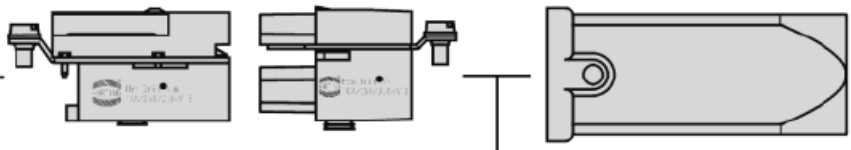


Device side
09 12 006 2611
09 12 006 2695
09 12 006 2694

Cable side
09 12 006 3111

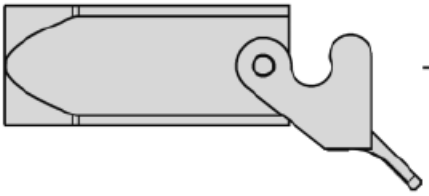
Thermoplastic
09 20 003 0423 (light grey)
09 20 003 0426 (black)
19 20 003 0423 (light grey)
19 20 003 0427 (black)

Metal
09 20 003 1443
19 20 003 1443



Thermoplastic
09 20 003 0720 (light grey)
09 20 003 0727 (black)
19 20 003 0720 (light grey)
19 20 003 0727 (black)

Metal
09 20 003 1750
19 20 003 1750

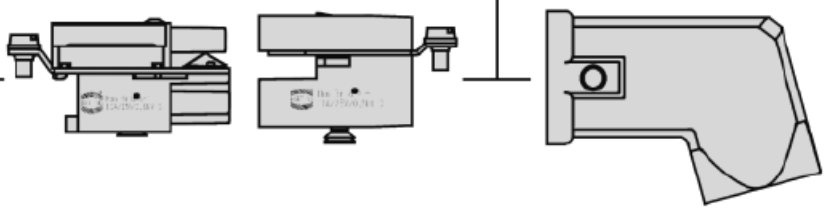


Device side
09 12 006 2701
09 12 006 2795
09 12 006 2794

Cable side
09 12 006 3001

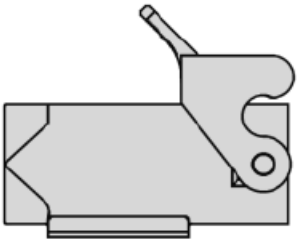
Thermoplastic
09 20 003 0623 (light grey)
09 20 003 0626 (black)
19 20 003 0623 (light grey)
19 20 003 0627 (black)

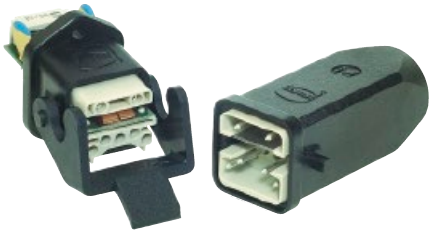
Metal
09 20 003 1643
19 20 003 1643



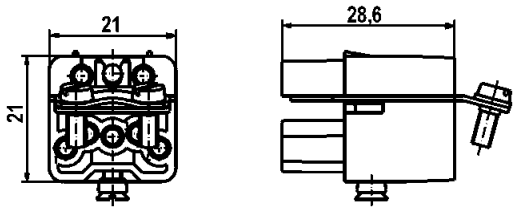
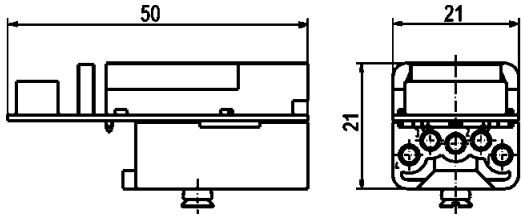
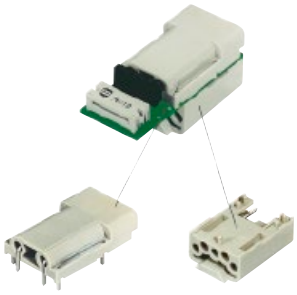
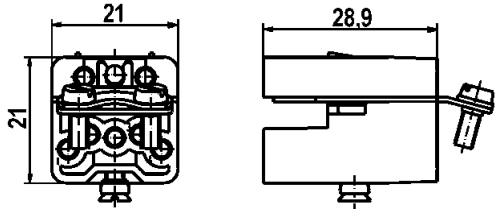
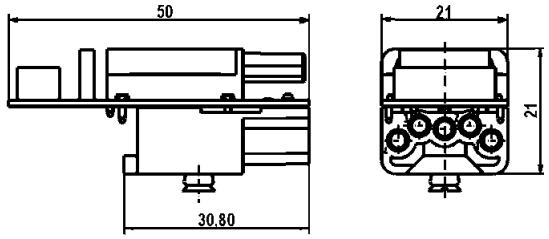
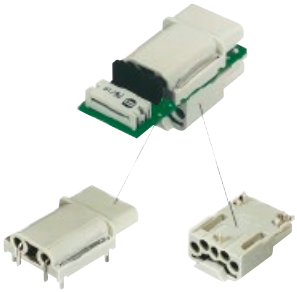
Thermoplastic
09 20 003 0220 (light grey)
09 20 003 0227 (light grey)
19 20 003 0220 (light grey)
19 20 003 0227 (black)

Metal
09 20 003 1250
19 20 003 1250

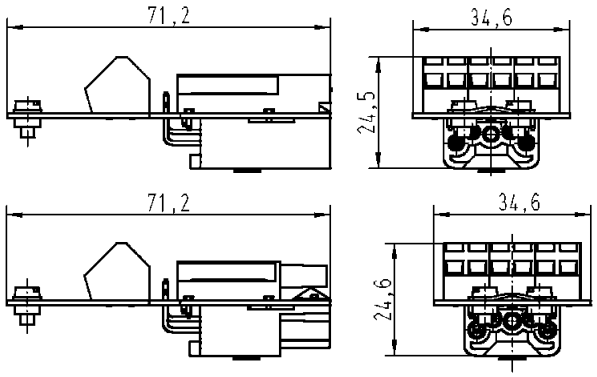
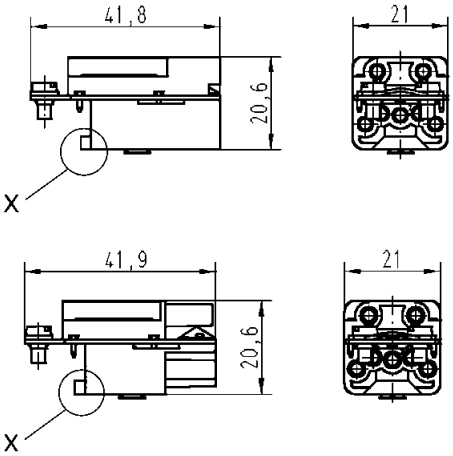
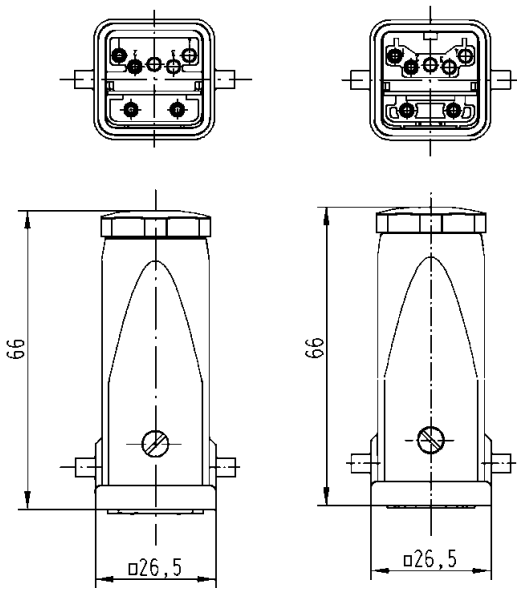




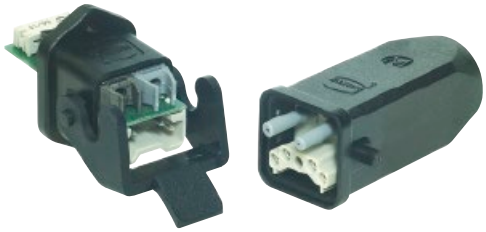
Hybrid field bus connector
for shielded twisted pair
+ 4 electrical contacts 10 A
+ option for PE

Identification	Part number Male insert (M)	Female insert (F)	Drawing	Dimensions in mm
Cable side Female insert 	**09 12 006 3111**		 View from termination side 	
Device side Male insert 	09 12 006 2611 Also available as single part loaded 09 12 002 2611 unloaded 09 12 002 3011	 Also available as single part unloaded 09 12 004 3011		
Cable side Male insert 	**09 12 006 3001**		 View from termination side 	
Device side Female insert 	09 12 006 2701 Also available as single part loaded 09 12 002 2701 unloaded 09 12 002 3101	 Also available as single part unloaded 09 12 004 3101		

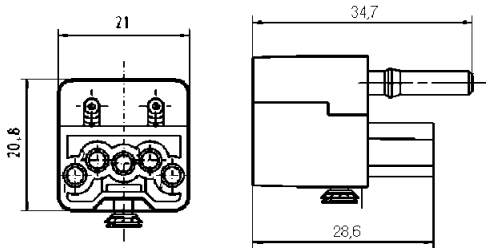
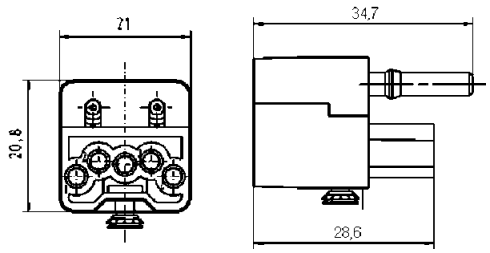
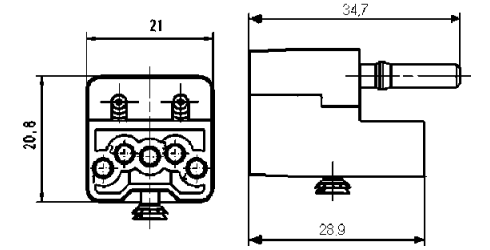
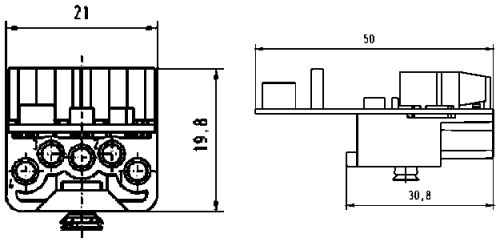
Stock items in bold type

Identification	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Panel feed-through with cage clamp 	**09 12 006 2695**	**09 12 006 2795**		
Coupling / Panel feed-through  X = Cutting off the fin allows the use in cable to cable housings	**09 12 006 2694**	**09 12 006 2794**		
Bus terminator Plastic hoods/housings  Hoods/Housings, metal 	**09 12 006 2691** **09 12 006 2692**	09 12 006 2791 09 12 006 2792		

Stock items in bold type



Hybrid field bus connector
with F.O. transmitter and receiver
+ 4 electrical contacts 10 A
+ option for PE

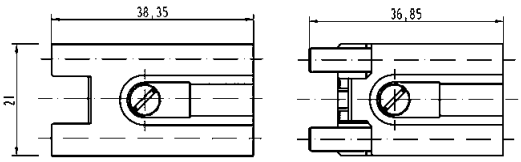
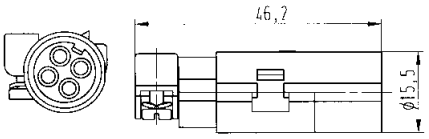
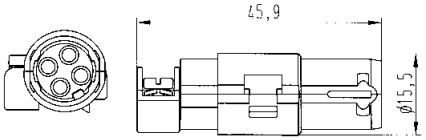
Identification	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Cable side F.O. (m) + Han D® (f)	Also available as single part for POF 09 12 004 2711 for POF crimpless 09 12 004 2713 for HCS®* fibre 09 12 004 2716	Also available as single part for POF 09 12 004 3111 for POF crimpless 09 12 004 3113 for HCS®* fibre 09 12 004 3116	 View from termination side	
Device side F.O. (f) + Han D® (m)	for POF 09 12 004 2611 for POF crimpless 09 12 004 2611 for HCS®* fibre 09 12 004 2611	for POF 09 12 004 3011 for POF crimpless 09 12 004 3011 for HCS®* fibre 09 12 004 3011	 View from termination side	
Cable side F.O. (m) + Han D® (m)	Also available as single part for POF 09 12 004 2601 for POF crimpless **09 12 004 2603** for HCS®* fibre 09 12 004 2606	Also available as single part for POF 09 12 004 3001 for POF crimpless 09 12 004 3003 for HCS®* fibre **09 12 004 3006**	 View from termination side	
Device side F.O. (f) + Han D® (f)	for POF 09 12 004 2701 for POF crimpless 09 12 004 2701 for HCS®* fibre 09 12 004 2701	for POF 09 12 004 3101 for POF crimpless 09 12 004 3101 for HCS®* fibre 09 12 004 3101	 View from termination side	

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

Stock items in bold type

Han-Brid® Quintax 3 A 50 V 10 A

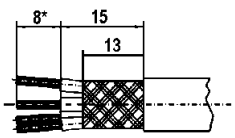
4 contacts + shielding
+ 2 power contacts
suitable in Han® 3 A metric
hoods and housings

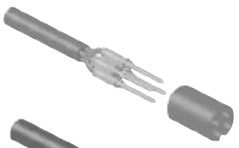
Identification	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Quintax insert 	**09 15 003 3001**	**09 15 003 3101**		
Quintax contacts Zinc alloy Order crimp contacts separately  Special clamp for cable diameter 3 - 6 and 6 - 9.5 mm included in delivery range	**09 15 004 3013**	**09 15 004 3113**	M  F 	

Assembly instructions

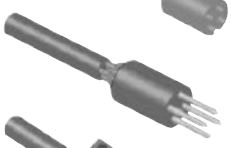
Quintax-Z-contact

1. Strip cable acc. to drawing 1 and fold the shielding over the cable.
2. Crimp Han D® contacts onto the wires.

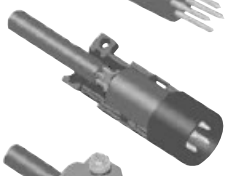
1. 

2. 

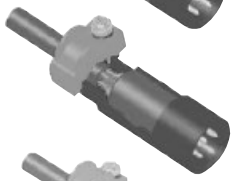
3. Insert Han D® contacts into corresponding cavaties of insulator until they are snapped in.

3. 

4. Fit the insert including the cable into the opened shielded bushing. The coding pin of the shielded bushing has to meet the groove of the insulator.

4. 

5. Clamp the tilt over the shielding onto the cable by means of the special clamp (small opening for cable diameter of 3 - 6 mm, large opening for cable diameter of 6 - 9.5 mm).

5. 

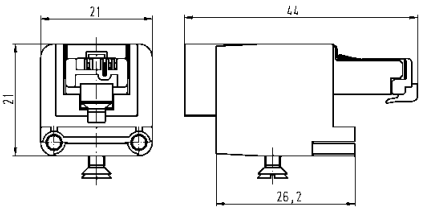
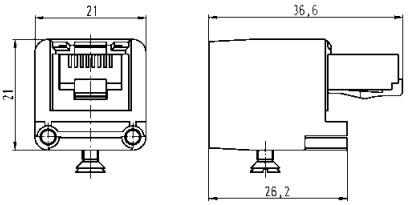
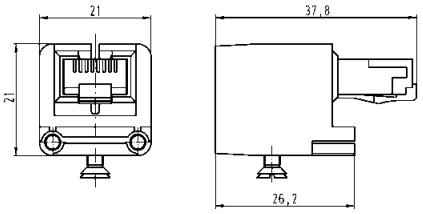
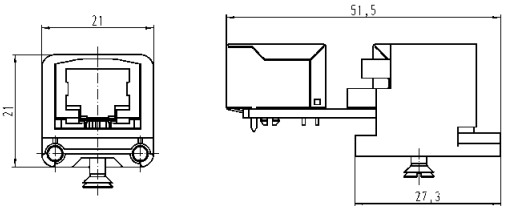
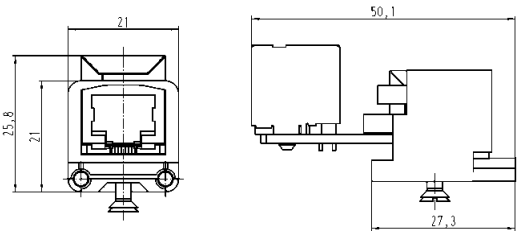
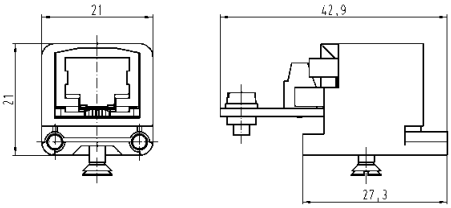
6. Check the wiring.

7. Close the shielded bushing with the cover and insert it into the corresponding cavity of the Quintax Module as usual.

6. 

Stock items in bold type

Hybrid network connector
+ 2 electrical contacts 10 A

Identification		Part number	Drawing	Dimensions in mm
Han-Brid® RJ45 C with RJ Industrial		**09 12 003 3011**		
Han-Brid® RJ45 C with Stewart RJ45		**09 12 003 3021**		
Han-Brid® RJ45 C with HIROSE RJ45		**09 12 003 3031**		
Panel feed-through straight		**09 12 003 2774**		
Panel feed-through angled		**09 12 003 2776**		
Panel feed-through with 4-pole terminal block		**09 12 003 2770**		

Stock items in bold type

Han-Brid® USB

Features

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

Technical characteristics

USB style A, 2.0 Standard

Specifications	DIN VDE 0110 DIN EN 61984
Number of contacts	4
Electrical data acc. to EN 61984	**1 A 50 V 0.8 kV 3**
Rated current	1 A
Rated voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Material	Polycarbonate
Insulation resistance	≥ 10^{10} Ω
Contact resistance	≥ 4 mΩ
Temperature range	-40 °C ... 85 °C
Flammability acc. to UL 94	V0
Mechanical working life - mating cycles	≥ 500

Han-Brid® FireWire

Features

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

Technical characteristics

Firewire IEEE 1394

Specifications	DIN VDE 0110 DIN EN 61984
Number of contacts	6
Electrical data acc. to EN 61984	**1 A 50 V 0.8 kV 3**
Rated current	1 A
Rated voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	3
Material	Polycarbonate
Insulation resistance	≥ 10^{10} Ω
Contact resistance	≥ 4 mΩ
Temperature range	-40 °C ... 85 °C
Flammability acc. to UL 94	V0
Mechanical working life - mating cycles	≥ 500

Han-Brid® USB / Han-Brid® FireWire 50 V 1 A

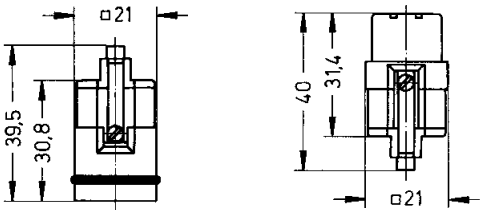
Identification	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Han-Brid® USB	**09 12 001 2794**	**09 12 001 3091**		
Han-Brid® FireWire	**09 12 001 2774**	**09 12 001 3071**		

Stock items in bold type

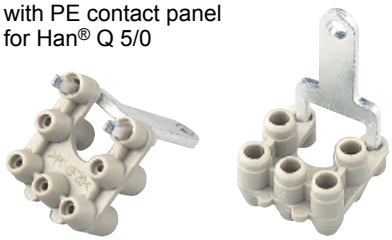
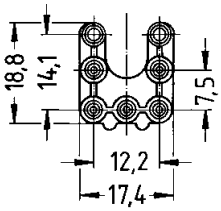
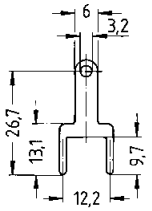
Han® Q 5/0 inserts with PCB-adapter

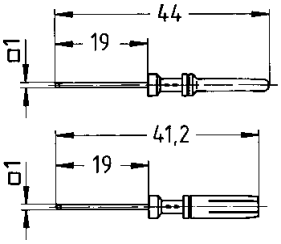
230/400 V 16 A

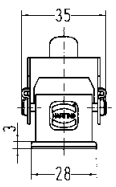
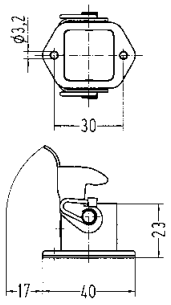
Device side

Insert	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Order contacts separately	**09 12 005 3001**	**09 12 005 3101**		

[1] Distance for contact max. 21 mm

PCB-adapter	Part number	Drawing	Dimensions in mm
with PE contact panel for Han® Q 5/0 	09 12 000 9905	 Adapter	 PE contact panel

Solder contacts	Part number Male contact	Part number Female contact	Drawing	Dimensions in mm
to connect the PCB-adapter 	09 33 000 6195	09 33 000 6295		

Housing bulkead mounting	Part number	Drawing	Dimensions in mm
	09 62 003 0304	Panel cut out 22 x 22 mm 	

Cable side

Further informations see HARTING catalogue "Industrial Connectors Han®, chapter Q"

Stock items in bold type

Han® Q 5/0 with PCB-adapter

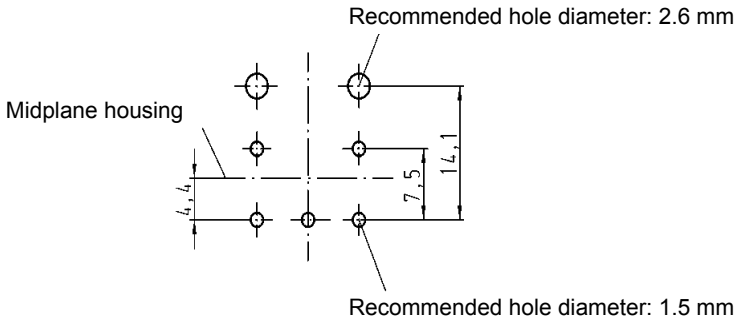
Features

- ❏ Robust design
- ❏ Suitable for EMC housings
- ❏ Low wiring costs
- ❏ Additional robust and secure PE-connection between housing and PCB

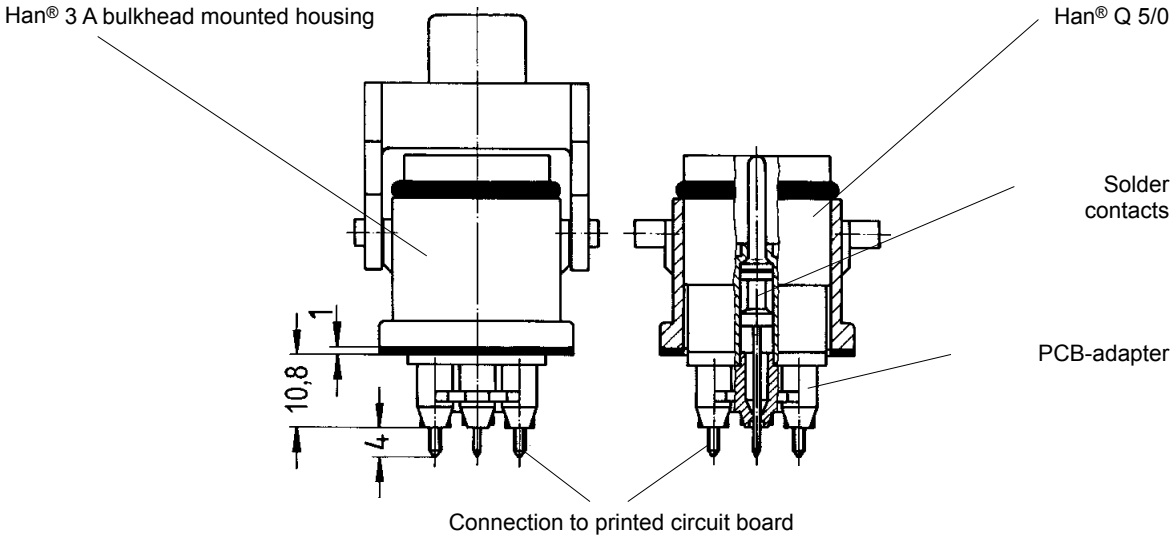
Technical characteristics

Approvals	
Inserts	
Number of contacts	5
Electrical data acc. to DIN EN 61984	**10 A 230/400 V 4 kV 3**
Working current	
Working voltage conductor – ground	
Working voltage conductor – conductor	
Rated impulse voltage	
Pollution degree	
- pollution degree 2 also	10 A 320/500 V 4 kV 2
Working voltage acc. to UL/CSA	400 V
Insulation resistance	≥ 10^{10} Ω
Material	Polycarbonate
Limiting temperatures	-40 °C … +125 °C
Flammability acc. to UL 94	V0
Mechanical working life	
- Mating cycles	≥ 500

Layout of printed circuit boards



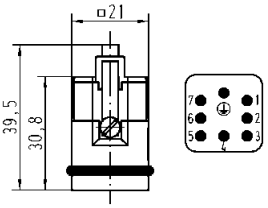
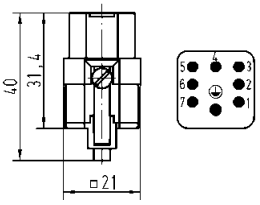
Assembly situation

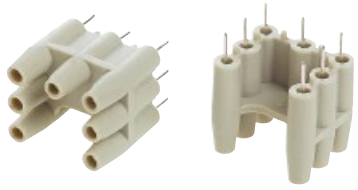
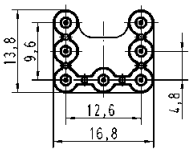
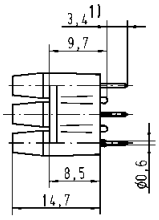


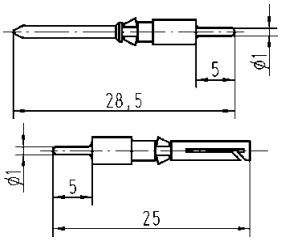
Han® Q 7/0 inserts with PCB-adapter

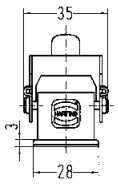
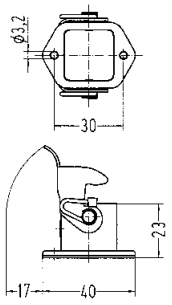
250 V 7.5 A

Device side

Insert	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Order contacts separately 	**09 12 007 3001**	**09 12 007 3101**		
Coding	**09 12 000 9901**	**09 12 000 9902**		

PCB-adapter	Part number	Drawing	Dimensions in mm
for PCB up to 2.4 mm 	09 12 000 9908		

Solder contacts	Part number Male contact	Part number Female contact	Drawing	Dimensions in mm
to connect the PCB-adapter 	09 15 000 6190	09 15 000 6290		

Housing bulkead mounting	Part number	Drawing	Dimensions in mm
	**09 20 003 0301**	Panel cut out 22 x 22 mm 	

Cable side

Further informations see HARTING catalogue "Industrial Connectors Han®, chapter Q"

Stock items in bold type

Han® Q 7/0 with PCB-adapter

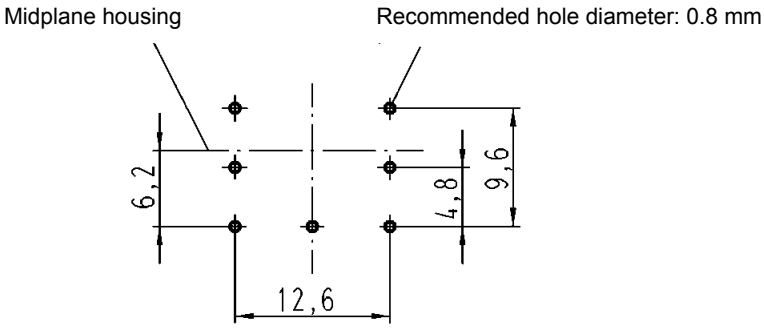
Features

- ❏ Robust design
- ❏ Suitable for standard and EMC housings
- ❏ Low cost wiring
- ❏ High contact density

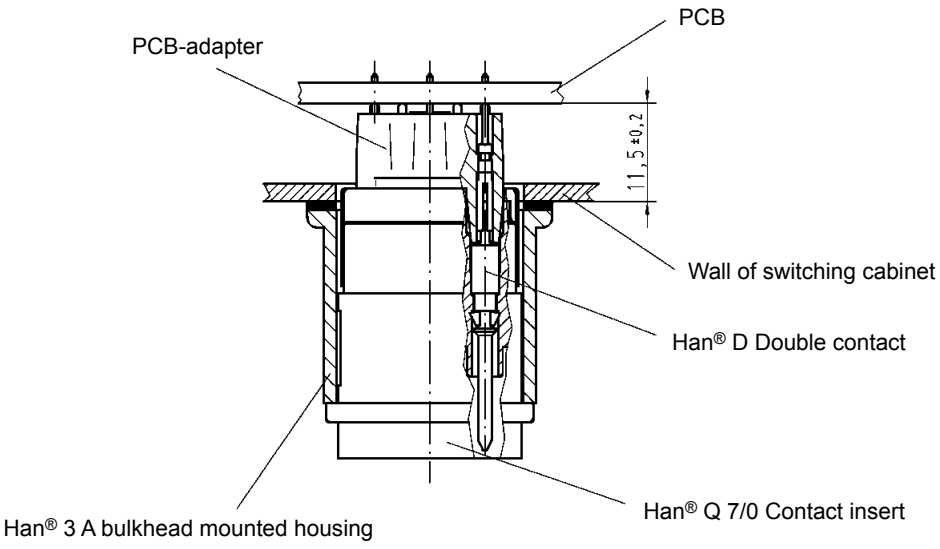
Technical characteristics

Approvals	
Inserts	
Number of contacts	7
Electrical data acc. to DIN EN 61984	**7.5 A 250 V 4 kV 3**
Working current	
Working voltage	
Rated impulse voltage	
Pollution degree	
Insulation resistance	≥ 10^{10} Ω
Material	Polycarbonate
Limiting temperatures	-40 °C … +125 °C
Flammability acc. to UL 94	V0
Mechanical working life - Mating cycles	≥ 500

Layout of printed circuit boards



Assembly situation



Hoods/Housings metal

Size 3 A

Identification		Part number	M	Drawing	Dimensions in mm
Hoods	Hood side-entry	**19 20 003 1640**	20		
	Hood top-entry	**19 20 003 1440**	20		
	Protection covers for hoods	**09 20 003 5422**[1] **09 20 003 5421**[2]			
Housings	Housings bulkhead mounting	**09 20 003 0301**		Panel cut out 22 x 22 mm	
	with fixed cover without sealing	**09 20 003 0305**[1]			
	with sealing	**09 20 003 0306**[2]			
		09 20 003 0801			
	Housing surface mounting 1 side-entry	**19 20 003 1250**	20	Panel cut out 22 x 22 mm	
	bottom closed	**19 20 003 1252**	20		
	Housing screw mounting	**19 20 003 1150**	20		
	Hood cable to cable	**19 20 003 1750**	20		
	Protection covers for housings	**09 20 003 5426**[1] **09 20 003 5425**[2]			
	for hoods cable to cable	09 20 003 5428[1] **09 20 003 5427**[2]			

[1] for mounted male insert
[2] for mounted female insert

Stock items in bold type

Identification		Part number	M	Drawing	Dimensions in mm
Hoods	**Hoods** side-entry	grey 19 20 003 0620 black 19 20 003 0627	20 20		
Hoods	**Hoods** top-entry	grey **19 20 003 0420** black 19 20 003 0427	20 20		
Hoods	**Protection covers** for hoods	09 20 003 5442[1] 09 20 003 5441[2]			
Housings	**Housings** bulkhead mounting	grey **09 20 003 0320** black **09 20 003 0327** grey **09 20 003 0820** black **09 20 003 0827**	– – – –	Panel cut out 22 x 22 mm	
Housings	**Housings** surface mounting 1 side-entry	grey **19 20 003 0220** black **19 20 003 0227**	20 20	Panel cut out 22 x 22 mm	
Housings	**Hoods** cable to cable	grey **19 20 003 0720** black 19 20 003 0727	20 20		
Housings	**Protection covers** for housings A B for hoods cable to cable C	09 20 003 5407[1][3] **09 20 003 5408**[2][3] **09 20 003 5445**[2] 09 20 003 5446[1] 09 20 003 5447[2][3] 09 20 003 5448[1] 09 20 003 5449[2]			

[1] for mounted male insert
[2] for mounted female or Han-Brid® insert
[3] for metal housings and cable to cable hoods also

Stock items in bold type

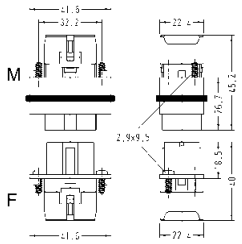
Han® Q 4/2 inserts with PCB-adapter

230/400 V 16 A

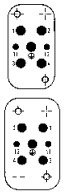
Han

Device side

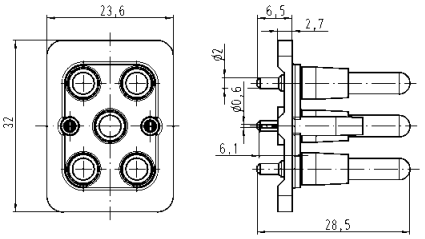
Insert	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Order contacts separately	**09 12 006 3041**	**09 12 006 3141**		



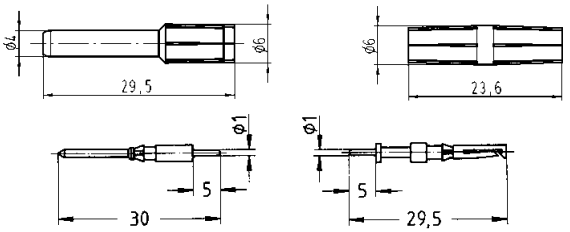
Contact arrangement
View from termination side



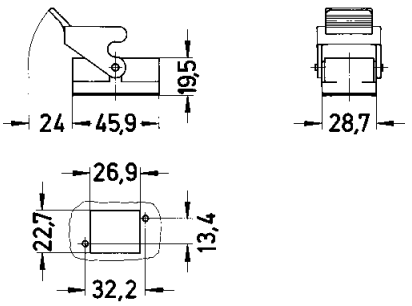
PCB-adapter	Part number	Drawing	Dimensions in mm
for PCBs up to 2.4 mm	09 12 006 9901		



Han® Q 4/2 double contacts	Part number Male contact	Part number Female contact	Drawing	Dimensions in mm
to connect the PCB adapter Power contact	09 32 000 6180	09 32 000 6280		
Signal contact	09 15 000 6191	09 15 000 6293		



Housing bulkead mounting	Part number	Drawing	Dimensions in mm
Plastic	09 12 008 0327	Panel cut out	



Cable side

Further informations see HARTING catalogue "Industrial Connectors Han®, chapter Q"

Stock items in bold type

Han® Q 4/2 with PCB-adapter

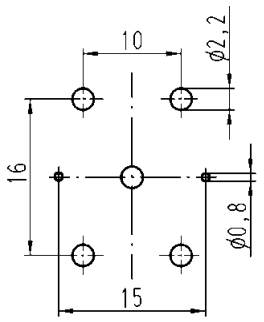
Features

- ❏ Robust Design
- ❏ Suitable for Han-Compact® hoods and housings
- ❏ Low wiring costs
- ❏ High contact density

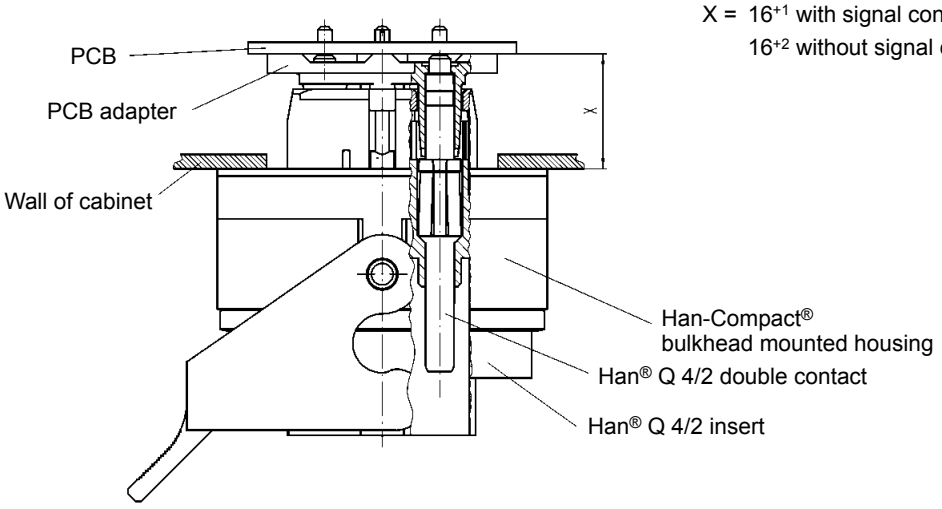
Technical characteristics

Approvals	,
Number of contacts	4/2 + PE
Electrical data acc. to DIN EN 61984	
Power area	30 A 400/690 V 6 kV 2
Rated current	30 A
Rated voltage	
conductor - ground	400 V
conductor - conductor	690 V
Rated impulse voltage	6 kV
Pollution degree	2
Signal area	7.5 A 250 V 4 kV 2
Rated current	7.5 A
Rated voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Insulation resistance	≥ 10^{10} Ω
Material	LCP
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V0
Mechanical working life	≥ 500 mating cycles

Layout of printed circuit boards



Assembly situation

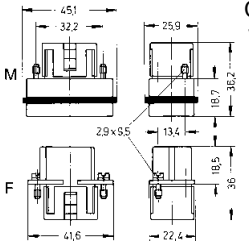
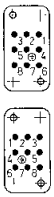


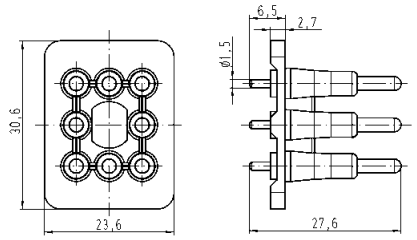
X = 16^{+1} with signal contact
16^{+2} without signal contact

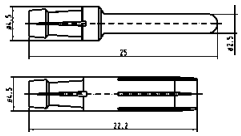
Han® Q 8/0 inserts with PCB-adapter

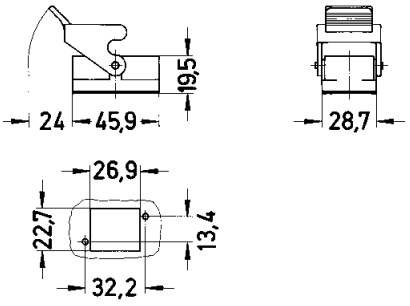
230/400 V 16 A

Device side

Insert	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Order contacts separately 	**09 12 008 3001**	**09 12 008 3101**	 Contact arrangement View from termination side 	

PCB-adapter	Part number	Drawing	Dimensions in mm
for PCBs up to 1.6 mm 	09 12 008 9901		

Han® Q 8/0 double contacts	Part number Male contact	Part number Female contact	Drawing	Dimensions in mm
to connect the PCB adapter 	09 33 000 6180	09 33 000 6280		

Housing bulkead mounting	Part number	Drawing	Dimensions in mm
Plastic 	09 12 008 0327	Panel cut out 	

Cable side

Further informations see HARTING catalogue "Industrial Connectors Han®, chapter Q"

Stock items in bold type

Han® Q 8/0 with PCB-adapter

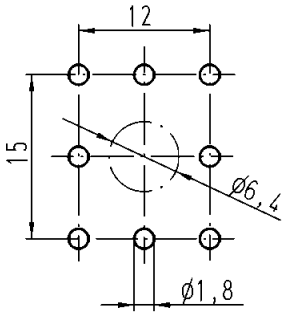
Features

- ❏ Robust Design
- ❏ Suitable for Han-Compact® hoods and housings
- ❏ Low wiring costs
- ❏ High contact density

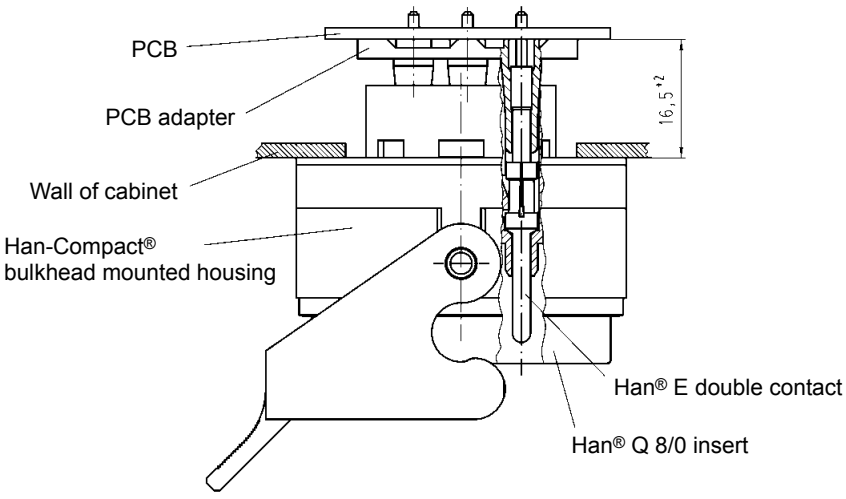
Technical characteristics

Approvals	,
Number of contacts	8
Electrical data acc. to DIN EN 61 984	16 A 230/400 V 4 kV 2
Rated current	16 A
Rated voltage	
conductor - ground	230 V
conductor - conductor	400 V
Rated impulse voltage	4 kV
Pollution degree	2
Insulation resistance	≥ 10^{10} Ω
Material	LCP
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V0
Mechanical working life	≥ 500 mating cycles

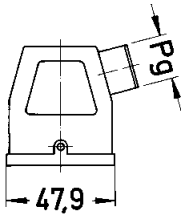
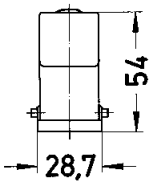
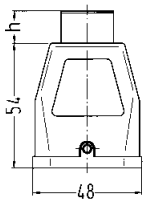
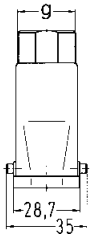
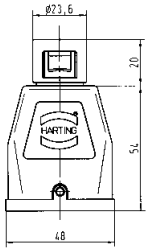
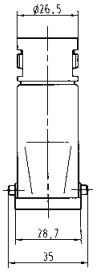
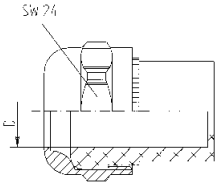
Layout of printed circuit boards



Assembly situation



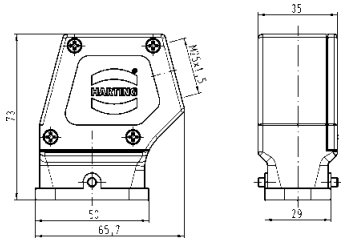
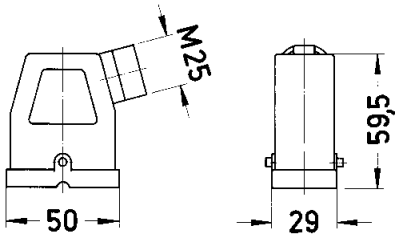
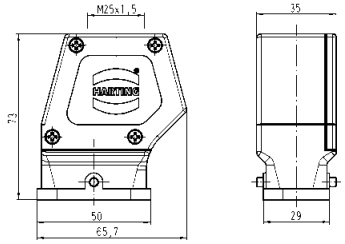
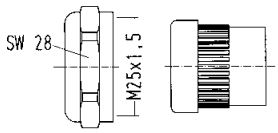
thermoplastic / metal

Identification		Part number		Drawing	Dimensions in mm
Hoods					
Hoods Thermoplastic side-entry Cable gland order separately		**09 12 008 0527**	Pg 16		
Hoods Thermoplastic top-entry Cable gland order separately		**19 12 008 0429** **09 12 008 0427** **09 12 008 0429**	M 25 Pg 16 Pg 21	 h / g: 14 / M 25x1.5; 13 / Pg 16; 13 / Pg 21	
Hoods Thermoplastic top-entry Cable gland order separately		09 12 008 0428	Pg 16		
Cable seal Thermoplastic for hoods Thrust bolt and insert		**09 00 000 5059** **19 12 000 5157** **19 12 000 5158** **09 00 000 5157** **09 00 000 5158**	Pg 16 M 25 M 25 Pg 21 Pg 21		

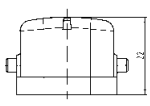
	cable	
	min.	max.
09 00 000 5059	11.5 mm	15.5 mm
19 12 000 5157	10.5 mm	14 mm
19 12 000 5158	14 mm	17 mm
09 00 000 5157	14 mm	18 mm
09 00 000 5158	17 mm	20.5 mm

Stock items in bold type

thermoplastic / metal

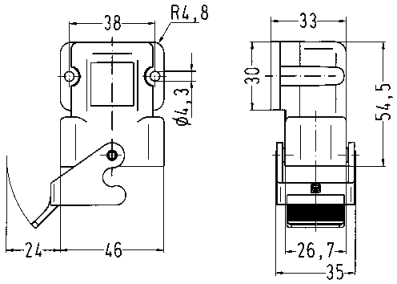
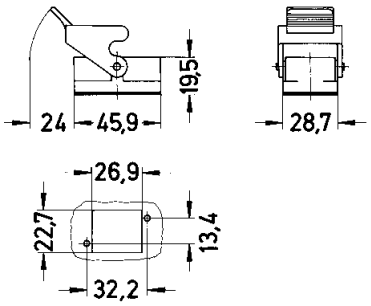
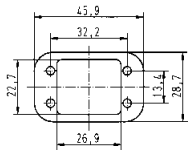
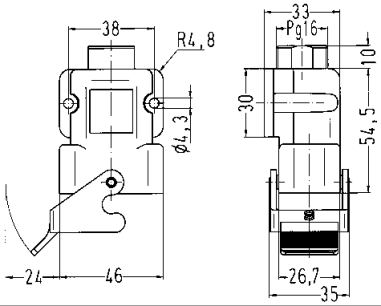
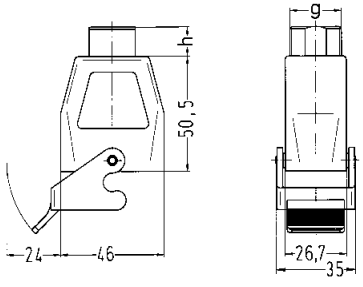
Identification		Part number		Drawing	Dimensions in mm
Hoods					
Hoods Metal side-entry Cable gland order separately		**19 12 008 0526**	M 25		
Hoods Metal side-entry Cable gland order separately		black chromated 19 12 008 0501 black powder coated 19 12 708 0501 matt nickel plated 19 12 008 0502	M 25 M 25 M 25		
Hoods Metal top-entry Cable gland order separately		**19 12 008 0426**	M 25		
Cable seal Metal for hoods Thrust bolt and insert		19 12 000 5057 **19 12 000 5058**	M 25 M 25		

	cable	
	min.	max.
19 12 000 5057	10.5 mm	14 mm
19 12 000 5058	14 mm	17 mm

Identification	Part number for male insert	Part number for female insert	Drawing	Dimensions in mm
Protection covers Thermoplastic for male insert 	without sealing 09 12 008 5407	with sealing 09 12 008 5408		

Stock items in bold type

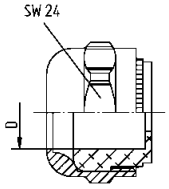
thermoplastic / metal

Identification		Part number		Drawing	Dimensions in mm
Housings					
Housings, bulkhead mounting Thermoplastic angled		**09 12 008 0902**	Pg 16		
Housings, bulkhead mounting Thermoplastic		**09 12 008 0327**	Pg 16		
Gasket for housings bulkhead mounting Han® Q 8/0		09 12 000 9912			
Housings, surface mounting Thermoplastic angled Cable gland order separately		09 12 008 0901	Pg 16		
Hoods, cable to cable Thermoplastic Cable gland order separately		09 12 008 0727 19 12 008 0729	Pg 16 M 25		

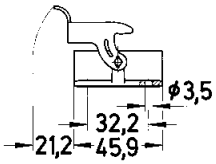
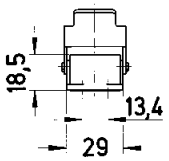
h	g
13	Pg 16
14	M 25x1.5

Stock items in bold type

thermoplastic / metal

Identification	Part number		Drawing	Dimensions in mm
Housings				
Cable seal Thermoplastic for housings Thrust bolt and insert 	09 00 000 5058	Pg 16		

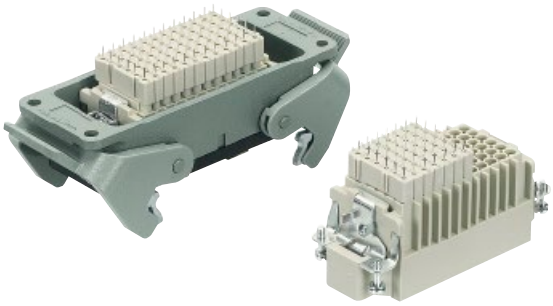
	cable	
	min.	max.
09 00 000 5058	11.5 mm	15.5 mm

Housings, bulkhead mounting Metal 	black chromated **09 12 008 0301** black powder coated **09 12 708 0301** matt nickel plated **09 12 008 0303**		 	

Stock items in bold type

Han DD® inserts with PCB-adapter

250 V 7.5 A

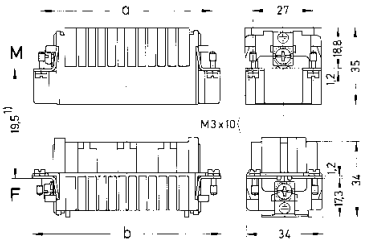


Device side

Insert

Insert	Size	Part number Male insert (M)	Part number Female insert (F)
Order contacts separately			
Han® 24 DD	6 B	**09 16 024 3001**	**09 16 024 3101**
Han® 42 DD	10 B	**09 16 042 3001**	**09 16 042 3101**
Han® 72 DD	16 B	**09 16 072 3001**	**09 16 072 3101**
Han® 108 DD	24 B	**09 16 108 3001**	**09 16 108 3101**

Drawing



1) Distance for contact max. 21 mm

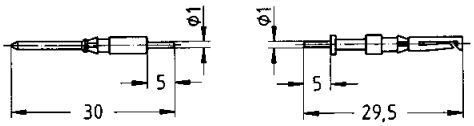
Dimensions in mm

	a	b
24 DD	44	51
42 DD	57	64
72 DD	77.5	84.5
108 DD	104	111

Han DD® double contacts

Han DD® double contacts	Part number Male contacts	Part number Female contacts
to connect the PCB-adapter	09 15 000 6191	**09 15 000 6291**

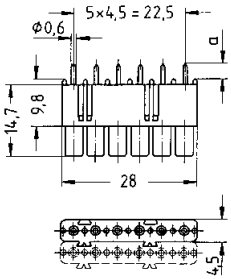
Drawing



Dimensions in mm

PCB adapter

PCB adapter	Part number	Drawing	Dimensions in mm
for PCBs up to 1.6 mm	**09 16 000 9905**		
for PCBs up to 2.4 mm	**09 16 000 9908**		

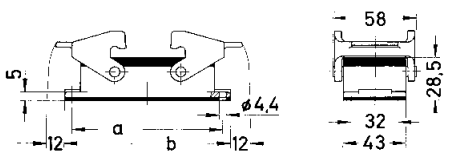


	a
09 16 000 9905	2.6
09 16 000 9908	3.4

Housing

Housing	Size	Part number
	6 B	**09 30 006 0301**
	10 B	**09 30 010 0301**
	16 B	**09 30 016 0301**
	24 B	**09 30 024 0301**

Drawing



Size	a	b	Panel cut out
6 B	70	80	48 x 35
10 B	83	93	60 x 35
16 B	103	113	82 x 35
24 B	130	140	108 x 35

Size 6 B with 1 locking lever

Dimensions in mm

Cable side

Further informations see HARTING catalogue "Industrial Connectors Han®, chapter DD"

Stock items in bold type

Han DD® with PCB-adapter

Features

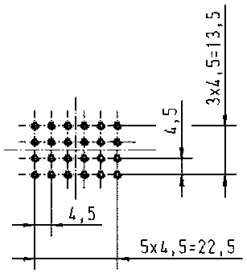
- ❏ Robust design
- ❏ Suitable for standard and EMC housing
- ❏ Low wiring costs
- ❏ Higher contact density

Technical characteristics

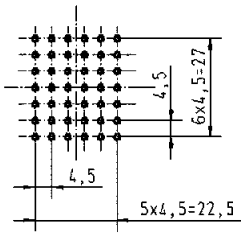
Approvals	c UL us
Inserts	
Number of contacts	24, 42, 72, 108
Electrical data acc. to DIN VDE 0627	**7.5 A 250 V 4 kV 3**
Working current	
Working voltage	
Rated impulse voltage	
Pollution degree	
Working voltage acc. to UL	250 V
Testing voltage U_{rms}	2 kV
Insulation resistance	≥ 10^{10} Ω
Material	Polyamide
Limiting temperatures	-40 °C / +125 °C
Flammability acc. to UL 94	HB
Mechanical working life - Mating cycles	≥ 500
Wire gauge	0.14 - 2.5 mm²

Layout of printed circuit boards

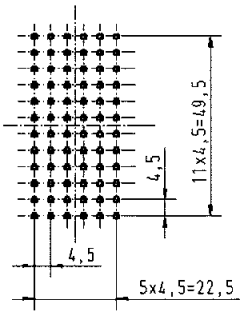
Han® 24 DD



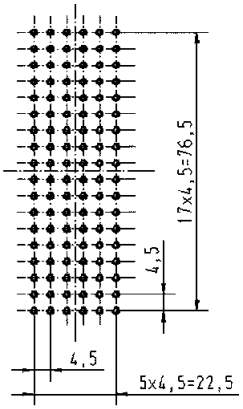
Han® 42 DD



Han® 72 DD

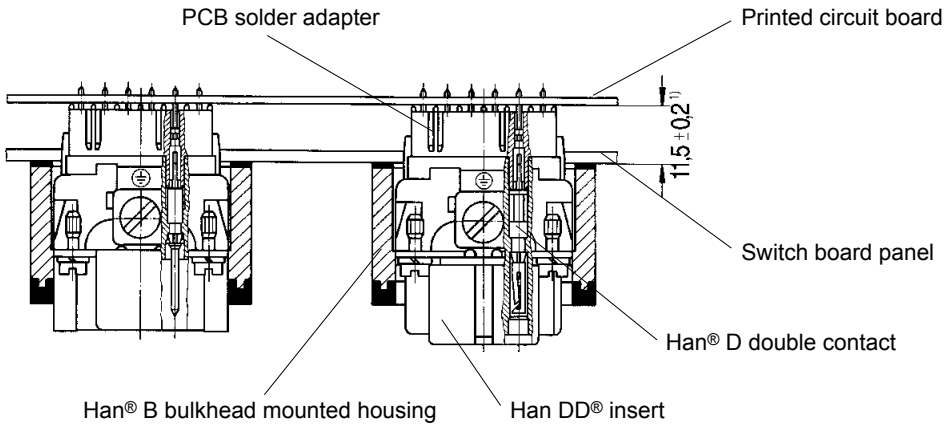


Han® 108 DD



Recommended hole diameter: 0.8 mm

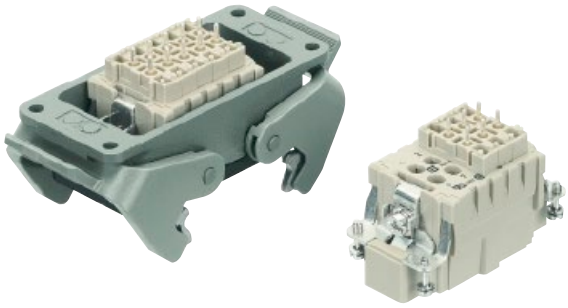
Assembly situation



1) for Han® B EMC hoods/housings spacing of 12.5 ± 0.2 is necessary as no flange seal is used.

Han E® inserts with PCB-adapter

500 V 16 A

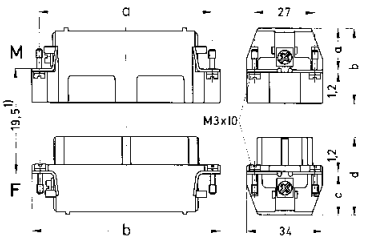


Device side

Inserts

Size	Part number Male insert (M)	Part number Female insert (F)
Order contacts separately		
Han® 6 E — 6 B	**09 33 006 2602**	**09 33 006 2702**
Han® 10 E — 10 B	**09 33 010 2602**	**09 33 010 2702**
Han® 16 E — 16 B	**09 33 016 2602**	**09 33 016 2702**
Han® 24 E — 24 B	**09 33 024 2602**	**09 33 024 2702**

Drawing



Dimensions in mm

1) Distance for contact max. 21 mm

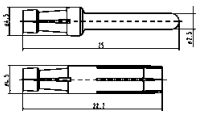
	a	b
6 E	44	51
10 E	57	64
16 E	77.5	84.5
24 E	104	111

Han E® double contacts

Part number Male contacts	Part number Female contacts
09 33 000 6180	09 33 000 6280

to connect the PCB-adapter

Drawing

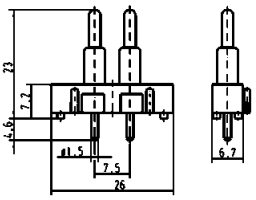


Dimensions in mm

PCB adapter

Part number: 09 33 000 9996

Drawing

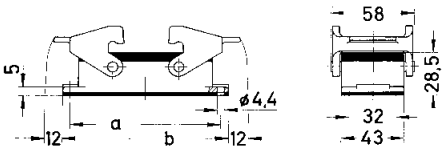


Dimensions in mm

Housing

Size	Part number
6 B	**09 30 006 0301**
10 B	**09 30 010 0301**
16 B	**09 30 016 0301**
24 B	**09 30 024 0301**

Drawing



Size	a	b	Panel cut out
6 B	70	80	48 x 35
10 B	83	93	60 x 35
16 B	103	113	82 x 35
24 B	130	140	108 x 35

Size 6 B with 1 locking lever

Cable side

Further informations see HARTING catalogue "Industrial Connectors Han®, chapter E"

Stock items in bold type

Han E® with PCB-adapter

Features

- ❏ Robust design
- ❏ Suitable for standard and EMC housings
- ❏ Low wiring costs
- ❏ Counter connector available with screw, crimp or cage clamp termination

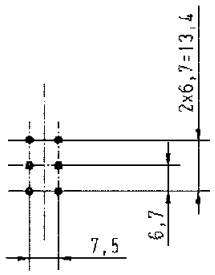
Technical characteristics

Inserts

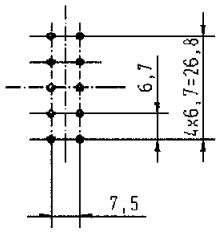
Number of contacts	6, 10, 16, 24
Electrical data acc. to DIN EN 61984	**16 A** **500 V** **6 kV** **3**
Working current	
Working voltage	
Rated impulse voltage	
Pollution degree	
Insulation resistance	≥ 10^{10} Ω
Material	Polycarbonate
Limiting temperatures	-40 °C / +125 °C
Flammability acc. to UL 94	V0
Mechanical working life - Mating cycles	≥ 500
Wire gauge	0.5 - 4 mm²

Layout of printed circuit boards

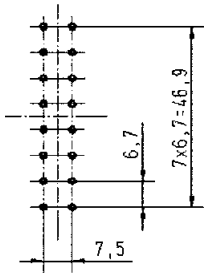
Han® 6 E



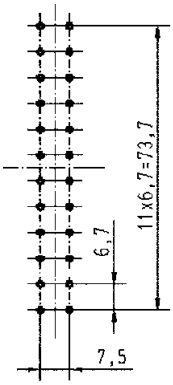
Han® 10 E



Han® 16 E

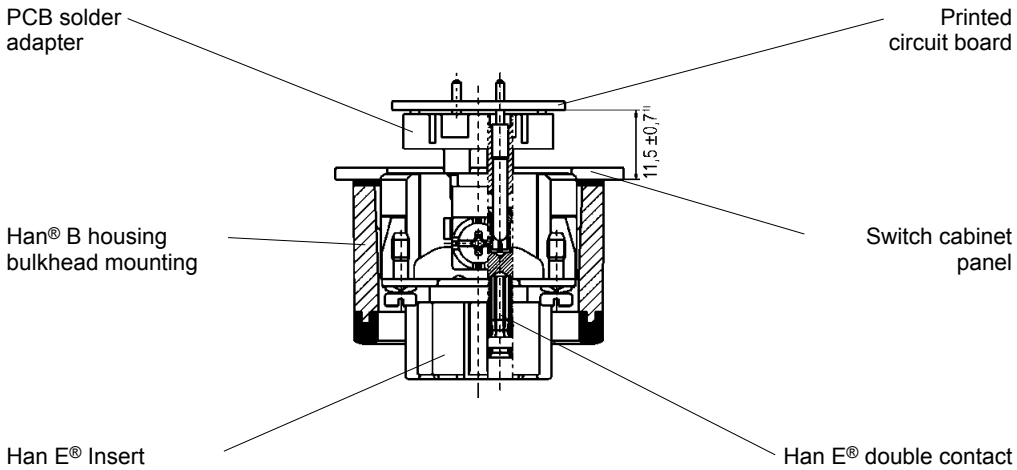


Han® 24 E

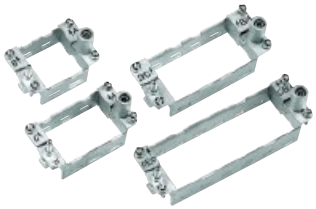


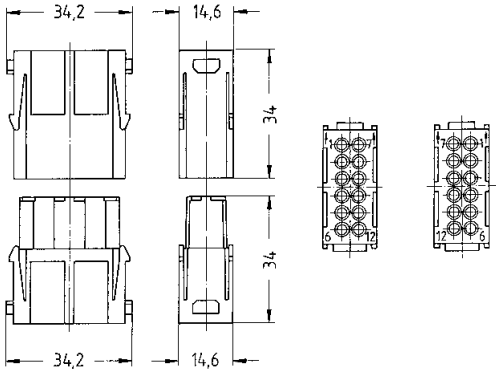
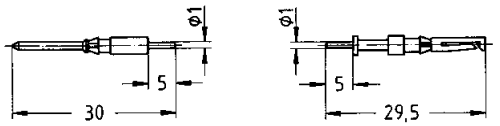
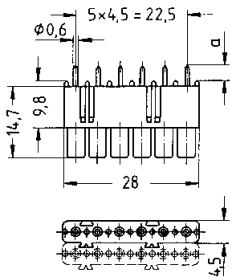
Recommended hole diameter: 1.8 mm

Assembly situation

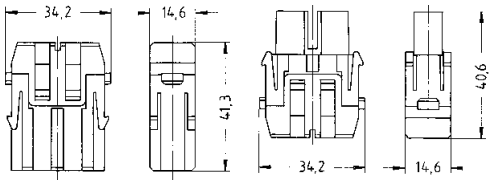
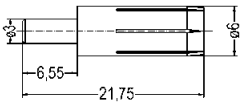


[1] for Han® B EMC hoods/housings spacing of 12.5 ± 0.7 is necessary as no flange seal is used

Hinged frame	No. of modules	Part number Male insert (M)	Part number Female insert (F)	Size	Figure
	1	**09 14 000 0304**	**09 14 000 0304**	10 A	Drawings and further details see HARTING catalogue “Industrial Connectors Han®, chapter 06”.
	2	**09 14 006 0303**	**09 14 006 0313**	6 B	
	3	**09 14 010 0303**	**09 14 010 0313**	10 B	
	4	**09 14 016 0303**	**09 14 016 0313**	16 B	
	6	**09 14 024 0303**	**09 14 024 0313**	24 B	

Identification	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Han DD® module PCB termination/ crimp termination 	**09 14 012 3001**	**09 14 012 3101**		
Han D® double contacts to connect the PCB 	09 15 000 6191	**09 15 000 6291**		
PCB adapter for PCBs up to 1.6 mm for PCBs up to 2.4 mm 	**09 16 000 9905** **09 16 000 9908**			

	a
09 16 000 9905	2.6
09 16 000 9908	3.4

Han® axial screw module	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Axial screw termination Cable side	**09 14 002 2601**	**09 14 002 2701**		
PCB adaption Device side 	09 14 002 2603	09 14 002 2703		
Solder contact 	09 32 000 6295			

Stock items in bold type

Han-Modular® with PCB-adapter

Features

- ❏ Modular assembly
- ❏ Robust design
- ❏ Suitable for standard and EMC housings
- ❏ Low wiring costs

Technical characteristics

Han DD® module with PCB-adapter

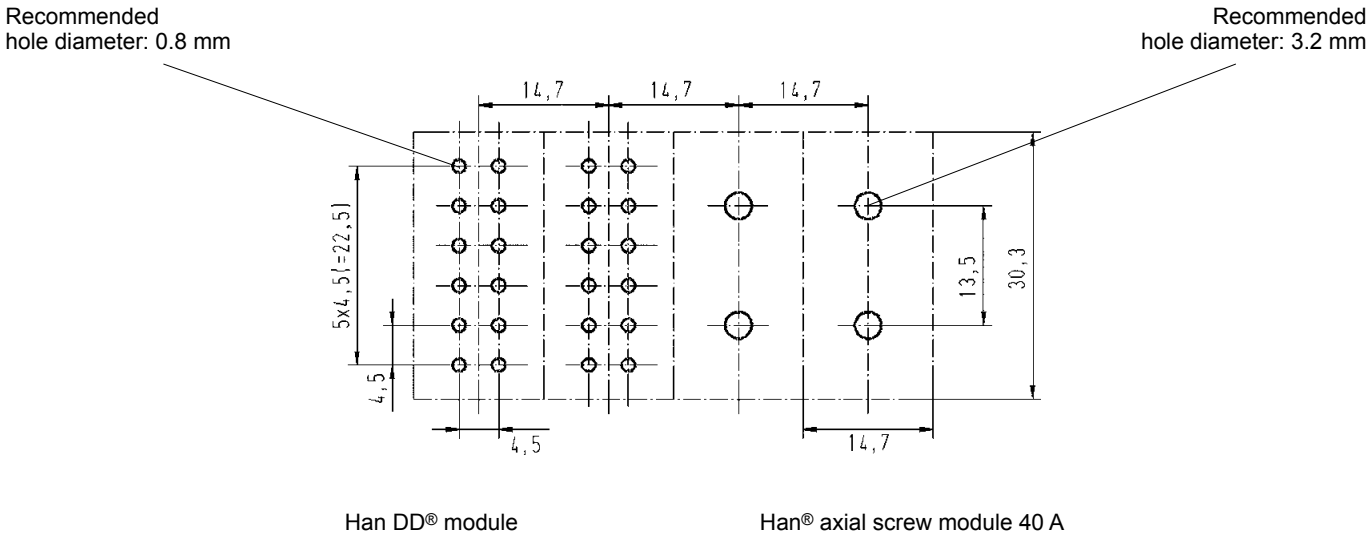
Number of contacts	12
Working current	7.5 A
Working voltage	250 V
Wire gauge	0.14 - 2.5 mm²

Han® axial screw module for PCB adaptions

Number of contacts	2
Working current	40 A
Working voltage	500 V
Wire gauge	2.5 - 10 mm²

Layout of printed circuit boards

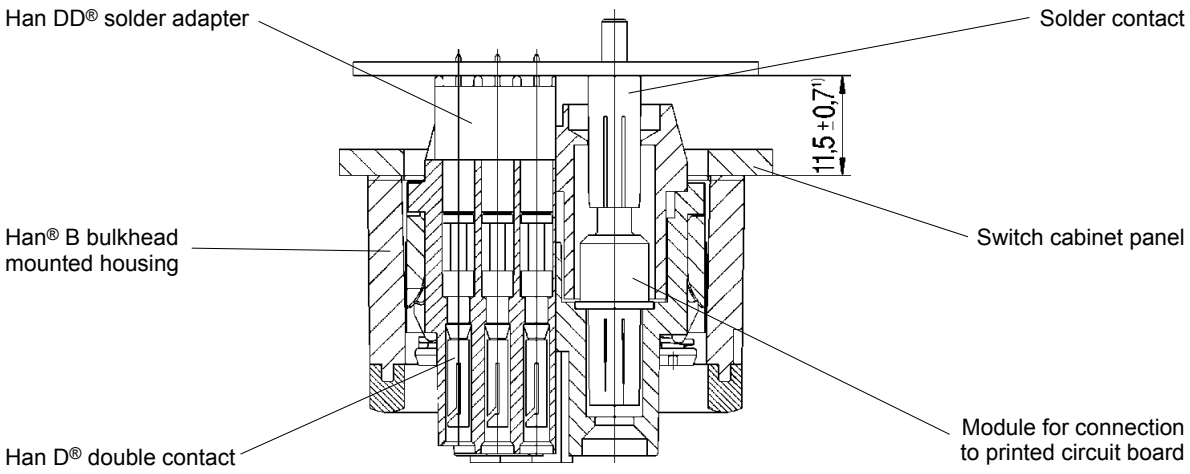
Depiction



Han DD® module

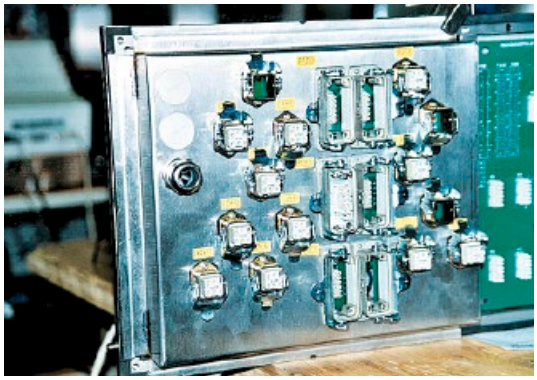
Han® axial screw module 40 A

Assembly situation



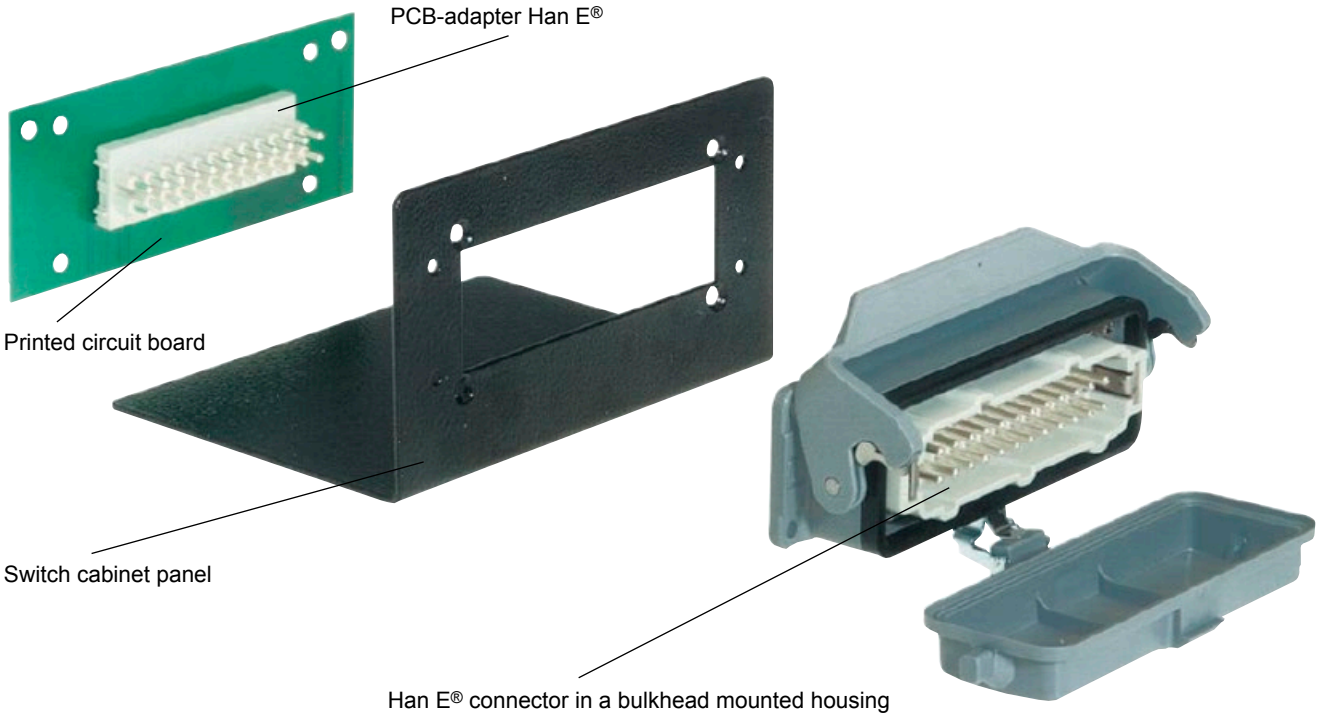
¹⁾ for Han® B EMC hoods/housings spacing of 12.5 ± 0.7 is necessary as no flange seal is used

- Secondary mating between industrial connector and printed circuit board.
- No higher force is applied on the soldering joint when mating the industrial connector due to an additional mating point.
- No wiring between printed circuit board and industrial connector necessary.
- thus no wiring faults
  ⇨ no testing, no costs
- Connecting times are minimized.
- Easy handling is time and cost saving.
- The production of mechanical and electrical / electronical components can be completely separated.
- Possibility to reach a higher degree of automation in the production (i. e. wave soldering of the PCBs).



Han DD® and Han® Q 5/0 PCB-adapter
Wilhelm Fette GmbH, Germany

Han E® PCB-adapter



Notes