



Pushing Performance



People | Power | Partnership

HARTING

M8 / M12 Circular Connectors

Standardized circular connectors with M8, M12 and 7/8" thread are in widespread use in the installation of machines and systems. HARTING offers a portfolio of field-assembly angled and straight M8, M12 and 7/8" connectors which are attuned to meet all relevant automation requirements. The housings are available as plastic and as metal variant. In addition to the standard circular connectors for sensors/actuators, HARTING is offering standardized circular connectors such as the M12 variants to meet the special requirements of communication technology (Ethernet, Ethernet/IP, PROFINET, Profibus, Devicenet and CAN).

The HARTING product range comprises connectors, ready-to-use patch cables and corresponding accessories.

The easy-to-handle *HARAX*® quick connection technology is available for the in situ assembly of M8 and M12 connectors and

does not require the use of special tools. The portfolio of circular connectors is rounded off by the *har-speed* M12 connector family. The *har-speed* connectors are optimized for machinery and system applications with high bandwidth as well as for the IP67 infrastructure. HARTING's comprehensive and user-friendly circular connector range enables cost-effective and quick realization of all wiring and communication tasks in automation projects.

APPLIANCE INTEGRATION:

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



QUICK CONNECTION WITH HARAX®:

The HARTING HARAX® quick connection technology is an ideal solution for the in situ assembly of M8/M12 connectors. Users only have to strip the cable insulation, insert the conductors, and screw the connector together in order to produce a gas-proof and vibration resistant connection.

HARAX® is a universal technology deployed in diverse connector series to wire data, signal and power lines and represents the current standard connection for Fieldbus and Fast Ethernet.



ASSEMBLED SYSTEM CABLES:

HARTING offers a comprehensive range of ready-to-use M8/M12 system cables for the quick wiring of sensors and actuators. HARTING also offers ready-to-use and tested system cables for special Ethernet communication such as PROFINET and Ethernet/IP.

HARTING also provides custom patch cables which are also available as overmoulded versions. The range of solutions comprises shielded and non-shielded cables with diverse structures, as required in drag chain applications, for example.



M12 FEMALE SOCKETS FOR PCB MOUNTING:

Straight and angled contact inserts are available for direct soldering on PCBs. HARTING has developed special shielded contact inserts category 5 to ISO/IEC 11801 for Ethernet technology which meet the stringent requirements for railway applications.



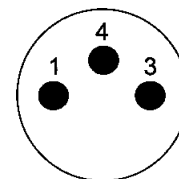
M8 HARAX[®] cable connector



Specifications IEC 60 352-4

Approval 

Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Technical characteristics M8 HARAX[®]

Type M8	HARAX [®] M8-XS	HARAX [®] M8-S
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General data

Conductor cross section	0.1 - 0.14 mm ² AWG 27-26	0.14 - 0.34 mm ² AWG 26-22
Diameter of individual strands	≥ 0.05 mm	≥ 0.1 mm
Conductor insulation material	PVC / PP / TPE	PVC / PP / TPE
Conductor diameter	0.6 - 1.0 mm	1.0 - 1.6 mm
Cable diameter	1.9 - 2.5 mm 2.5 - 3.5 mm	2.5 - 5.1 mm
Temperature range	-40 °C ... +85 °C	-40 °C ... +85 °C
Temperature during connection	-5 °C ... +50 °C	-5 °C ... +50 °C
Degree of protection	IP67	IP67
Mating cycles	100	100
Recommended tightening torque / Hexagonal wrench	0.4 Nm / SW 9	0.4 Nm / SW 9

Electrical characteristics

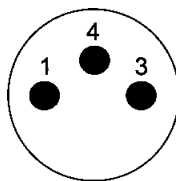
Rated current	2 A	4 A
Rated voltage	32 V	32 V
Rated impulse voltage	1.5 kV	1.5 kV
Contact resistance	10 mΩ	10 mΩ
Insulation resistance	10 ⁸ Ω	10 ⁸ Ω
Pollution degree	3	3
Overvoltage category	3	3
Isolation group	1	1

Materials

Contact material	Copper alloy	Copper alloy
Contact plating	Gold	Gold
Contact carrier material	PA	PA
Housing material	PA, zinc die-cast	PA, zinc die-cast



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



02

Applications / Advantages

- Actor and sensor applications
- Unshielded versions
- HARAX® rapid termination
- Overmoulded system cables in various lengths
- Robust design, quick assembly

Identification

Part No.

Drawing

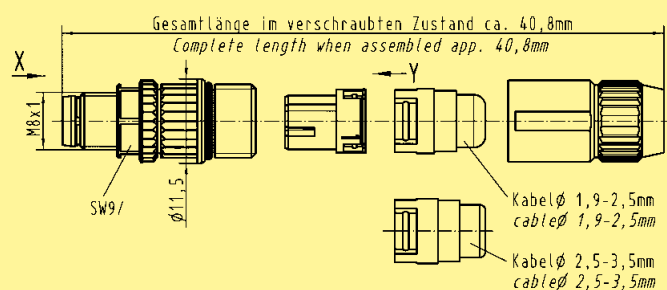
Dimensions in mm

HARAX® M8-XS



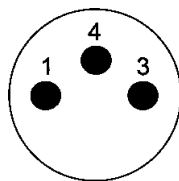
Male
straight version, 3 poles
for 0.1 - 0.14 mm²

21 02 159 1305





Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

HARAX® M8-S



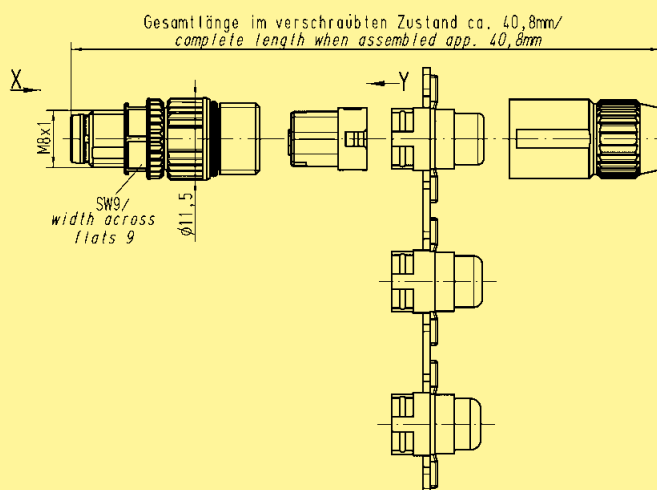
Male
straight version, 3 poles
for 0.14 - 0.34 mm²

21 02 151 1305



Male
straight version, 4 poles
for 0.14 - 0.34 mm²

21 02 151 1405



View mating side:
3 poles, male

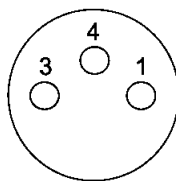


View mating side:
4 poles, male





Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



02

Identification

Part No.

Drawing

Dimensions in mm

HARAX® M8-S



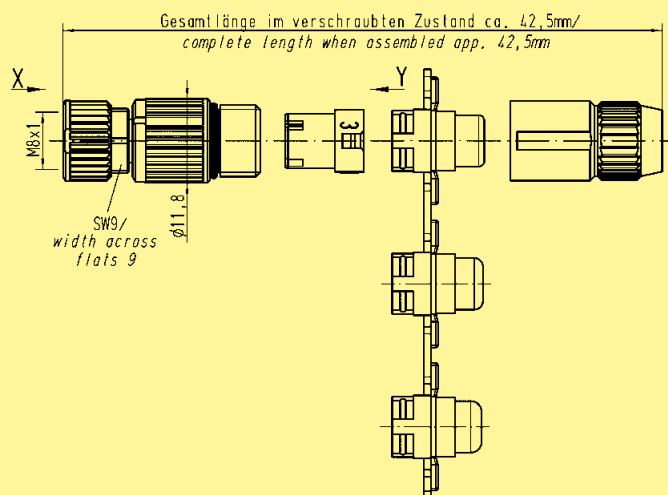
Female
straight version, 3 poles
for 0.14 - 0.34 mm²

21 02 151 2305

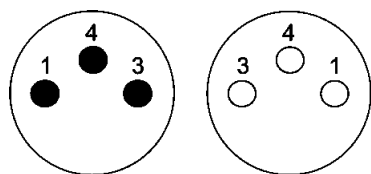


Female
straight version, 4 poles
for 0.14 - 0.34 mm²

21 02 151 2405



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



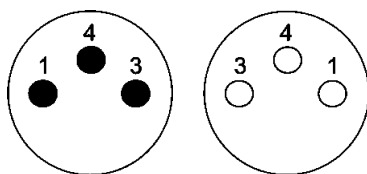
02

Technical characteristics

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 (dependant on connected conductor)	-25 °C ... +85 °C
Degree of protection	IP67
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. 4.2 - 5.5 mm
Bending radius	10 x outer diameter
Temperature range (working and storage)	-5 °C ... + 80 °C

Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



02

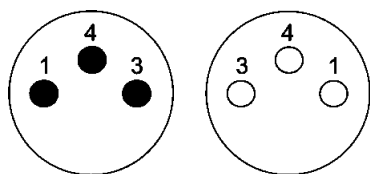
Overview system cables M8

Number of contacts		Male M8 straight		Female M8 angled	
		 Cable material PUR		 Cable material PUR	
Female M8 angled		0.3 m	21 02 454 5301	xxx	
		0.6 m	21 02 454 5302	xxx	
		1.0 m	21 02 454 5303	xxx	
		1.5 m	21 02 454 5304	xxx	
		2.0 m	21 02 454 5305	xxx	
		0.3 m	21 02 454 7301 with LED	xxx	
		0.6 m	21 02 454 7302 with LED	xxx	
		1.0 m	21 02 454 7303 with LED	xxx	
		1.5 m	21 02 454 7304 with LED	xxx	
		2.0 m	21 02 454 7305 with LED	xxx	
Open end		xxx		1.5 m	21 02 554 4301
		xxx		3.0 m	21 02 554 4302
		xxx		5.0 m	21 02 554 4303
		xxx		7.5 m	21 02 554 4304
		xxx		10.0 m	21 02 554 4305
		xxx		1.5 m	21 02 554 7301 with LED
		xxx		3.0 m	21 02 554 7302 with LED
		xxx		5.0 m	21 02 554 7303 with LED
		xxx		7.5 m	21 02 554 7304 with LED
		xxx		10.0 m	21 02 554 7305 with LED

M8 System cables



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

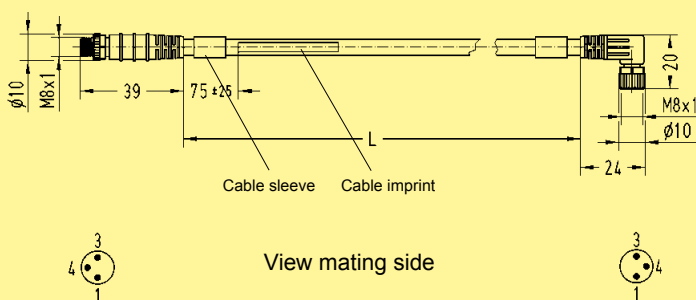
Dimensions in mm

M8 Circular connectors

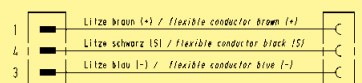
Female angled, male straight

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

21 02 454 5301
21 02 454 5302
21 02 454 5303
21 02 454 5304
21 02 454 5305



Schematic diagram

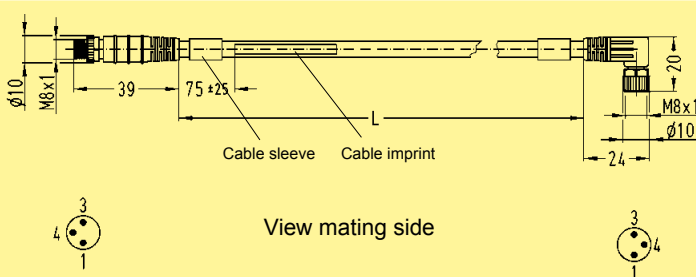


M8 Circular connectors

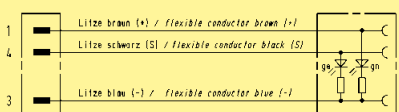
Female angled, with LED
Male straight

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

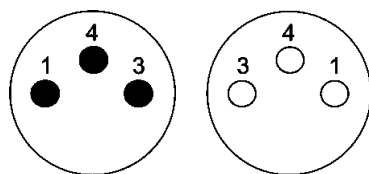
21 02 454 7301
21 02 454 7302
21 02 454 7303
21 02 454 7304
21 02 454 7305



Schematic diagram



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



02

Identification

Part No.

Drawing

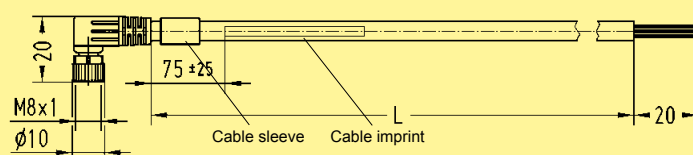
Dimensions in mm

M8 Circular connectors

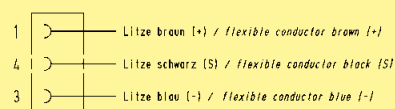
Female angled
pre-assembled on one end

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

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



Schematic diagram



View mating side

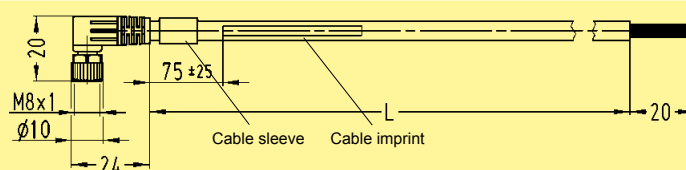


M8 Circular connectors

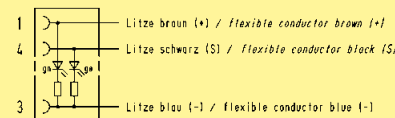
Female angled, with LED
pre-assembled on one end

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

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



Schematic diagram



View mating side



Identification

Part No.

Drawing

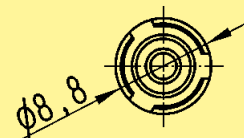
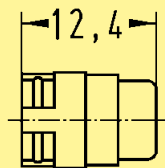
Dimensions in mm

Seal M8

for 1.9 - 2.5 mm cable Ø
for 2.5 - 3.5 mm cable Ø
for 4.2 - 5.4 mm cable Ø



21 01 010 2016
21 01 010 2008
21 01 010 2005

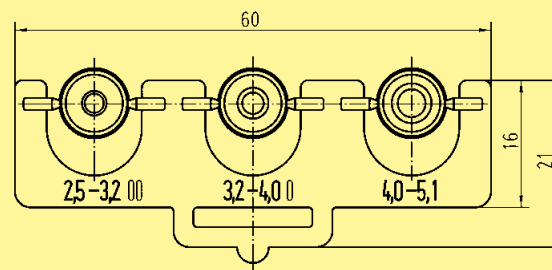


Set of seals for HARAX® M8-S

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



M8 dynamometric screwdriver

Tightening torque 0.4 Nm

SW 9

09 99 000 0380



M12 A-coding

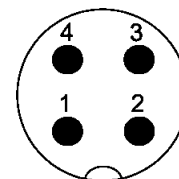


Specifications IEC 60 352-4

Approval 



Mating face



A-coding
Mating face
acc. to IEC 61 076-2-101

Technical characteristics M12 – A-coding

Type M12 A-coded	<i>HARAX</i> ® M12-S	<i>HARAX</i> ® M12 angled	<i>HARAX</i> ® M12 L 3 poles, 4 poles
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General data

Conductor cross section	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
Diameter of individual strands	≥ 0.1 mm	≥ 0.1 mm	≥ 0.1 mm
Conductor insulation material	PVC / PP / TPE	PVC	PVC
Conductor diameter	1.0 - 1.6 mm	1.2 - 1.6 mm	1.6 - 2.0 mm 2.0 - 2.6 mm
Cable diameter	2.9 - 4.0 mm 4.0 - 5.1 mm	4 - 5.1 mm	6 - 8 mm
Temperature range	-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
Degree of protection	IP67	IP67	IP65 / IP67
Mating cycles	100	100	100
Tightening torque connector / hexagonal wrench	0.6 Nm / SW 13	0.6 Nm / SW 13	0.6 Nm / SW 17

Electrical characteristics

Rated current	4 A	4 A	6 A
Rated voltage	32 V	32 V	50 V
Rated impulse voltage	1.5 kV	1.5 kV	1.5 kV
Contact resistance	10 mΩ	10 mΩ	10 mΩ
Insulation resistance	10 ⁸ Ω	10 ⁸ Ω	10 ⁸ Ω
Pollution degree	3	3	3
Overvoltage category	3	3	3
Isolation group	1	1	1

Materials

Contact material	Brass	Brass	Brass
Contact plating	Gold	Gold	Gold
Contact carrier material	PA reinforced	PA	PA unreinforced
Housing material	PA reinforced	PA	PA unreinforced

M12 A-coding

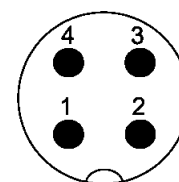


Specifications IEC 60 352-4

Approval 



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101

Technical characteristics M12 – A-coding

03

Type M12 A-coded	HARAX® M12-L 5 poles	HARAX® M12 L shielded	M12 Crimp
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General data

Conductor cross section	0.34 - 0.5 mm ² AWG 22-20	0.14 - 0.34 mm ² AWG 26-22	0.14 - 0.75 mm ² AWG 26-18
Diameter of individual strands	≥ 0.1 mm	≥ 0.1 mm	X
Conductor insulation material	PVC	PVC	X
Conductor diameter	1.2 - 2.0 mm	1.2 - 1.6 mm	2.0 - 2.3 mm
Cable diameter	6 - 8 mm	4.5 - 8.8 mm	4.5 - 8.8 mm
Temperature range	-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
Degree of protection	IP65 / IP67	IP65 / IP67	IP67
Mating cycles	100	100	500
Tightening torque connector / hexagonal wrench	0.6 Nm / SW 17	0.6 Nm / SW 17	0.5 Nm / SW 17

Electrical characteristics

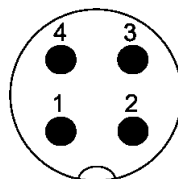
Rated current	4 A	4 A	4 A
Rated voltage	50 V	50 V	250 V
Rated impulse voltage	1.5 kV	1.5 kV	1.5 kV
Contact resistance	10 mΩ	10 mΩ	10 mΩ
Insulation resistance	10 ⁸ Ω	10 ⁸ Ω	10 ⁸ Ω
Pollution degree	3	3	3
Overvoltage category	3	3	3
Isolation group	1	1	1

Materials

Contact material	Brass	Brass	Brass
Contact plating	Gold	Gold	Gold
Contact carrier material	PA unreinforced	PA unreinforced	PA
Housing material	PA unreinforced	PA unreinforced	PA



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Applications / Advantages

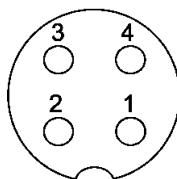
- Actor and sensor applications
- Shielded and unshielded versions
- Available with crimp resp. HARAX® rapid termination, or as overmoulded system cable in various lengths
- Robust design, quick assembly

Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12-S Male straight version 4 poles, 0.14 - 0.34 mm ²	21 03 111 1405	Gesamtlänge im verschraubten Zustand ca. 46,75mm complete length when assembled app. 46,75mm	
Male straight version 4 poles, 0.25 - 0.5 mm ²	21 03 112 1405	Gesamtlänge im verschraubten Zustand ca. 54,8mm complete length when assembled app. 54,8mm SW13 width across flats 13 Ø16,7	

M12 HARAX® A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

HARAX® M12-S

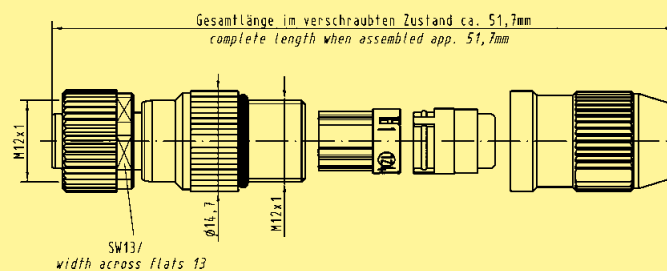
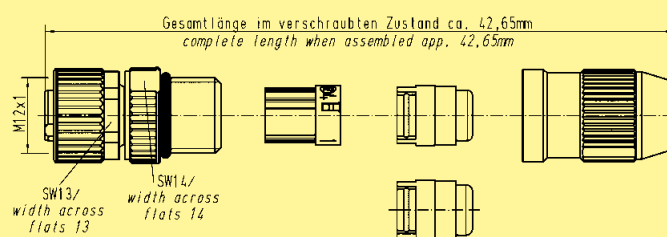


Female
straight version
4 poles, 0.14 - 0.34 mm²

Female
straight version
4 poles, 0.25 - 0.5 mm²

21 03 111 2405

21 03 112 2405



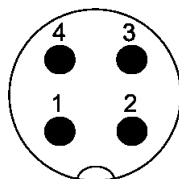
03

03
09

M12 HARAX® A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

Drawing

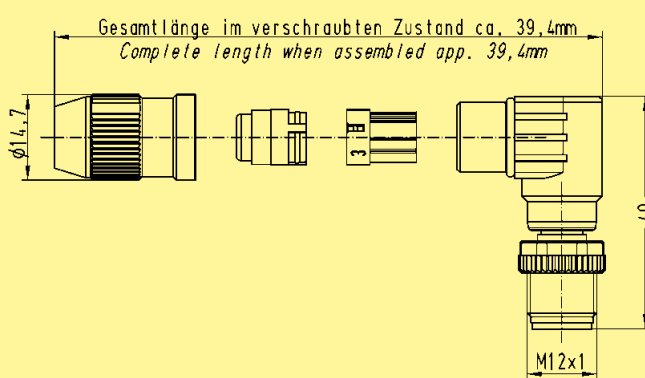
Dimensions in mm

HARAX® M12



Male
angled version
4 poles

21 01 140 5081

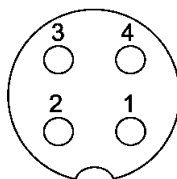


03
10

M12 HARAX® A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

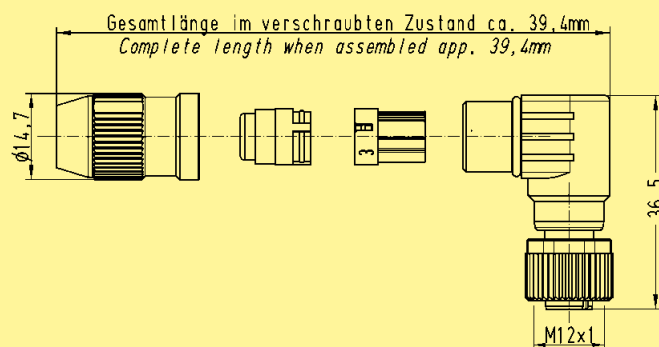
Dimensions in mm

HARAX® M12



Female
angled version
4 poles

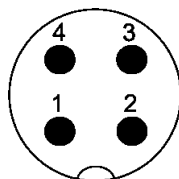
21 01 140 5091



03



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

Drawing

Dimensions in mm

HARAX® M12-L, unshielded



Male
3 poles, A-coding,
with pre-leading contact
(assignment 3, 4, 5)

21 03 212 1400

3 poles, A-coding
(assignment 1, 3, 4)

21 03 212 1306

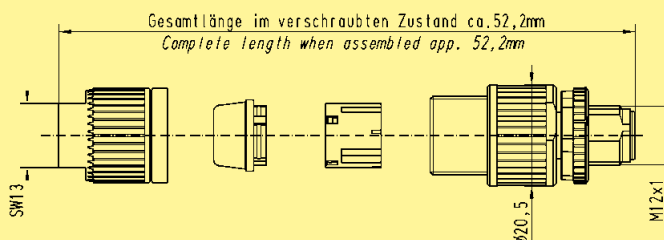
4 poles, A-coding
(assignment 1, 2, 3, 4)

21 03 212 1305

4 poles, A-coding,
to 2.6 mm core diameter
(assignment 1, 2, 3, 4)

21 03 212 1407

0.34 - 0.75 mm²
AWG 22 - 18
Cable diameter: 6 - 8 mm



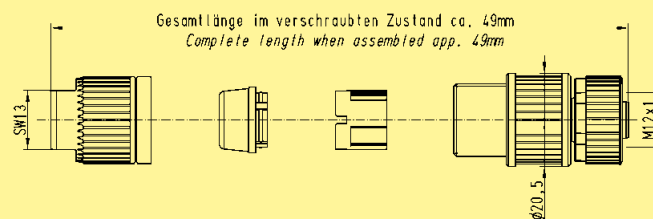
HARAX® M12-L, unshielded



Male
5 poles, A-coding

21 03 272 1505

0.34 - 0.5 mm²
AWG 22 - 20
Cable diameter: 6 - 8 mm

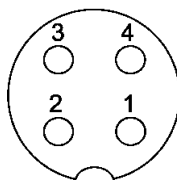


03
12

M12 HARAX® A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

HARAX® M12-L, unshielded



Female
3 poles, A-coding
(assignment 3, 4, 5)

21 03 212 2400

3 poles, A-coding
(assignment 1, 3, 4)

21 03 212 2306

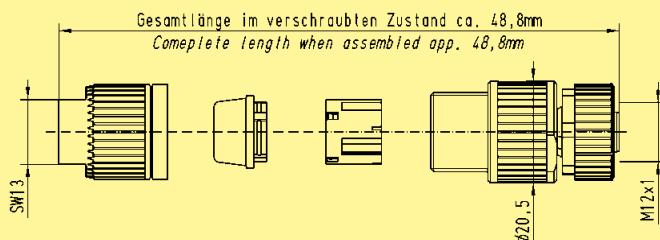
4 poles, A-coding
(assignment 1, 2, 3, 4)

21 03 212 2305

4 poles, A-coding,
to 2.6 mm core diameter
(assignment 1, 2, 3, 4)

21 03 212 2407

0.34 - 0.75 mm²
AWG 22 - 18
Cable diameter: 6 - 8 mm



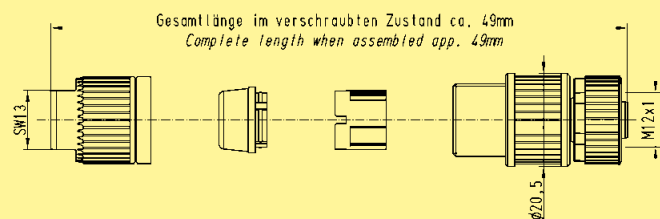
HARAX® M12-L, unshielded



Female
5 poles, A-coding

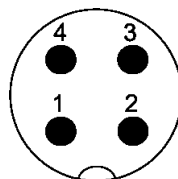
21 03 272 2505

0.34 - 0.5 mm²
AWG 22 - 20
Cable diameter: 6 - 8 mm





Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

Drawing

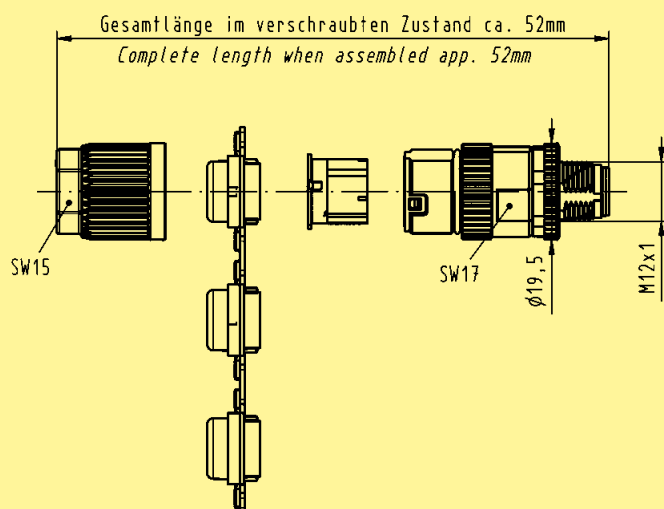
Dimensions in mm

HARAX® M12-L, shielded



Male
4 poles, A-coding
0.14 - 0.34 mm² / AWG 26 - 22

21 03 221 1405

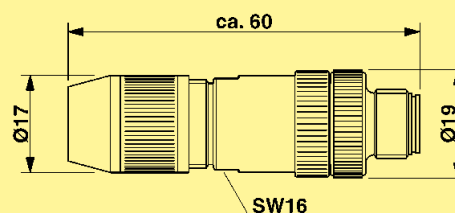


M12 Circular connector



Male
with IDC termination,
8 poles
0.14 - 0.34 mm² / AWG 26 - 22

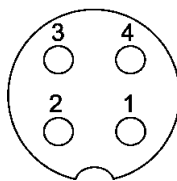
21 03 121 1801



M12 HARAX® A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

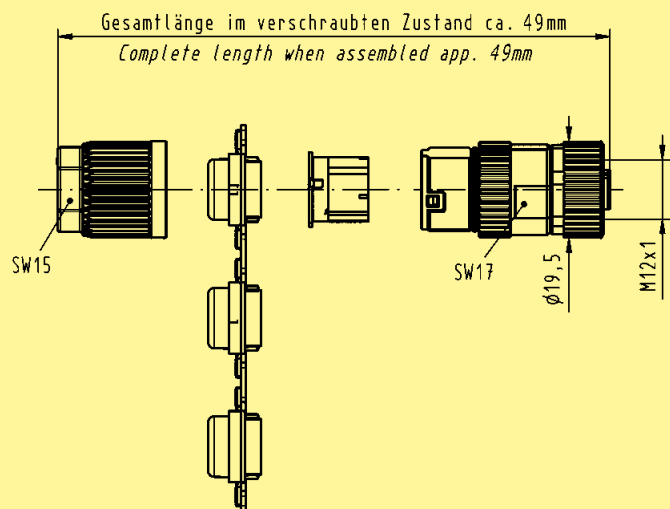
Dimensions in mm

HARAX® M12-L, shielded



Female
4 poles, A-coding
0.14 - 0.34 mm² / AWG 26 - 22

21 03 221 2405

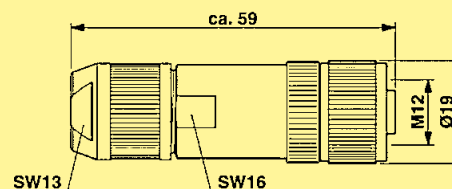


M12 Circular connectors



Female
with IDC termination technology,
8 poles
0.14 - 0.34 mm² / AWG 26 - 22

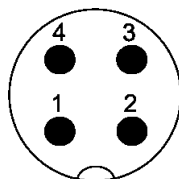
21 03 121 2801



M12 Crimp A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

Drawing

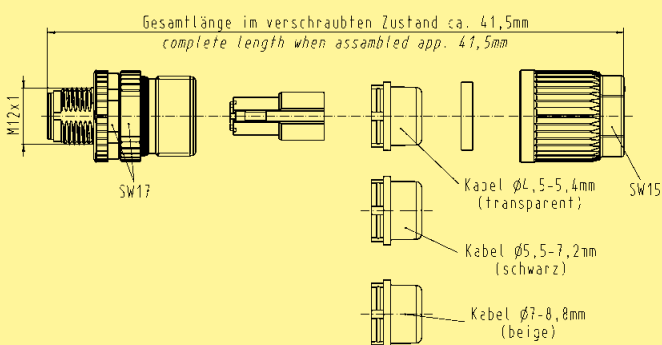
Dimensions in mm

M12 Crimp



Male
4 poles, A-coding

21 03 812 1405

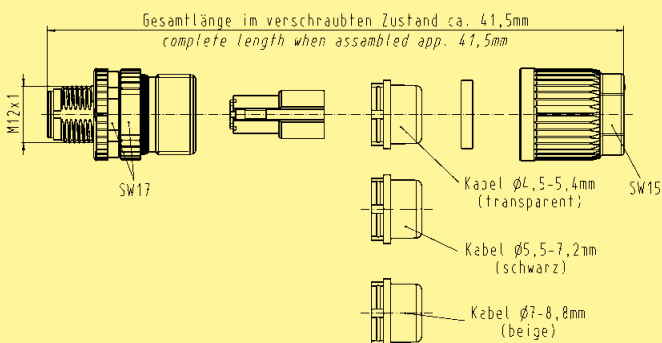


M12 Crimp



Male
5 poles, A-coding

21 03 812 1505*

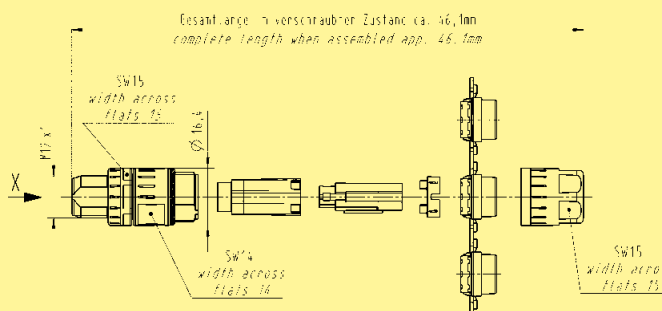


M12 Crimp Slim design



Male
5 poles, A-coding
Cable diameter: 4.5 - 8.8 mm

21 03 821 1505*



03
16

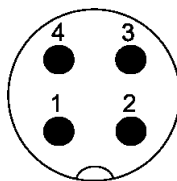
Further information and data sheets see www.HARTING.com

* UL approval is in preparation

M12 Crimp A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

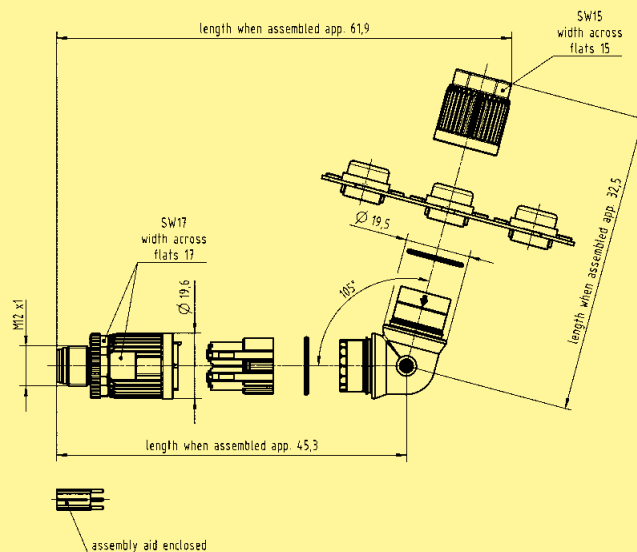
Dimensions in mm

M12 Crimp, angled



Male
5 poles, A-coding

21 03 822 3505*

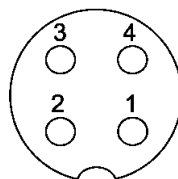


03

M12 Crimp A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

Drawing

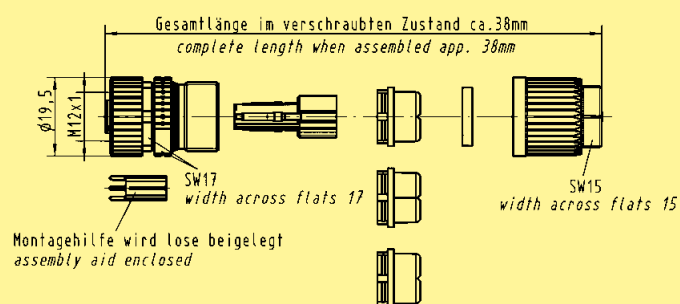
Dimensions in mm

M12 Crimp



Female
4 poles, A-coding

21 03 812 2405

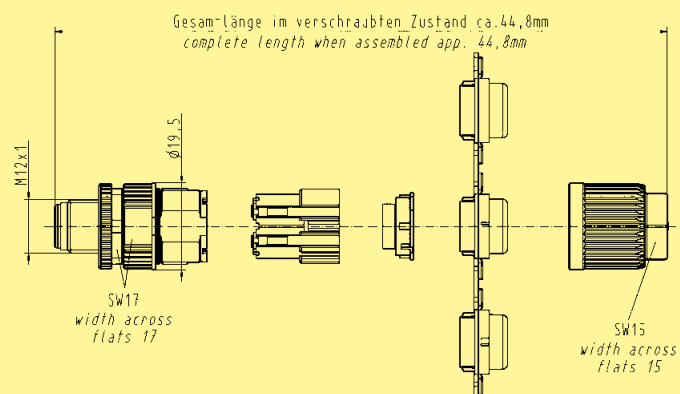


M12 Crimp



Female
5 poles, A-coding

21 03 812 2505*



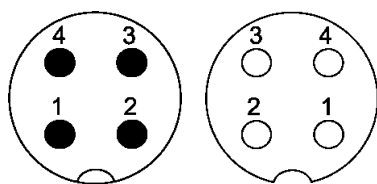
03
18

Further information and data sheets see www.HARTING.com

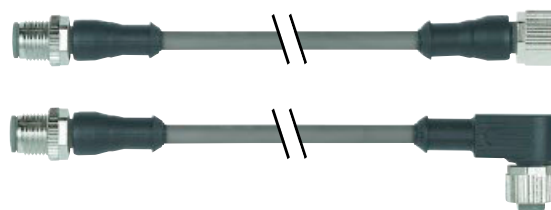
* UL approval is in preparation



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Technical characteristics

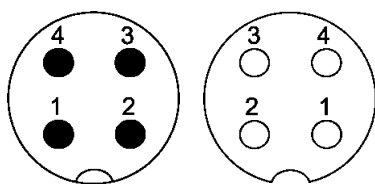
M12 Circular connectors, without PE

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	-25 °C ... +85 °C (dependant on connected conductor)
Degree of protection	IP67
Number of wires / wire gauge	4 x 0.34 mm ²
Conductor insulation	PP (bn, wh, bu, bk)
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

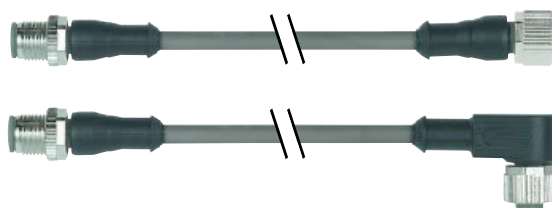
M12 System cables, A-coded



Mating face

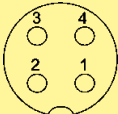
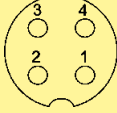
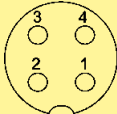


A-coding
Mating face
acc. to IEC 61076-2-101

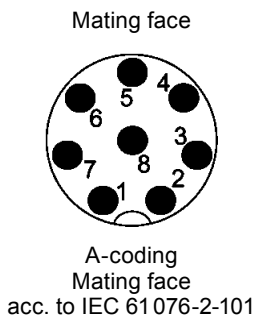


Overview system cables M12

03

			Male M12 A-coding, straight		Female M12 A-coding, angled	
Number of contacts			 Cable material: PUR		 Cable material: PUR	
Female M12	straight		0.3 m	21 03 415 2401	xxx	
			0.6 m	21 03 415 2402	xxx	
			1.0 m	21 03 415 2403	xxx	
			1.5 m	21 03 415 2404	xxx	
			2.0 m	21 03 415 2405	xxx	
	angled		0.3 m	21 03 415 5401	xxx	
			0.6 m	21 03 415 5402	xxx	
			1.0 m	21 03 415 5403	xxx	
			1.5 m	21 03 415 5404	xxx	
			2.0 m	21 03 415 5405	xxx	
			0.3 m	21 03 415 7401 with LED	xxx	
			0.6 m	21 03 415 7402 with LED	xxx	
			1.0 m	21 03 415 7403 with LED	xxx	
			1.5 m	21 03 415 7404 with LED	xxx	
			2.0 m	21 03 415 7405 with LED	xxx	
Open end			xxx		1.5 m	21 03 515 4401
			xxx		3.0 m	21 03 515 4402
			xxx		5.0 m	21 03 515 4403
			xxx		7.5 m	21 03 515 4404
			xxx		10.0 m	21 03 515 4405
			xxx		1.5 m	21 03 515 7401 with LED
			xxx		3.0 m	21 03 515 7402 with LED
			xxx		5.0 m	21 03 515 7403 with LED
			xxx		7.5 m	21 03 515 7404 with LED
			xxx		10.0 m	21 03 515 7405 with LED
M12 cable set for individual assembly incl. HARAX® M12 Male			xxx		1.5 m	21 83 515 4401
			xxx		3.0 m	21 83 515 4402
			xxx		5.0 m	21 83 515 4403
			xxx		7.5 m	21 83 515 4404
			xxx		10.0 m	21 83 515 4405
			xxx		1.5 m	21 83 515 7401 with LED
			xxx		3.0 m	21 83 515 7402 with LED
			xxx		5.0 m	21 83 515 7403 with LED
			xxx		7.5 m	21 83 515 7404 with LED
			xxx		10.0 m	21 83 515 7405 with LED

03
21



03

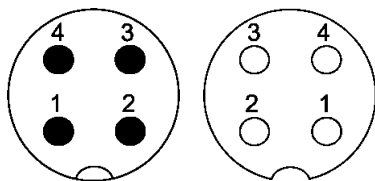
Overview system cables M12

Number of contacts		Male M12 A-coding, straight	
		 Cable material: PUR	
Open end		1.0 m	21 03 514 1801
		2.0 m	21 03 514 1803
		5.0 m	21 03 514 1805

M12 System cables, A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

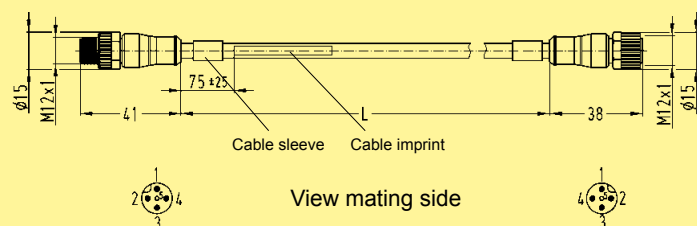
Drawing

Dimensions in mm

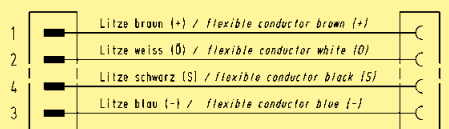
M12 Circular connectors Female straight, male straight

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



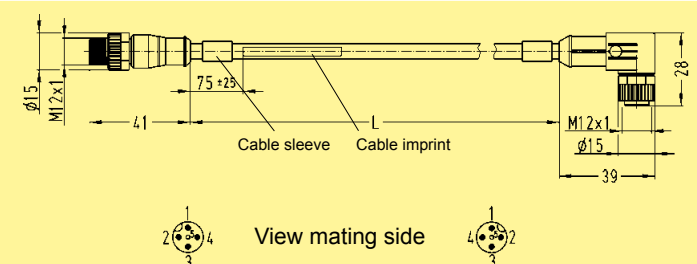
Schematic diagram



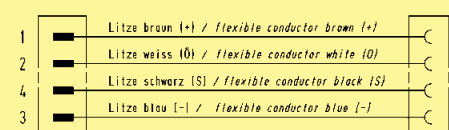
M12 Circular connectors Female angled, male straight

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



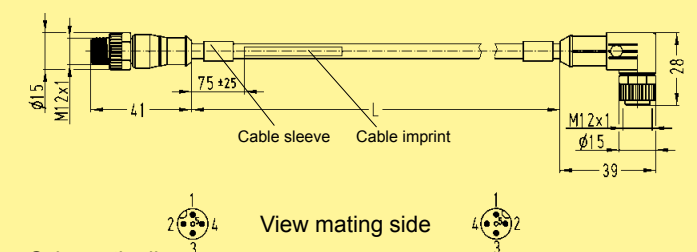
Schematic diagram



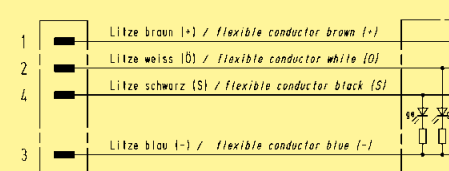
M12 Circular connectors Female angled, with LED, Male straight

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



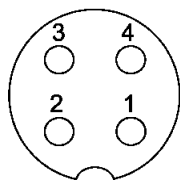
Schematic diagram



M12 System cables, A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

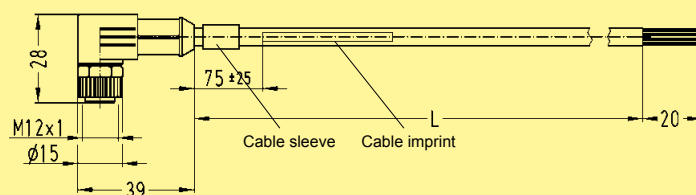
Dimensions in mm

M12 Circular connectors

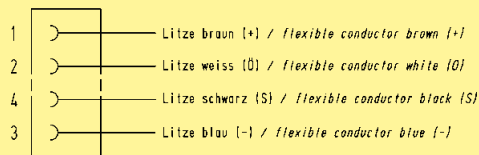
Female angled
pre-assembled on one end

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



View mating
side

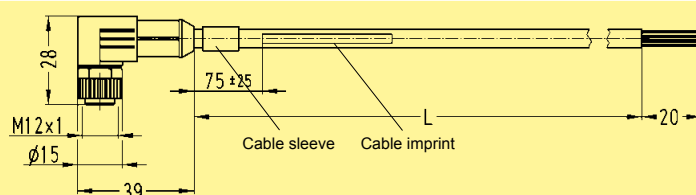


M12 Circular connectors

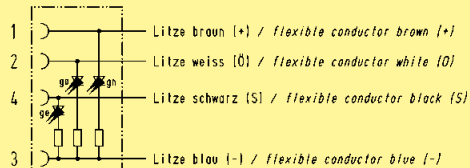
Female angled, with LED
pre-assembled on one end

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



View mating
side

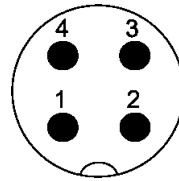


03
25

M12 Panel feed-through HARAX® A-coded



Mating face

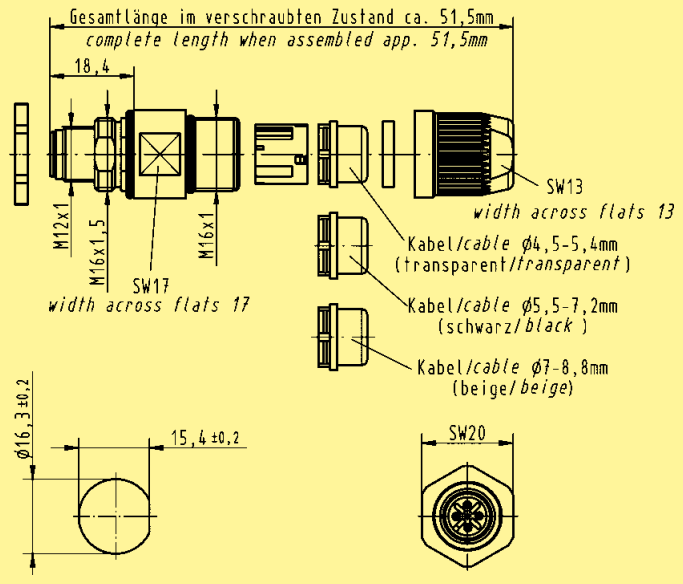


A-coding
Mating face
acc. to IEC 61076-2-101



Applications / Advantages

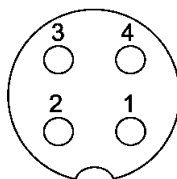
- Actor and sensor applications
- For panel feed-through or PCB, straight version in IP20 or IP67, with or without assembled pigtail
- Available with crimp resp. HARAX® rapid termination
- Quick and easy assembly

Identification	Part No.	Drawing	Dimensions in mm
HARAX® Panel feed-through  Male 4 poles, A-coding 0.14 - 0.34 mm² / AWG 26 - 22 Panel thickness min. 2.5 mm max. 4.5 mm	21 03 321 1425	 Gesamtlänge im verschraubten Zustand ca. 51,5mm complete length when assembled app. 51,5mm 18,4 M12x1 M16x1,5 SW17 M16x1 width across flats 17 SW13 width across flats 13 Kabel/cable ϕ4,5-5,4mm (transparent/transparent) Kabel/cable ϕ5,5-7,2mm (schwarz/black) Kabel/cable ϕ7-8,8mm (beige/beige) ϕ16,3 $\pm$0,2 15,4 $\pm$0,2 SW20	

M12 Panel feed-through HARAX® A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

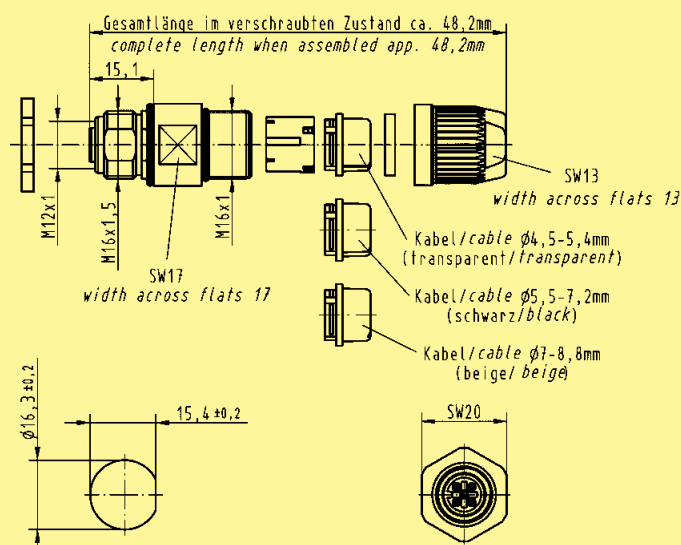
HARAX® Panel feed-through



Female
4 poles, A-coding
0.14 - 0.34 mm² / AWG 26 - 22

Panel thickness
min. 2.5 mm
max. 4.5 mm

21 03 321 2425

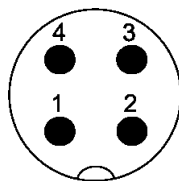


03

M12 Panel feed-through Crimp A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

Drawing

Dimensions in mm

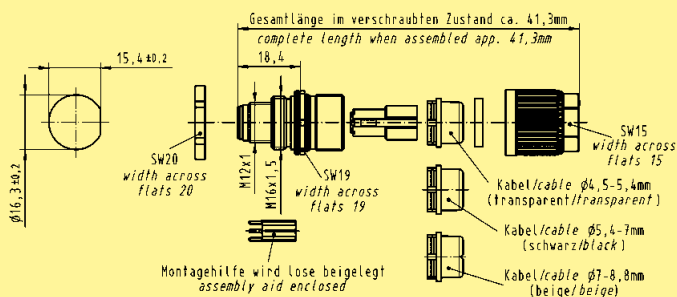
M12 Panel feed-through Crimp



Male
4 poles, A-coding

Panel thickness
min. 2.5 mm
max. 4.5 mm

21 03 822 1425



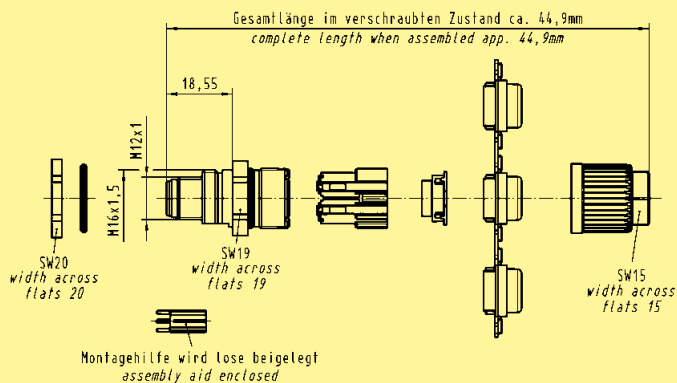
M12 Panel feed-through Crimp



Male
5 poles, A-coding

Panel thickness
min. 2.5 mm
max. 4.5 mm

21 03 822 1525*



03
28

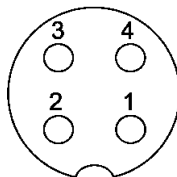
Further information and data sheets see www.HARTING.com

* UL approval is in preparation

M12 Panel feed-through Crimp A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

03

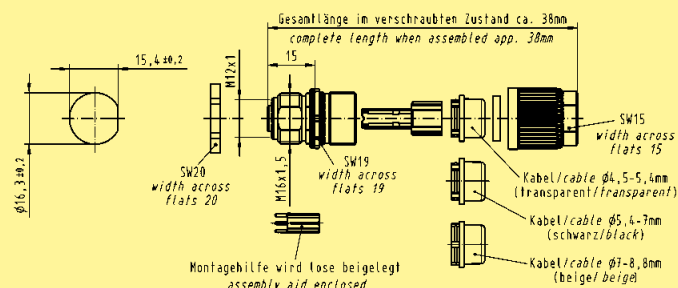
M12 Panel feed-through Crimp



Female
4 poles, A-coding

Panel thickness
min. 2.5 mm
max. 4.5 mm

21 03 822 2425



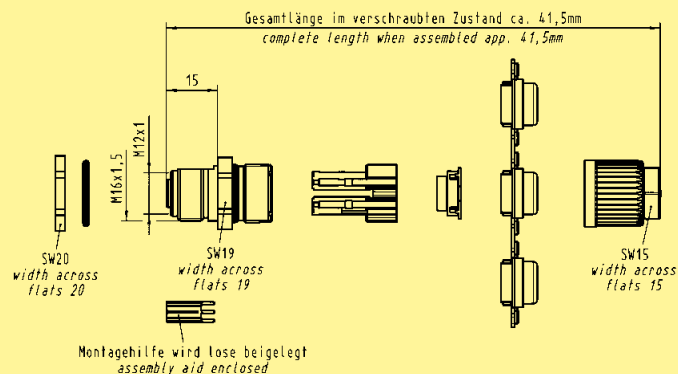
M12 Panel feed-through Crimp



Female
5 poles, A-coding

Panel thickness
min. 2.5 mm
max. 4.5 mm

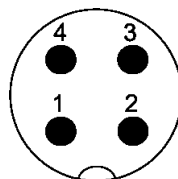
21 03 822 2525*



M12 Panel feed-through A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

Drawing

Dimensions in mm

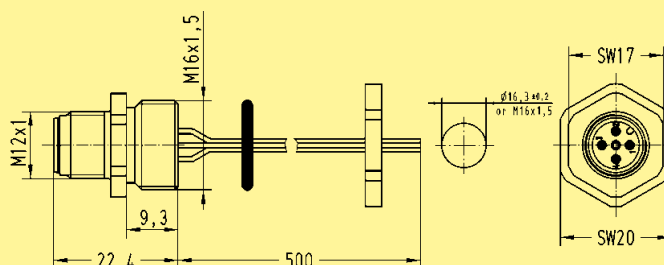
M12 Panel feed-through



Male
A-coding,
50 cm conductors, 0.5 mm², 4 poles

Panel thickness
min. 2.0 mm
max. 5.0 mm

21 03 311 1402



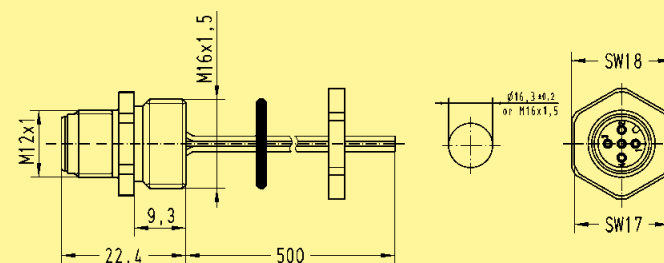
M12 Panel feed-through



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

Panel thickness
min. 2.0 mm
max. 5.0 mm

21 03 311 1501

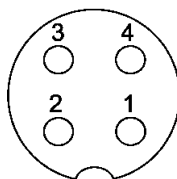


03
30

M12 Panel feed-through A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

03

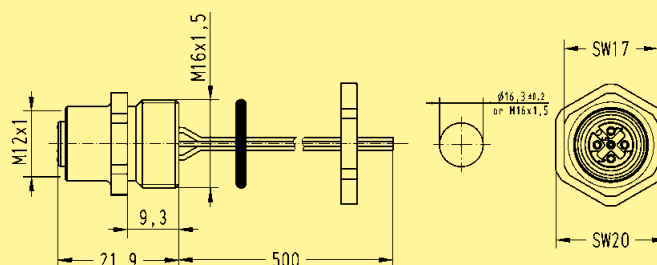
M12 Panel feed-through



Female
A-coding,
50 cm conductors, 0.5 mm², 4 poles

Panel thickness
min. 2.0 mm
max. 5.0 mm

21 03 311 2400



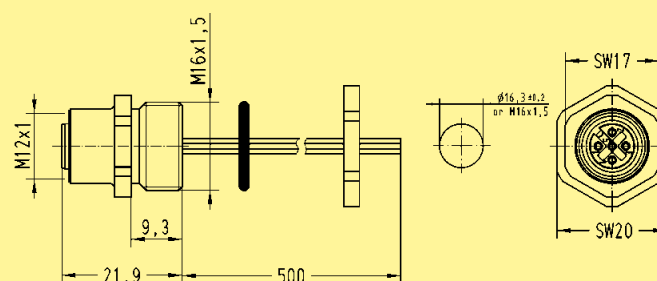
M12 Panel feed-through



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

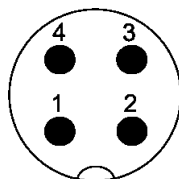
Panel thickness
min. 2.0 mm
max. 5.0 mm

21 03 311 2501





Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Technical characteristics: M12 PCB adapter

Degree of protection	IP20, IP67 (mated and locked)	Temperature during connection	-5 °C ... +50 °C
Rated current	max. 4 A (dependant on PCB layout)	Termination	PIH
Rated voltage	50 V	Contact material	Copper alloy
Mating cycles	max. 100	Contact plating (mating side)	Au over Ni
Limiting temperature	-40 °C ... +85 °C	Insulator material	PA

Identification	Part No.	Drawing	Dimensions in mm
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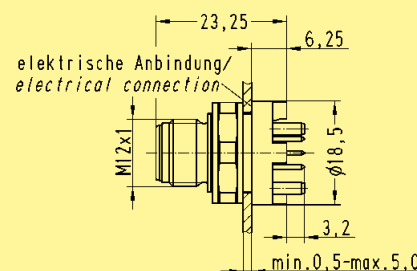
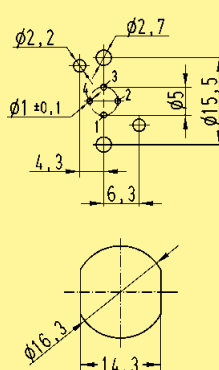
M12 PCB adapter

Male, A-coding, straight



4 poles, IP20
4 poles, IP67

21 03 321 1410
21 03 321 1420



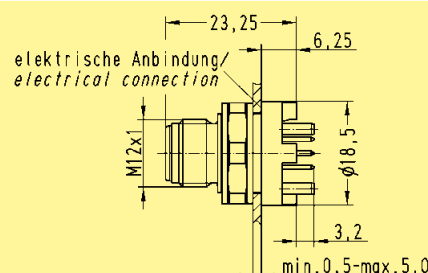
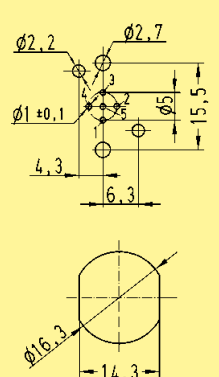
M12 PCB adapter

Male, A-coding, straight



5 poles, IP20
5 poles, IP67

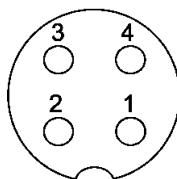
21 03 321 1510
21 03 321 1520



M12 PCB adapter A-coded



Mating face



A-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

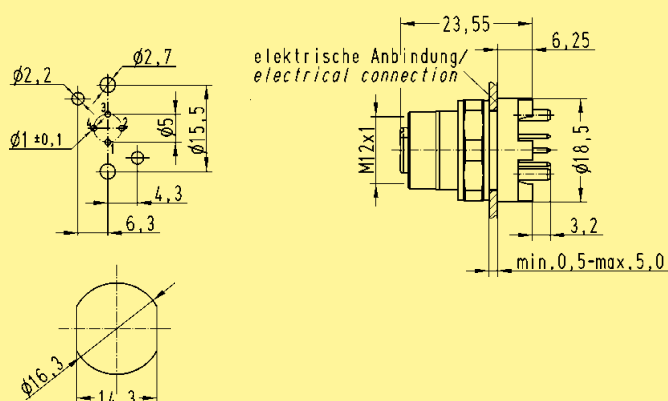
M12 PCB adapter

Female, A-coding,
straight



4 poles, IP20
4 poles, IP67

21 03 321 6410
21 03 321 6420*



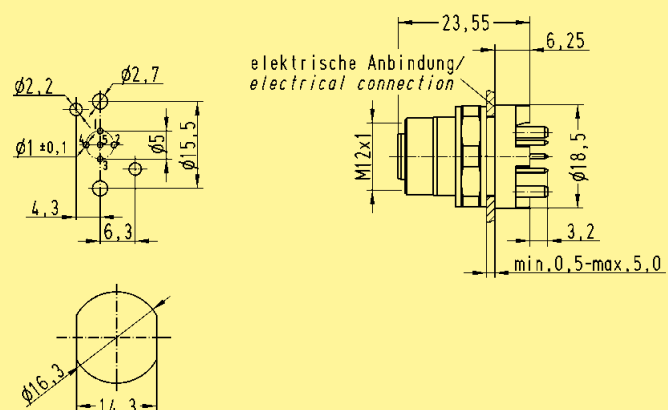
M12 PCB adapter

Female, A-coding,
straight



5 poles, IP20
5 poles, IP67

21 03 321 6510
21 03 321 6520



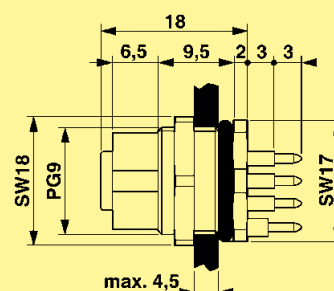
M12 PCB adapter

Female, A-coding,
straight



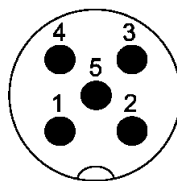
8 poles, IP67

21 03 311 2801





Mating face



A-coding
Mating face
acc. to IEC 61 076-2-101



03

Identification

Part No.

Drawing

Dimensions in mm

M12 PCB adapter,
shielded

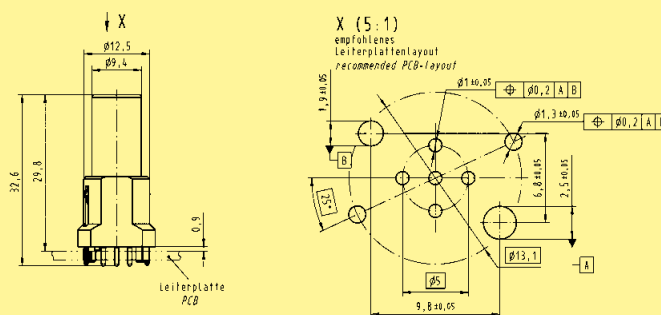


Male
5 poles, A-coding

8 poles, A-coding

21 03 321 1518*

21 03 321 1818*



Housing

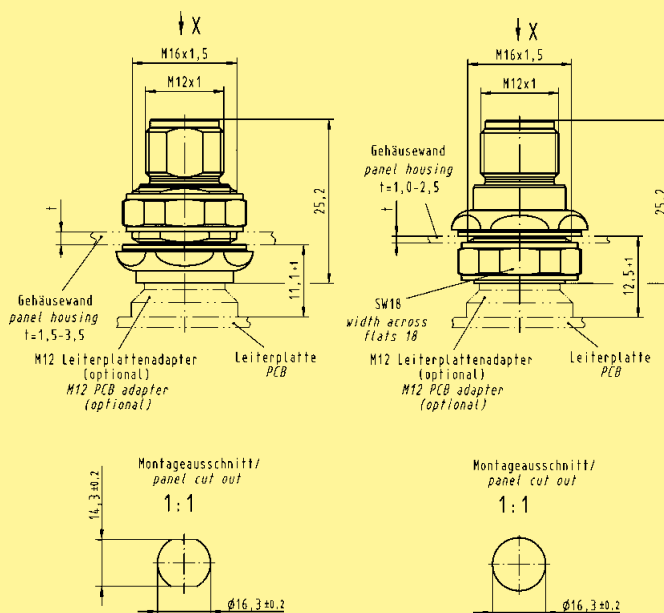


for rear mounting

for front mounting

21 03 301 1000

21 03 301 1001





03
35

* UL approval is in preparation

Identification

Part No.

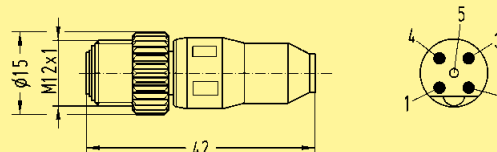
Drawing

M12-male moving load

A-coding



21 03 030 1400



HARTING M12 T-Coupler

21 03 321 9400



Crimping tool for M12 Crimp

09 99 000 0501



Accessories M12 Crimp

Locator

09 99 000 0531



D-Sub contacts

Part number	AWG	Tool settings
09 67 000 3x76	18	6
	20	6
	22	5
09 67 000 8x76	20, 22, 24	6
09 67 000 5x76	22, 24, 26	6

D-Sub single contacts (500 mating cycles)

turned male contacts

AWG 22 - 18 / 0.33 - 0.82 mm²

AWG 24 - 20 / 0.25 - 0.52 mm²

AWG 26 - 22 / 0.13 - 0.33 mm²



09 67 000 3576

09 67 000 8576

09 67 000 5576

turned female contacts

AWG 22 - 18 / 0.33 - 0.82 mm²

AWG 24 - 20 / 0.25 - 0.52 mm²

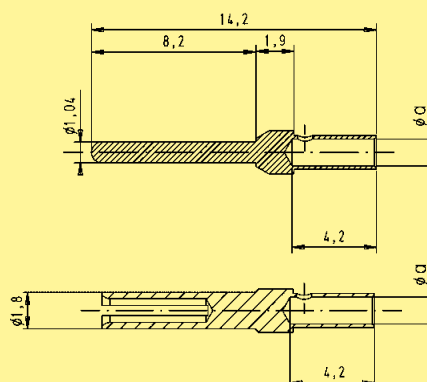
AWG 26 - 22 / 0.13 - 0.33 mm²



09 67 000 3476

09 67 000 8476

09 67 000 5476



	a
AWG 22 - 18	1.34
AWG 24 - 20	1.13
AWG 26 - 22	0.88

M12 dynamometric screwdriver

Tightening torque 0.6 Nm

for M12-S SW 13

09 99 000 0382

for M12 Slim design SW 15

09 99 000 0646

for M12-L SW 17

09 99 000 0384



Identification	Part No.	Drawing	Dimensions in mm
Seal M12-S for 2.9 - 4.0 mm cable Ø for 4 - 5.1 mm cable Ø	21 01 010 2011 21 01 010 2001		
Seal M12-L unshielded for 4.7 - 6 mm cable Ø for 6 - 8 mm cable Ø	21 01 010 2015 21 01 010 2007		
Set of seals M12-L shielded for 4.5 - 5.4 mm cable Ø for 5.4 - 7.2 mm cable Ø for 7.2 - 8.8 mm cable Ø	21 01 010 2017		
Cap M12 for IP65 / IP67 Seals material Viton Plastic cap for female	21 01 000 0003		
Accessories M12 Lock nut	21 01 000 0018		

Identification	Part No.	Drawing	Dimensions in mm
Cap metal M12 for IP65 / IP67 M12 metal cap for male side with cord	21 01 000 0033		
Cap metal M12 for IP65 / IP67 M12 metal cap for male side with cable clip	21 01 000 0038		
Cap metal M12 for IP65 / IP67 M12 metal cap for female side with cord	21 01 000 0030		
Cap metal M12 for IP65 / IP67 M12 metal cap for female side with cable clip	21 01 000 0031		

M12 B-coding

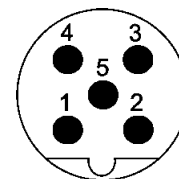


Specifications IEC 60 352-4

Approval 



Mating face



B-coding
Mating face
acc. to IEC 61076-2-101

Technical characteristics M12 – B-coding

Type M12 B-coded	<i>HARAX</i> ® M12 L shielded	M12 Crimp
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General data

Conductor cross section	0.25 - 0.34 mm ² AWG 24-22	0.13 - 0.75 mm ² AWG 26-18
Diameter of individual strands	≥ 0.1 mm	X
Conductor insulation material	PVC, Zell-PE	X
Conductor diameter	2 - 2.6 mm	2.0 - 2.3 mm
Cable diameter	7.0 - 8.8 mm	4 poles: 4.5 - 8.8 mm 5 poles: 4.5 - 8.8 mm
Temperature range	-40 °C ... +85 °C	-40 °C ... +85 °C
Temperature during connection	-5 °C ... +50 °C	-5 °C ... +50 °C
Degree of protection	IP65 / IP67	IP67
Mating cycles	100	500
Tightening torque connector / hexagonal wrench	0.6 Nm / SW 17	0.5 Nm / SW 17

Electrical characteristics

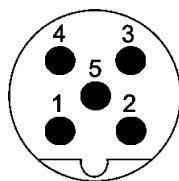
Rated current	4 A	4 A
Rated voltage	32 V	250 V
Rated impulse voltage	1.5 kV	1.5 kV
Contact resistance	10 mΩ	10 mΩ
Insulation resistance	10 ⁸ Ω	10 ⁸ Ω
Pollution degree	3	3
Overvoltage category	3	3
Isolation group	1	1

Materials

Contact material	Brass	Brass
Contact plating	Gold	Gold
Contact carrier material	PA unreinforced	PA
Housing material	PA unreinforced	PA



Mating face

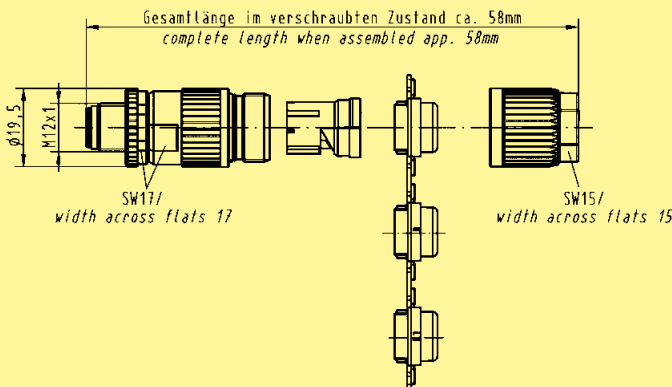


B-coding
Mating face
acc. to IEC 61076-2-101



Applications / Advantages

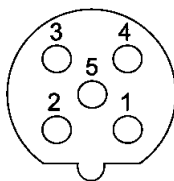
- B-coding for field bus systems e.g. Profibus, DeviceNet or CANopen
- Available with crimp resp. HARAX® rapid termination, or as overmoulded system cable in various lengths
- Shielding by the hood
- Easy handling, quick assembly

Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12-L, shielded  Male 2 poles, B-coding 0.25 - 0.34 mm² / AWG 24 - 22	21 03 241 1301	 Gesamtlänge im verschraubten Zustand ca. 58mm complete length when assembled app. 58mm SW17/ width across flats 17 SW15/ width across flats 15	

M12 HARAX® B-coded



Mating face



B-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

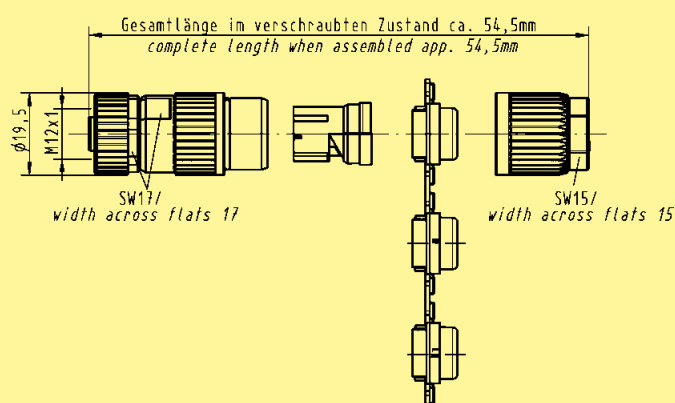
Dimensions in mm

HARAX® M12-L, shielded



21 03 241 2301

Female
2 poles, B-coding
0.25 - 0.34 mm² / AWG 24 - 22

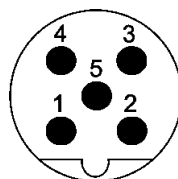


03

M12 Crimp B-coded



Mating face



B-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

Drawing

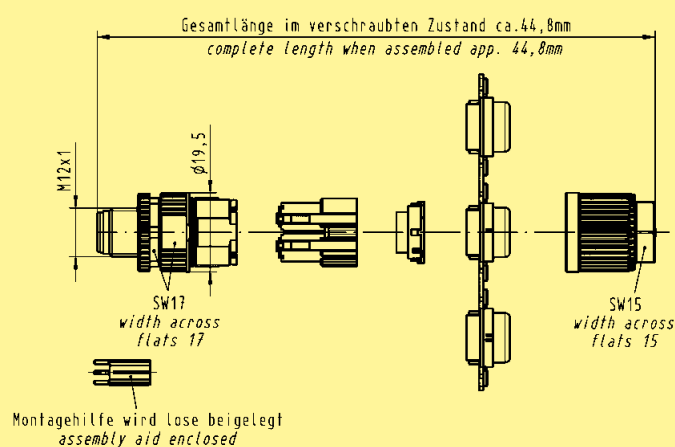
Dimensions in mm

M12 Crimp



Male
5 poles, B-coding

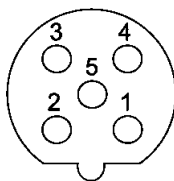
21 03 841 1505



M12 Crimp B-coded



Mating face



B-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

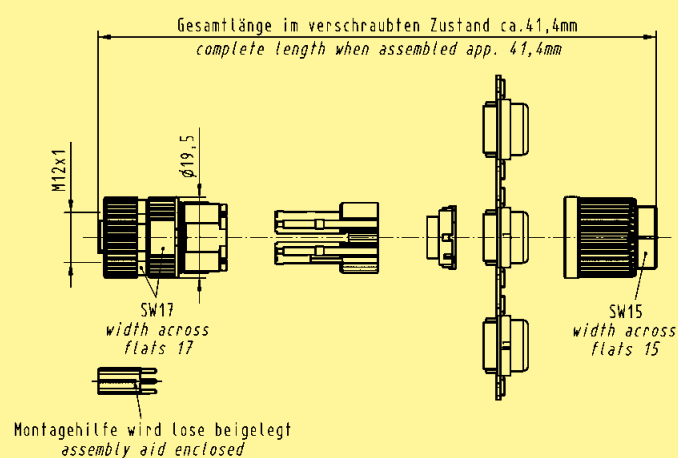
Dimensions in mm

M12 Crimp



Female
5 poles, B-coding

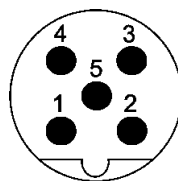
21 03 841 2505



03



Mating face

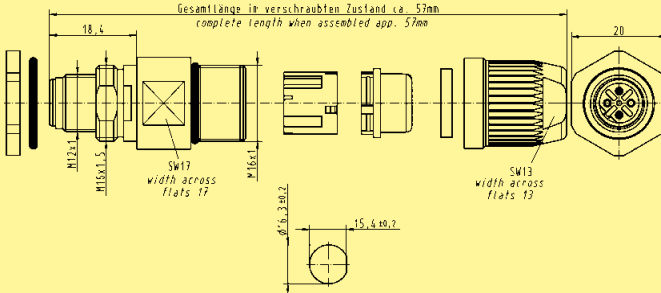


B-coding
Mating face
acc. to IEC 61076-2-101



Applications / Advantages

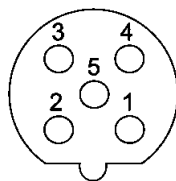
- B-coding for field bus systems e.g. Profibus, DeviceNet or CANopen
- For panel feed-through or PCB, straight version in IP20 or IP67, with or without assembled pigtail
- Available with crimp resp. HARAX® rapid termination
- Quick and easy assembly

Identification	Part No.	Drawing	Dimensions in mm
HARAX® Panel feed-through  Male 2 poles and shielding, B-coding 0.25 - 0.34 mm² / AWG 24 - 22 Cable diameter: 7 - 8.8 mm Panel thickness min. 2.5 mm max. 4.5 mm	21 03 341 1425	 Gesamtlänge in verschraubten Zustand ca. 57mm complete length when assembled app. 57mm SW17 width across flats 17 SW13 width across flats 13 18.4 15.4 ±0.2 20 M12x1.5 M16x1 Ø 6.3 ±0.2	

M12 Panel feed-through HARAX® B-coded



Mating face



B-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

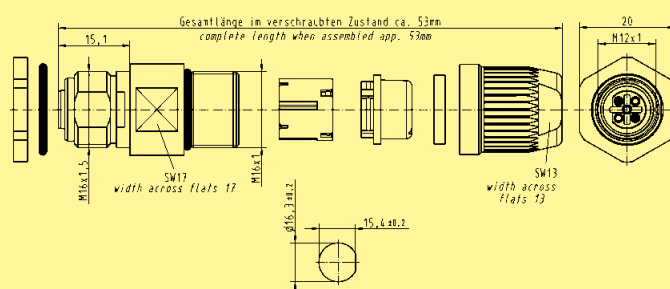
Drawing

Dimensions in mm

HARAX® Panel feed-through



21 03 341 2425



Female
2 poles and shielding, B-coding
0.25 - 0.34 mm² / AWG 24 - 22

Cable diameter: 7 - 8.8 mm

Panel thickness
min. 2.5 mm
max. 4.5 mm

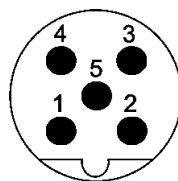
03

03
51

M12 Panel feed-through Crimp B-coded



Mating face



B-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

Drawing

Dimensions in mm

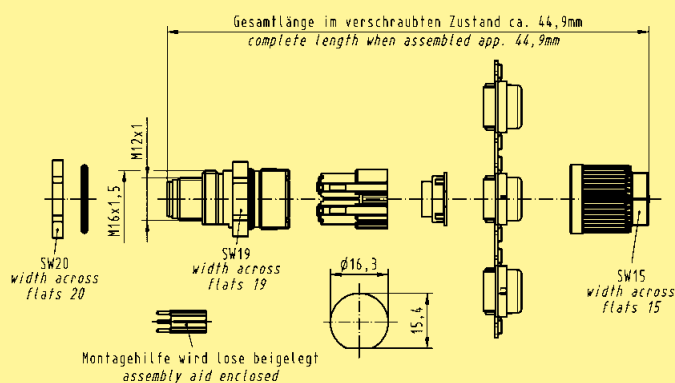
M12 Panel feed-through Crimp



Male
5 poles, B-coding

Panel thickness
min. 2.5 mm
max. 4.5 mm

21 03 841 1525

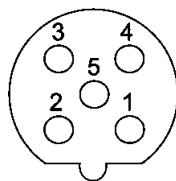


03
52

M12 Panel feed-through Crimp B-coded



Mating face



B-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

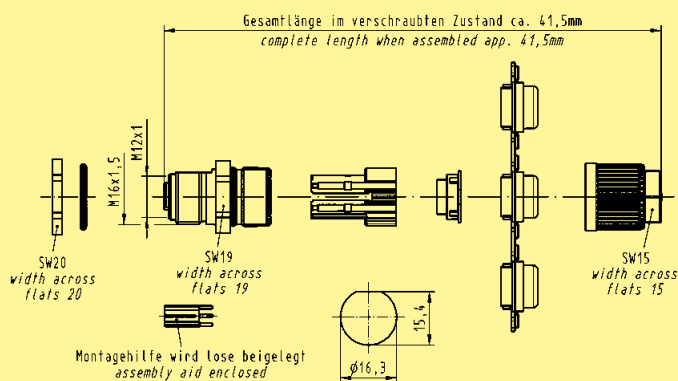
M12 Panel feed-through
Crimp



Female
5 poles, B-coding

Panel thickness
min. 2.5 mm
max. 4.5 mm

21 03 841 2525

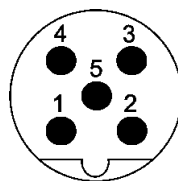


03

M12 Panel feed-through B-coded



Mating face



B-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

Drawing

Dimensions in mm

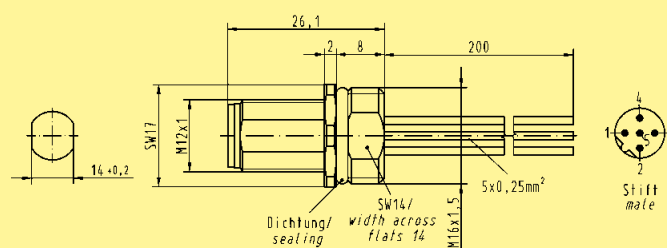
M12 Panel feed-through



Male
B-coding, 20 cm conductors,
0.25 mm²

Panel thickness
min. 2.0 mm
max. 5.0 mm

21 03 339 1301



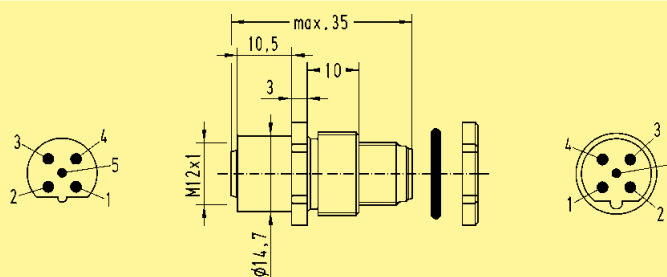
M12-male/female
panel feed-through

B-coding



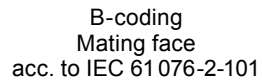
Panel thickness
min. 2.0 mm
max. 5.0 mm

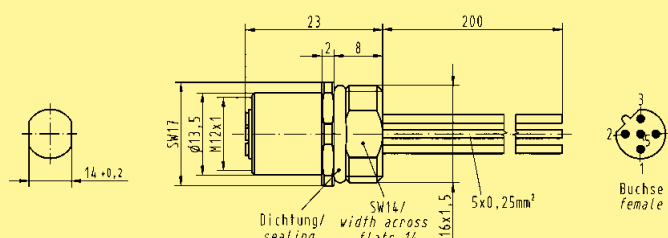
21 03 330 1300



Rated voltage 24 V AC/DC
Thread M16 x 1.5

03
54

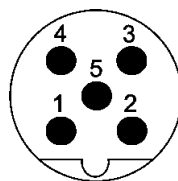


Identification	Part No.	Drawing	Dimensions in mm
M12 Panel feed-through  Female B-coding, 20 cm conductors, 0.25 mm² Panel thickness min. 2.0 mm max. 5.0 mm	21 03 339 2301		

M12 PCB adapter B-coded



Mating face



B-coding
Mating face
acc. to IEC 61076-2-101



Technical characteristics: M12 PCB adapter

Degree of protection	IP20, IP67 (mated and locked)	Temperature during connection	-5 °C ... +50 °C
Rated current	max. 4 A (dependant on PCB layout)	Termination	PIH
Rated voltage	50 V	Contact material	Copper alloy
Mating cycles	max. 100	Contact plating (mating side)	Au over Ni
Limiting temperature	-40 °C ... +85 °C	Insulator material	PA

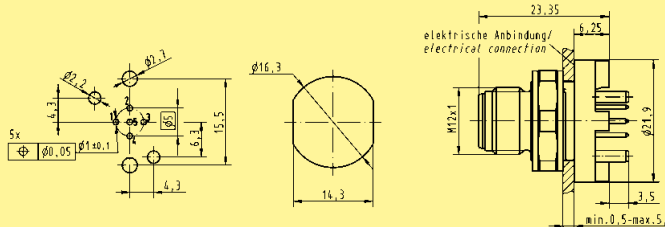
Identification	Part No.	Drawing	Dimensions in mm
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M12 PCB adapter
Male, B-coding,
straight



5 poles, IP20

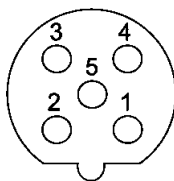
21 03 341 1505



M12 PCB adapter B-coded



Mating face



B-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

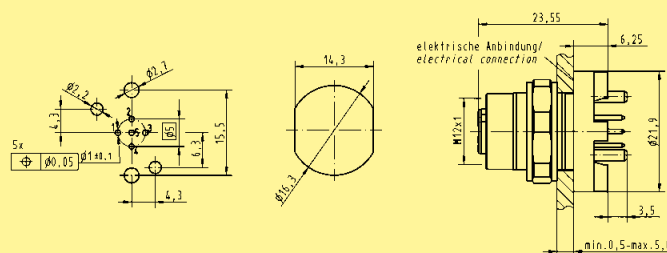
M12 PCB adapter

Female, B-coding,
straight



5 poles, IP20

21 03 341 2505

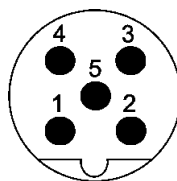


03

M12 PCB adapter shielded B-coded



Mating face



B-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

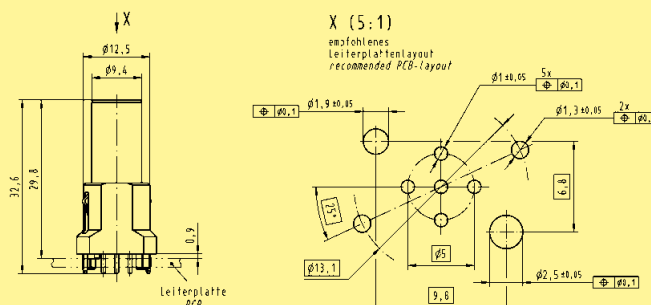
Dimensions in mm

M12 PCB adapter, shielded



Male
5 poles, B-coding

21 03 341 1518*



Housing

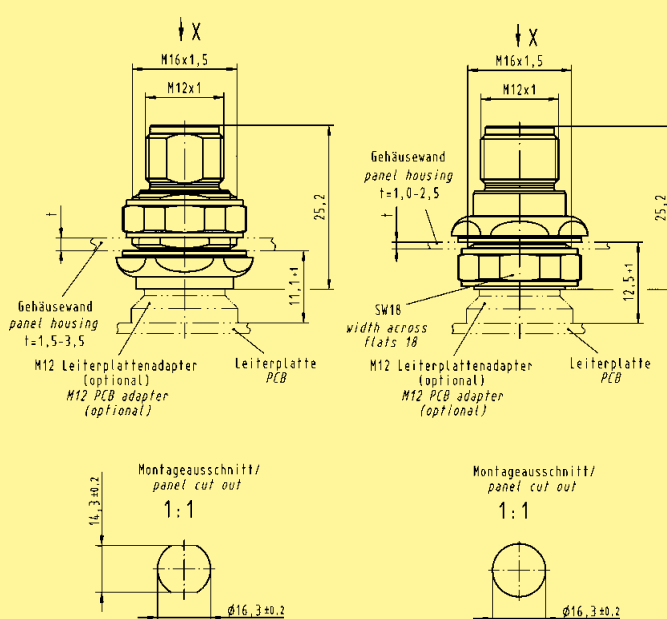


for rear mounting

21 03 301 1000

for front mounting

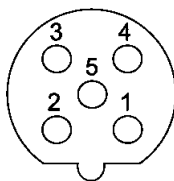
21 03 301 1001



M12 PCB adapter shielded B-coded

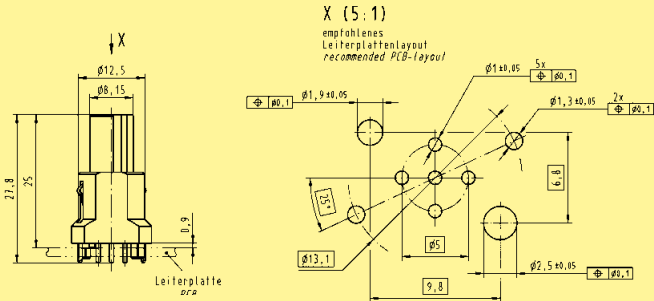
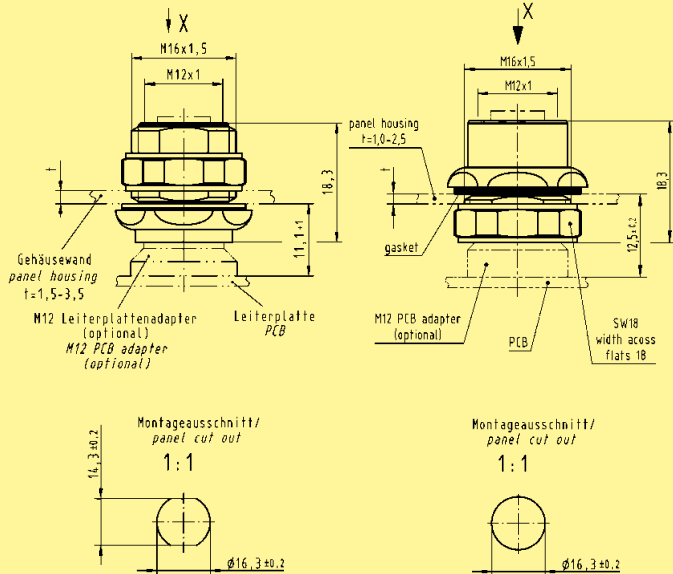


Mating face



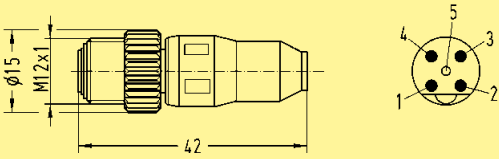
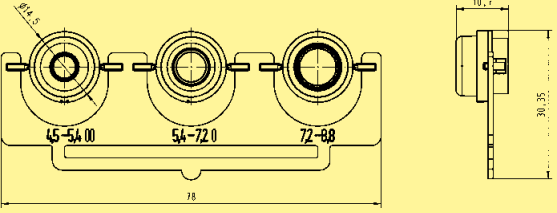
B-coding
Mating face
acc. to IEC 61 076-2-101



Identification	Part No.	Drawing	Dimensions in mm
M12 PCB adapter, shielded  Female 5 poles, B-coding	21 03 341 2518*		
Housing  for rear mounting for front mounting	21 03 301 2000 21 03 301 2001		

Further information and data sheets see www.HARTING.com

Identification	Part No.	Drawing	Dimensions in mm
Cap metal M12 for IP65 / IP67 M12 metal cap for male side with cord	21 01 000 0033		03
Cap metal M12 for IP65 / IP67 M12 metal cap for male side with cable clip	21 01 000 0038		
Cap metal M12 for IP65 / IP67 M12 metal cap for female side with cord	21 01 000 0030		
Cap metal M12 for IP65 / IP67 M12 metal cap for female side with cable clip	21 01 000 0031		

Identification	Part No.	Drawing	Dimensions in mm
M12-male moving load B-coding 	21 03 030 1300		
HARTING M12 T-Coupler 	21 03 341 6401		
Seal M12-L unshielded for 4.7 - 6 mm cable ϕ for 6 - 8 mm cable ϕ 	21 01 010 2015 21 01 010 2007		
Set of seals M12-L shielded for 4.5 - 5.4 mm cable ϕ for 5.4 - 7.2 mm cable ϕ for 7.2 - 8.8 mm cable ϕ 	21 01 010 2017		
Accessories M12 Lock nut 	21 01 000 0018		

M12 D-coding

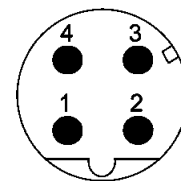


Specifications IEC 60 352-4

Approval 



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101

Technical characteristics M12 – D-coding

Type M12 D-coded	<i>HARAX</i> ® M12 L shielded	M12 Crimp	M12 preLink®
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General data

Conductor cross section	0.14 - 0.34 mm ² AWG 26-22 0.34 - 0.5 mm ² AWG 22-20	0.13 - 0.75 mm ² AWG 26-18	0.10 - 0.34 mm ² AWG 27-22
Diameter of individual strands	≥ 0.1 mm	X	≥ 0.1 mm
Conductor insulation material	PVC/PE	X	PVC/PE
Conductor diameter	1.2 - 2.0 mm	2.0 - 2.3 mm	0.8 - 1.6 mm
Cable diameter	4.5 - 8.8 mm	4 poles: 4.5 - 8.8 mm 5 poles: 4.5 - 8.8 mm	6.3 - 6.7 mm
Temperature range	-40 °C ... +85 °C	-40 °C ... +85 °C	-40 °C ... +85 °C
Temperature during connection	-5 °C ... +50 °C	-5 °C ... +50 °C	–
Degree of protection	IP65 / IP67	IP67	IP65
Mating cycles	100	500	250
Tightening torque connector / Hexagonal wrench	0.6 Nm / SW 17	0.6 Nm / SW 17	0.6 Nm / SW 17

Electrical characteristics

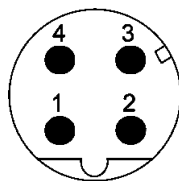
Rated current	4 A	4 A	1 A
Rated voltage	50 V	250 V	48 V
Rated impulse voltage	1.5 kV	1.5 kV	1.5 kV
Contact resistance	10 mΩ	10 mΩ	10 mΩ
Insulation resistance	10 ⁸ Ω	10 ⁸ Ω	10 ⁸ Ω
Pollution degree	3	3	3
Overvoltage category	3	3	3
Isolation group	1	1	–
Transmission performance (Category)	Cat. 5	Cat. 5	Cat. 5

Materials

Contact material	Brass	Brass	Brass
Contact plating	Gold	Gold	Gold
Contact carrier material	PA unreinforced	PA	–
Housing material	PA unreinforced	PA	Zinc die-cast



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



Applications / Advantages

- D-coding for Ethernet/Profinet applications
- Robust design
- 360° shielding termination
- Transmission performance Cat. 5

Identification

Part No.

Drawing

Dimensions in mm

HARAX® M12-L, shielded

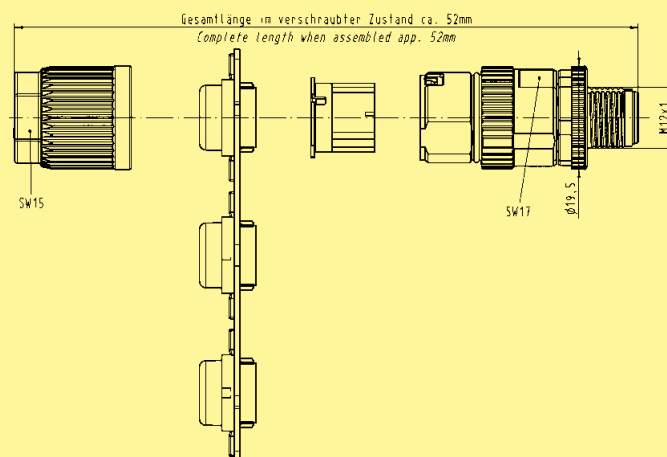


Male
4 poles, D-coding
0.14 - 0.34 mm², AWG 26 - 22

21 03 281 1405

Male
4 poles, D-coding
0.34 - 0.5 mm², AWG 22 - 20

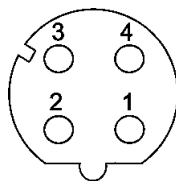
21 03 282 1405



M12 HARAX® D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

HARAX® M12-L, shielded

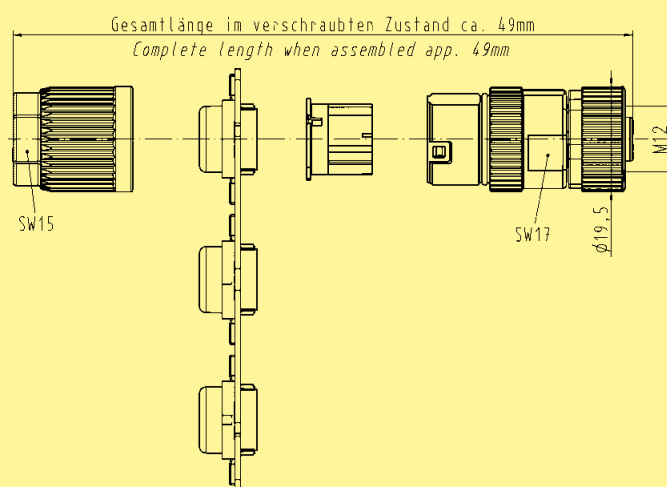


Female
4 poles, D-coding
0.14 - 0.34 mm², AWG 26 - 22

21 03 281 2405

Female
4 poles, D-coding
0.34 - 0.5 mm², AWG 22 - 20

21 03 282 2405

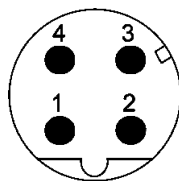


03

M12 Crimp D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

Drawing

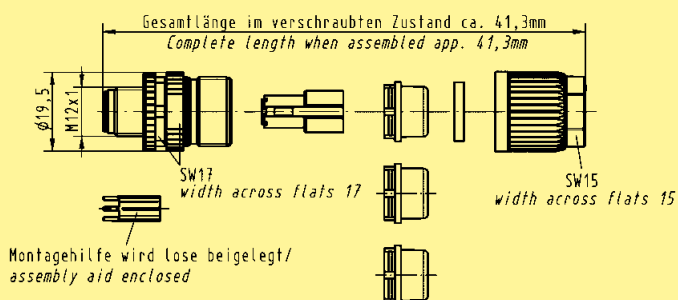
Dimensions in mm

M12 Crimp, shielded



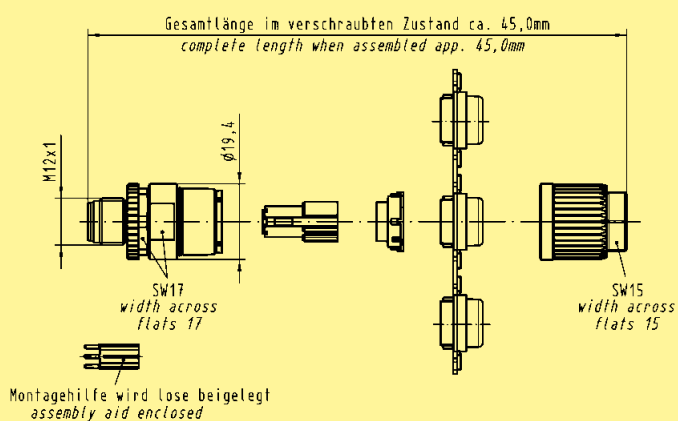
Male
4 poles, D-coding

21 03 882 1405



Male
4 poles, D-coding

21 03 882 1415

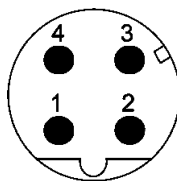


03
68

M12 Crimp D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

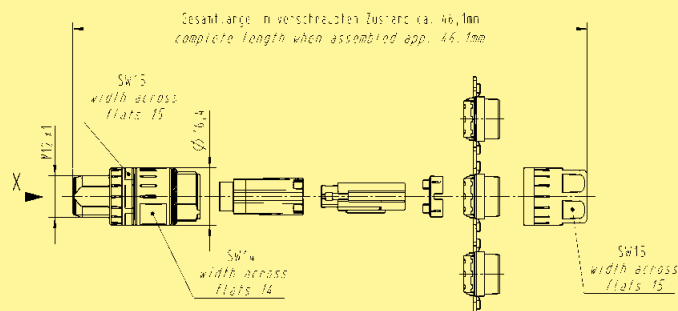
Dimensions in mm

M12 Crimp Slim design, shielded



Male
4 poles, D-coding
Cable: 4.4 - 8.8 mm
outer diameter

21 03 881 1405*

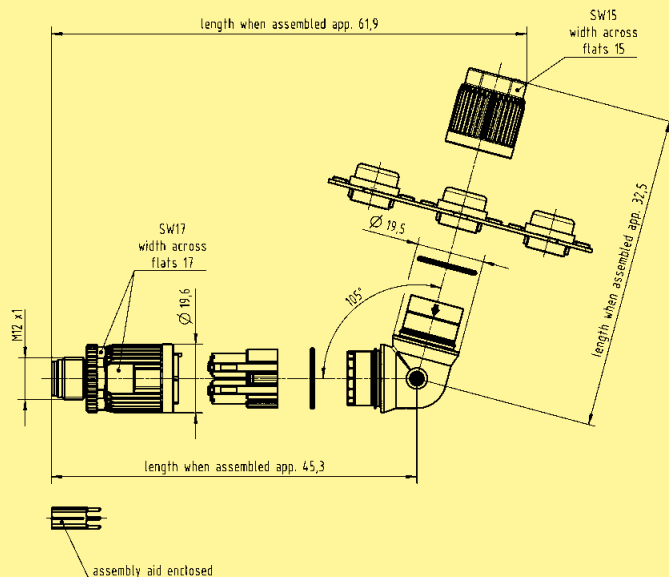


M12 Crimp, shielded



Male
4 poles, D-coding
angled

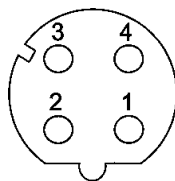
21 03 882 3405*



M12 Crimp D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

Drawing

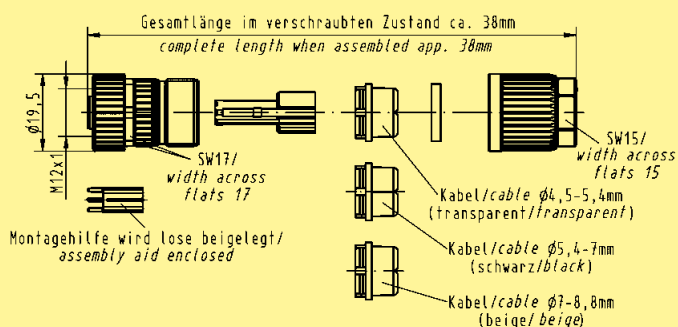
Dimensions in mm

M12 Crimp, shielded



Female
4 poles, D-coding

21 03 882 2405

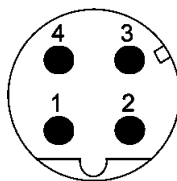


03
70

M12 preLink® D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



Identification

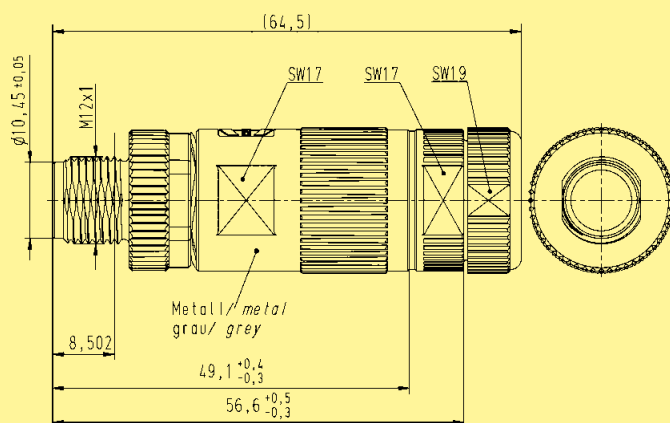
Part No.

Drawing

Dimensions in mm

preLink® M12 housing

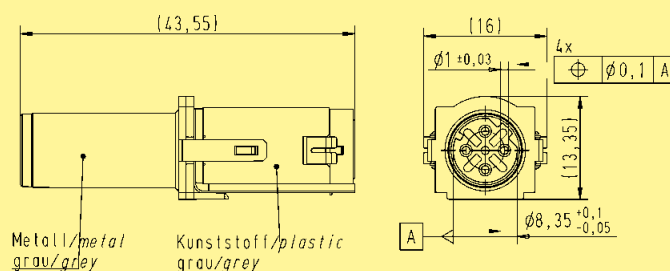
20 82 000 1210



preLink® M12 male module

20 82 005 1214

Male
4 poles, D-coding



preLink® terminal module
(Pack with 10 pieces)
terminal block with IDC termination

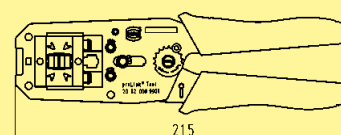
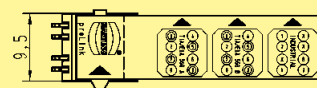
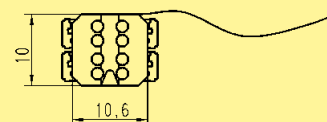
Number of contacts: 8

Conductor cross section: AWG 22/23 (24)
solid and
stranded
Conductor diameter: $\phi 1.3 - 1.6$ mm
Colour: yellow

20 82 000 0001

Conductor cross section: AWG 26/27
solid and
stranded
Conductor diameter: $\phi 0.8 - 1.1$ mm
Colour: white

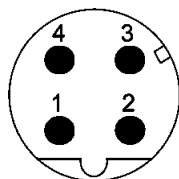
20 82 000 0003



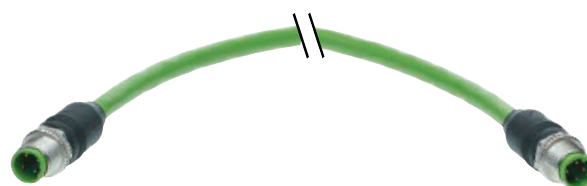
Assembly tool

20 82 000 9901

Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



Technical characteristics

Pre-assembled and tested system cables

for structured cabling of industrial Ethernet networks, based on M12 Circular connectors, D-coded

Cable type: Shielded Twisted Pair
Standard Cable

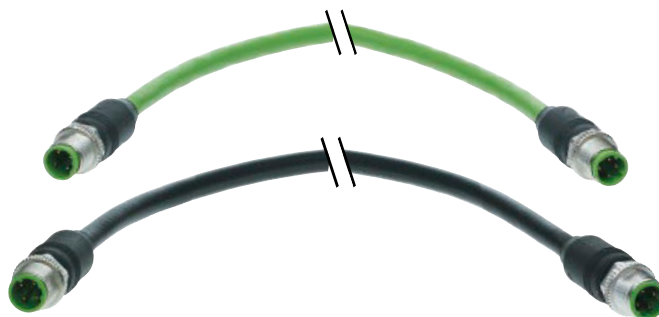
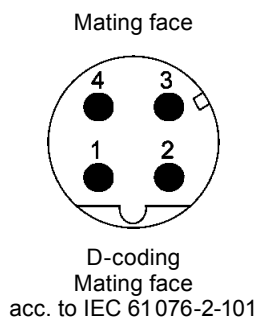
Mating interface: M12 D-coded
acc. to IEC 61 076-2-101

Transmission performance
acc. to ISO/IEC 11801:2002: Class D, 100% tested

Degree of protection IP65 / IP67 (when mated)

Pin assignment

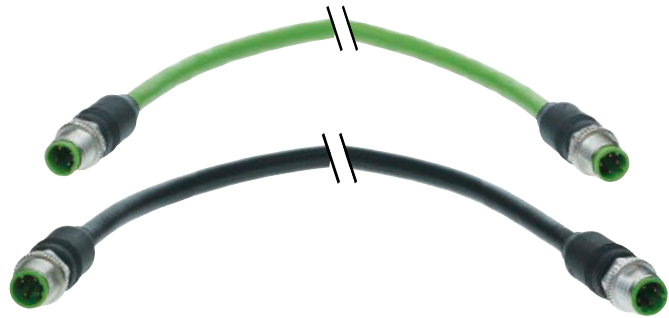
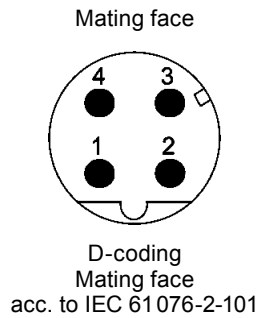
Signal	Function	Conductor colour PROFINet®	Contact assignment
TD+	Transmission Data+	Yellow	1
TD-	Transmission Data-	Orange	3
RD+	Receiver Data+	White	2
RD-	Receiver Data-	Blue	4



Overview system cables M12

Number of contacts			Male M12 D-coding straight			
			Cable material: PUR		Cable material: PVC	
Male M12	straight		1.0 m	21 03 485 1401 09 48 222 2004 010*	1.0 m	09 47 222 2002 09 48 222 2003 010*
			1.5 m	21 03 485 1451 09 48 222 2004 015*	1.5 m	09 47 222 2003 09 48 222 2003 015*
			3.0 m	21 03 485 1403 09 48 222 2004 030*	3.0 m	09 47 222 2005 09 48 222 2003 030*
			5.0 m	21 03 485 1405 09 48 222 2004 050*	5.0 m	09 47 222 2006 09 48 222 2003 050*
			7.5 m	21 03 485 1457 09 48 222 2004 075*	7.5 m	09 47 222 2022 09 48 222 2003 075*
			10.0 m	21 03 485 1410 09 48 222 2004 100*	10.0 m	09 47 222 2011 09 48 222 2003 100*
			20.0 m	21 03 485 1420 09 48 222 2004 200*	20.0 m	09 47 222 2013 09 48 222 2003 200*
Open end			1.0 m	21 03 585 1401 09 48 220 0004 010*	1.0 m	09 47 220 0002 09 48 220 0003 010*
			1.5 m	21 03 585 1451 09 48 220 0004 015*	1.5 m	09 47 220 0003 09 48 220 0003 015*
			3.0 m	21 03 585 1403 09 48 220 0004 030*	3.0 m	09 47 220 0005 09 48 220 0003 030*
			5.0 m	21 03 585 1405 09 48 220 0004 050*	5.0 m	09 47 220 0006 09 48 220 0003 050*
			7.5 m	21 03 585 1457 09 48 220 0004 075*	7.5 m	09 47 220 0022 09 48 220 0003 075*
			10.0 m	21 03 585 1410 09 48 220 0004 100*	10.0 m	09 47 220 0011 09 48 220 0003 100*
			20.0 m	21 03 585 1420 09 48 220 0004 200*	20.0 m	09 47 220 0013 09 48 220 0003 200*

* Mid 2014 the part numbers beginning with 21 03 ... or 09 47 ... will be replaced by the part numbers beginning with 09 48 ...
The former part numbers will be set to status inactive.
Please use only the part numbers beginning with 09 48 ... for your order.

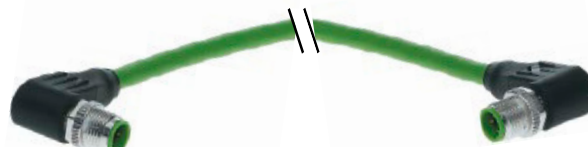
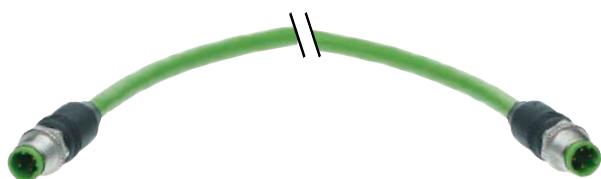


Overview system cables M12

03

Number of contacts			Male M12 D-coding angled			
			Cable material: PUR		Cable material: PVC	
Male M12	angled		1.0 m	21 03 485 3401 09 48 808 0004 010*	1.0 m	09 47 808 0002 09 48 808 0003 010*
			1.5 m	21 03 485 3451 09 48 808 0004 015*	1.5 m	09 47 808 0003 09 48 808 0003 015*
			3.0 m	21 03 485 3403 09 48 808 0004 030*	3.0 m	09 47 808 0005 09 48 808 0003 030*
			5.0 m	21 03 485 3405 09 48 808 0004 050*	5.0 m	09 47 808 0006 09 48 808 0003 050*
			7.5 m	21 03 485 3457 09 48 808 0004 075*	7.5 m	09 47 808 0022 09 48 808 0003 075*
			10.0 m	21 03 485 3410 09 48 808 0004 100*	10.0 m	09 47 808 0011 09 48 808 0003 100*
			20.0 m	21 03 485 3420 09 48 808 0004 200*	20.0 m	09 47 808 0013 09 48 808 0003 200*
Open end			1.0 m	21 03 585 3401 09 48 800 0004 010*	1.0 m	09 47 800 0002 09 48 800 0003 010*
			1.5 m	21 03 585 3451 09 48 800 0004 015*	1.5 m	09 47 800 0003 09 48 800 0003 015*
			3.0 m	21 03 585 3403 09 48 800 0004 030*	3.0 m	09 47 800 0005 09 48 800 0003 030*
			5.0 m	21 03 585 3405 09 48 800 0004 050*	5.0 m	09 47 800 0006 09 48 800 0003 050*
			7.5 m	21 03 585 3457 09 48 800 0004 075*	7.5 m	09 47 800 0022 09 48 800 0003 075*
			10.0 m	21 03 585 3410 09 48 800 0004 100*	10.0 m	09 47 800 0011 09 48 800 0003 100*
			20.0 m	21 03 585 3420 09 48 800 0004 200*	20.0 m	09 47 800 0013 09 48 800 0003 200*

* Mid 2014 the part numbers beginning with 21 03 ... or 09 47 ... will be replaced by the part numbers beginning with 09 48 ...
The former part numbers will be set to status inactive.
Please use only the part numbers beginning with 09 48 ... for your order.



Identification

Part No.

Drawing

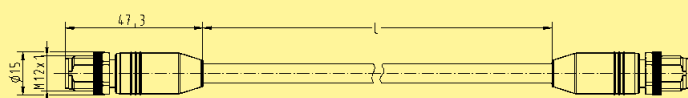
Dimensions in mm

2 x M12
Circular connectors,
D-coding,
PUR,
straight

Length*: 1.0 m
1.5 m
3.0 m
5.0 m
7.5 m
10.0 m
20.0 m

21 03 485 1401
21 03 485 1451
21 03 485 1403
21 03 485 1405
21 03 485 1457
21 03 485 1410
21 03 485 1420

Cable: AWG 22 / 0.34 mm²

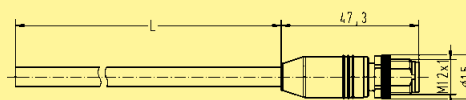


1 x M12
Circular connectors,
D-coding,
PUR,
straight

Length*: 1.0 m
1.5 m
3.0 m
5.0 m
7.5 m
10.0 m
20.0 m

21 03 585 1401
21 03 585 1451
21 03 585 1403
21 03 585 1405
21 03 585 1457
21 03 585 1410
21 03 585 1420

Cable: AWG 22 / 0.34 mm²

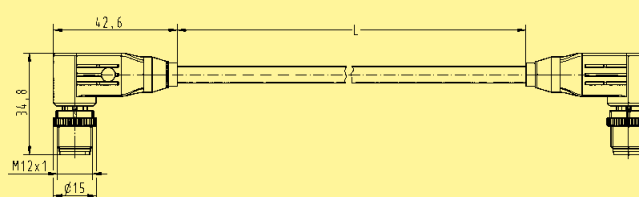


2 x M12
Circular connectors,
D-coding,
PUR,
angled

Length*: 1.0 m
1.5 m
3.0 m
5.0 m
7.5 m
10.0 m
20.0 m

21 03 485 3401
21 03 485 3451
21 03 485 3403
21 03 485 3405
21 03 485 3457
21 03 485 3410
21 03 485 3420

Cable: AWG 22 / 0.34 mm²

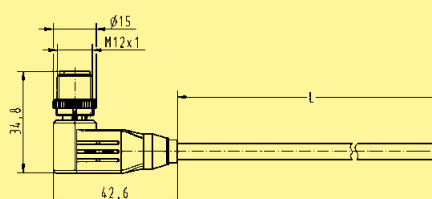


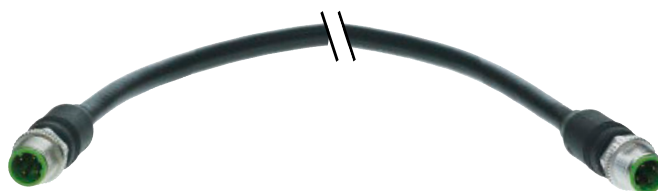
1 x M12
Circular connectors,
D-coding,
PUR,
angled

Length*: 1.0 m
1.5 m
3.0 m
5.0 m
7.5 m
10.0 m
20.0 m

21 03 585 3401
21 03 585 3451
21 03 585 3403
21 03 585 3405
21 03 585 3457
21 03 585 3410
21 03 585 3420

Cable: AWG 22 / 0.34 mm²



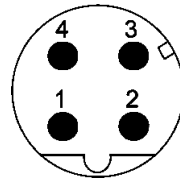


Identification	Part No.	Drawing	Dimensions in mm
2 x M12 Circular connectors, D-coding, PVC, straight	Length*: 1.0 m 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m 20.0 m	09 47 222 2002 09 47 222 2003 09 47 222 2005 09 47 222 2006 09 47 222 2022 09 47 222 2011 09 47 222 2013	Cable: AWG 22 / 0.34 mm²
1 x M12 Circular connectors, D-coding, PVC, straight	Length*: 1.0 m 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m 20.0 m	09 47 220 0002 09 47 220 0003 09 47 220 0005 09 47 220 0006 09 47 220 0022 09 47 220 0011 09 47 220 0013	Cable: AWG 22 / 0.34 mm²
2 x M12 Circular connectors, D-coding, PVC, angled	Length*: 1.0 m 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m 20.0 m	09 47 808 0002 09 47 808 0003 09 47 808 0005 09 47 808 0006 09 47 808 0022 09 47 808 0011 09 47 808 0013	Cable: AWG 22 / 0.34 mm²
1 x M12 Circular connectors, D-coding, PVC, angled	Length*: 1.0 m 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m 20.0 m	09 47 800 0002 09 47 800 0003 09 47 800 0005 09 47 800 0006 09 47 800 0022 09 47 800 0011 09 47 800 0013	Cable: AWG 22 / 0.34 mm²

M12 Panel feed-through HARAX® D-coded



Mating face

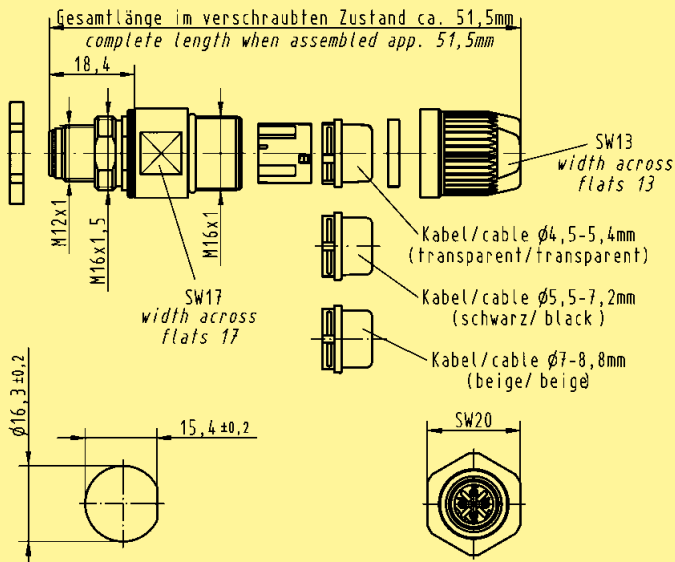


D-coding
Mating face
acc. to IEC 61076-2-101



Applications / Advantages

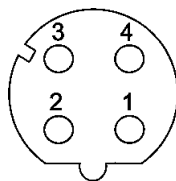
- D-coding for Ethernet/Profinet applications
- Patent HARAX® fast termination
- Robust design
- 360° shielding termination
- Transmission performance Cat. 5

Identification	Part No.	Drawing	Dimensions in mm
HARAX® Panel feed-through  Male 4 poles, D-coding 0.14 - 0.34 mm² / AWG 26 - 22 Panel thickness min. 2.5 mm max. 4.5 mm	21 03 381 1425	 Gesamtlänge im verschraubten Zustand ca. 51,5mm complete length when assembled app. 51,5mm 18,4 M12x1 M16x1,5 M16x1 SW17 width across flats 17 SW13 width across flats 13 Kabel/cable ϕ4,5-5,4mm (transparent/transparent) Kabel/cable ϕ5,5-7,2mm (schwarz/black) Kabel/cable ϕ7-8,8mm (beige/beige) SW20 ϕ16,3 $\pm$ 0,2 15,4 $\pm$ 0,2	

M12 Panel feed-through HARAX® D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

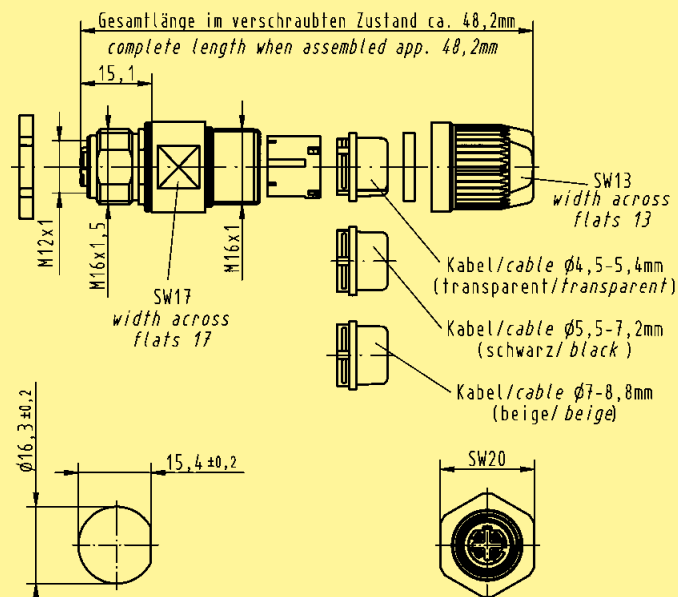
HARAX® Panel feed-through



Female
4 poles, D-coding
0.14 - 0.34 mm² / AWG 26 - 22

Panel thickness
min. 2.5 mm
max. 4.5 mm

21 03 381 2425

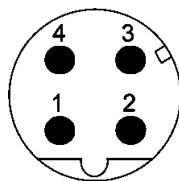


03

M12 Panel feed-through Crimp D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

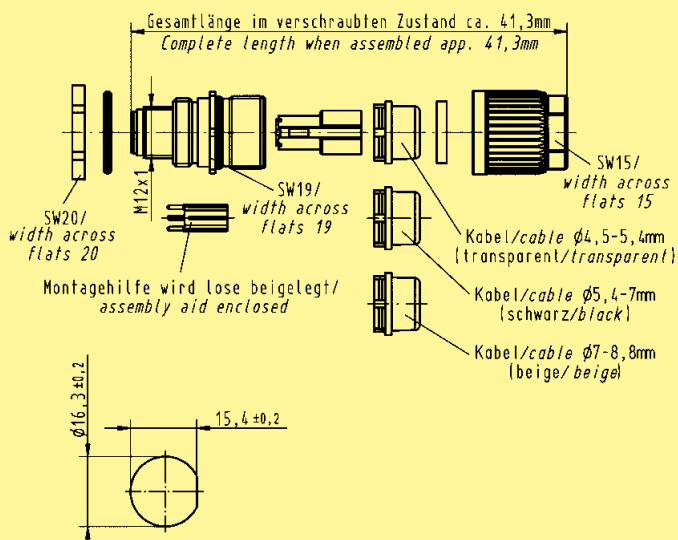
Drawing

Dimensions in mm

M12 Panel feed-through Crimp



21 03 882 1425



Male
4 poles, D-coding

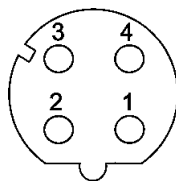
Panel thickness
min. 2.5 mm
max. 4.5 mm

03
80

M12 Panel feed-through Crimp D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

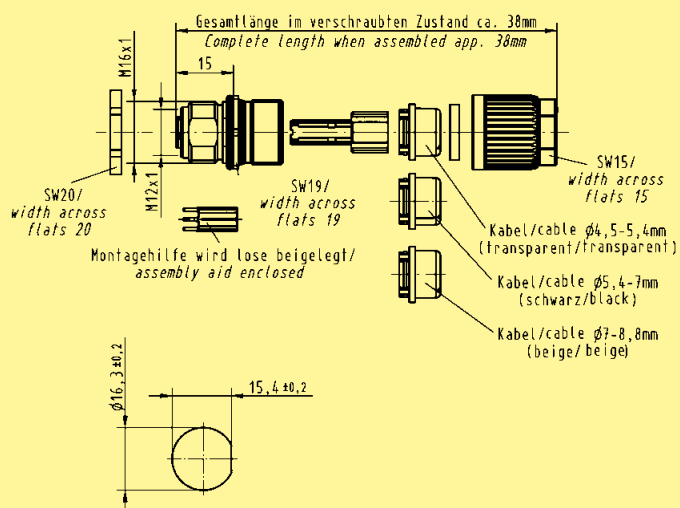
M12 Panel feed-through Crimp



Female
4 poles, D-coding

Panel thickness
min. 2.5 mm
max. 4.5 mm

21 03 882 2425

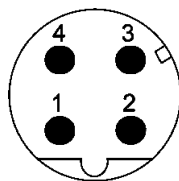


03

M12 Panel feed-through D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



03

Identification

Part No.

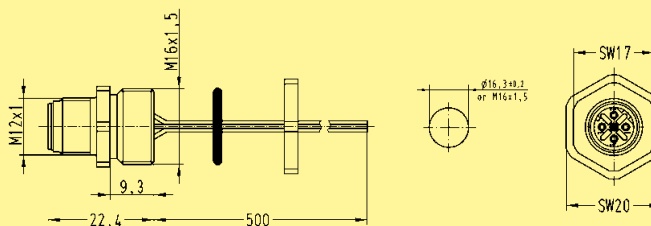
Drawing

Dimensions in mm

M12 Panel feed-through



21 03 371 1403



Male
D-coding
50 cm conductors, AWG 22, 4 poles

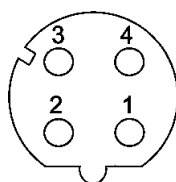
Panel thickness
min. 2.0 mm
max. 5.0 mm

03
82

M12 Panel feed-through D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

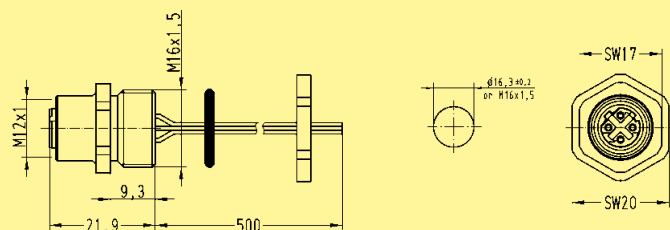
Drawing

Dimensions in mm

M12 Panel feed-through



21 03 371 2403



Female
D-coding
50 cm conductors, AWG 22, 4 poles

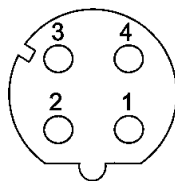
Panel thickness
min. 2.0 mm
max. 5.0 mm

03

M12 Panel feed-through D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

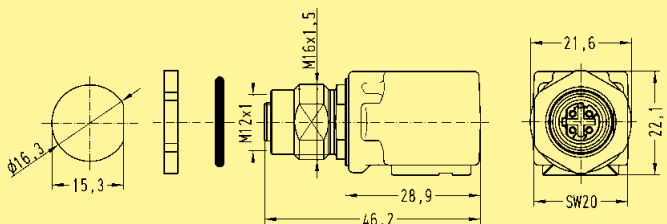
M12 Female-RJ45 Panel feed-through



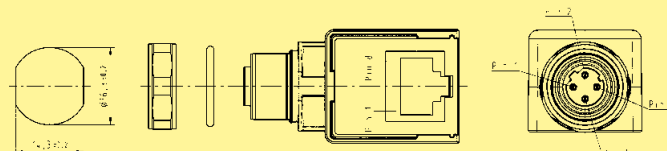
4 poles, D-coding
angled

Panel thickness
min. 2.1 mm
max. 4.5 mm

21 03 381 4400



21 03 381 4401*



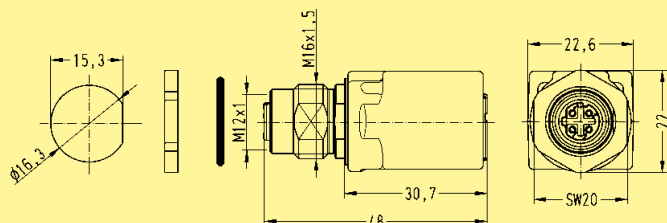
M12 Female-RJ45 Panel feed-through



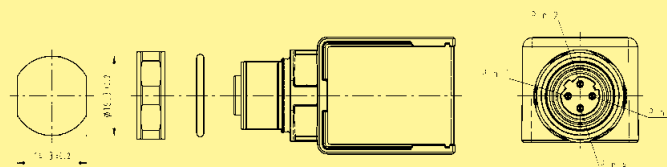
4 poles, D-coding
straight

Panel thickness
min. 2.1 mm
max. 4.5 mm

21 03 381 2400



21 03 381 2401*

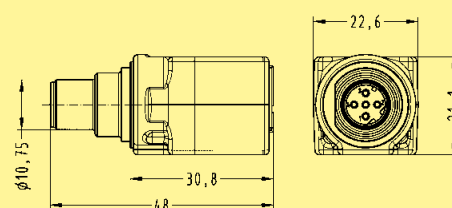


M12 Male-RJ45 Adapter



4 poles, D-coding
straight
(coupler, without thread in the
termination area)

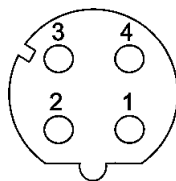
21 03 371 1420



M12 Panel feed-through D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

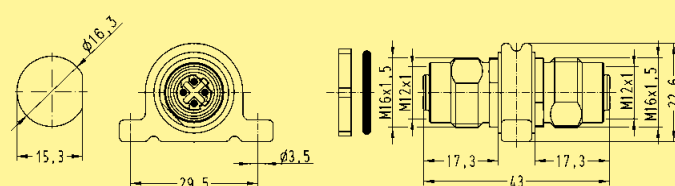
Dimensions in mm

M12 Gender Changer
Female-Female



4 poles, D-coding
Cat. 5

21 03 381 6405

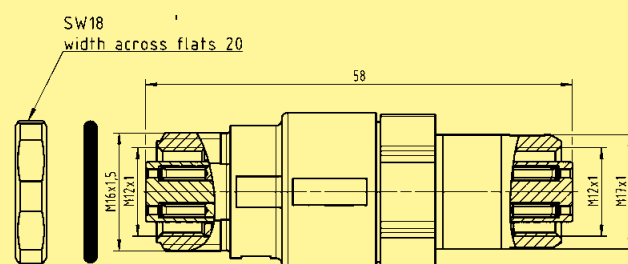


M12 Gender Changer
Female-Female

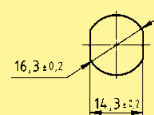


4 poles, D-coding
Cat. 5

21 03 381 6401*



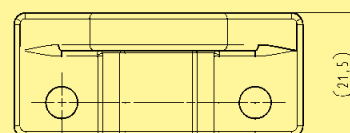
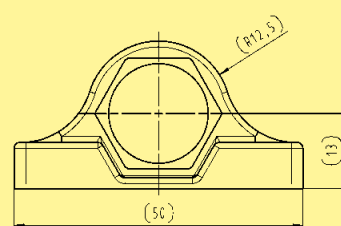
Panel cut out
(1:1)



Wall bracket



21 01 000 0036



Further information and data sheets see www.HARTING.com

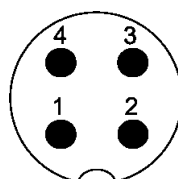
* UL approval is in preparation

03

03
85



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



Technical characteristics: M12 PCB adapter D-coded angled

Degree of protection	IP20, IP67 (mated and locked)	Temperature during connection	-5 °C ... +50 °C
Rated current	max. 4 A (dependant on PCB layout)	Termination	Reflow
Rated voltage	50 V	Contact material	Copper alloy
Mating cycles	max. 100	Contact plating (mating side)	Au over Ni
Limiting temperature	-40 °C ... +85 °C	Insulator material	LCP

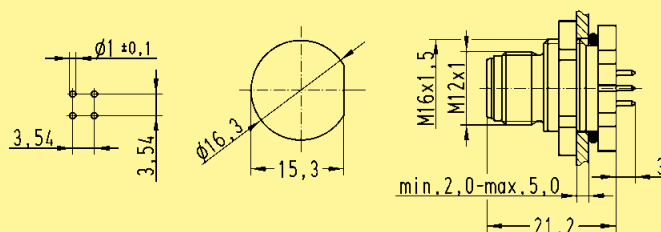
Identification	Part No.	Drawing	Dimensions in mm
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M12 PCB adapter
Male, D-coding,
straight



4 poles, IP67

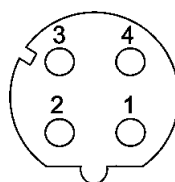
21 03 371 1400



M12 PCB adapter D-coded



Mating face



D-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

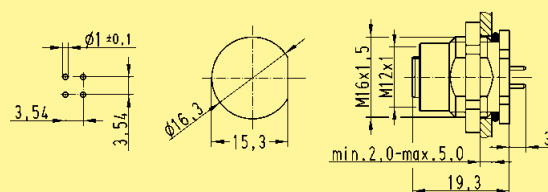
M12 PCB adapter

Female, D-coding,
straight



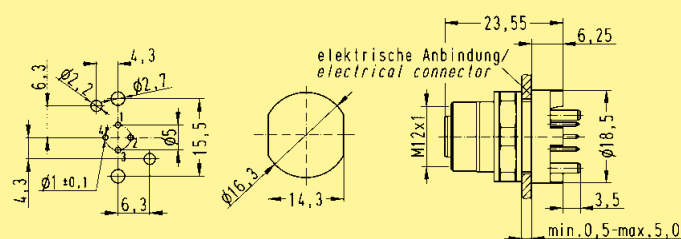
4 poles, IP67

21 03 371 2415



4 poles, IP20
4 poles, IP67

21 03 381 6410
21 03 381 6420

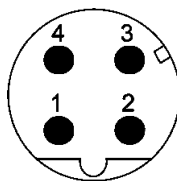


[illegible]

M12 PCB adapter shielded D-coded

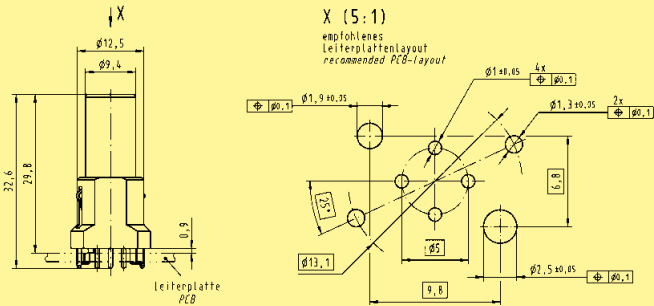
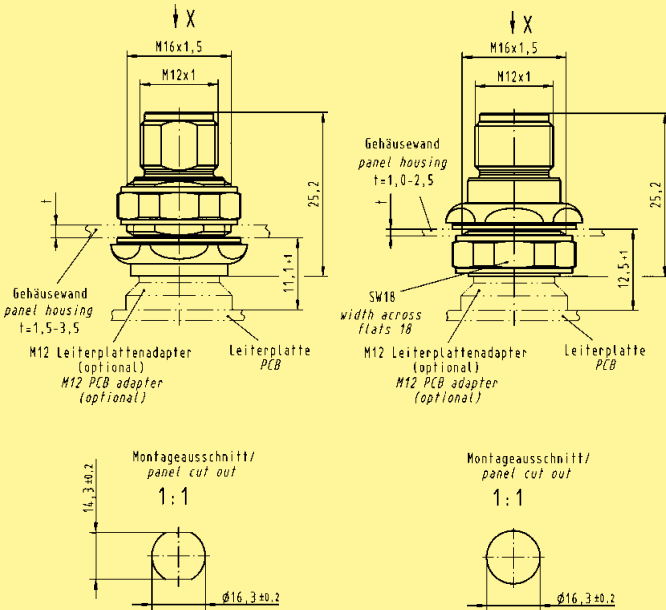


Mating face



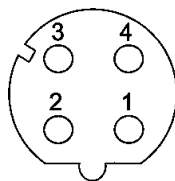
D-coding
Mating face
acc. to IEC 61 076-2-101



Identification	Part No.	Drawing	Dimensions in mm
M12 PCB adapter, shielded  Male 4 poles, D-coding	21 03 381 1418*		
Housing   for rear mounting for front mounting	21 03 301 1000 21 03 301 1001		



Mating face



D-coding
Mating face
acc. to IEC 61 076-2-101



03

Identification

Part No.

Drawing

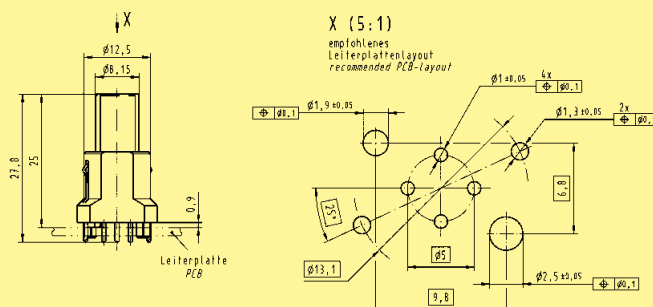
Dimensions in mm

M12 PCB adapter,
shielded



Female
4 poles, D-coding

21 03 381 2418*



Housing

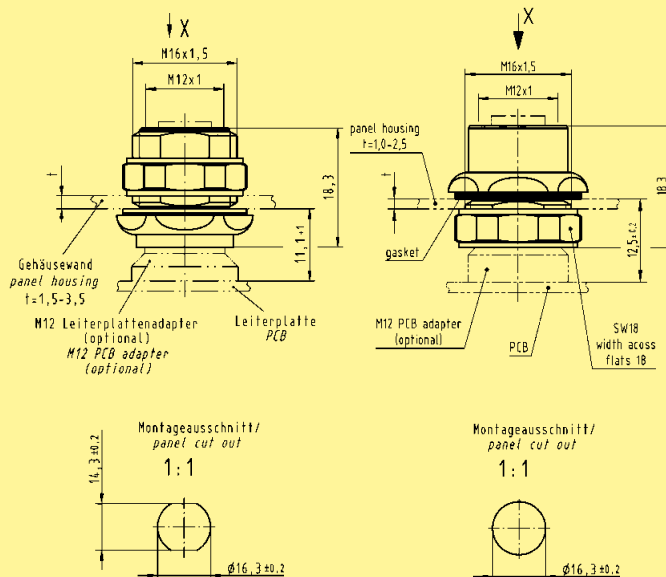


for rear mounting

21 03 301 2000

for front mounting

21 03 301 2001



Identification	Part No.	Drawing																								
Crimping tool for M12 Crimp	09 99 000 0501																									
Accessories M12 Crimp																										
Locator	09 99 000 0531																									
D-Sub single contacts (500 mating cycles)		D-Sub contacts <table><thead><tr><th>Part number</th><th>AWG</th><th>Tool settings</th></tr></thead><tbody><tr><td rowspan="3">09 67 000 3x76</td><td>18</td><td>6</td></tr><tr><td>20</td><td>6</td></tr><tr><td>22</td><td>5</td></tr><tr><td>09 67 000 8x76</td><td>20, 22, 24</td><td>6</td></tr><tr><td>09 67 000 5x76</td><td>22, 24, 26</td><td>6</td></tr></tbody></table> <table><thead><tr><th></th><th>a</th></tr></thead><tbody><tr><td>AWG 22-18</td><td>1.34</td></tr><tr><td>AWG 24-20</td><td>1.13</td></tr><tr><td>AWG 26-22</td><td>0.88</td></tr></tbody></table>	Part number	AWG	Tool settings	09 67 000 3x76	18	6	20	6	22	5	09 67 000 8x76	20, 22, 24	6	09 67 000 5x76	22, 24, 26	6		a	AWG 22-18	1.34	AWG 24-20	1.13	AWG 26-22	0.88
Part number	AWG	Tool settings																								
09 67 000 3x76	18	6																								
	20	6																								
	22	5																								
09 67 000 8x76	20, 22, 24	6																								
09 67 000 5x76	22, 24, 26	6																								
	a																									
AWG 22-18	1.34																									
AWG 24-20	1.13																									
AWG 26-22	0.88																									
turned male contacts AWG 22-18 / 0.33-0.82 mm ² AWG 24-20 / 0.25-0.52 mm ² AWG 26-22 / 0.13-0.33 mm ²	09 67 000 3576 09 67 000 8576 09 67 000 5576																									
turned female contacts AWG 22-18 / 0.33-0.82 mm ² AWG 24-20 / 0.25-0.52 mm ² AWG 26-22 / 0.13-0.33 mm ²	09 67 000 3476 09 67 000 8476 09 67 000 5476																									
M12 dynamometric screwdriver Tightening torque 0.6 Nm																										
for M12 Slim design SW 15	09 99 000 0646																									
for M12-L SW 17	09 99 000 0384																									
Set of seals M12-L shielded for 4.5 - 5.4 mm cable Ø for 5.4 - 7.2 mm cable Ø for 7.2 - 8.8 mm cable Ø	21 01 010 2017																									
Accessories M12																										
Lock nut	21 01 000 0018																									

Identification	Part No.	Drawing	Dimensions in mm
Cap metal M12 for IP65 / IP67 M12 metal cap for male side with cord	21 01 000 0033		
Cap metal M12 for IP65 / IP67 M12 metal cap for male side with cable clip	21 01 000 0038		
Cap metal M12 for IP65 / IP67 M12 metal cap for female side with cord	21 01 000 0030		
Cap metal M12 for IP65 / IP67 M12 metal cap for female side with cable clip	21 01 000 0031		
Cap M12 for IP65 / IP67 Seals material Viton Plastic cap for female	21 01 000 0003		

M12 X-coding

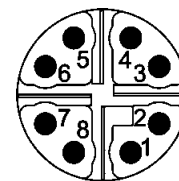


Specifications IEC 60 352-4

Approval 



Mating face



X-coding
Mating face
acc. to IEC 61076-2-101

Technical characteristics M12 – X-coding

Type M12 X-coded

har-speed M12
har-speed M12 Slim design

General data

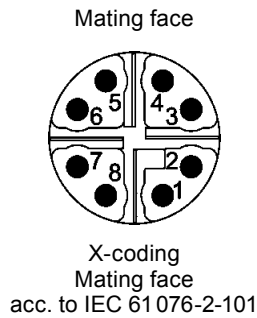
Conductor cross section	0.08 - 0.25 mm ² AWG 28-23
Diameter of individual strands	–
Conductor insulation material	–
Conductor diameter	0.33 - 0.61 mm
Cable diameter	4.5 - 8.8 mm
Temperature range	-40 °C ... +85 °C
Temperature during connection	-5 °C ... +50 °C
Degree of protection	IP65 / IP67
Mating cycles	500
Tightening torque connector / hexagonal wrench	0.6 Nm / SW 15

Electrical characteristics

Rated current	0.5 A
Rated voltage	48 V
Rated impulse voltage	1.5 kV
Contact resistance	15 mΩ
Insulation resistance	10 ⁸ Ω
Pollution degree	3
Overvoltage category	3
Isolation group	1
Transmission performance (Category)	Cat. 6 _A

Materials

Contact material	Brass
Contact plating	Gold
Contact carrier material	LCP
Housing material	ZP410



Applications / Advantages

- High-Speed Ethernet applications for process automatization, e.g. camera system for process control in the production
- Maximum data rates through the configuration of the contacts in conformance with Ethernet technology. Transfer class E_A for 1 and 10 Gigabit
- Perfect shielding through paired shielding of the contacts
- Overmoulded system cables in various lengths

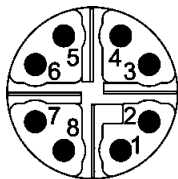
04

Identification	Part No.	Drawing	Dimensions in mm
har-speed M12 Male straight version 8 poles, Cat. 6 _A Cable diameter: 4.5 - 8.8 mm	21 03 881 5805	Gesamtlänge im verschraubten Zustand ca. 62,5mm complete length when assembled app. 62,5mm M12x1 SW17/ width across flats 17 SW15/ width across flats 15 Steckgesicht n. Contact face acc. IEC 61076-2-10 PAS	
har-speed M12 Slim design Male straight version 8 poles, Cat. 6 _A Cable diameter: 4.5 - 8.8 mm	21 03 881 1805	Gesamtlänge im verschraubten Zustand ca. 45,1mm complete length when assembled app. 46,1mm M12x1 SW16/ width across flats 16 SW14/ width across flats 14 SW12/ width across flats 12 X (2:1) Steckgesicht n. Contact face acc. to IEC 61076-2-101 600 BRONZE plating	

har-speed M12 System cables X-coded



Mating face



X-coding
Mating face
acc. to IEC 61076-2-101

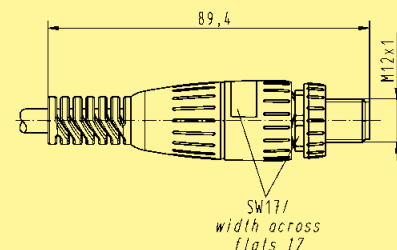
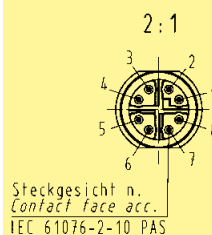


Identification	Part No.	Drawing	Dimensions in mm
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har-speed M12
System cables

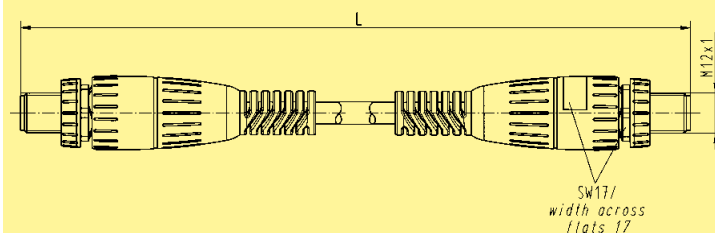
single ended overmoulded
system cable

Length:	1 m	21 03 483 1801
	3 m	21 03 483 1803
	5 m	21 03 483 1805
	7 m	21 03 483 1807
	10 m	21 03 483 1810



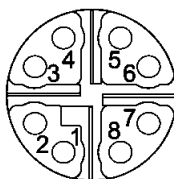
double ended overmoulded
system cable

Length:	0.5 m	21 03 483 5850
	1.0 m	21 03 483 5801
	1.5 m	21 03 483 5851
	2.0 m	21 03 483 5802
	2.5 m	21 03 483 5852





Mating face



X-coding
Mating face
acc. to IEC 61076-2-101



Identification	Part No.	Drawing	Dimensions in mm
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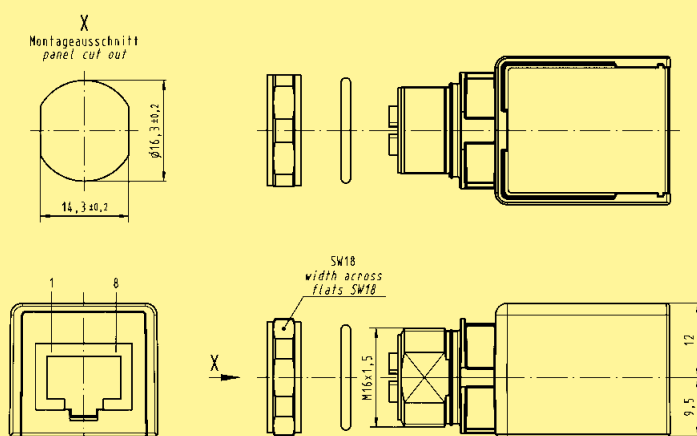
har-speed M12 Adapter M12-RJ45



straight, Cat. 6A

Panel thickness
min. 2.1 mm
max. 4.5 mm

21 03 381 2800



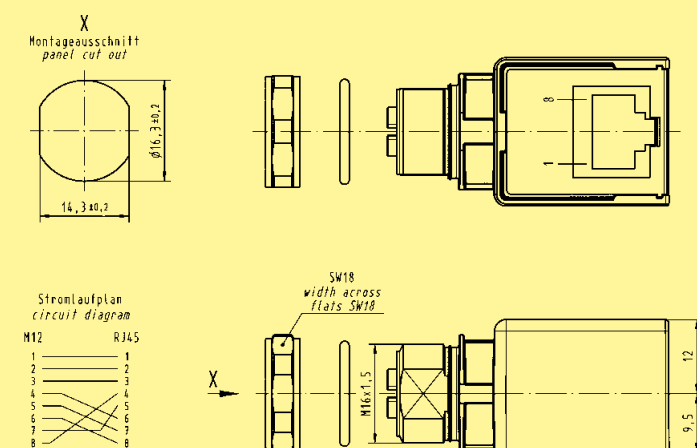
04



angled, Cat. 6A

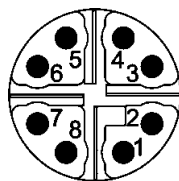
Panel thickness
min. 2.1 mm
max. 4.5 mm

21 03 381 4800





Mating face



X-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

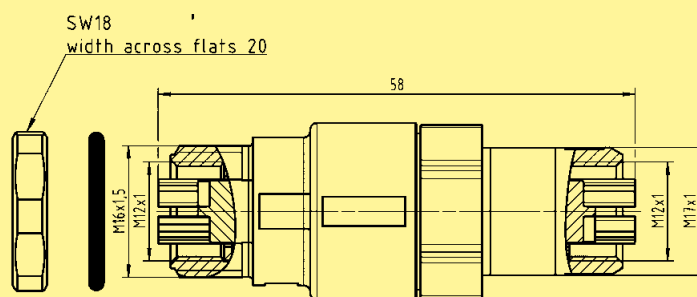
Drawing

Dimensions in mm

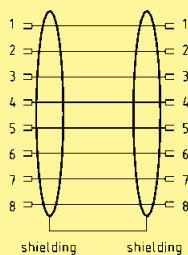
Gender changer, Cat. 6A



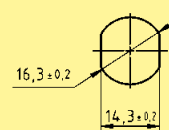
21 03 381 6815



schematic diagram



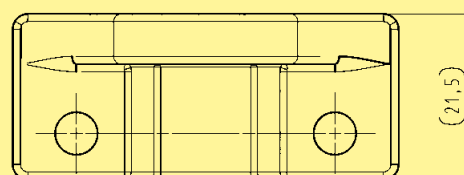
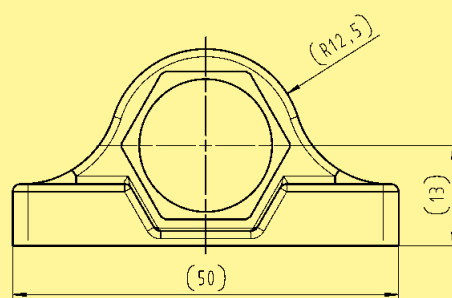
Panel cut out
(1:1)



Wall bracket



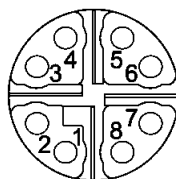
21 01 000 0036



har-speed M12 PCB adapter X-coded



Mating face



X-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

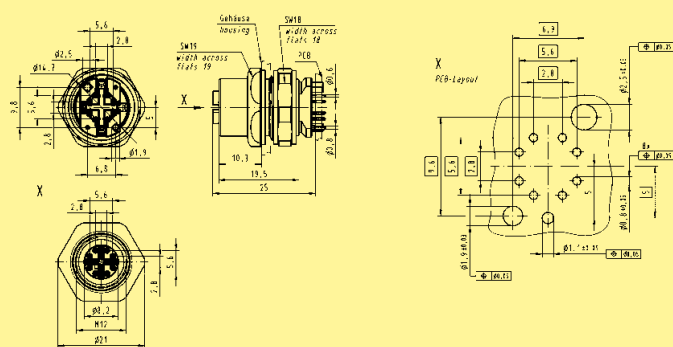
Dimensions in mm

har-speed M12 PCB adapter

Female, X-coding,
straight, Cat. 6_A
for front mounting



21 03 381 2802

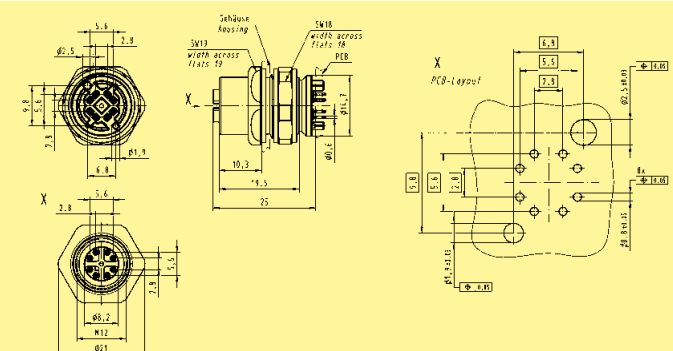


har-speed M12 PCB adapter

Female, X-coding,
straight, Cat. 5
for front mounting



21 03 381 2803

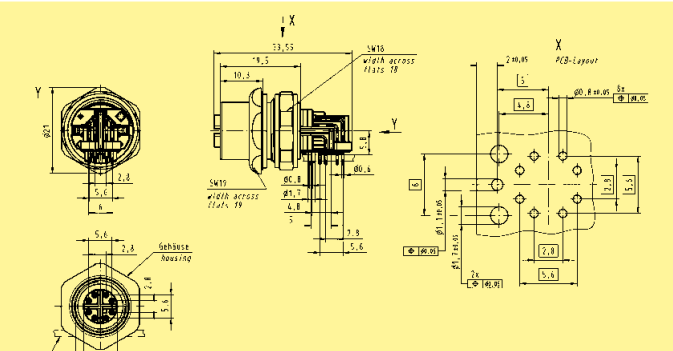


har-speed M12 PCB adapter

Female, X-coding,
angled, Cat. 6_A
for front mounting



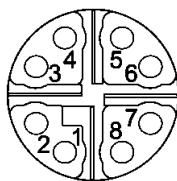
21 03 381 4802



har-speed M12 PCB adapter X-coded



Mating face



X-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

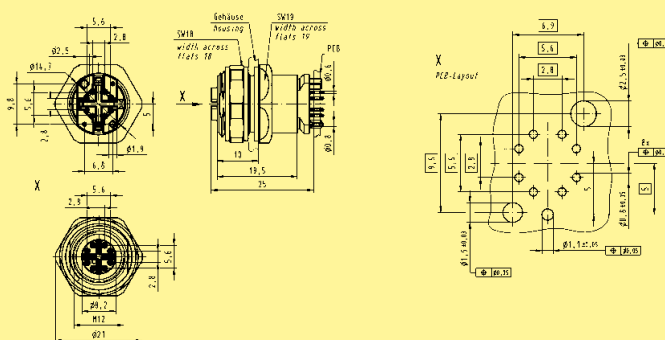
Dimensions in mm

har-speed M12 PCB adapter

Female, X-coding,
straight, Cat. 6_A
for rear mounting



21 03 381 2804



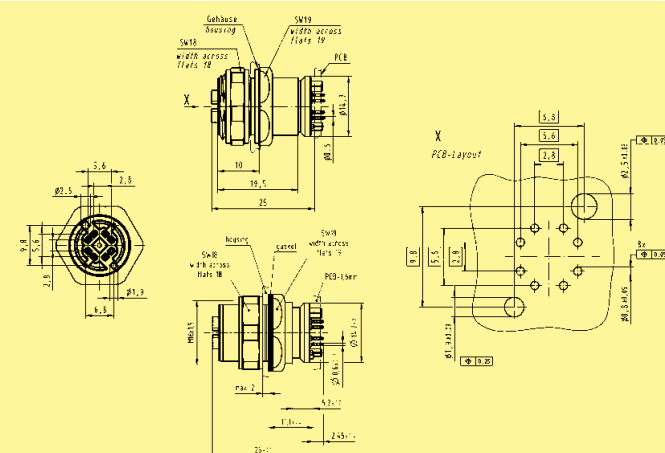
har-speed M12 PCB adapter

Female, X-coding,
straight, Cat. 5
for rear mounting



21 03 381 2805

21 03 381 2809

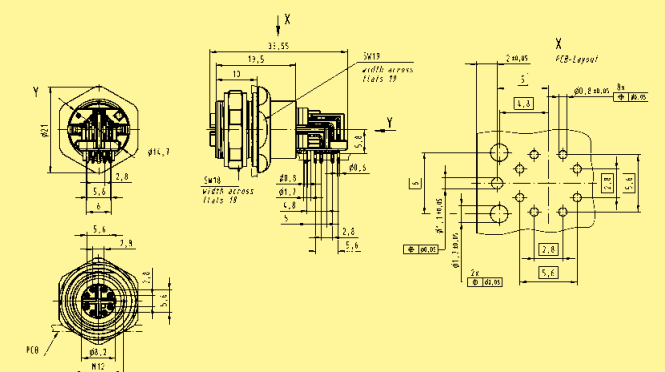


har-speed M12 PCB adapter

Female, X-coding,
angled, Cat. 6_A
for rear mounting

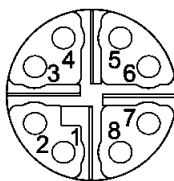


21 03 381 4804





Mating face



X-coding
Mating face
acc. to IEC 61 076-2-101



Identification	Part No.	Drawing	Dimensions in mm
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har-speed M12
PCB adapter

Female
8 poles, X-coding
Cat. 6A

Female
8 poles, X-coding
Cat. 5

21 03 381 2806

21 03 381 2807

ausgelegt für Gehäuseinnerø 13±0,05
designed for housing innerø 13±0,05

LP/PCB -1,6mm

Ø14,7±0,1

Ø1,9±0,05

10,5±0,04

2,45±0,1

3,2±0,1

25±0,1

X

Isolierkörper
insulating body

X (5:1)
empfohlenes
Leiterplattenlayout
recommended PCB layout

Ø1,9±0,05

Ø16,7±0,1

Ø1,1±0,05

Ø1,0±0,05

Pinbelegung
pin assignment

Paar/Pair	Pin	Signal
2	1	TC1+
2	2	TC1-
3	3	TC2+
3	4	TC2-
4	5	TC4+
4	6	TC4-
5	7	TC3+
5	8	TC3-

Housing

for rear mounting

for front mounting

21 03 301 2000

21 03 301 2001

M16x1,5

M12x1

18,3

11,1±0,5

12,5±0,2

Ø16,3±0,2

Gehäusewand
panel housing
t=1,5-3,5

M12 Leiterplattenadapter
(optional)

M12 PCB adapter
(optional)

Leiterplatte
PCB

panel housing
t=1,0-2,5

gasket

M12 PCB adapter
(optional)

PCB

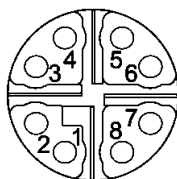
SW18
width across
flats 18

Montageausschnitt/
panel cut out
1:1

Montageausschnitt/
panel cut out
1:1



Mating face



X-coding
Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

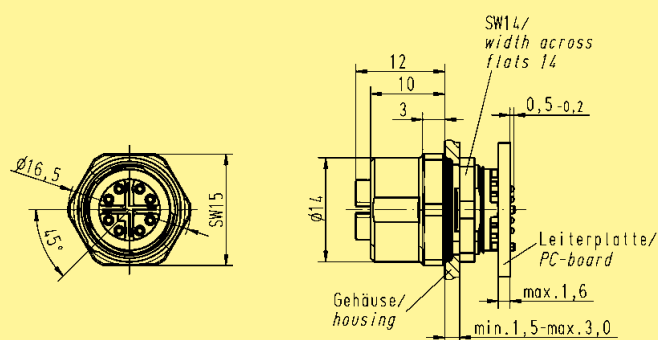
Dimensions in mm

har-speed M12 PCB adapter

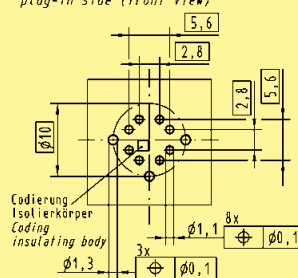
Female, X-coding,
straight, Cat. 6A
for front mounting



21 03 381 2801



Bohrplan/drilling plan Bestückungsseite (Frontansicht) plug-in side (front view)



Identification

Part No.

Drawing

Crimping tool
for *har-speed* M12

09 99 000 0501



Accessories *har-speed* M12

Locator

09 99 000 0525



Single contacts
(500 mating cycles)

har-speed M12 contacts
AWG 28-24 / 0.08-0.22 mm²



21 01 100 9014

har-speed M12 contacts
AWG 26-23 / 0.13-0.25 mm²

21 01 100 9019

har-speed contacts

Part number	AWG	Tool settings
21 01 100 9014	28	3
	26	4
	24	5
21 01 100 9019	26	4
	24	5
	23	5

Accessories M12

Lock nut

21 01 000 0018



M12
dynamometric screwdriver
Tightening torque 0.6 Nm

for M12 Slim design SW 15

09 99 000 0646



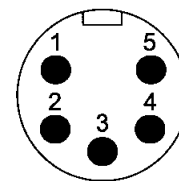
Identification	Part No.	Drawing	Dimensions in mm
Cap metal M12 for IP65 / IP67 M12 metal cap for male side with cord	21 01 000 0033		
Cap metal M12 for IP65 / IP67 M12 metal cap for male side with cable clip	21 01 000 0038		
Cap metal M12 for IP65 / IP67 M12 metal cap for female side with cord	21 01 000 0030		
Cap metal M12 for IP65 / IP67 M12 metal cap for female side with cable clip	21 01 000 0031		
Cap M12 for IP65 / IP67 Seals material Viton Plastic cap for female	21 01 000 0003		

Specifications IEC 60 352-4
DIN 61984

Approval VDE



Mating face



Mating face
acc. to IEC 61076-2-101

Technical characteristics 7/8" HARAX®

Type	7/8" HARAX®
------	-------------

General data

Conductor cross section	0.75 - 1.5 mm ² AWG 18-16
Diameter of individual strands	≥ 0.15 mm
Conductor insulation material	PVC, PP, TPE
Conductor diameter	≤ 2.8 mm
Cable diameter	6.8 - 9.5 mm (black) 9 - 12.5 mm (grey)
Temperature range	-40 °C ... +85 °C
Temperature during connection	-5 °C ... +50 °C
Degree of protection	IP65 / IP67
Mating cycles	100
Recommended tightening torque / Hexagonal wrench	1.5 Nm / SW 22

Electrical characteristics

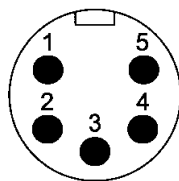
Rated current	10 A
Rated voltage	230 V / 400 V
Rated impulse voltage	4.8 kV
Contact resistance	10 mΩ
Insulation resistance	10 ⁸ Ω
Pollution degree	3
Overvoltage category	3
Isolation group	1

Materials

Contact material	Copper alloy
Contact plating	Gold
Contact carrier material	TPU, PA
Housing material	TPU, zinc die-cast, PA



Mating face

Mating face
acc. to IEC 61076-2-101

Applications / Advantages

- The reliable connector for power applications
- Patent HARAX® fast termination
- Overmoulded system cables in various lengths
- Robust design, quick assembly

Identification

Part No.

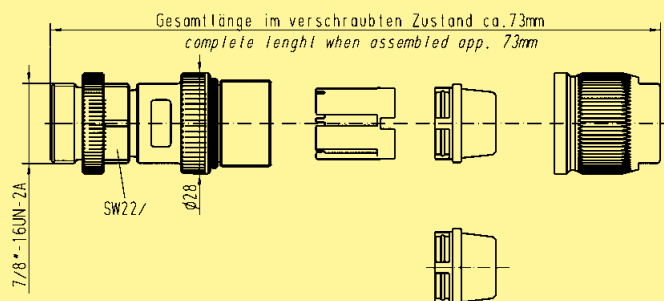
Drawing

Dimensions in mm

7/8" HARAX® Male

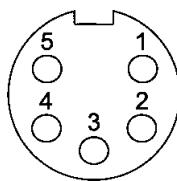


21 04 116 1505





Mating face



Mating face
acc. to IEC 61076-2-101



Identification

Part No.

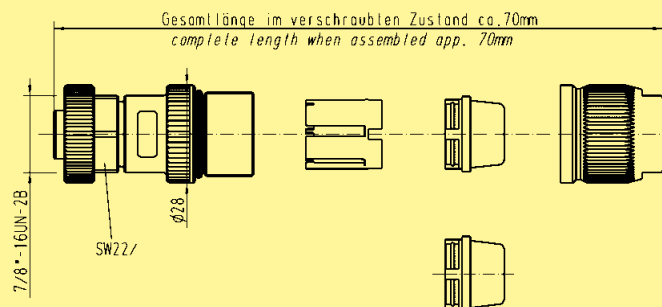
Drawing

Dimensions in mm

7/8" HARAX® Female



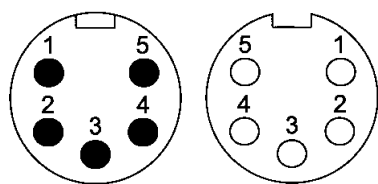
21 04 116 2505



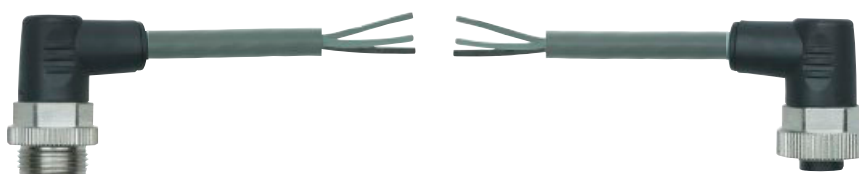
05

05
05

Mating face



Mating face
acc. to IEC 61076-2-101



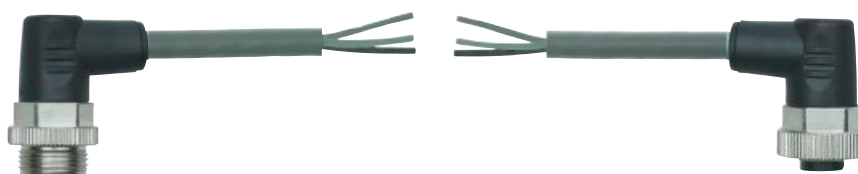
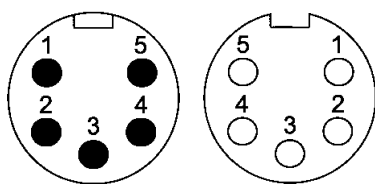
Technical characteristics

Degree of protection	IP67
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

7/8" System cables



Mating face



Mating face
acc. to IEC 61076-2-101

Overview system cables 7/8"

Number of contacts			Male 7/8"			
			straight		angled	
			 Cable material: PUR		 Cable material: PUR	
Female 7/8"	straight		0.3 m	21 04 416 1501	xxx	
			0.6 m	21 04 416 1502	xxx	
			1.0 m	21 04 416 1503	xxx	
			1.5 m	21 04 416 1504	xxx	
			2.0 m	21 04 416 1505	xxx	
	angled		xxx		0.3 m	21 04 416 3501
			xxx		0.6 m	21 04 416 3502
			xxx		1.0 m	21 04 416 3503
			xxx		1.5 m	21 04 416 3504
			xxx		2.0 m	21 04 416 3505

Number of contacts			Female 7/8"			
			straight		angled	
			 Cable material: PUR		 Cable material: PUR	
Open end		1.5 m	21 04 516 2501	1.5 m	21 04 516 4501	
		3.0 m	21 04 516 2502	3.0 m	21 04 516 4502	
		5.0 m	21 04 516 2503	5.0 m	21 04 516 4503	
		7.5 m	21 04 516 2504	7.5 m	21 04 516 4504	
		10.0 m	21 04 516 2505	10.0 m	21 04 516 4505	

7/8" System cables



Identification

Part No.

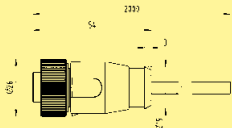
Drawing

Dimensions in mm

Overmoulded cordsets 7/8"
Female straight
3 poles

Length: 2.0 m

21 04 516 2302



— 21 04 516 2302
— 21 04 516 2302
— 21 04 516 2302

Schematic
diagram

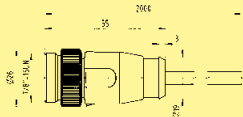
View
mating side



Overmoulded cordsets 7/8"
Male straight
4 poles

Length: 2.0 m

21 04 516 1402



— 21 04 516 1402
— 21 04 516 1402
— 21 04 516 1402

Schematic
diagram

View
mating side



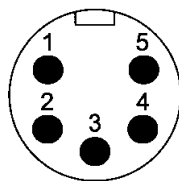


Identification	Part No.	Drawing	Dimensions in mm
Overmoulded cordsets 7/8" Female straight 5 poles Length: 1.5 m 3.0 m 5.0 m 7.5 m 10.0 m	21 04 516 2501 21 04 516 2502 21 04 516 2503 21 04 516 2504 21 04 516 2505	Schematic diagram View mating side	
Overmoulded cordsets 7/8" Female angled 5 poles Length: 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	
Overmoulded cordsets 7/8" Male-Female straight 5 poles 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	
Overmoulded cordsets 7/8" Male-Female angled 5 poles 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	

7/8" Panel feed-through



Mating face



Mating face
acc. to IEC 61076-2-101



Identification

Part No.

Drawing

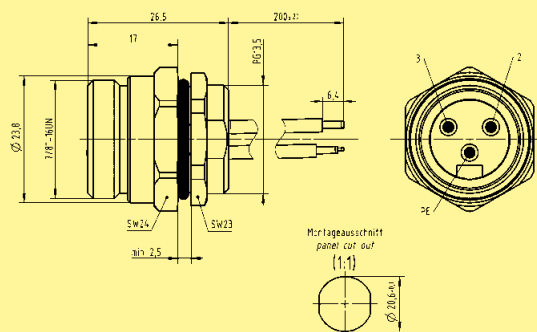
Dimensions in mm

7/8" Panel feed-through

20 cm conductors, AWG 18, 1 mm², 3 poles

Male

21 04 316 1305

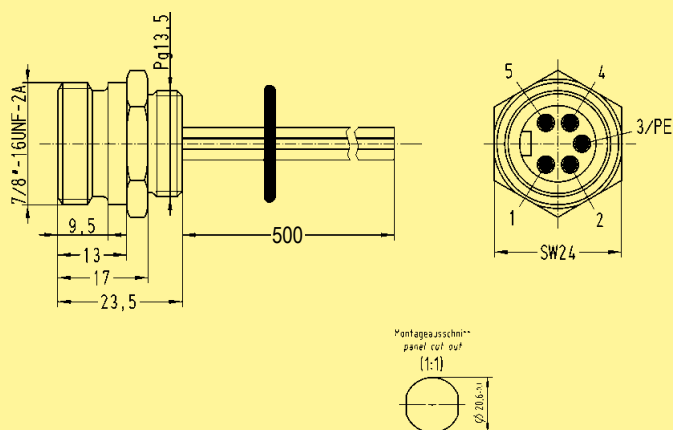


7/8" Panel feed-through

50 cm conductors, AWG 18, 1 mm², 5 poles

Male

21 04 316 1505





Identification

Part No.

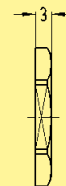
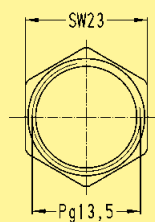
Drawing

Dimensions in mm

Lock nut Pg 13.5
nickel plated



21 01 000 0020



7/8"
dynamometric screwdriver
Tightening torque 1.5 Nm

for 7/8"

SW 23

09 99 000 0395



Specifications IEC 60 352-4
DIN 61984

Approval , VDE



Technical characteristics Panel feed-through

Type	HARAX® Pg 13.5/M20 Panel feed-through
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General data

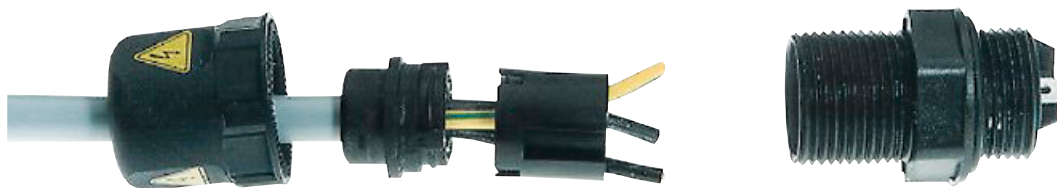
Conductor cross section	0.75 - 1.5 mm ² AWG 18 - 16
Diameter of individual strands	≥ 0.2 mm
Conductor insulation material	PVC, PP, TPE
Conductor diameter	≤ 2.8 mm
Cable diameter	6 - 9 mm
Temperature range	-25 °C ... +85 °C
Temperature during connection	-5 °C ... +50 °C
Degree of protection	IP67
Mating cycles	100
Recommended tightening torque	8 Nm

Electrical characteristics

Rated current	16 A
Rated voltage	230 V / 400 V
Rated impulse voltage	4 kV
Contact resistance	10 mΩ
Insulation resistance	10 ⁸ Ω
Pollution degree	3
Overvoltage category	3
Isolation group	1

Materials

Contact material	Copper alloy
Contact plating	Gold
Contact carrier material	TPU, PA
Housing material	TPU, PA



Identification

Part No.

Drawing

Dimensions in mm

HARAX® Pg 13.5 / 3 contacts
with faston blades

21 01 130 1013

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 mm²

21 01 130 1223

HARAX® Pg 13.5 / 2 + PE
with faston blades

21 01 130 3013

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 mm²

21 01 130 3233

HARAX® Pg 13.5 / 4 contacts
with solder termination

21 01 140 1023

HARAX® Pg 13.5 / 3 + PE
with solder termination

21 01 140 3023

HARAX® Pg 13.5 / 4 contacts
with pre-assembled pigtail cable, l = 500 mm, 1.5 mm²

21 01 140 1323

HARAX® Pg 13.5 / 3 + PE
with pre-assembled pigtail cable, l = 500 mm, 1.5 mm²

21 01 140 3333

HARAX® M20 / 4 contacts
with solder termination

21 01 141 1023

HARAX® M20 / 3 + PE
with solder termination

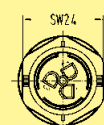
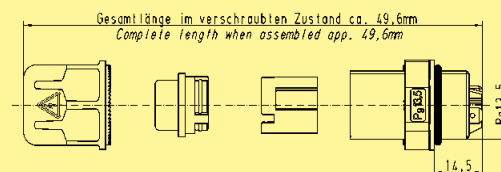
21 01 141 3023

HARAX® M20 / 4 contacts
with pre-assembled pigtail cable, l = 500 mm, 1.5 mm²

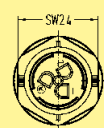
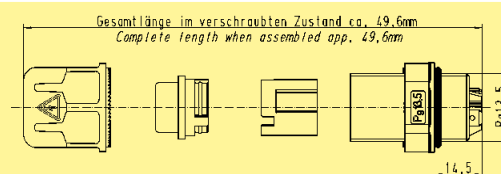
21 01 141 1323

HARAX® M20 / 3 + PE
with pre-assembled pigtail cable, l = 500 mm, 1.5 mm²

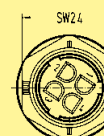
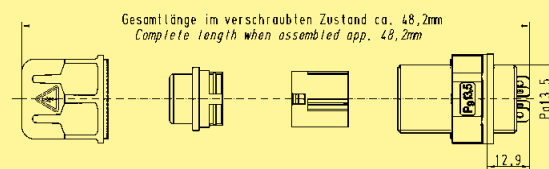
21 01 141 3333



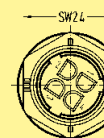
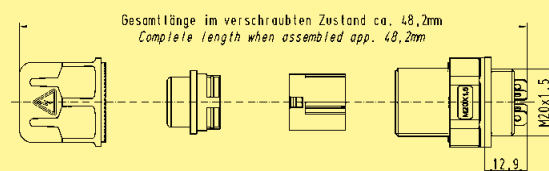
View:
Mating side



View:
Mating side



View:
Mating side



View:
Mating side

Specifications IEC 60 352-4
IEC 60 068-2-52:1996, severity level 4



Technical characteristics M12 INOX

Type M12 INOX V4A	HARAX® M12-L 4 poles	M12 Crimp
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General data

Conductor cross section	0.34 - 0.75 mm ² AWG 22 - 18	0.14 - 0.75 mm ² AWG 26 - 18
Diameter of individual strands	≥ 0.1 mm	X
Conductor insulation material	PVC	X
Conductor diameter	1.6 - 2.0 mm 2.0 - 2.6 mm	2.0 - 2.3 mm
Cable diameter	6 - 8 mm	4.5 - 8.8 mm
Temperature range	-40 °C ... +85 °C	-40 °C ... +85 °C
Temperature during connection	-5 °C ... +50 °C	-5 °C ... +50 °C
Degree of protection	IP65 / IP67	IP67
Mating cycles	100	500
Tightening torque connector / hexagonal wrench	0.6 Nm / SW 17	0.6 Nm / SW 17

Electrical characteristics

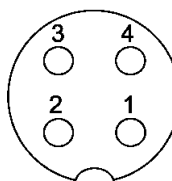
Rated current	6 A	4 A
Rated voltage	50 V	250 V
Rated impulse voltage	1.5 kV	1.5 kV
Contact resistance	10 mΩ	10 mΩ
Insulation resistance	10 ⁸ Ω	10 ⁸ Ω
Pollution degree	3	3
Overvoltage category	3	3
Isolation group	1	1

Materials

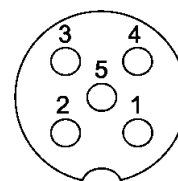
Contact material	Brass	Brass
Contact plating	Gold	Gold
Contact carrier material	PA unreinforced	PA
Housing material	V4A	V4A



Mating faces



A-coding
4 poles
Mating faces acc. to IEC 61076-2-101



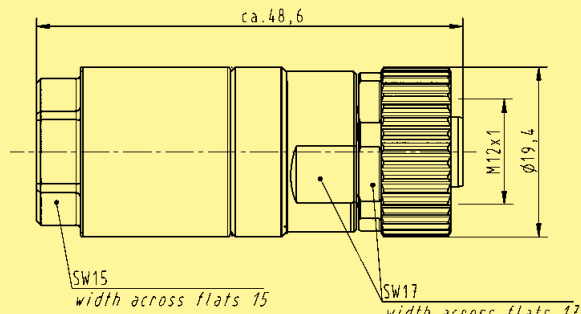
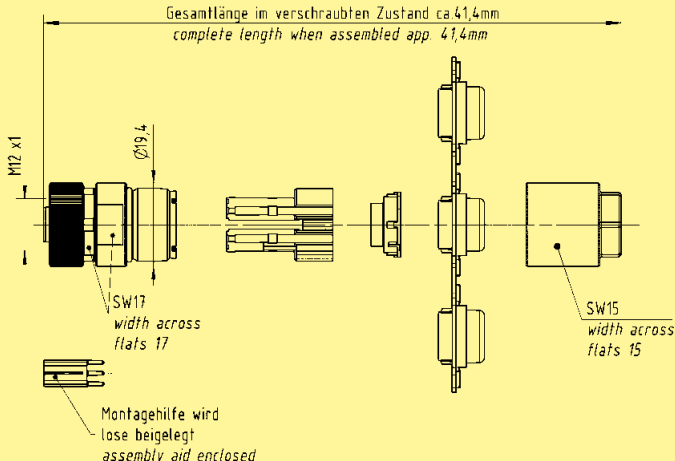
A-coding
5 poles
Mating faces acc. to IEC 61076-2-101



Applications / Advantages

- Designed for rough outdoor applications in harsh environments
- Material V4A
- Available with crimp resp. **HARAX®** rapid termination
- Extreme robust design, quick assembly

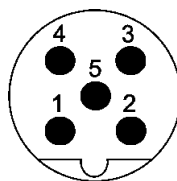
07

Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12-L INOX  Female, A-coding, straight version 4 poles	21 03 222 2435		
M12-L Crimp INOX  Female, A-coding, straight version 5 poles	21 03 822 2535		

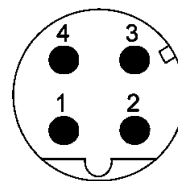
07
04



Mating faces



B-coding



D-coding

Mating faces acc. to IEC 61076-2-101



Identification

Part No.

Drawing

Dimensions in mm

M12-L Crimp INOX



Male, B-coding,
straight version
5 poles

21 03 841 1535



Male, D-coding,
straight version
4 poles

21 03 882 1435

