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HARAX® 7/8"



Han® M12-Crimp

Technical characteristics

Specifications

IEC 60352-4
IEC 61076-2-101
IEC 61076-2-104

Approval

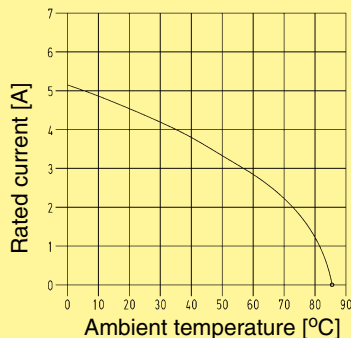


Construction type	HARAX® M8-S (0.08 mm ²)	HARAX® M8-S/ M12-S	HARAX® M12 angled	HARAX® M12-L 3 poles, 4 poles	HARAX® M12-L screened version, A-coded
Rated voltage	32 V	32 V	32 V	50 V	50 V
Rated current (see current carrying capacity)	2 A	4 A	4 A	6 A	4 A
Conductor cross section	0.08 - 0.14 mm ² AWG 28 - 26	0.14 - 0.34 mm ² AWG 26 - 22	0.25 - 0.5 mm ² AWG 24/7 - 20	0.34 - 0.75 mm ² AWG 22 - 18	0.14 - 0.34 mm ² AWG 26 - 22
Diameter of individual strands	≥ 0.05 mm	≥ 0.1 mm	≥ 0.1 mm	≥ 0.1 mm	≥ 0.1 mm
Conductor insulation material	PVC / PP / TPE	PVC / PP / TPE	PVC	PVC	PVC
Conductor diameter	0.6 - 1.0 mm	1.0 - 1.6 mm	1.2 - 1.6 mm	1.6 - 2.0 mm	1.2 - 1.6 mm
Cable diameter	1.9 - 2.5 mm (transp.) 2.5 - 3.5 mm (grey)	M8-S: 2.5 - 5.1 mm M12-S: 2.5 - 4.0 mm (transp.) 4.0 - 5.1 mm (black)	4 - 5.1 mm	3 poles: 5.5 - 7.2 mm 4 poles: 6 - 8 mm	7 - 8.8 mm
Limiting temperatures	- 25 °C / + 85 °C	- 25 °C / + 85 °C	- 25 °C / + 85 °C	- 25 °C / + 85 °C	- 25 °C / + 85 °C
Temperature during connection	- 5 °C ... + 50 °C	- 5 °C ... + 50 °C	- 5 °C ... + 50 °C	- 5 °C ... + 50 °C	- 5 °C ... + 50 °C
Degree of protection	IP 67	IP 67	IP 67	IP 65 / IP 67	IP 67
Termination cycles with the same cross section	10	10	10	10	10
Recommended tightening torque / Hexagonal wrench	0.4 Nm / SW 9	M8-S: 0.4 Nm / SW 9 M12-S: 0.6 Nm / SW 13	0.6 Nm / SW 13	0.6 Nm / SW 17	0.6 Nm / SW 17

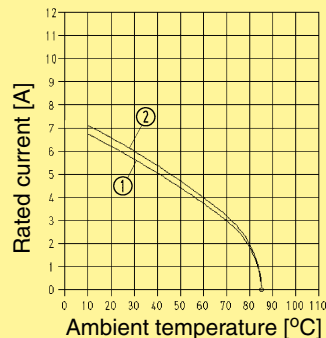
Current carrying capacity The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity-curve is valid for continuous, not interrupted current-loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60512-5.

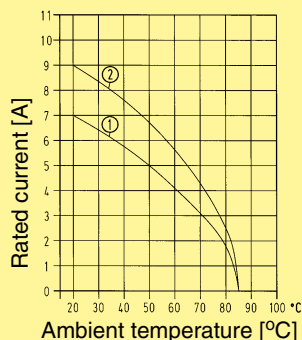
M8-S, 3 poles wire gauge 1.4 mm²



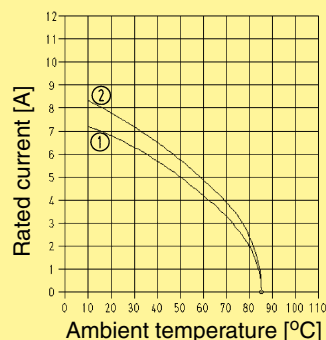
M8-S, 4 poles 1 = wire gauge 0.25 mm²
M12-S, 4 poles 2 = wire gauge 0.34 mm²



M12-L 3 poles, 4 poles 1 = wire gauge 0.34 mm²
2 = wire gauge 0.75 mm²



M12, 4 poles, angled 1 = wire gauge 0.25 mm²
2 = wire gauge 0.5 mm²



Technical characteristics

Specifications

IEC 60352-4
IEC 61076-2-101
IEC 61076-2-104

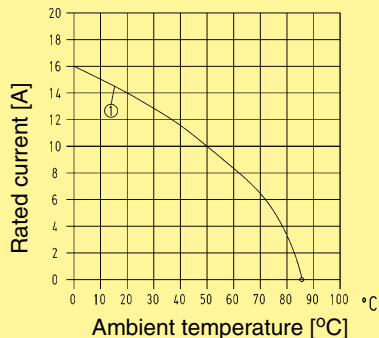
Approval



Construction type	HARAX® M12-L screened version Ethernet	PROFIBUS	Han® 7/8"	HARAX® M12-L 5 poles	Han® M12 Crimp
Rated voltage	50 V	32 V	230 V / 400 V	50 V	50 V
Rated current (see current carrying capacity)	4 A	4 A	10 A	4 A	4 A
Conductor cross section	① 0.14 - 0.34 mm ² AWG 26 - 22 ② 0.34 - 0.5 mm ² AWG 22-20	0.25 - 0.34 mm ² AWG 24- 22	0.75 - 1.5 mm ² AWG 18 - 16	0.25 - 0.34 mm ² AWG 24 - 22 0.34 - 0.5 mm ² AWG 22 - 20	0.34 - 0.5 mm ² AWG 22 - 20
Diameter of individual strands	≥ 0.1 mm	≥ 0.1 mm	≥ 0.15 mm	≥ 0.1 mm	
Conductor insulation material	PVC / PE	PVC, Zell-PE	PVC, PP, TPE	PVC	
Conductor diameter	1.2 - 2.0 mm	2 - 2.6 mm	≤ 2.8 mm	1.2 - 2.0 mm	2.0 - 2.3 mm
Cable diameter	① 5.5 - 7.2 mm (black) ② 7 - 8.8 mm (light grey)	7 - 8.8 mm	6.8 - 9.5 mm (black) 9 - 12.5 mm (grey)	4.7 - 6 mm 6 - 8 mm	4.5 - 5.4 mm (transparent) 7 - 8.8 mm (light grey)
Limiting temperatures	- 25 °C / + 85 °C	- 25 °C / + 85 °C	- 40 °C / + 85 °C	- 40 °C / + 85 °C	- 40 °C / + 85 °C
Temperature during connection	- 5 °C ... + 50 °C	- 5 °C ... + 50 °C	- 5 °C ... + 50 °C	- 5 °C ... + 50 °C	- 5 °C ... + 50 °C
Degree of protection	IP 67	IP 67	IP 65 / IP 67	IP 65 / IP 67	IP 67
Termination cycles with the same cross section	10	10	10	10	
Recommended tightening torque / Hexagonal wrench	0.6 Nm / SW 17	0.6 Nm / SW 17	1.5 Nm / SW 22	0.6 Nm / SW 17	0.6 Nm / SW 17

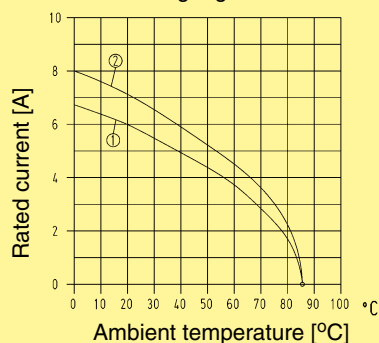
7/8"

1 = wire gauge 0.75 mm² / 1.5 mm²



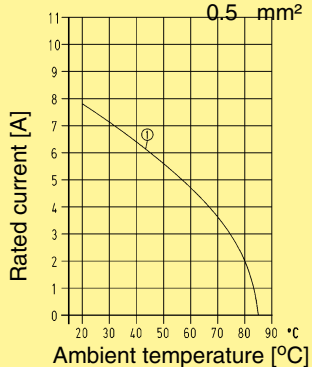
M12L, 5 poles

1 = wire gauge 0.25 mm²
2 = wire gauge 0.34 mm²



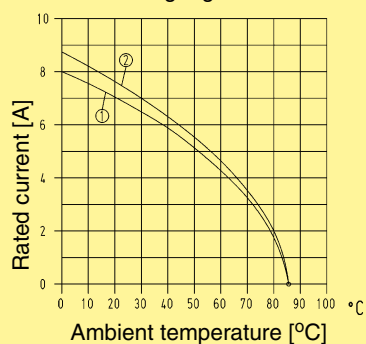
M12, Crimp

1 = wire gauge 0.34 mm² / 0.5 mm²

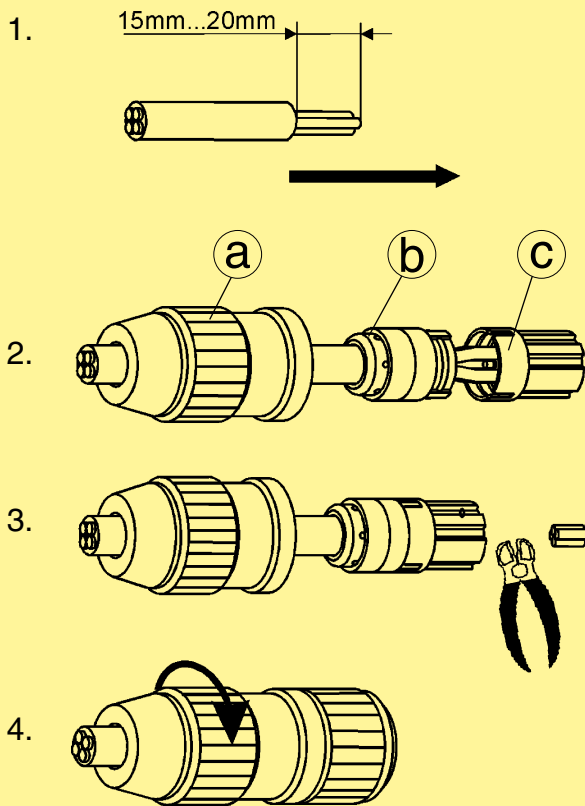


M12L, 5 poles

1 = wire gauge 0.34 mm²
2 = wire gauge 0.5 mm²



Assembly manual HARAX®



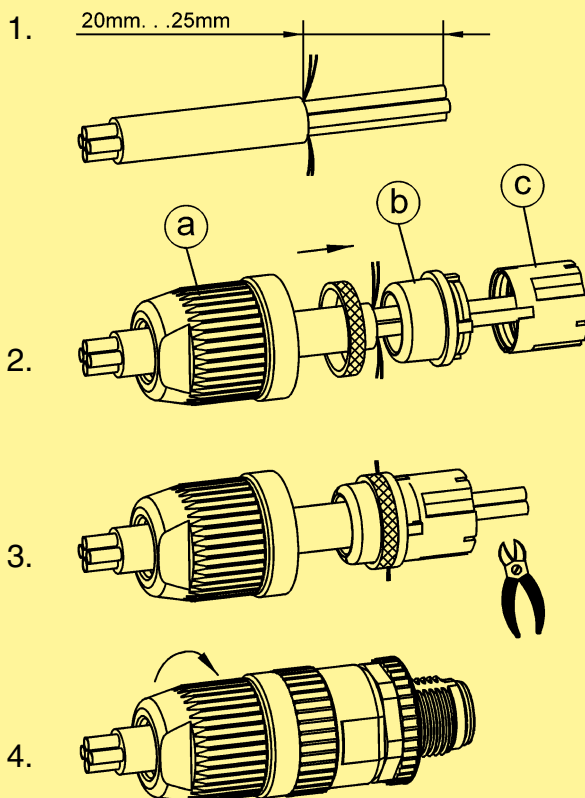
1. strip cable
2. assemble HARAX® elements
3. cut off cable ends
4. screw the connector

- (a) Nut
 (b) Strain relief
 (c) Insert

Screw the nut onto the insert until a stop is noticeable.

Note!
For reconnection cut off the used cable ends and repeat steps 1 to 4.

Assembly manual HARAX® shielded

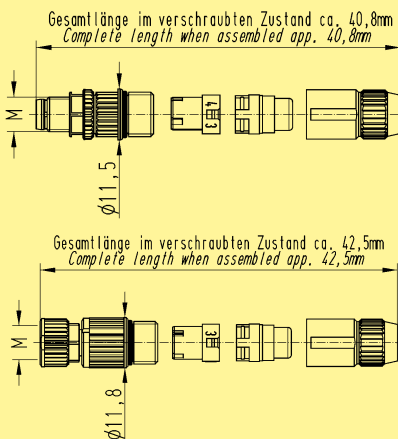
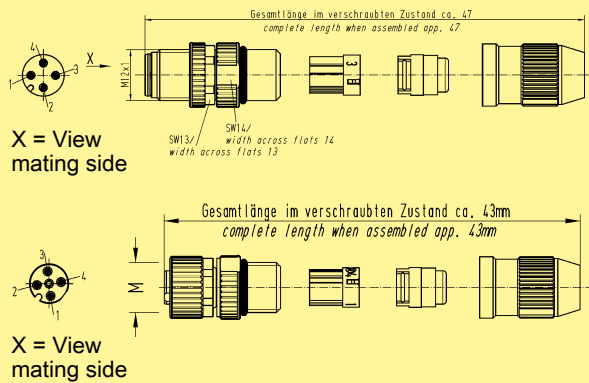
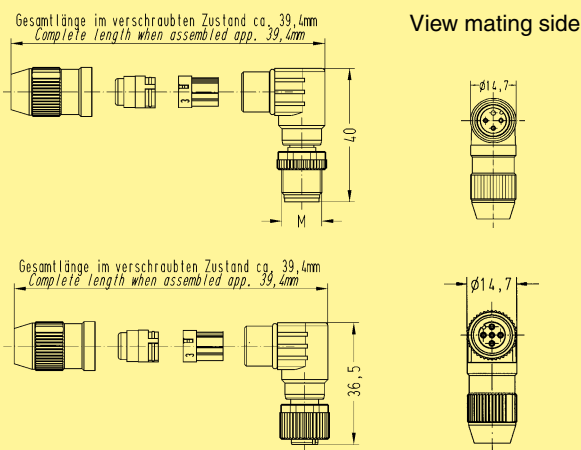


1. strip cable
2. assemble HARAX® elements
twist screening braid and push it into the sealing slot
3. Slide ring over the sealing cut off cable ends and the screening braid
4. screw the connector

- (a) Nut
 (b) Strain relief
 (c) Insert

Note!
For reconnection cut off the used cable ends and repeat steps 1 to 4.



Identification	Part No.		Drawing	Dimensions in mm
	Male	Female		
HARAX® M8-S straight version, 3 poles straight version, 4 poles straight version, 3 poles for 0.08 - 0.14 mm ²  straight version, 3 poles straight version, 4 poles 	21 02 151 1305 21 02 151 1405 21 02 159 1305		 View mating side: 3 poles, male version View mating side: 4 poles, male version	
HARAX® M12-S straight version, 4 poles  	21 03 111 1405		 X = View mating side X = View mating side	
HARAX® M12 angled version, 4 poles  angled version, 4 poles 	21 01 140 5081	21 01 140 5091	 View mating side:	

HARAX

50
05

Stock items in bold type



Part No.

Identification

Male

Female

Drawing

Dimensions in mm

HARAX® M12-L

3 poles, A-coded,
with pre-leading contact

3 poles, A-coded

4 poles, A-coded



3 poles, A-coded,
with pre-leading contact

3 poles, A-coded

4 poles, A-coded



5 poles, A-coded,
0.25 - 0.34 mm², AWG 24 - 22
Cable diameter: 4.7 - 6 mm



5 poles, A-coded,
0.34 - 0.5 mm², AWG 22 - 20
Cable diameter: 6 - 8 mm



21 03 212 1400

21 03 212 1306

21 03 212 1305

21 03 271 1505

21 03 272 1505

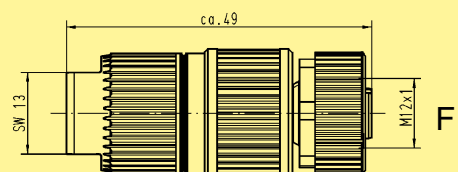
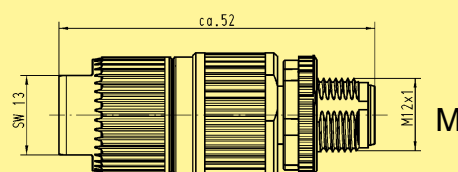
21 03 212 2400

21 03 212 2306

21 03 212 2305

21 03 271 2505

21 03 272 2505

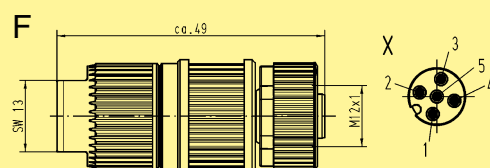
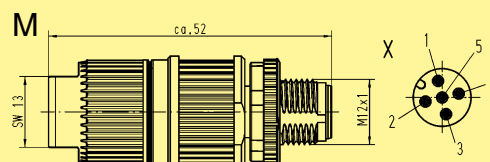
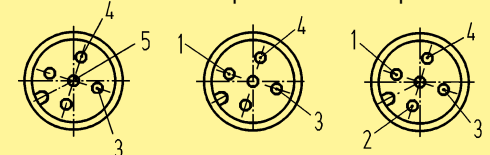


View mating side, male version: HARAX® M12-L

3 poles with
pre-leading
contact

3 poles

4 poles



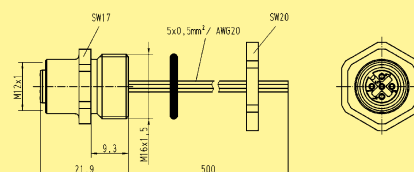
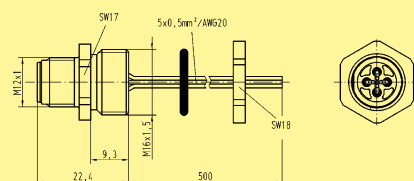
Han® M12 panel feed-through

Male, A-coded,
50 cm conductors,
0.5 mm², 5 poles

21 03 311 1501

Female, A-coded,
50 cm conductors,
0.5 mm², 5 poles

21 03 311 2501



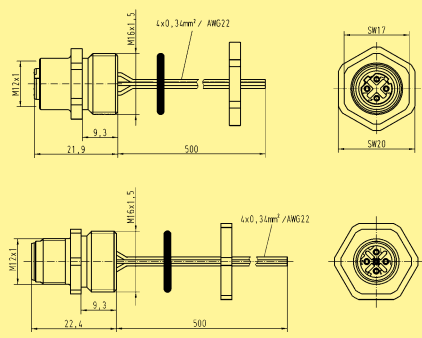
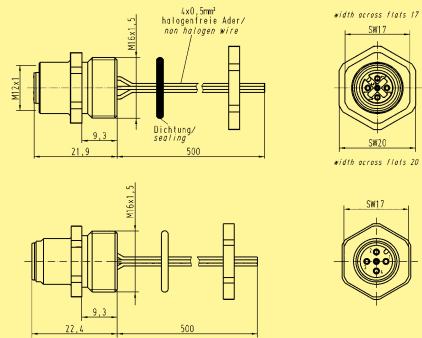
Stock items in bold type

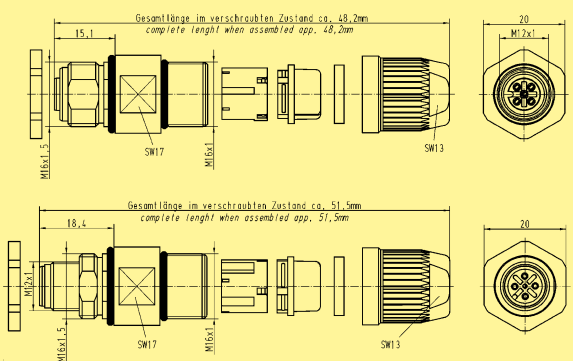
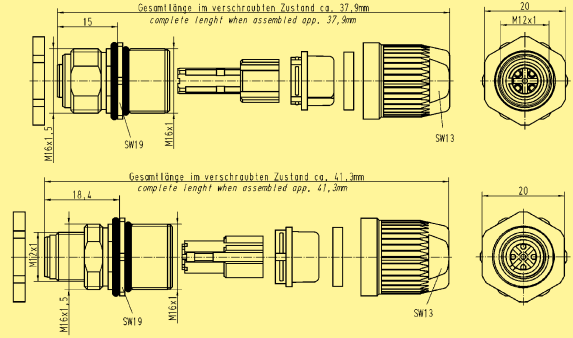


Identification	Part No.		Drawing	Dimensions in mm
	Male	Female		
HARAX® M12-L, screened version 2 poles, B-coded 2 poles + shielding, B-coded 4 poles, D-coded, 0.14 - 0.34 mm², AWG 26-22 0.34 - 0.5 mm², AWG 22-20 4 poles, A-coded	21 03 241 1301 21 03 241 1300 21 03 281 1405 21 03 282 1405 21 03 221 1405		View mating side, male version: HARAX® M12-L, screened version 2 poles 21 03 241 1301 B-coded 	2 poles 21 03 241 2301 B-coded
2-poles, B-coded 2 poles + shielding, B-coded 4 poles, D-coded, 0.14 - 0.34 mm², AWG 26-22 0.34 - 0.5 mm², AWG 22-20 4 poles, A-coded		21 03 241 2301 21 03 241 2300 21 03 281 2405 21 03 282 2405 21 03 221 2405	3 poles PROFIBUS B-coded 	4 poles Ethernet D-coded
			4 poles A-coded 	

Identification	Part No.	Drawing	Dimensions in mm
Han® M12-RJ45 panel feed-through 4 poles, D-coded, angled	21 03 381 4400		
Han® M12-RJ45 panel feed-through 4 poles, D-coded, straight	21 03 381 2400		
Han® M12 Gender Changer 4 poles, D-coded	21 03 381 6405		



Identification	Part No.	Drawing	Dimensions in mm
Han® M12 panel feed-through  Female, D-coded, 50 cm conductors, AWG 22, 4 poles  Male, D-coded, 50 cm conductors, AWG 22, 4 poles	21 03 371 2403 21 03 371 1403		
Han® M12 panel feed-through  Female, A-coded, 50 cm conductors, 0.5 mm²  Male, A-coded, 50 cm conductors, 0.5 mm²	21 03 311 2400 21 03 311 1402		

Identification	Part No.	Drawing	Dimensions in mm
HARAX® panel feed-through  Female, A-coded 0.14 - 0.34 mm², AWG 26 - 22 5.5 - 7.2 mm  Male, A-coded 0.14 - 0.34 mm², AWG 26 - 22 5.5 - 7.2 mm	21 03 321 2425 21 03 321 1425		
Han® M12 panel feed-through Crimp  Female, A-coded 4.5 - 5.4 / 7 - 8.8 mm  Male, A-coded 4.5 - 5.4 / 7 - 8.8 mm	21 03 822 2425 21 03 822 1425		

Stock items in bold type

Identification	Part No.	Drawing	Dimensions in mm
Han® M12 panel feed-through for outer termination Female, D-coded, screened version, 360 mm cable ¹⁾ , AWG 26, 4 poles	21 03 383 6407		
Han® M12 panel feed-through for inner termination Female, D-coded, screened version, 700 mm cable ¹⁾ , AWG 26, 4 poles	21 03 383 6405		
Han® M12 panel feed-through with RJ45 Female, D-coded, screened version, 48 mm cable ¹⁾ , AWG 26, 4 poles	21 03 683 6401		
HARAX® panel feed-through Female, D-coded 0.14 - 0.34 mm ² , AWG 26 - 22 5.5 - 7.2 mm	21 03 381 2425		
Han® M12 panel feed-through Crimp Female, D-coded 4.5 - 5.4 / 7 - 8.8 mm	21 03 882 2425		

HARAX

¹⁾ Other length on request

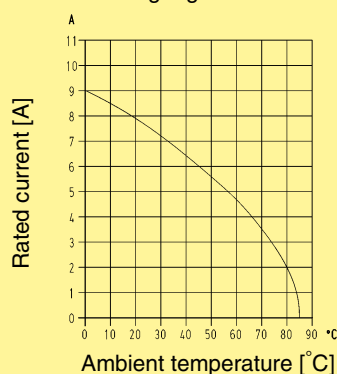
Technical characteristics: Han® M12 pcb

Degree of protection	IP 20
Rated current	max. 4 A (dependent on pcb layout)
Rated voltage	50 V
mating cycles	max. 100
Limiting temperatures	- 25 °C / + 85 °C
Temperature during connection	- 5 °C / + 50 °C

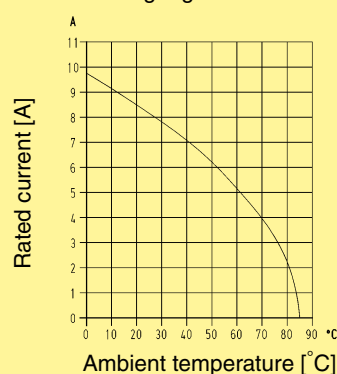
Current carrying capacity The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity-curve is valid for continuous, not interrupted current-loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60512-5.

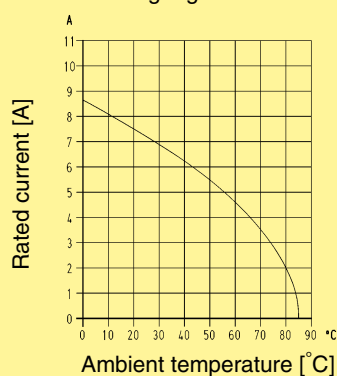
M12, A-Kodierung, straight, male, 4 poles
wire gauge 0.5 mm²



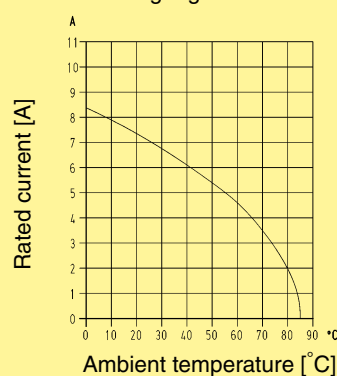
M12, A-Kodierung, straight, female, 4 poles
wire gauge 0.75 mm²



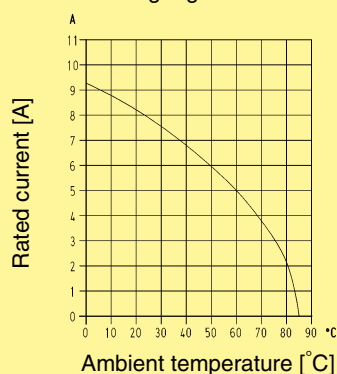
M12, A-Kodierung, straight, female, 5 poles
wire gauge 0.5 mm²



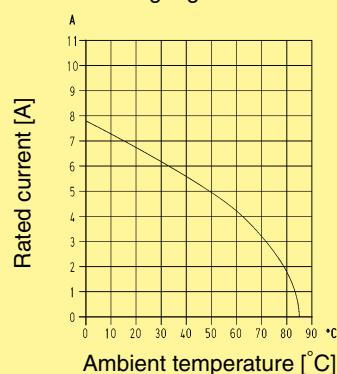
M12, A-Kodierung, straight, male, 5 poles
wire gauge 0.5 mm²



M12, D-Kodierung, straight, female, 4 poles
wire gauge 0.5 mm²

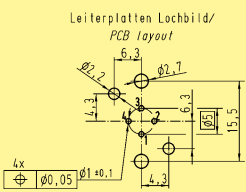
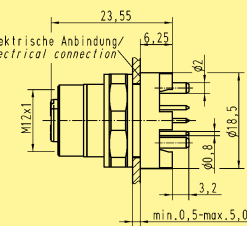
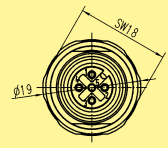
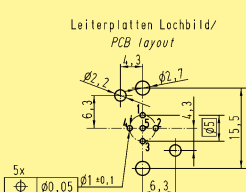
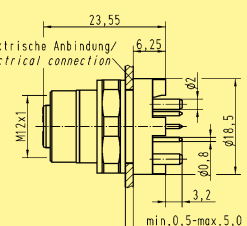
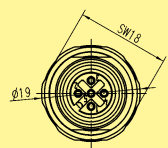
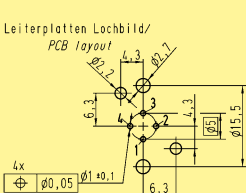
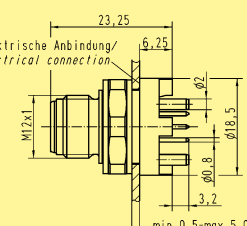
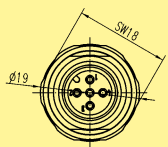
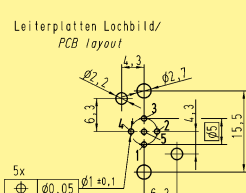
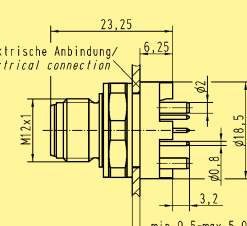
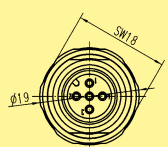


M12, D-Kodierung, gewinkelt, female, 4 poles
wire gauge AWG 22

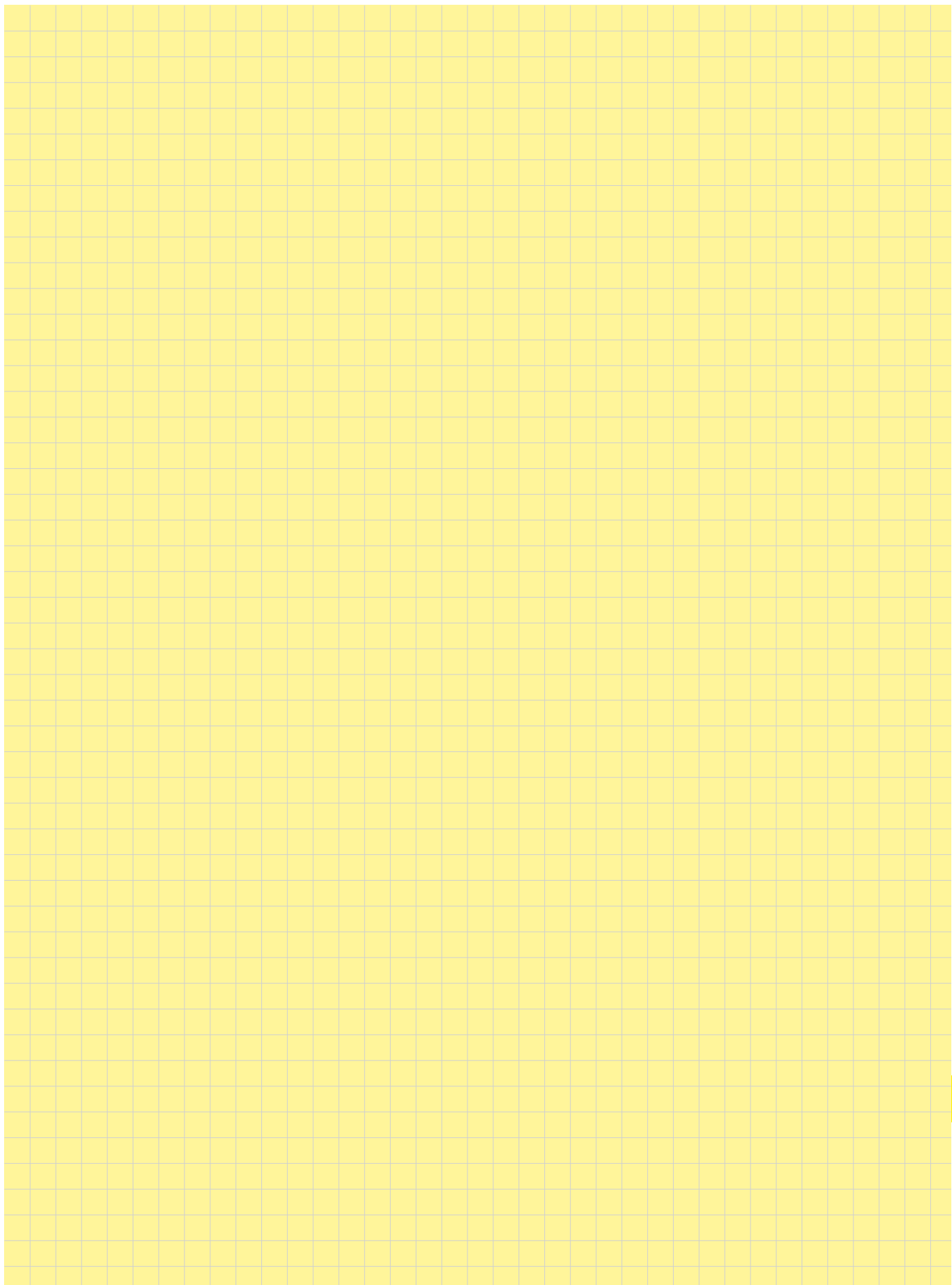


[illegible]



Identification	Part No.	Drawing	Dimensions in mm
Han® M12 Female, A-coded, straight  4 poles  5 poles	21 03 321 6410 21 03 321 6510	Leiterplatten Lochbild/ PCB layout  elektrische Anbindung/ electrical connection   Leiterplatten Lochbild/ PCB layout  elektrische Anbindung/ electrical connection  	
Han® M12 Male, A-coded, straight  4 poles  5 poles	21 03 321 1410 21 03 321 1510	Leiterplatten Lochbild/ PCB layout  elektrische Anbindung/ electrical connection   Leiterplatten Lochbild/ PCB layout  elektrische Anbindung/ electrical connection  	

Stock items in bold type

A large rectangular area of yellow paper with a light gray grid pattern, intended for taking notes.



General Description

- Fibre optic data transmission system for industrial applications
- Optical transceiver for 1300 nm
- Passive interface as coupling unit and panel feed-through
- Based on M12 hoods and housings in accordance with IEC 61 076-2-101
- Suitable for multimode glass fibre
- 2 supplementary electrical contacts
- Degree of protection: IP 65 / IP 67
- Wide temperature range of -40 °C up to +85 °C
- Minimum insertion loss: < 0.3 dB

Technical characteristics

Mechanical Features

Storage temperature	-40 °C / +85 °C
Working temperature	-25 °C / +85 °C
Degree of protection	IP 65/67
Tightening torque	50 - 60 Ncm

Electrical Data

Rated voltage of electrical contacts	60 V DC
Rated current	4 A max.

Optical Data Transceiver for Multimode

Center wave length (λ_C)	1270 nm up to 1380 nm
Output optical power max. (P_0)	-14 dBm
Input optical power min. (P_{SAT})	-31 dBm
Data transmission rate	125 Mbit/s in accordance with Fast Ethernet 100Base-FX; IEEE 802.3u

Identification

Part No.

Drawing

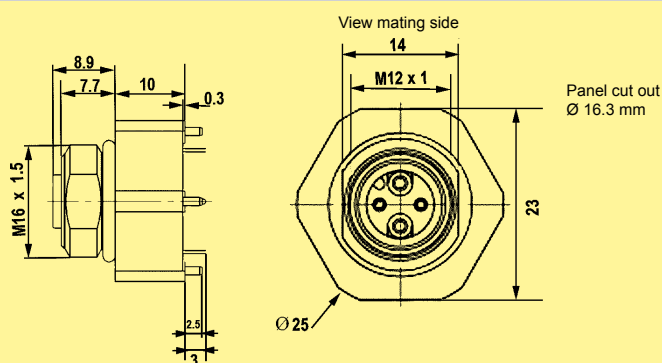
Dimensions in mm

Transceiver

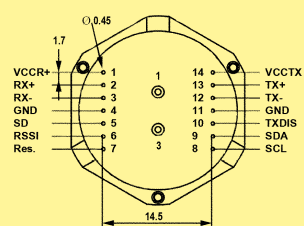
for multimode
with glass fibres,
1300 nm



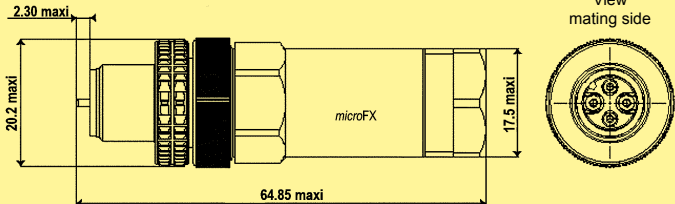
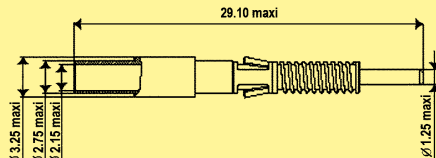
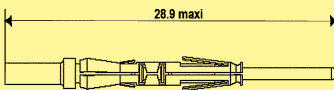
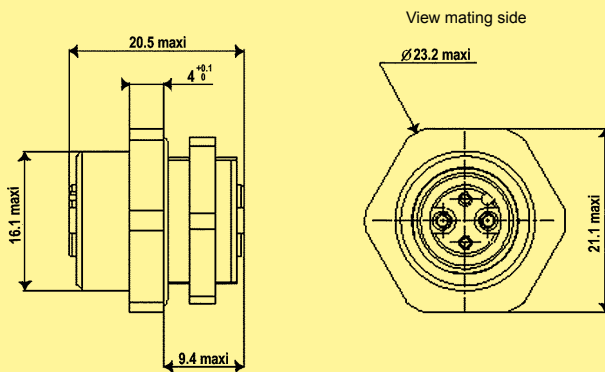
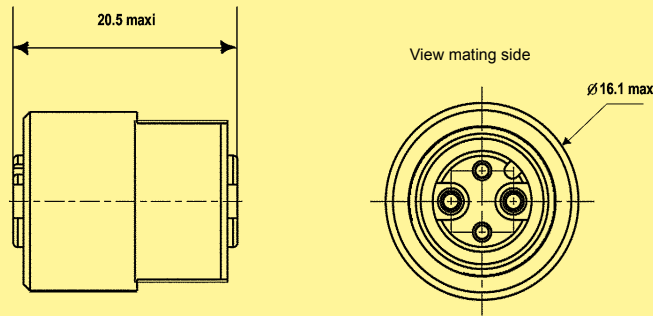
20 50 004 3411



Contact	Function	Description
1	VCCRX	Receiver supply voltage 3.3 V
2	RX+	Receiver data output, noninverted, PECL
3	RX-	Receiver data output, inverted, PECL
4	GND	Ground (Receiver)
5	SD	Signal Defect, PECL
6	RSSI	Receiver signal strength indicator output, analog voltage
7	Res.	Reserved for future use
8	SCL	
9	SDA	
10	TXDIS	
11	GND	Ground (Transmitter)
12	TX-	Transmitter data input, inverted, PECL
13	TX+	Transmitter data input, noninverted, PECL
14	VCCTX	Transmitter supply voltage 3.3 V



Stock items in bold type

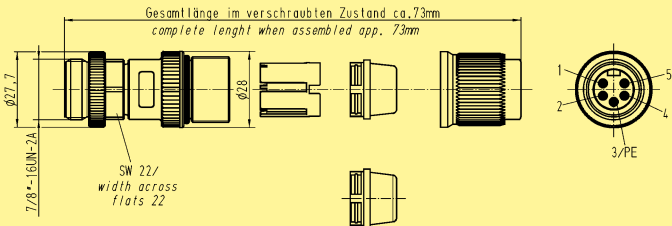
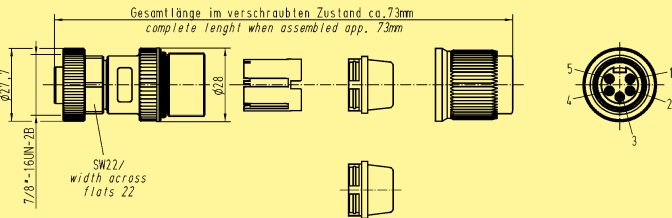
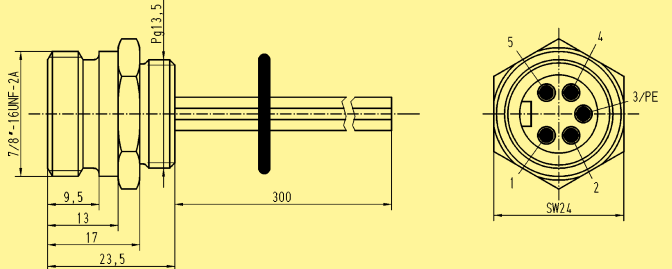
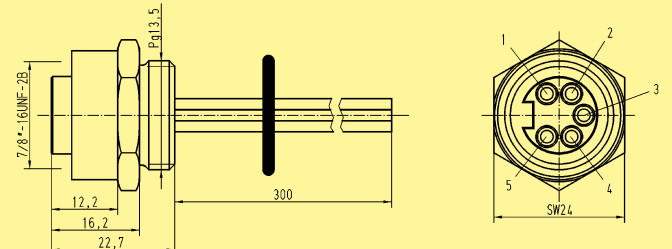
Identification	Part No.	Drawing	Dimensions in mm
Connector order contacts separately 	20 10 004 3411		
Optical Contacts for GI-fibres 50 - 60 / 125 µm	20 10 125 3411		
Electrical Contacts 1 mm² wire gauge	20 10 000 3411		
Panel feed-through	20 80 004 3411		
Coupling unit	20 80 004 3412		
Cordset Length: 1 m 2 m 5 m 10 m	20 25 050 0010 20 25 050 0020 20 25 050 0050 20 25 050 0100		

HARAX

50
15

Stock items in bold type



Identification	Part No.	Drawing	Dimensions in mm
HARAX® 7/8" Male 	21 04 116 1505		
HARAX® 7/8" Female 	21 04 116 2505		
Han® 7/8" panel feed-through 30 cm conductors, 0.75 mm ²			
 Male	21 04 316 1505		
 Female	21 04 316 2505		

Stock items in bold type



Identification	Part No.	Drawing	Dimensions in mm																					
Han® M12 Crimp Male, D-coded 4.5 - 5.4 mm / 7 - 8.8 mm Male, A-coded 4.5 - 5.4 mm / 7 - 8.8 mm Female, A-coded 4.5 - 5.4 mm / 7 - 8.8 mm	21 03 882 1405 21 03 812 1405 21 03 812 2405																							
Order crimp contacts separately																								
Crimping tool	09 99 000 0501																							
Locator	61 03 600 0023																							
Single contacts turned male contacts* AWG 22-20 / 0.33-0.52 AWG 26-22 / 0.13-0.33 turned female contacts* AWG 22-20 / 0.33-0.52 AWG 26-22 / 0.13-0.33	61 03 000 0073 61 03 000 0094 61 03 000 0074 61 03 000 0096	<table><tr><td></td><td>a</td><td>b</td><td>c</td><td>d</td><td>e</td><td>f</td></tr><tr><td>AWG 22-20</td><td>8.10</td><td>4.0</td><td>14.8</td><td>1.12</td><td>1.66</td><td>14.4</td></tr><tr><td>AWG 26-22</td><td>8.10</td><td>4.0</td><td>14.8</td><td>0.90</td><td>1.66</td><td>14.4</td></tr></table>		a	b	c	d	e	f	AWG 22-20	8.10	4.0	14.8	1.12	1.66	14.4	AWG 26-22	8.10	4.0	14.8	0.90	1.66	14.4	
	a	b	c	d	e	f																		
AWG 22-20	8.10	4.0	14.8	1.12	1.66	14.4																		
AWG 26-22	8.10	4.0	14.8	0.90	1.66	14.4																		

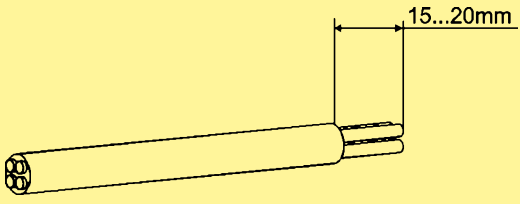
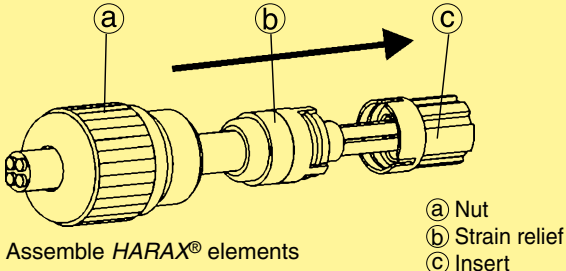
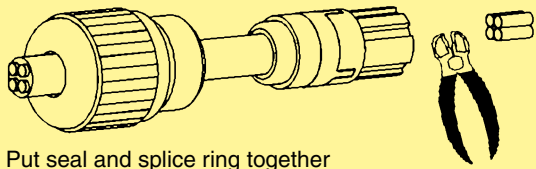
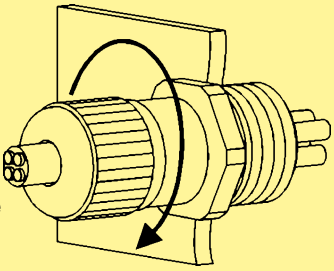
Features

- ❑ The faston blade was chosen acc. to DIN 46 330 - A 2.8
- ❑ Each type is delivered with a termination element consisting of a nut, a seal and a splice ring
- ❑ Splice ring with Pg 9
- ❑ For assembly in openings without threads a Pg 9 locknut is available
- ❑ Diameter of the mounting cutout: $d = 15.5 \text{ mm}$

Technical characteristics

Rated voltage	32 V
Rated current (see current carrying capacity)	4 A
Wire gauge	0.25 - 0.5 mm ² 24/7 AWG - 22 AWG
Diameter of individual strands	≥ 0.1 mm
Conductor insulation material	PVC
Conductor diameter	1.2 - 1.6 mm
Cable diameter	4.0 - 5.1 mm
Working temperature	- 25 °C ... + 85 °C
Temperature during connection	- 5 °C ... + 50 °C
Degree of protection	IP 67
Termination cycles with the same cross section	10

Assembly manual

1. 
Strip cable jacket
2. 
Assemble HARAX® elements
a) Nut
b) Strain relief
c) Insert
3. 
Put seal and splice ring together
Cut off cable ends
4. 
Twist the nut onto the insert until a stop is noticeable

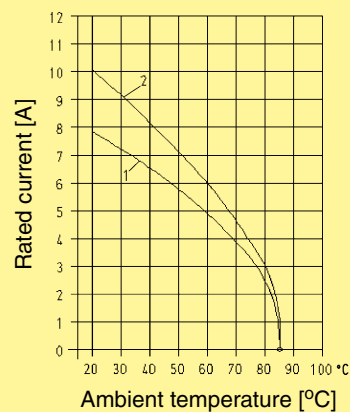
Current carrying capacity

The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity-curve is valid for continuous, not interrupted current-loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60 512-3.

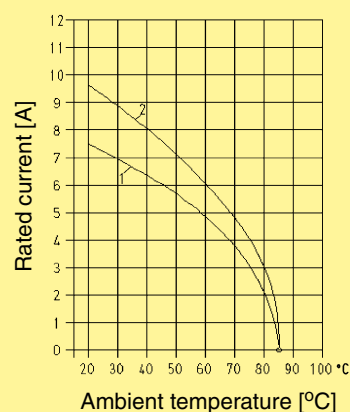
Pg 9, 3 contacts

- 1 = wire gauge $3 \times 0.25 \text{ mm}^2$
- 2 = wire gauge $3 \times 0.5 \text{ mm}^2$

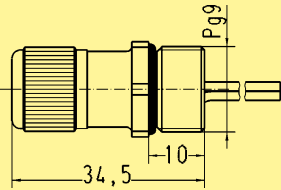
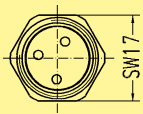
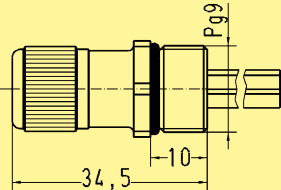
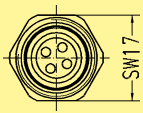
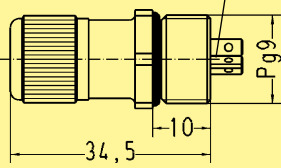
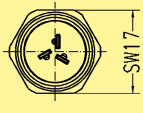
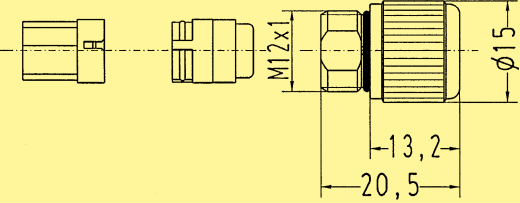
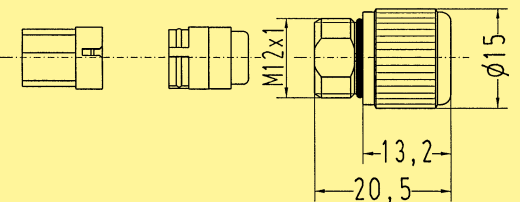


Pg 9, 4 contacts

- 1 = wire gauge $4 \times 0.25 \text{ mm}^2$
- 2 = wire gauge $4 \times 0.5 \text{ mm}^2$





Identification	Part No.	Drawing	Dimensions in mm
HARAX® Pg 9 panel feed-through 3 contacts, with pre-assembled 0.5 m / 0.5 mm ² pigtail cable 	21 01 130 4241		View: Termination side 
HARAX® Pg 9 panel feed-through 4 contacts, with pre-assembled 0.5 m / 0.5 mm ² pigtail cable 	21 01 140 4341		View: Termination side 
HARAX® Pg 9 panel feed-through 3 contacts with faston blades 	21 01 130 4011	Faston blade termination acc. to DIN 46330-A 2,8 	View: Termination side 
Termination element M12 HARAX® 3 contacts Screw cap, splice ring, seal	21 01 010 0001		
Termination element M12 HARAX® 4 contacts Screw cap, splice ring, seal	21 01 010 0006		

Technical characteristics

Specifications	IEC 60352-4 DIN 61984 VDE	
Approval		
Construction type	Pg 13,5 3 poles	Pg 13,5 / M20 4 poles
Rated voltage	250 V 4 kV 3 with faston terminals with insulation cap	230/400 V 4 kV 3
acc. to UL/CSA	600 V	600 V
Rated current (see current carrying capacity)	16 A	16 A
Testing voltage	4 kV (1.2/50)	4 kV (1.2/50)
Conductor cross section	0.75 - 1.5 mm ²	0.75 - 1.5 mm ²
Diameter of individual strands	≥ 0.2 mm	≥ 0.2 mm
Outer cable diameter	6.0 - 9.0 mm	6.0 - 9.0 mm
Termination cycles with the same cross section	10	10
Limiting temperature	- 25 / + 85 °C	- 25 / + 85 °C
Temperature during connection	- 5 ... + 50 °C	- 5 ... + 50 °C
Degree of protection	IP 67	IP 67
Conductor insulation material	PVC	PVC
Max. tightening torque	8 Nm	8 Nm

Current carrying capacity

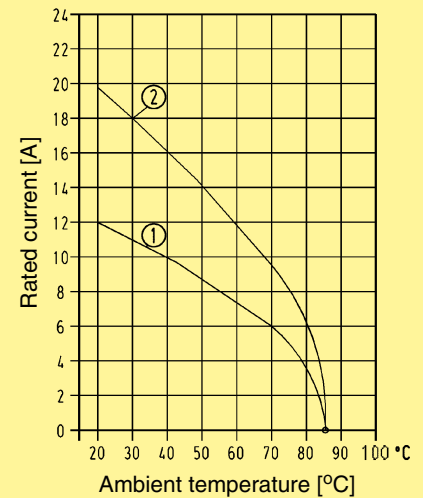
The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity-curve is valid for continuous, not interrupted current-loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60512-3.

Pg 13,5 3 contacts

1 = wire gauge
0.75 mm²

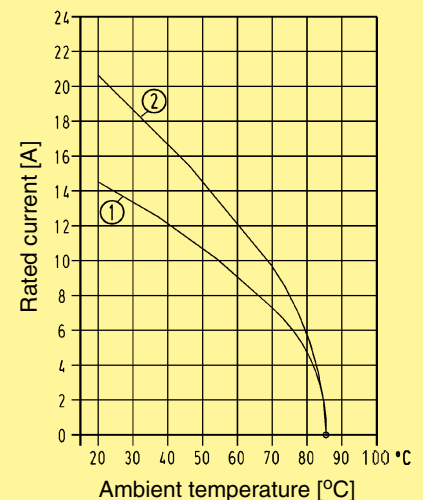
2 = wire gauge
1.5 mm²



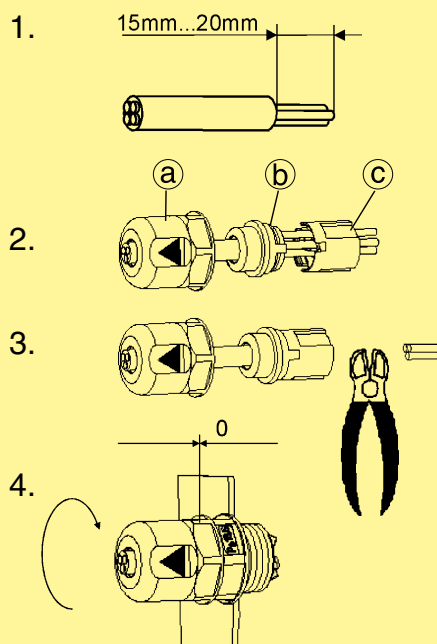
Pg 13,5 / M20 4 contacts

1 = wire gauge
0.75 mm²

2 = wire gauge
1.5 mm²



Assembly manual



Connection and disconnection of the cable must only be performed by suitably qualified persons when supply is isolated.

- (a) Nut
- (b) Strain relief
- (c) Insert

HARAX® Pg 13.5 – 3 contacts – is supplied with either faston blades or solder terminals.

HARAX® Pg 13.5 / M20 – 4 contacts – is supplied only with solder termination.

The nut must be tightened completely down so that the notches engage on the contact carrier.

The opening of the gland always requires a wrench.

Note: For reconnection cut off the used cable ends and repeat steps 1 to 4.

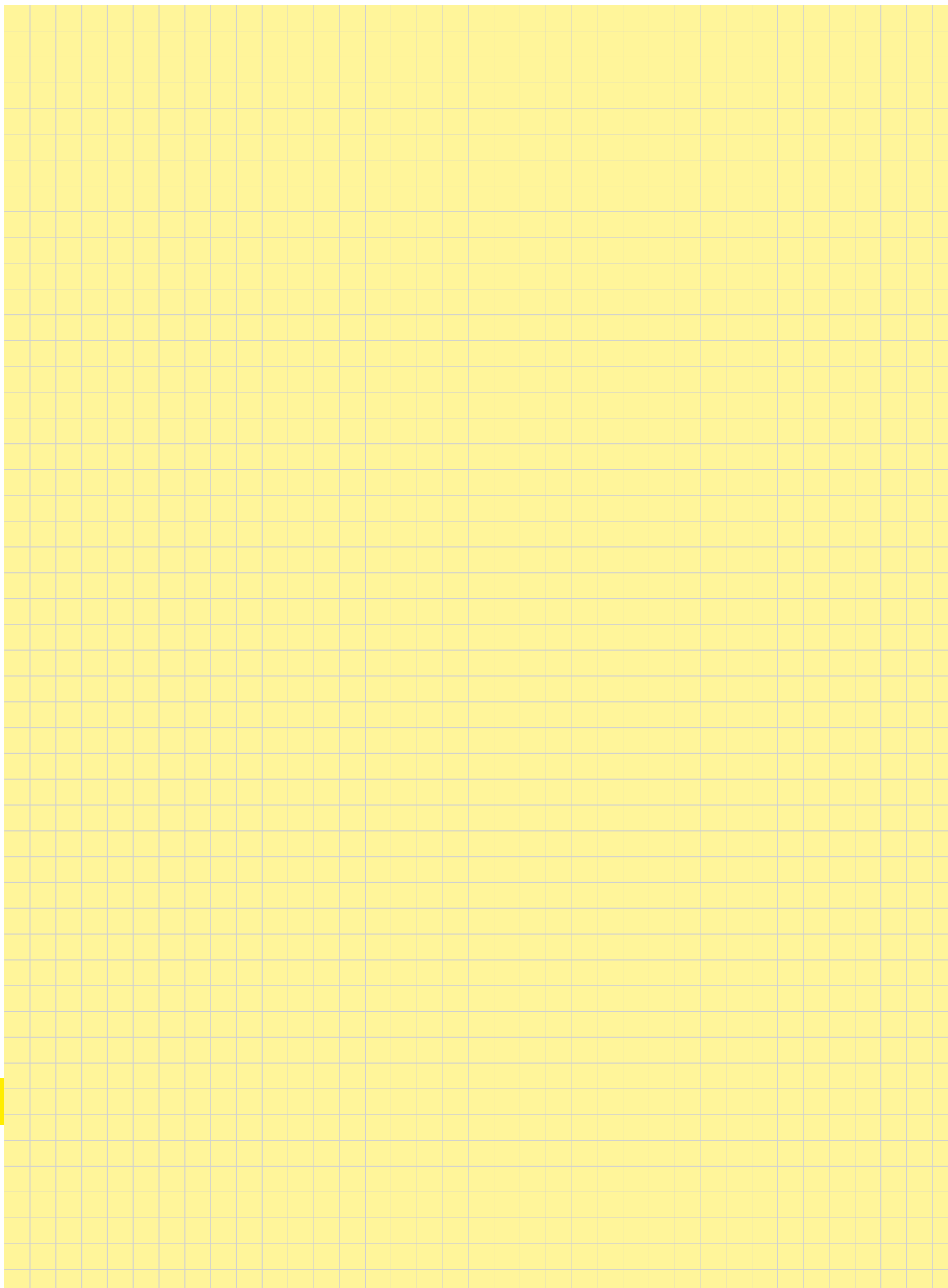


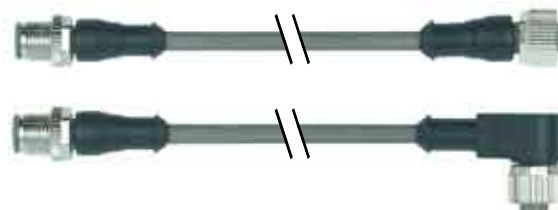
Identification	Part No.	Drawing	Dimensions in mm
HARAX® Pg 13.5 / 3 contacts with faston blades	21 01 130 1013		View: Mating side SW 24
HARAX® Pg 13.5 / 3 contacts with solder termination	21 01 130 1023		
HARAX® Pg 13.5 / 3 contacts with pre-assembled pigtail cable, l = 500 mm, 1.5 mm ²	21 01 130 1223		
HARAX® Pg 13.5 / 2 + PE with faston blades	21 01 130 3013		View: Mating side SW 24
HARAX® Pg 13.5 / 2 + PE with solder termination	21 01 130 3023		
HARAX® Pg 13.5 / 2 + PE with pre-assembled pigtail cable, l = 500 mm, 1.5 mm ²	21 01 130 3233		
HARAX® Pg 13.5 / 4 contacts with solder termination	21 01 140 1023		View: Mating side SW 24
HARAX® Pg 13.5 / 3 + PE with solder termination	21 01 140 3023		
HARAX® Pg 13.5 / 4 contacts with pre-assembled strand, l = 500 mm, 1.5 mm ²	21 01 140 1323		
HARAX® Pg 13.5 / 3 + PE with pre-assembled strand, l = 500 mm, 1.5 mm ²	21 01 140 3333		
HARAX® M20 / 4 contacts with solder termination	21 01 141 1023		View: Mating side SW 24
HARAX® M20 / 3 + PE with solder termination	21 01 141 3023		
HARAX® M20 / 4 contacts with pre-assembled strand, l = 500 mm, 1.5 mm ²	21 01 141 1323		
HARAX® M20 / 3 + PE with pre-assembled strand, l = 500 mm, 1.5 mm ²	21 01 141 3333		

Other length on request

Stock items in bold type

HARAX





System cables with
Han® M12 Circular connector, A-coded
Han® M8 Circular connector

Technical characteristics

Han® M12 Circular connector, without PE

Rated voltage	max. 250 V AC/DC, max. 30 V DC (with LED)
Rated current/contact	max. 4 A
Locking	Screw locking M12x1, self securing
Recommended torque	0.6 Nm
Temperature range (dependent on connected conductor)	- 25 °C ... +85 °C
Degree of protection	IP 67
Number of wires / wire gauge	4 x 0.34 mm ²
Conductor insulation	PP (br, ws, bl, sw)
Arrangement of insulated strands	42 x 0.1 mm
Sheath	PUR (UL, CSA)
Outer diameter	appr. 4.7 mm
Bending radius	10 x outer diameter
Temperature range (working and storage)	-25 °C ... + 80 °C

Han® M8 Circular connector, without PE

Rated voltage	max. 60 V AC/DC
Rated current/contact	max. 4 A
Locking	Screw locking M8x1, self securing
Recommended torque	0.4 Nm
Temperature range (dependent on connected conductor)	-25 °C ... +85 °C
Degree of protection	IP 67
Number of wires / wire gauge	3 x 0.25 mm ²
Conductor insulation	PP (br, bl, sw)
Arrangement of insulated strands	32 x 0.1 mm
Sheath	PUR (UL, CSA)
Outer diameter	appr. 4.1 mm
Bending radius	10 x outer diameter
Temperature range (working and storage)	-5 °C ... + 80 °C

Han® M12 Circular connector



System cables with
Han® M12 Circular connector, A-coded

Identification	Part No.	Drawing	Dimensions in mm
Han® M12 Circular connector Female straight, Male straight Length: 0.3 m 0.6 m 1.0 m 1.5 m 2.0 m	21 03 415 2401 21 03 415 2402 21 03 415 2403 21 03 415 2404 21 03 415 2405	View mating side Schematic diagram	
Han® M12 Circular connector Female angled, Male straight Length: 0.3 m 0.6 m 1.0 m 1.5 m 2.0 m	21 03 415 5401 21 03 415 5402 21 03 415 5403 21 03 415 5404 21 03 415 5405	View mating side Schematic diagram	
Han® M12 Circular connector Female angled, with LED, Male straight Length: 0.3 m 0.6 m 1.0 m 1.5 m 2.0 m	21 03 415 7401 21 03 415 7402 21 03 415 7403 21 03 415 7404 21 03 415 7405	View mating side Schematic diagram	

Stock items in bold type



System cables with Han® M12 Circular connector, A-coded

Identification	Part No.	Drawing	Dimensions in mm
Han® M12 Circular connector Female angled pre-assembled on one end Length: 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m	21 03 515 4401 21 03 515 4402 21 03 515 4403 21 03 515 4404 21 03 515 4405	 Schematic diagram 1 Litze braun (+) 2 Litze weiss (Ø) 4 Litze schwarz (S) 3 Litze blau (-) View mating side	
HARAX® M12 cable-Set Delivery range: Han® M12 connector with individually adaptable cable and HARAX® M12-S Length: 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m	21 83 515 4401 21 83 515 4402 21 83 515 4403 21 83 515 4404 21 83 515 4405	 HARAX® M12-S (21 03 111 1405) ca. 43,5 View mating side	
Han® M12 Circular connector Female angled, with LED pre-assembled on one end Length: 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m	21 03 515 7401 21 03 515 7402 21 03 515 7403 21 03 515 7404 21 03 515 7405	 Schematic diagram 1 Litze braun (+) 2 Litze weiss (Ø) 4 Litze schwarz (S) 3 Litze blau (-) View mating side	
HARAX® M12 cable-Set Delivery range: Han® M12 connector with individually adaptable cable and HARAX® M12-S Length: 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m	21 83 515 7401 21 83 515 7402 21 83 515 7403 21 83 515 7404 21 83 515 7405	 HARAX® M12-S (21 03 111 1405) ca. 43,5 View mating side	HARAX

Stock items in bold type



System cables with Han® M8 Circular connector

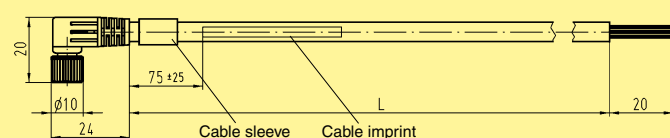
Identification	Part No.	Drawing	Dimensions in mm
Han® M8 Circular connector Female angled, Male straight		View mating side	
Length:	21 02 454 5301 21 02 454 5302 21 02 454 5303 21 02 454 5304 21 02 454 5305	Schematic diagram	
Han® M8 Circular connector Female angled, with LED Male straight		View mating side	
Length:	21 02 454 7301 21 02 454 7302 21 02 454 7303 21 02 454 7304 21 02 454 7305	Schematic diagram	

Stock items in bold type

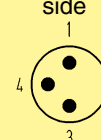
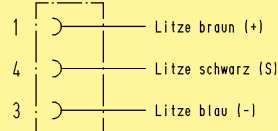


Han® M8 Circular connector
Female angled
pre-assembled on one end

21 02 554 4301
21 02 554 4302
21 02 554 4303
21 02 554 4304
21 02 554 4305

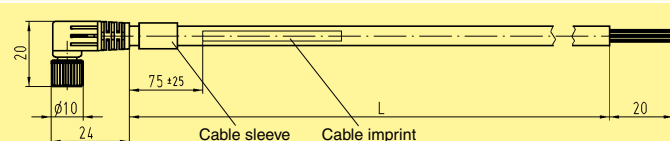


View mating
side



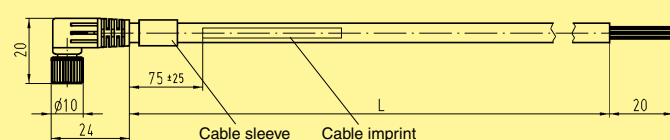
Delivery range: Han® M8 connector
with individually adaptable cable and
HARAX® M8-S

21 82 554 4301
21 82 554 4302
21 82 554 4303
21 82 554 4304
21 82 554 4305

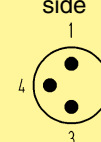
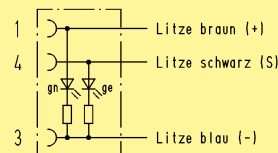
View mating
side

Length: 1.5 m
3.0 m
5.0 m
7.5 m
10.0 m

21 02 554 7301
21 02 554 7302
21 02 554 7303
21 02 554 7304
21 02 554 7305



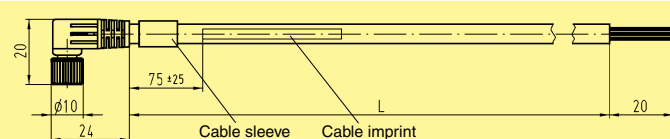
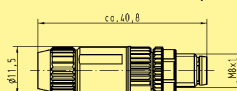
View mating
side



Delivery range: Han® M8 connector
with individually adaptable cable and
HARAX® M8-S

Length: 1.5 m
3.0 m
5.0 m
7.5 m
10.0 m

21 82 554 7301
21 82 554 7302
21 82 554 7303
21 82 554 7304
21 82 554 7305

View mating
side



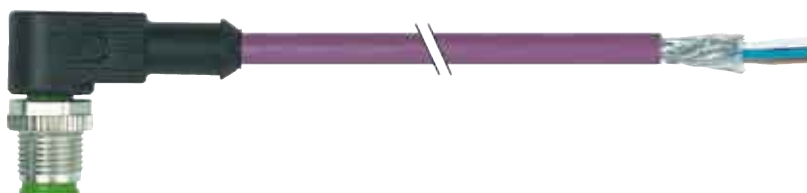
System cables with
Han® M12 Circular connector, B-coded

Technical characteristics

Rated voltage	max. 125 V AC/ DC
Rated current/contact	max. 4 A
Locking	Screw locking M12 x 1 mm, self securing
Recommended torque	0.6 Nm
Temperature range (male) °C	-25 °C ... +85 °C (dependent on connected conductor)
Degree of protection	IP 67
Number of wires / wire gauge	4 x 0.64 mm ²
Conductor insulation	PUR (rt, gn)
Arrangement of insulated strands	19 x 0.13 mm
Sheath	PUR (UL/CSA)
Outer diameter	appr. 7.8 mm
Bending radius	65 x outer diameter
Temperature range °C (applicate with fixed cable)	-30 °C ... + 80 °C

Identification	Part No.	Drawing
Han® M12 Circular connector, Male, straight pre-assembled on one end, useable as trailing cable		
Length: 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m	21 03 549 1301 21 03 549 1302 21 03 549 1303 21 03 549 1304 21 03 549 1305	
Han® M12 Circular connector, Male, angled pre-assembled on one end, useable as trailing cable		
Length: 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m	21 03 549 3301 21 03 549 3302 21 03 549 3303 21 03 549 3304 21 03 549 3305	

Stock items in bold type



System cables with Han® M12 Circular connector, B-coded

Identification	Part No.	Drawing
Han® M12 Circular connector, Female, straight pre-assembled on one end, useable as trailing cable Length: 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m	21 03 549 2301 21 03 549 2302 21 03 549 2303 21 03 549 2304 21 03 549 2305	Schematic diagram
Han® M12 Circular connector, Female, angled pre-assembled on one end, useable as trailing cable Length: 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m	21 03 549 4301 21 03 549 4302 21 03 549 4303 21 03 549 4304 21 03 549 4305	Schematic diagram
Han® M12 Circular connector, Male, straight Female, straight pre-assembled on one end, useable as trailing cable Length: 0.3 m 0.6 m 1.0 m 1.5 m 2.0 m	21 03 449 4301 21 03 449 4302 21 03 449 4303 21 03 449 4304 21 03 449 4305	Schematic diagram
Han® M12 Circular connector, Male, angled Female, angled pre-assembled on one end, useable as trailing cable Length: 0.3 m 0.6 m 1.0 m 1.5 m 2.0 m	21 03 449 6301 21 03 449 6302 21 03 449 6303 21 03 449 6304 21 03 449 6305	Schematic diagram

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Identification	Part No.	Technical characteristics	
Han® M12-male moving load B-coded 	21 03 030 1300		
Han® M12-male/female panel feed-through B-coded 	21 03 330 1300	Rated voltage Voltage/contact Thread Degree of protection Temperature range	24 V AC/DC 4 A M16 x 1.5 IP 67 in locked position (EN 60529) -25 °C ... + 85 °C
Han® M12-panel feed-through Male, B-coded, 20 cm conductor 	21 03 339 1301	Rated voltage Voltage/contact Termination Conductor cross section Degree of protection Temperature range	250 V AC/DC max. 4A solder, with pigtails (TPE insulation) assembled 0.25 mm ² IP 67 in locked position (EN 60529) -25 °C ... + 85 °C
Han® M12-panel feed-through Female, B-coded, 20 cm conductor 	21 03 339 2301	Rated voltage Voltage/contact Termination Conductor cross section Degree of protection Temperature range	250 V AC/DC max. 4A solder, with pigtails (TPE insulation) assembled 0.25 mm ² IP 67 in locked position (EN 60529) -25 °C ... + 85 °C
PROFIBUS-cable 100 m raw, PUR cable, useable as trailing cable 	21 01 000 0021		
Han® M12 dynamometric screwdriver SW 9	09 99 000 0380	 	
Han® M8 dynamometric screwdriver SW 13 SW 17	09 99 000 0382 09 99 000 0384		

Stock items in bold type

HARAX

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30



System cables with
Han® M12 Circular connector, D-coded

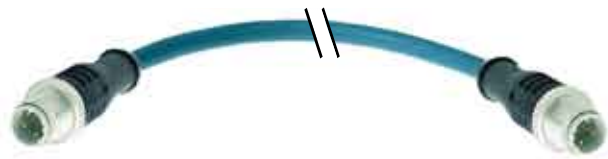
Technical characteristics

Han® M12 Circular connector – AWG 22/7

Rated voltage	max. 50 V AC/DC
Rated current/contact	max. 4 A
Locking	Screw locking M12x1, self securing
Recommended torque	0.6 Nm
Temperature range	- 20 °C ... +60 °C
Degree of protection	IP 67
Number of wires / wire gauge	2 x 2 x AWG 22/7
Conductor insulation	PE (yellow, orange, white, blue) acc. to PROFInet®
Arrangement of insulated strands	7 x 0.25 mm
Sheath	PUR (UL, CSA)
Outer diameter	appr. 6.5 mm
Bending radius	10 x outer diameter
Temperature range	-20 °C ... + 60 °C

Han® M12 Circular connector – AWG 26

Rated voltage	max. 50V AC/DC
Rated current/contact	max. 2 A
Locking	Screw locking M12x1, self securing
Recommended torque	0.6 Nm
Temperature range	- 5 °C ... +60 °C
Degree of protection	IP 67
Number of wires / wire gauge	2 x 2 x AWG 26
Conductor insulation	PE (white/orange, orange, white/green, green) acc. to EIA/ TIA 568B
Arrangement of insulated strands	7 x 0.16 mm
Sheath	PUR (UL, CSA)
Outer diameter	appr. 5.6 mm
Bending radius	10 x outer diameter
Temperature range	-5 °C ... + 60 °C



System cables with Han® M12 Circular connector, D-coded

Identification	Part No.	Drawing	Dimensions in mm
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Pre-assembled and tested system cables for structured cabling of industrial Ethernet networks, based on Han® M12 Circular connectors, D-coded			
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Cable type:	Shielded Twisted Pair Standard Cable
Mating interface:	M12 D-coded acc. to IEC 61 076-2-101
Transmission performance acc. to ISO/IEC 11801:2002:	Class D, 100% tested
Degree of protection	IP 65 / IP 67 (when mated)

Pin assignment

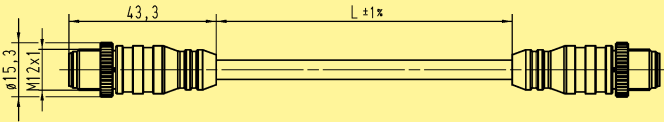
Signal	Function	Conductor colour PROFINet®	Conductor colour EIA/TIA 568B	Contact assign- ment
TD+	Transmission Data+	Yellow	White/ Orange	1
TD-	Transmission Data-	Orange	Orange	3
RD+	Receiver Data+	White	White/Green	2
RD-	Receiver Data-	Blue	Green	4

2 x Han® M12 Circular connector, D-coded, straight			
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Length: 1 m	21 03 483 1401
3 m	21 03 483 1403
5 m	21 03 483 1405
10 m	21 03 483 1410
15 m	21 03 483 1415
25 m	21 03 483 1425
40 m	21 03 483 1440

other length on request

cable: AWG 26 / 0.14 mm²

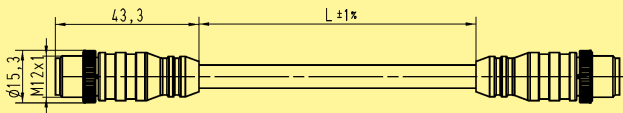


2 x Han® M12 Circular connector, D-coded, straight			
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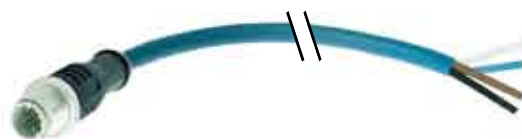
Length: 1 m	21 03 485 1401
3 m	21 03 485 1403
5 m	21 03 485 1405
10 m	21 03 485 1410
15 m	21 03 485 1415
25 m	21 03 485 1425
40 m	21 03 485 1440

other length on request

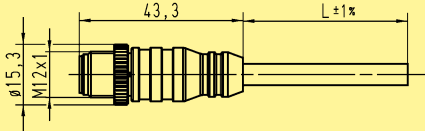
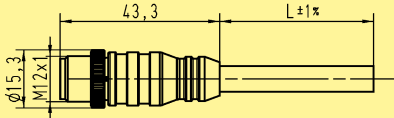
cable: AWG 22 / 0.34 mm²

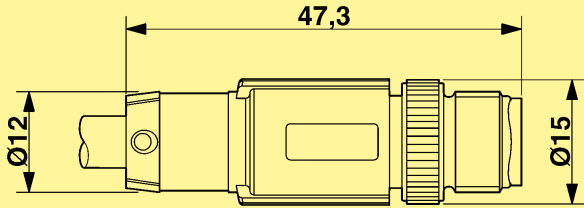
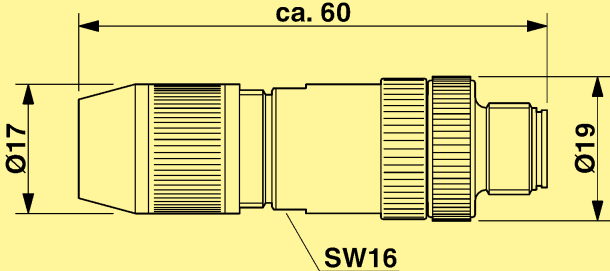
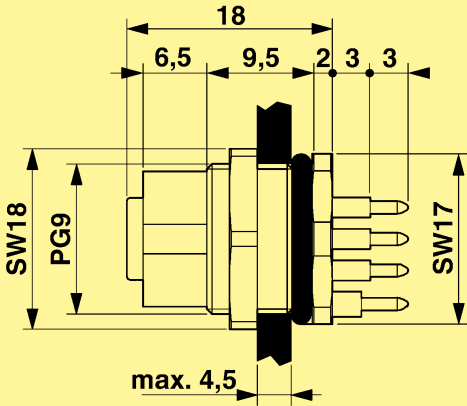


Stock items in bold type



System cables with Han® M12 Circular connector, D-coded

Identification	Part No.	Drawing	Dimensions in mm																									
Pre-assembled and tested system cables for structured cabling of industrial Ethernet networks, based on Han® M12 Circular connectors, D-coded		Cable type: Shielded Twisted Pair Standard Cable Mating interface: M12 D-coded acc. to IEC 61 076-2-101 Transmission performance acc. to ISO/IEC 11801:2002: Class D, 100% tested Degree of protection IP 65 / IP 67 (when mated) Pin assignment <table><tr><th>Signal</th><th>Function</th><th>Conductor colour PROFINet®</th><th>Conductor colour EIA/TIA 568B</th><th>Contact assignment</th></tr><tr><td>TD+</td><td>Transmission Data+</td><td>Yellow</td><td>White/ Orange</td><td>1</td></tr><tr><td>TD-</td><td>Transmission Data-</td><td>Orange</td><td>Orange</td><td>3</td></tr><tr><td>RD+</td><td>Receiver Data+</td><td>White</td><td>White/Green</td><td>2</td></tr><tr><td>RD-</td><td>Receiver Data-</td><td>Blue</td><td>Green</td><td>4</td></tr></table>	Signal	Function	Conductor colour PROFINet®	Conductor colour EIA/TIA 568B	Contact assignment	TD+	Transmission Data+	Yellow	White/ Orange	1	TD-	Transmission Data-	Orange	Orange	3	RD+	Receiver Data+	White	White/Green	2	RD-	Receiver Data-	Blue	Green	4	
Signal	Function	Conductor colour PROFINet®	Conductor colour EIA/TIA 568B	Contact assignment																								
TD+	Transmission Data+	Yellow	White/ Orange	1																								
TD-	Transmission Data-	Orange	Orange	3																								
RD+	Receiver Data+	White	White/Green	2																								
RD-	Receiver Data-	Blue	Green	4																								
1 x Han® M12 Circular connector, D-coded, straight Length: 1 m21 03 583 1401 3 m21 03 583 1403 5 m21 03 583 1405 10 m21 03 583 1410 25 m21 03 583 1425 40 m21 03 583 1440 other length on request		cable: AWG 26 / 0.14 mm² 																										
1 x Han® M12 Circular connector, D-coded, straight Length: 1 m21 03 585 1401 3 m21 03 585 1403 5 m21 03 585 1405 10 m21 03 585 1410 25 m21 03 585 1425 40 m21 03 585 1440 other length on request		cable: AWG 22 / 0.34 mm² 	HARAX																									

Identification	Part No.	Drawing	Dimensions in mm
1 x Han® M12 Circular connector, straight pre-assembled on one end, 8 poles Length: 1.0 m 3.0 m 5.0 m 	21 03 514 1801 21 03 514 1803 21 03 514 1805		
Han® M12 Circular connector with IDC termination technology, 8 poles 	21 03 121 1801		
Han® M12 pcb 8 poles 	21 03 311 2801		

Stock items in bold type



Overmolded cordsets 7/8"

Technical characteristics

Degree of protection	IP 67
Temperature range	
applies to moved cable	-20 °C ... +80 °C
cables permanently installed	-50 °C ... +80 °C
Rated current	max. 8 A every contact (+40 °C)
Rated voltage	230 / 400 V
Rated impulse voltage	3 kV
Pollution degree	3
Material group	Category I acc. to IEC 60664-1
Cable data	
Jacket material	PUR
Jacket colour	grey
Wire isolation	TPM
Wire colours	brown, white, blue, black, green/yellow
Wire gauge	5 x 1.5 mm ²
Standards	UL / CSA

Circular connector 7/8"



Overmolded cordsets 7/8"

Identification	Part No.	Drawing	Dimensions in mm
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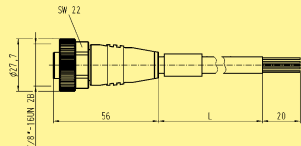
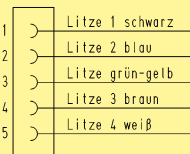
Overmolded cordsets 7/8"

Female straight
5 pin

Length: 1.5 m
3.0 m
5.0 m
7.5 m
10.0 m

21 04 516 2501
21 04 516 2502
21 04 516 2503
21 04 516 2504
21 04 516 2505

Schematic diagram



View mating side



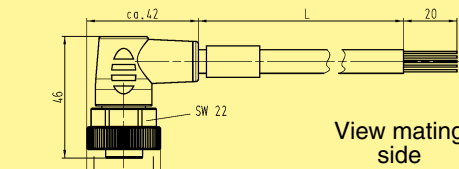
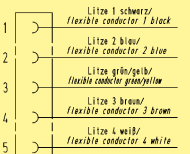
Overmolded cordsets 7/8"

Female angled
5 pin

Length: 1.5 m
3.0 m
5.0 m
7.5 m
10.0 m

21 04 516 4501
21 04 516 4502
21 04 516 4503
21 04 516 4504
21 04 516 4505

Schematic diagram



View mating side



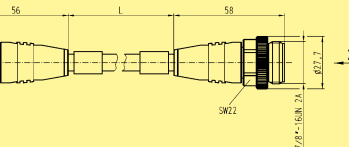
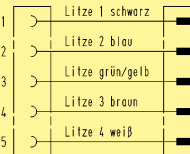
Overmolded cordsets 7/8"

Male-Female straight
5 pin

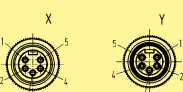
Length: 0.3 m
0.6 m
1.0 m
1.5 m
2.0 m

21 04 416 1501
21 04 416 1502
21 04 416 1503
21 04 416 1504
21 04 416 1505

Schematic diagram



View mating side



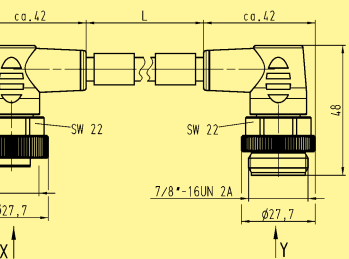
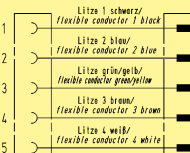
Overmolded cordsets 7/8"

Male-Female angled
5 pin

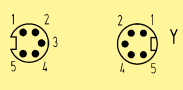
Length: 0.3 m
0.6 m
1.0 m
1.5 m
2.0 m

21 04 416 3501
21 04 416 3502
21 04 416 3503
21 04 416 3504
21 04 416 3505

Schematic diagram



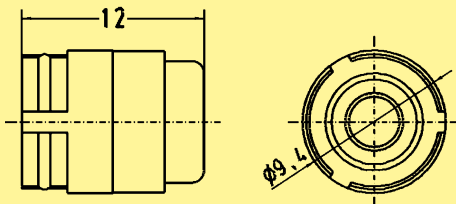
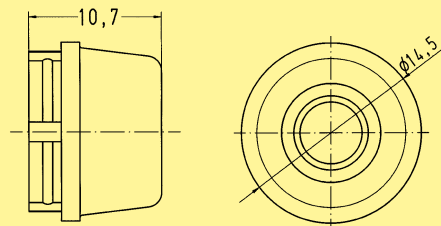
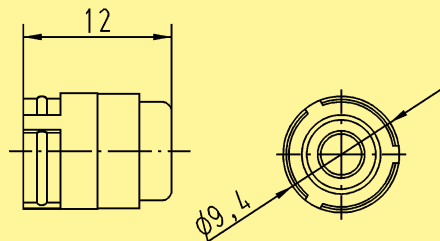
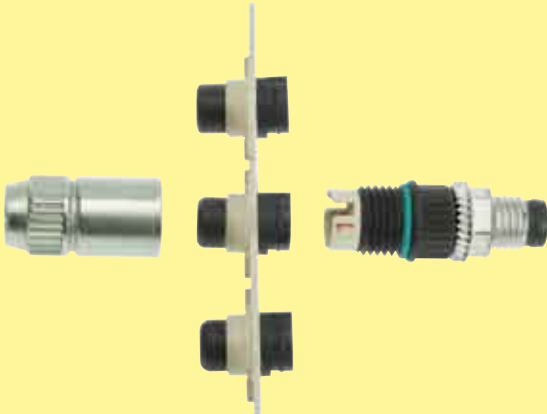
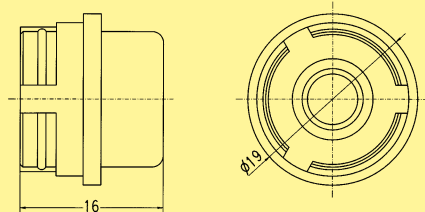
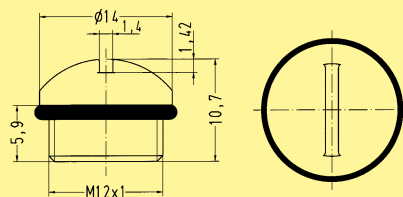
View mating side



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36

Stock items in bold type

Identification		Part No.	Drawing	Dimensions in mm
Seal M12 2.9 - 4.0 mm 4 - 5.1 mm		21 01 010 2011 21 01 010 2001		
Seal M12-L 3 poles: 5.5 - 7.2 mm 4 + 5 poles: 6 - 8 mm		21 01 010 2003 21 01 010 2007		
Seal M8 for 2.5 - 3.5 mm cable Ø for 3.2 - 4.4 mm cable Ø for 4.2 - 5.4 mm cable Ø		21 01 010 2008 21 01 010 2004 21 01 010 2005		
Set of 3 seals for HARAX® M8-S for 2.5 - 3.2 mm cable Ø for 3.2 - 4.0 mm cable Ø for 4.0 - 5.1 mm cable Ø		21 01 010 2013		
Seal Pg 13.5 / M20 6 - 9 mm		21 01 010 2002		
Cap M12		21 01 000 0003		

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Identification	Part No.	Drawing	Dimensions in mm
Lock nut Pg 9 nickel plated	21 01 000 0008		2,9
Lock nut M16 nickel plated	21 01 000 0010		3
Lock nut 7/8" nickel plated	21 01 000 0023		
Lock nut Pg 13.5 nickel plated	21 01 000 0020		3
Lock nut Pg 13.5	21 01 000 0007		5
Lock nut M20	21 01 000 0009		5
Socket wrench	21 01 000 0001		

Stock items in bold type