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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.



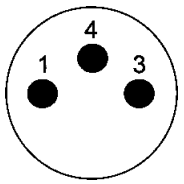
M8 *HARAX*® cable connector

Specifications IEC 60 352-4

Approval



Mating face



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

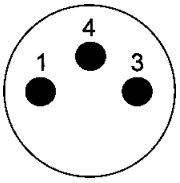
02

Technical characteristics M8 *HARAX*®

Type M8	*HARAX*® M8-XS	*HARAX*® M8-S
General data		
Conductor cross section	0.1 - 0.14 mm² AWG 27-26	0.14 - 0.34 mm² 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



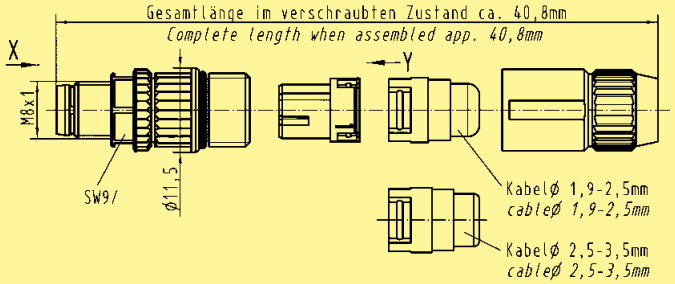
Mating face



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

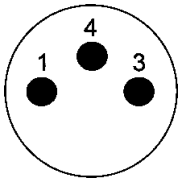
Applications / Advantages

- 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		



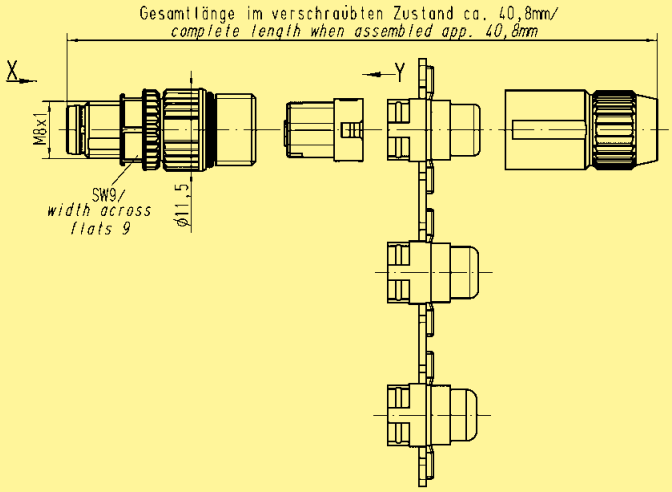
Mating face



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

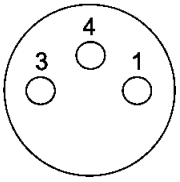
RoHS

02

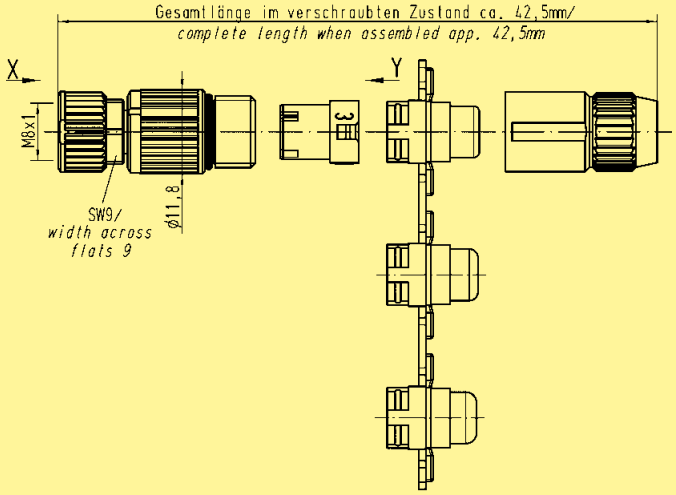
Identification	Part No.	Drawing	Dimensions in mm
HARAX® M8-S  Male straight version, 3 poles for 0.14 - 0.34 mm²	21 02 151 1305	 View mating side: 3 poles, male  View mating side: 4 poles, male 
 Male straight version, 4 poles for 0.14 - 0.34 mm²	21 02 151 1405		



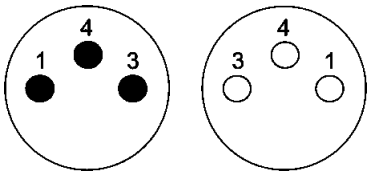
Mating face



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

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

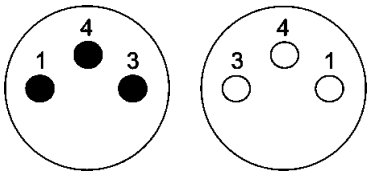


Technical characteristics

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 mm²
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

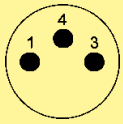
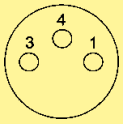
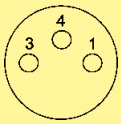
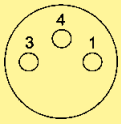
Mating face



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

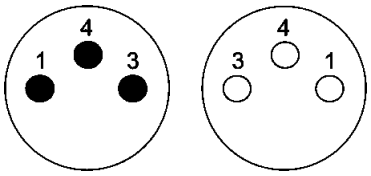


Overview system cables M8

	Number of contacts	Male M8 straight  Cable material PUR		Female M8 angled  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

Mating face

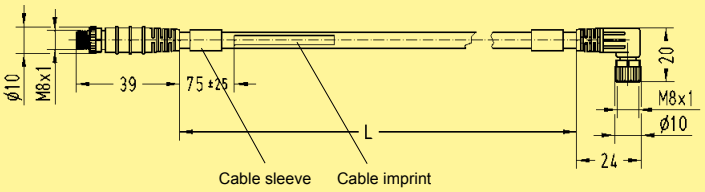


A-coding
Mating face
acc. to IEC 61076-2-101

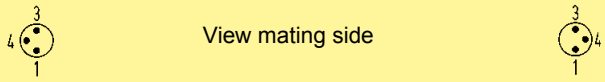


Identification		Part No.	Drawing	Dimensions in mm

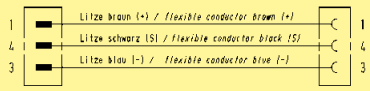
M8 Circular connectors
Female angled, male straight



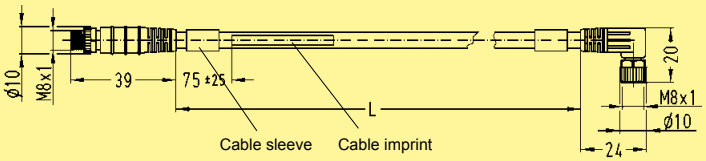
Length:	0.3 m	21 02 454 5301
	0.6 m	21 02 454 5302
	1.0 m	21 02 454 5303
	1.5 m	21 02 454 5304
	2.0 m	21 02 454 5305



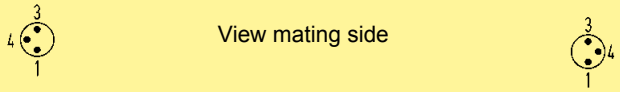
Schematic diagram



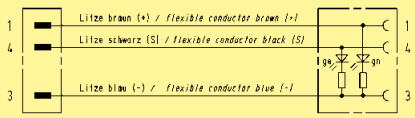
M8 Circular connectors
Female angled, with LED
Male straight



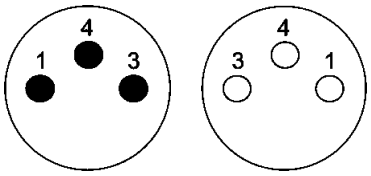
Length:	0.3 m	21 02 454 7301
	0.6 m	21 02 454 7302
	1.0 m	21 02 454 7303
	1.5 m	21 02 454 7304
	2.0 m	21 02 454 7305



Schematic diagram



Mating face



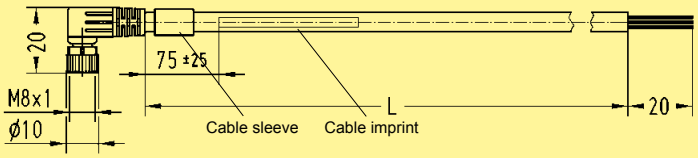
A-coding
Mating face
acc. to IEC 61076-2-101



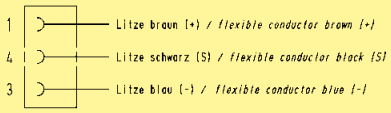
Identification		Part No.	Drawing	Dimensions in mm

M8 Circular connectors

Female angled
pre-assembled on one end



Schematic diagram



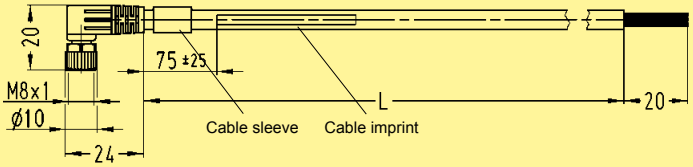
View mating side



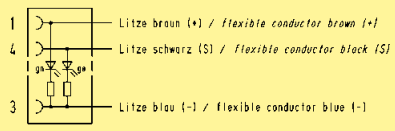
Length:		Part No.
	1.5 m	21 02 554 4301
	3.0 m	21 02 554 4302
	5.0 m	21 02 554 4303
	7.5 m	21 02 554 4304
	10.0 m	21 02 554 4305

M8 Circular connectors

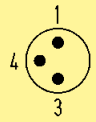
Female angled, with LED
pre-assembled on one end



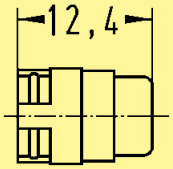
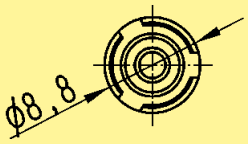
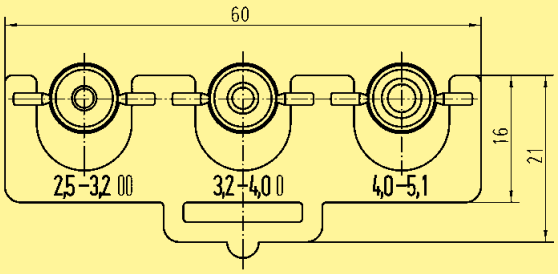
Schematic diagram



View mating side



Length:		Part No.
	1.5 m	21 02 554 7301
	3.0 m	21 02 554 7302
	5.0 m	21 02 554 7303
	7.5 m	21 02 554 7304
	10.0 m	21 02 554 7305

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		

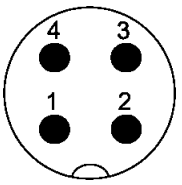
M12 A-coding

Specifications IEC 60 352-4

Approval



Mating face



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

Technical characteristics M12 – A-coding

Type M12 A-coded	*HARAX*® M12-S	*HARAX*® M12 angled	*HARAX*® M12 L 3 poles, 4 poles
General data			
Conductor cross section	0.14 - 0.34 mm² AWG 26-22	0.25 - 0.5 mm² AWG 24/7-20	0.34 - 0.75 mm² 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

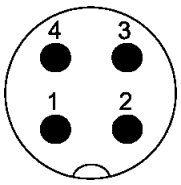
Specifications IEC 60 352-4

Approval





Mating face



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

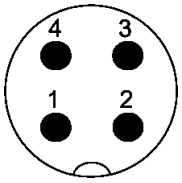
Technical characteristics M12 – A-coding

Type M12 A-coded	*HARAX*® M12-L 5 poles	*HARAX*® M12 L shielded	M12 Crimp
General data			
Conductor cross section	0.34 - 0.5 mm² AWG 22-20	0.14 - 0.34 mm² AWG 26-22	0.14 - 0.75 mm² 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

M12 *HARAX*® A-coded



Mating face

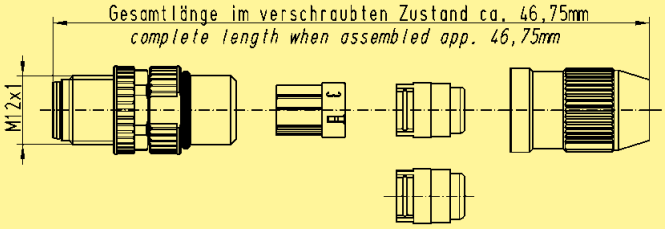
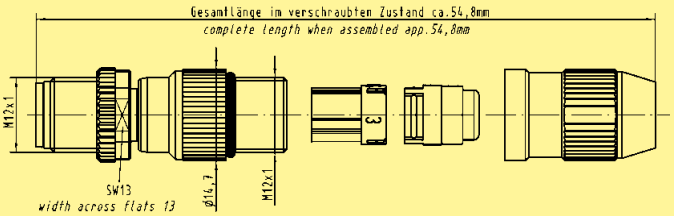


A-coding
Mating face
acc. to IEC 61076-2-101

RoHS

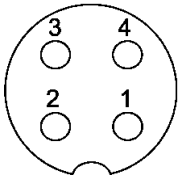
Applications / Advantages

- 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

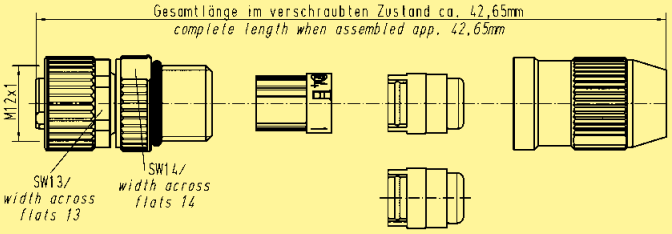
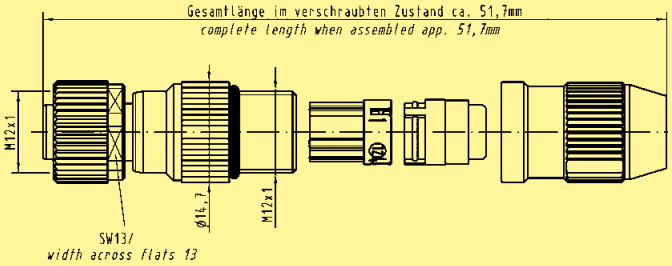
Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12-S			
 Male straight version 4 poles, 0.14 - 0.34 mm²	21 03 111 1405		
Male straight version 4 poles, 0.25 - 0.5 mm²	21 03 112 1405		



Mating face

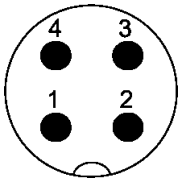


A-coding
Mating face
acc. to IEC 61076-2-101

Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12-S  Female straight version 4 poles, 0.14 - 0.34 mm²	21 03 111 2405		
Female straight version 4 poles, 0.25 - 0.5 mm²	21 03 112 2405		



Mating face

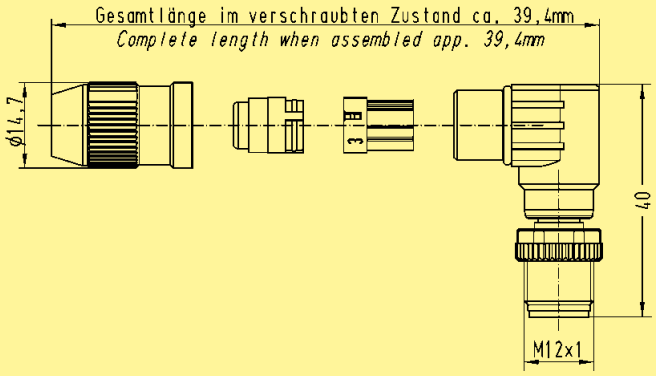


A-coding
Mating face
acc. to IEC 61076-2-101

Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12	21 01 140 5081		

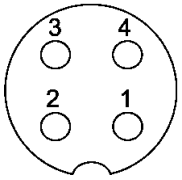


Male
angled version
4 poles

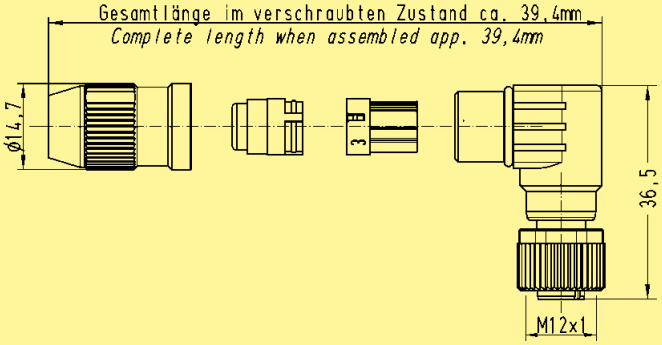




Mating face

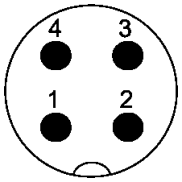


A-coding
Mating face
acc. to IEC 61076-2-101

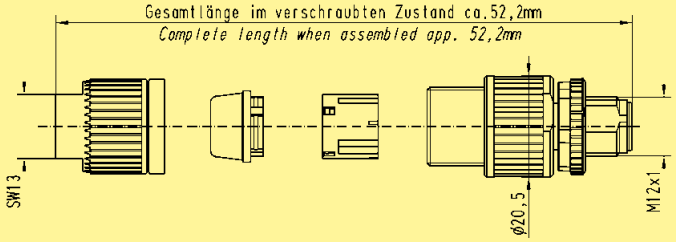
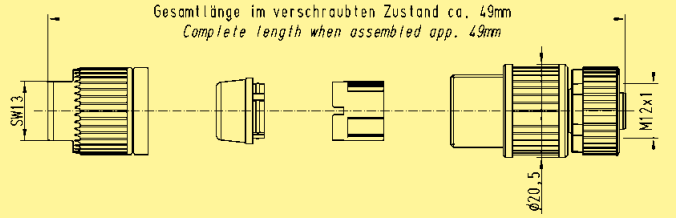
Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12  Female angled version 4 poles	21 01 140 5091		



Mating face

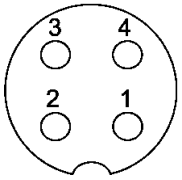


A-coding
Mating face
acc. to IEC 61076-2-101

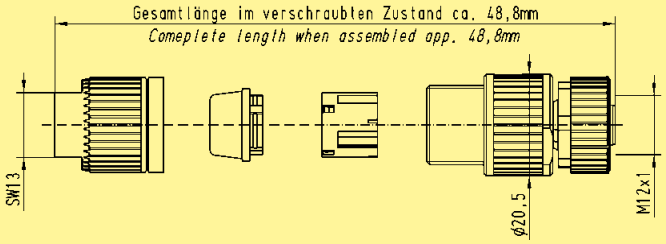
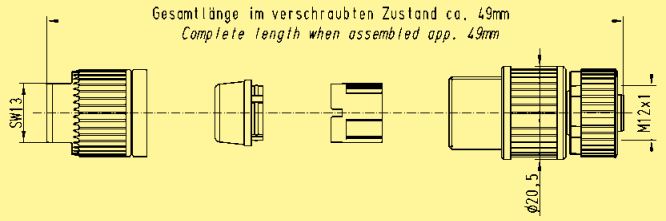
Identification	Part No.	Drawing	Dimensions in mm
***HARAX*® M12-L, unshielded**  Male 3 poles, A-coding, with pre-leading contact (assignment 3, 4, 5) 3 poles, A-coding (assignment 1, 3, 4) 4 poles, A-coding (assignment 1, 2, 3, 4) 4 poles, A-coding, to 2.6 mm core diameter (assignment 1, 2, 3, 4) 0.34 - 0.75 mm² AWG 22 - 18 Cable diameter: 6 - 8 mm	21 03 212 1400 21 03 212 1306 21 03 212 1305 21 03 212 1407		
***HARAX*® M12-L, unshielded**  Male 5 poles, A-coding 0.34 - 0.5 mm² AWG 22 - 20 Cable diameter: 6 - 8 mm	21 03 272 1505		



Mating face

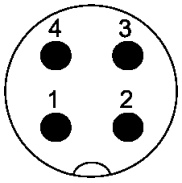


A-coding
Mating face
acc. to IEC 61076-2-101

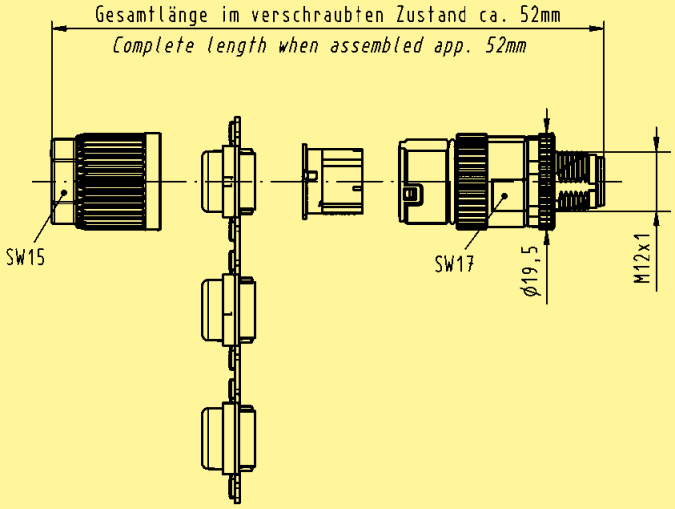
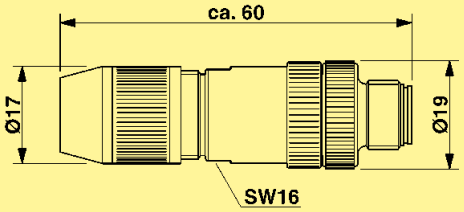
Identification	Part No.	Drawing	Dimensions in mm
***HARAX*® M12-L, unshielded**  Female 3 poles, A-coding (assignment 3, 4, 5)	21 03 212 2400		
3 poles, A-coding (assignment 1, 3, 4)	21 03 212 2306		
4 poles, A-coding (assignment 1, 2, 3, 4)	21 03 212 2305		
4 poles, A-coding, to 2.6 mm core diameter (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

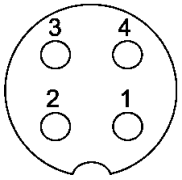


A-coding
Mating face
acc. to IEC 61076-2-101

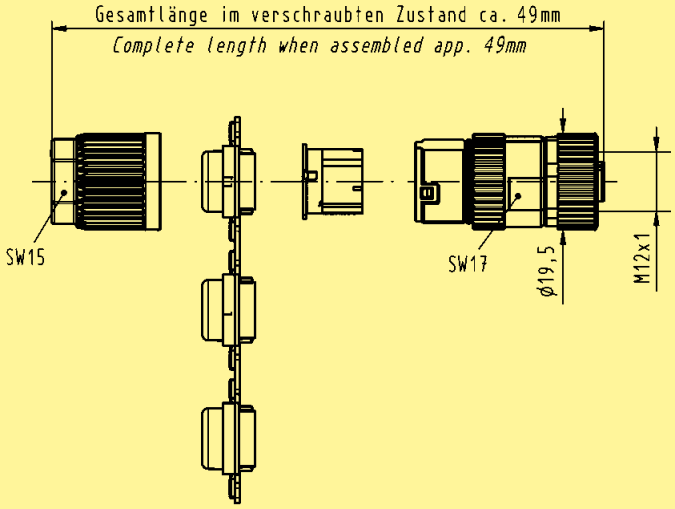
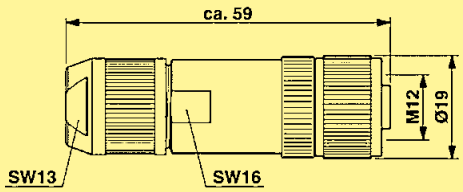
Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12-L, shielded  Male 4 poles, A-coding 0.14 - 0.34 mm² / AWG 26 - 22	21 03 221 1405		
M12 Circular connector  Male with IDC termination, 8 poles 0.14 - 0.34 mm² / AWG 26 - 22	21 03 121 1801		



Mating face



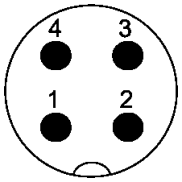
A-coding
Mating face
acc. to IEC 61076-2-101

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		

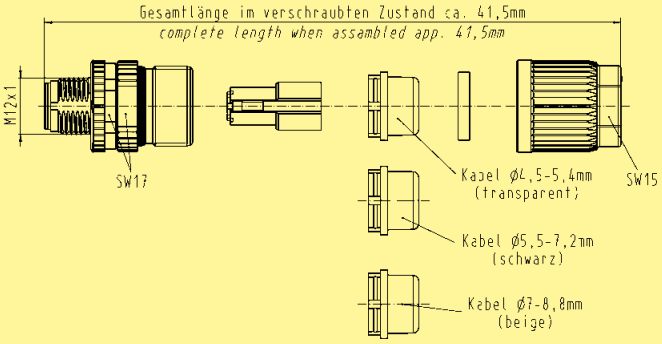
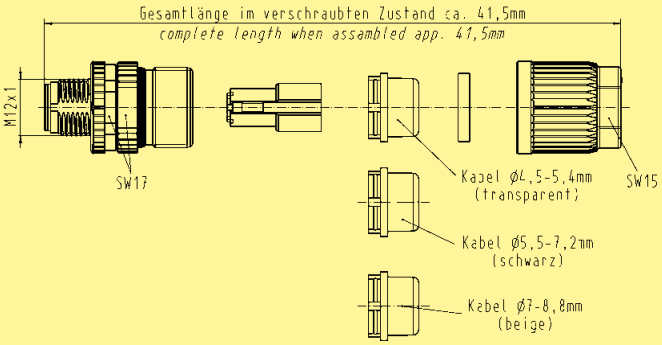
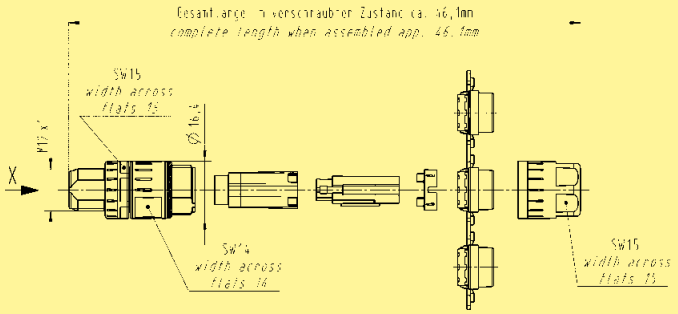
M12 Crimp A-coded



Mating face



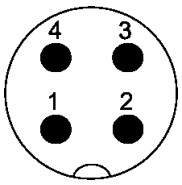
A-coding
Mating face
acc. to IEC 61076-2-101

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*	

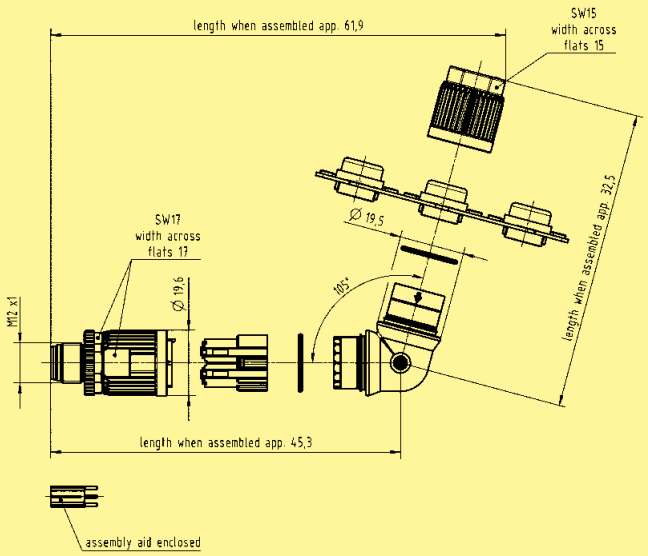
Further information and data sheets see www.HARTING.com
* UL approval is in preparation



Mating face



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

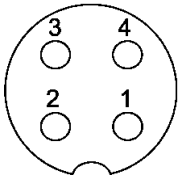
Identification	Part No.	Drawing	Dimensions in mm
M12 Crimp, angled  Male 5 poles, A-coding	21 03 822 3505*		

Further information and data sheets see www.HARTING.com
* UL approval is in preparation

M12 Crimp A-coded



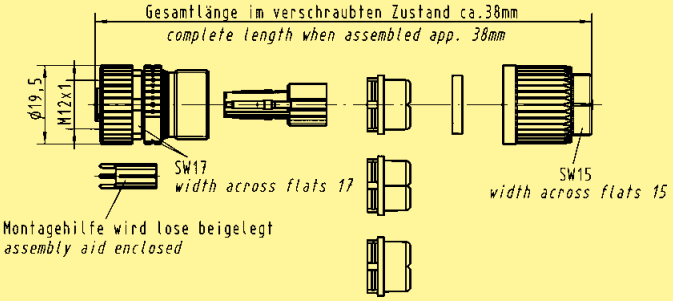
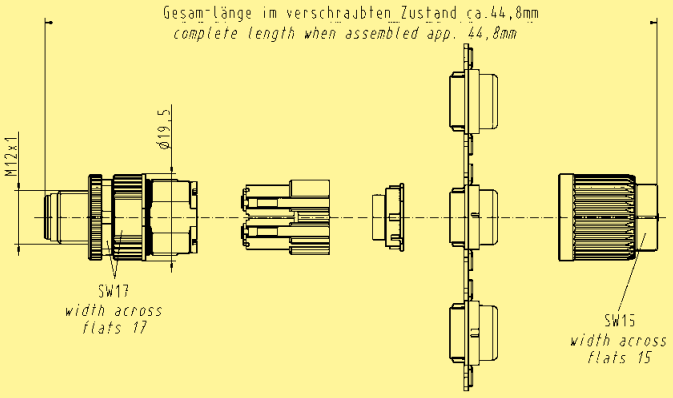
Mating face



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

RoHS

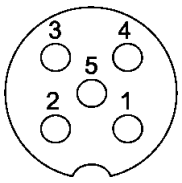
03

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*		

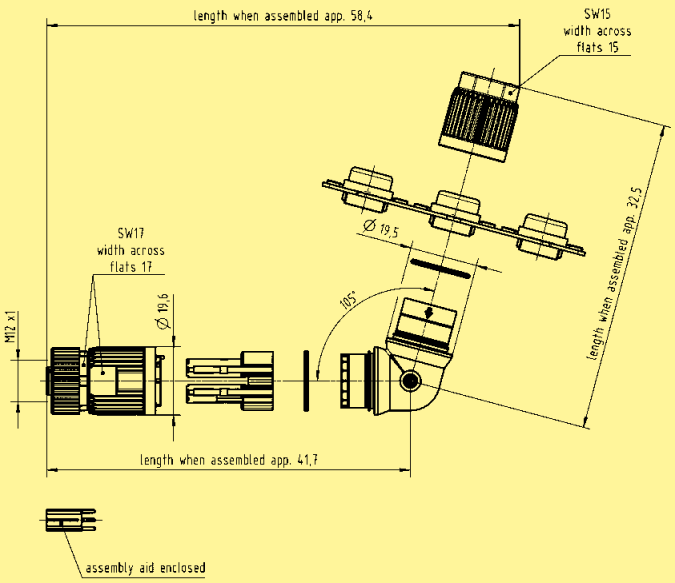
Further information and data sheets see www.HARTING.com
* UL approval is in preparation



Mating face

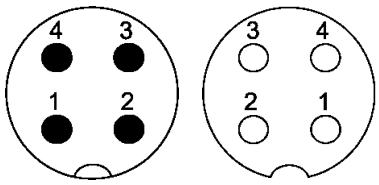


A-coding
Mating face
acc. to IEC 61076-2-101

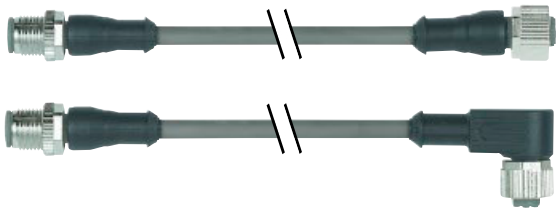
Identification	Part No.	Drawing	Dimensions in mm
M12 Crimp, angled  Female 5 poles, A-coding	21 03 822 4505*		

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



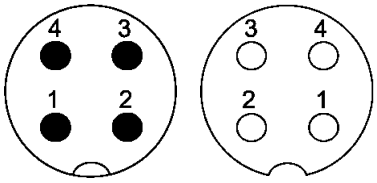
Technical characteristics

M12 Circular connectors, without PE

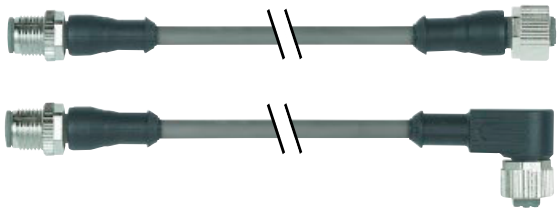
Rated voltage	max. 250 V AC/DC, max. 30 V DC (with LED)
Rated current / contact	max. 4 A
Locking	Screw locking M12x1, self securing
Recommended torque	0.6 Nm
Temperature range	-25 °C … +85 °C (dependant on connected conductor)
Degree of protection	IP67
Number of wires / wire gauge	4 x 0.34 mm²
Conductor 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

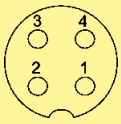
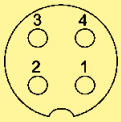
Mating face



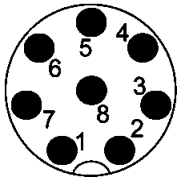
A-coding
Mating face
acc. to IEC 61076-2-101



Overview system cables M12

		Number of contacts	Male M12 A-coding, straight Cable material: PUR		Female M12 A-coding, angled 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

Mating face

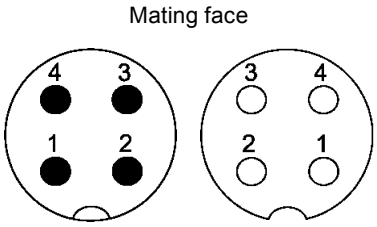


A-coding
Mating face
acc. to IEC 61076-2-101



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

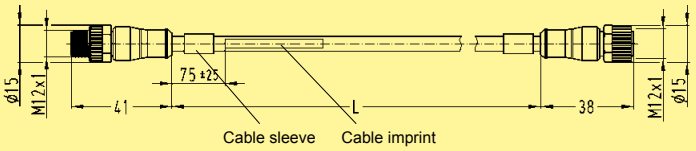


A-coding
Mating face
acc. to IEC 61076-2-101



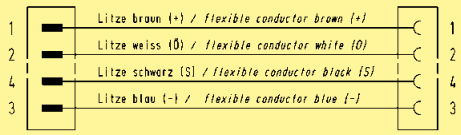
Identification		Part No.	Drawing	Dimensions in mm

M12 Circular connectors
Female straight, male straight



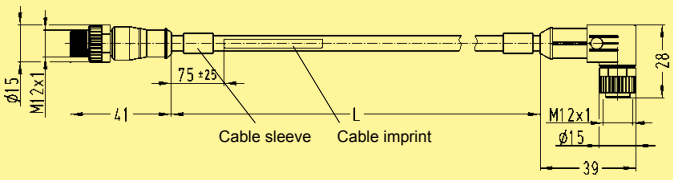


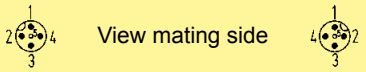
Schematic diagram



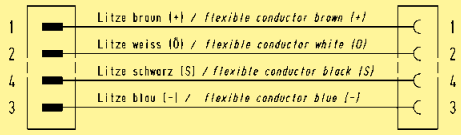
Length:	0.3 m	21 03 415 2401
	0.6 m	21 03 415 2402
	1.0 m	21 03 415 2403
	1.5 m	21 03 415 2404
	2.0 m	21 03 415 2405

M12 Circular connectors
Female angled, male straight



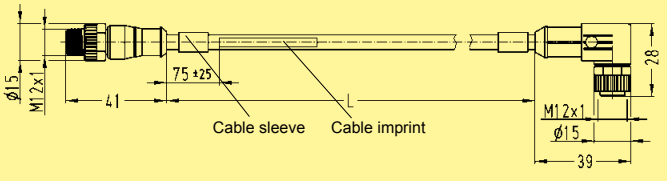


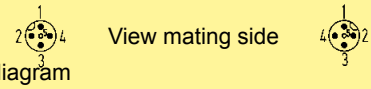
Schematic diagram



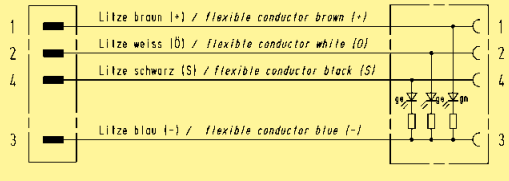
Length:	0.3 m	21 03 415 5401
	0.6 m	21 03 415 5402
	1.0 m	21 03 415 5403
	1.5 m	21 03 415 5404
	2.0 m	21 03 415 5405

M12 Circular connectors
Female angled, with LED,
Male straight



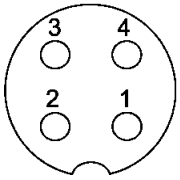


Schematic diagram



Length:	0.3 m	21 03 415 7401
	0.6 m	21 03 415 7402
	1.0 m	21 03 415 7403
	1.5 m	21 03 415 7404
	2.0 m	21 03 415 7405

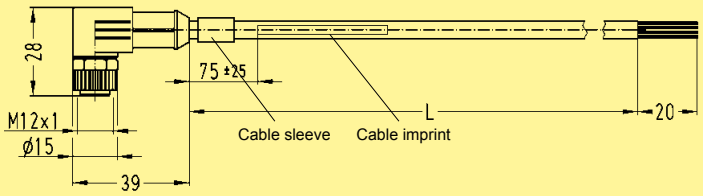
Mating face



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



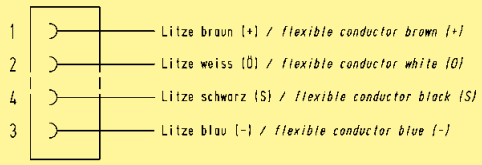
Identification		Part No.	Drawing	Dimensions in mm
M12 Circular connectors Female angled pre-assembled on one end				
Length:	1.5 m	21 03 515 4401		
	3.0 m	21 03 515 4402		
	5.0 m	21 03 515 4403		
	7.5 m	21 03 515 4404		
	10.0 m	21 03 515 4405		
M12 Circular connectors Female angled, with LED pre-assembled on one end				
Length:	1.5 m	21 03 515 7401		
	3.0 m	21 03 515 7402		
	5.0 m	21 03 515 7403		
	7.5 m	21 03 515 7404		
	10.0 m	21 03 515 7405		

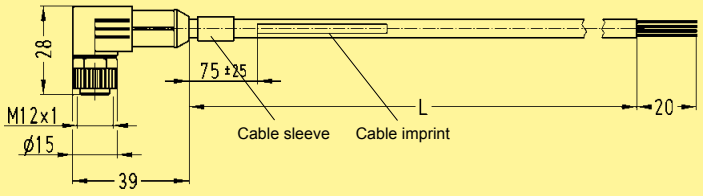


View mating side



Schematic diagram

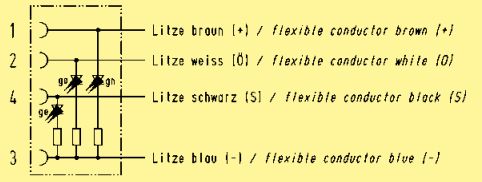




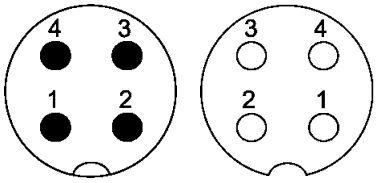
View mating side



Schematic diagram



Mating face



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

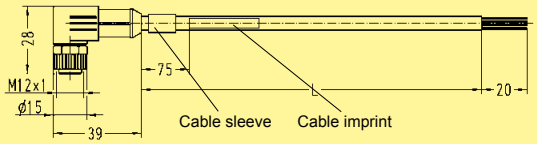


Identification		Part No.	Drawing	Dimensions in mm

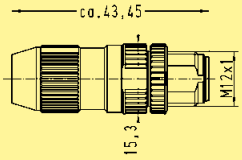
HARAX® M12 Cable set without LED

Delivery range: M12 connector with individually adaptable cable and HARAX® M12-S

Length:		
	1.5 m	21 83 515 4401
	3.0 m	21 83 515 4402
	5.0 m	21 83 515 4403
	7.5 m	21 83 515 4404
	10.0 m	21 83 515 4405



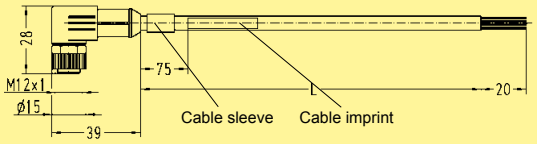
HARAX® M12-S (21 03 111 1405)



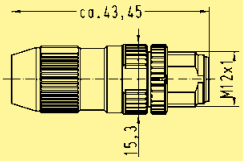
HARAX® M12 Cable set with LED

Delivery range: M12 connector with individually adaptable cable and HARAX® M12-S

Length:		
	1.5 m	21 83 515 7401
	3.0 m	21 83 515 7402
	5.0 m	21 83 515 7403
	7.5 m	21 83 515 7404
	10.0 m	21 83 515 7405



HARAX® M12-S (21 03 111 1405)

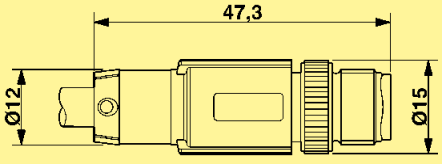


1 x M12 Circular connectors, straight

pre-assembled on one end, 8 poles

Length:		
	1.0 m	21 03 514 1801
	3.0 m	21 03 514 1803
	5.0 m	21 03 514 1805

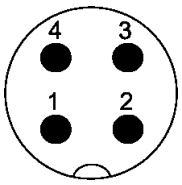




M12 Panel feed-through *HARAX*® A-coded



Mating face

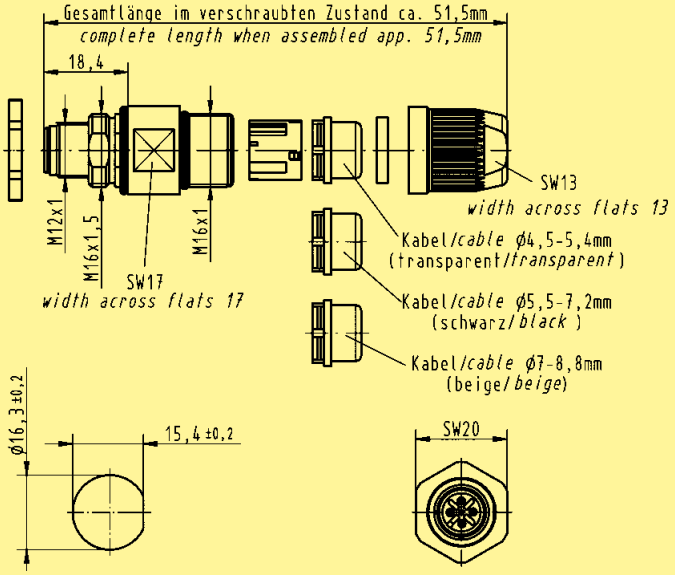


A-coding
Mating face
acc. to IEC 61076-2-101

Applications / Advantages

03

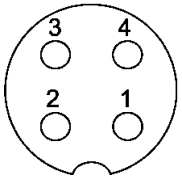
- Actor and sensor applications
- For panel feed-through or PCB, straight version in IP20 or IP67, with or without assembled pigtail
- Available with crimp resp. *HARAX*® rapid termination
- Quick and easy assembly

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		

M12 Panel feed-through *HARAX*® A-coded



Mating face



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

RoHS

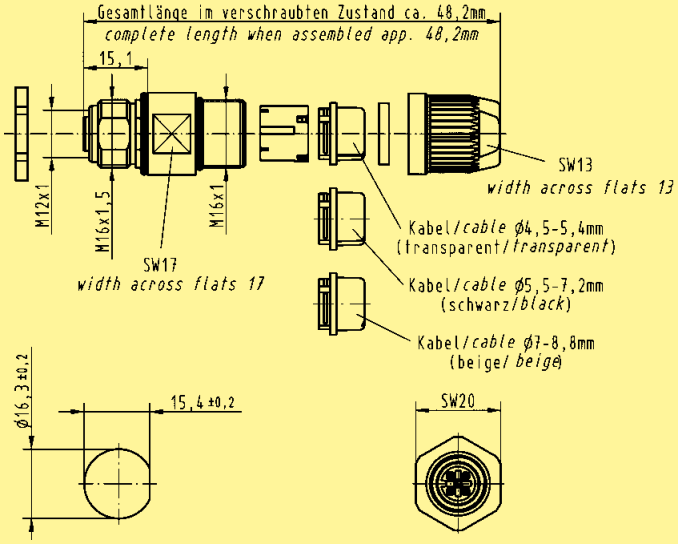
03

Identification	Part No.	Drawing	Dimensions in mm
HARAX® Panel feed-through	21 03 321 2425		



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

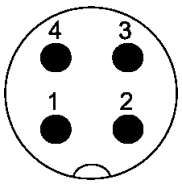
Panel thickness
min. 2.5 mm
max. 4.5 mm



M12 Panel feed-through Crimp A-coded



Mating face



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

RoHS

03

Identification	Part No.	Drawing	Dimensions in mm

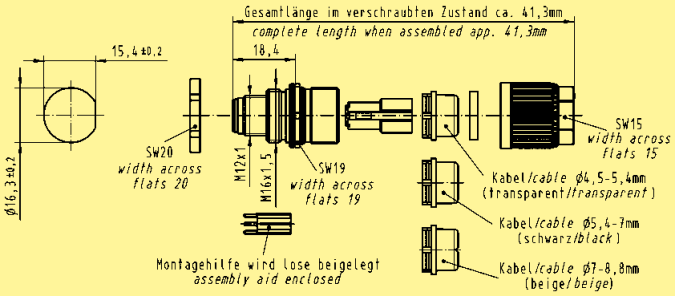
M12 Panel feed-through Crimp



Male
4 poles, A-coding

Panel thickness
min. 2.5 mm
max. 4.5 mm

21 03 822 1425



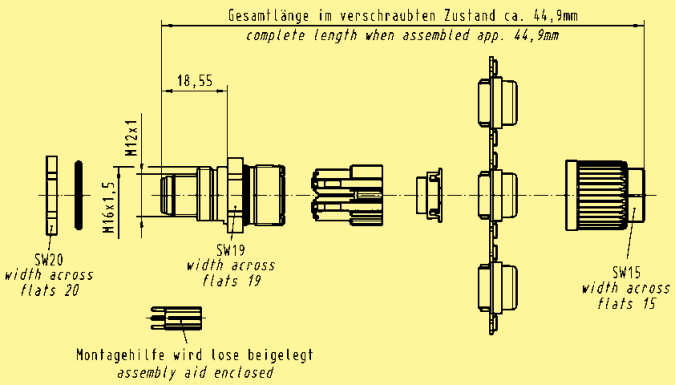
M12 Panel feed-through Crimp



Male
5 poles, A-coding

Panel thickness
min. 2.5 mm
max. 4.5 mm

21 03 822 1525*

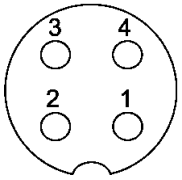


Further information and data sheets see www.HARTING.com
* UL approval is in preparation

M12 Panel feed-through Crimp A-coded

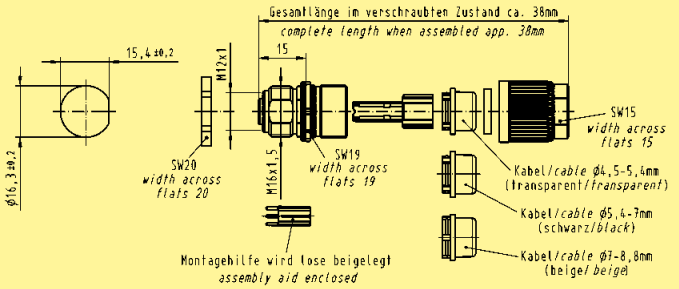
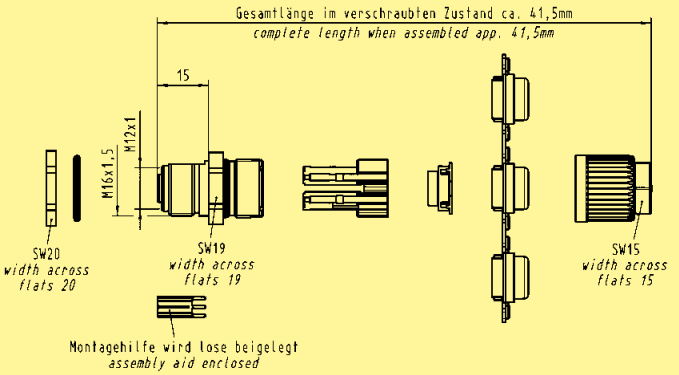


Mating face



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

RoHS

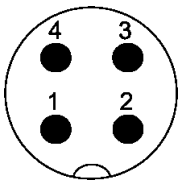
Identification	Part No.	Drawing	Dimensions in mm
M12 Panel feed-through Crimp  Female 4 poles, A-coding Panel thickness min. 2.5 mm max. 4.5 mm	21 03 822 2425		
M12 Panel feed-through Crimp  Female 5 poles, A-coding Panel thickness min. 2.5 mm max. 4.5 mm	21 03 822 2525*		

Further information and data sheets see www.HARTING.com
* UL approval is in preparation

M12 Panel feed-through A-coded



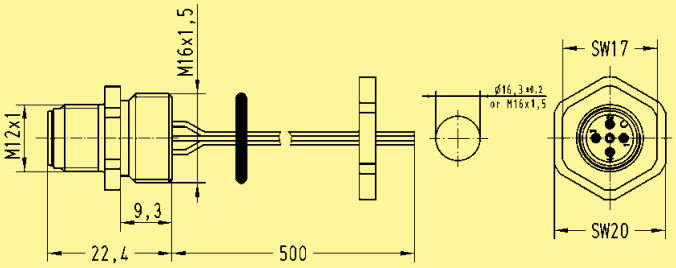
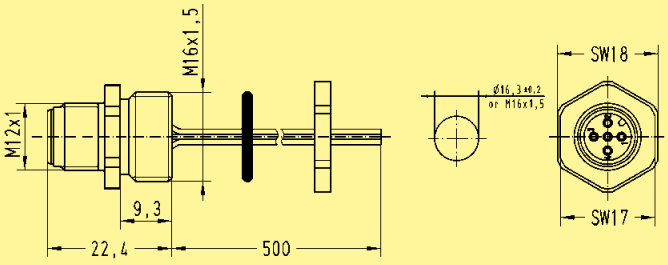
Mating face



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

RoHS

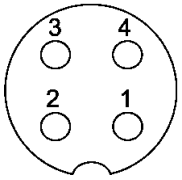
03

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		

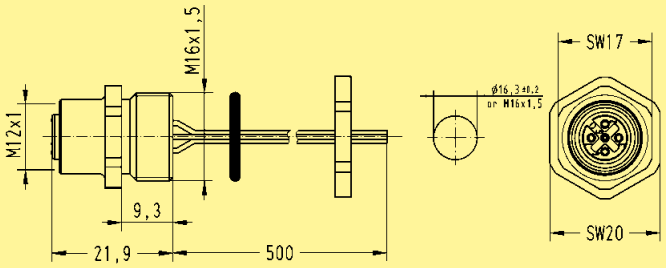
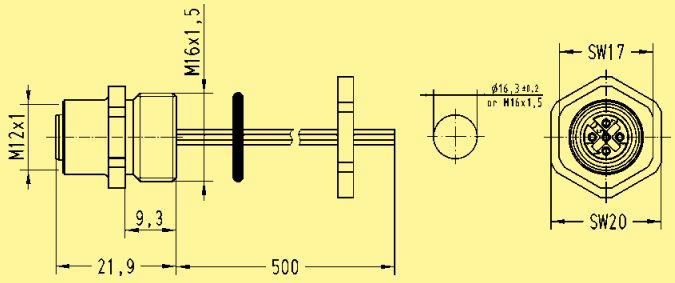
M12 Panel feed-through A-coded



Mating face



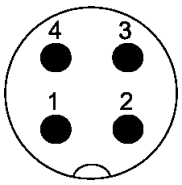
A-coding
Mating face
acc. to IEC 61076-2-101

Identification	Part No.	Drawing	Dimensions in mm
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		

M12 PCB adapter A-coded



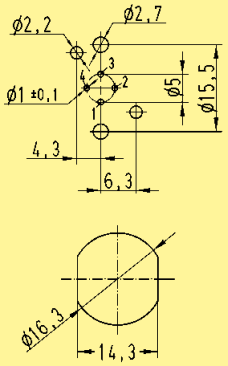
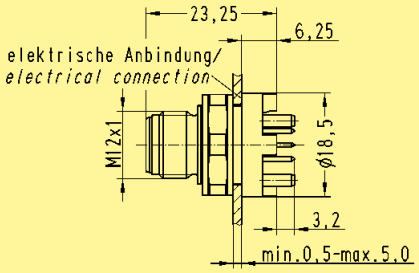
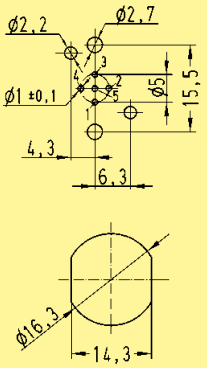
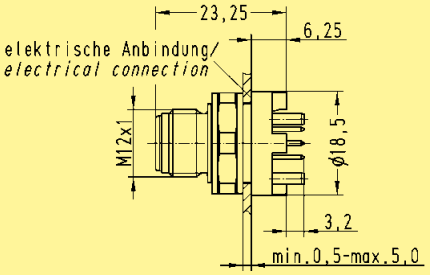
Mating face



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

Technical characteristics: M12 PCB adapter

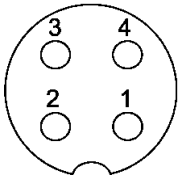
Degree of protection	IP20, IP67 (mated and locked)	Temperature during connection	-5 °C … +50 °C
Rated current	max. 4 A (dependant on PCB layout)	Termination	PIH
Rated voltage	50 V	Contact material	Copper alloy
Mating cycles	max. 100	Contact plating (mating side)	Au over Ni
Limiting temperature	-40 °C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

Identification		Part No.	Drawing	Dimensions in mm
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

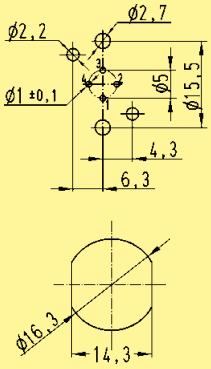
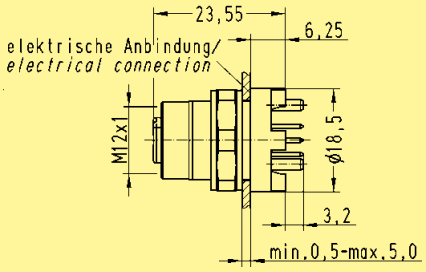
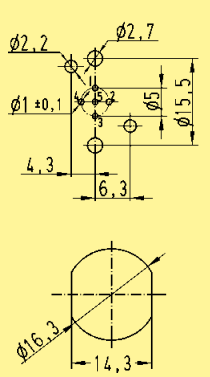
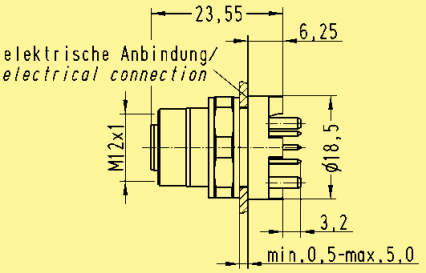
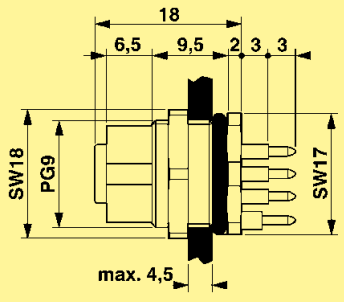


Mating face



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

RoHS

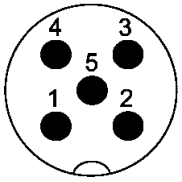
Identification	Part No.	Drawing	Dimensions in mm
M12 PCB adapter Female, A-coding, straight  4 poles, IP20 4 poles, IP67	21 03 321 6410 21 03 321 6420*	 	
M12 PCB adapter Female, A-coding, straight  5 poles, IP20 5 poles, IP67	21 03 321 6510 21 03 321 6520	 	
M12 PCB adapter Female, A-coding, straight  8 poles, IP67	21 03 311 2801	 	

Further information and data sheets see www.HARTING.com
* UL approval is in preparation

M12 PCB adapter shielded A-coded



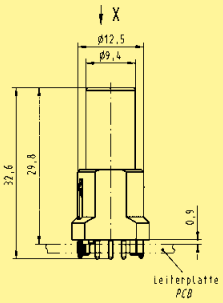
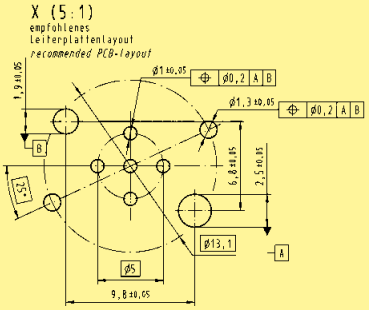
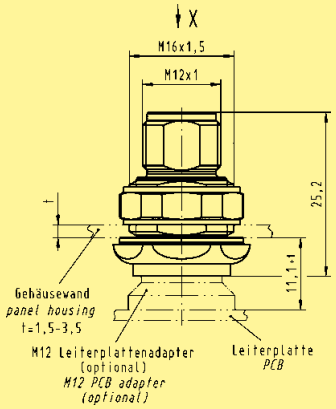
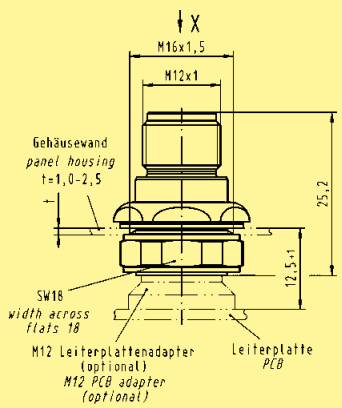
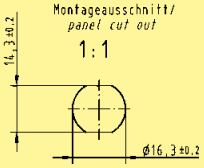
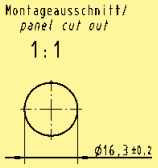
Mating face



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

RoHS

03

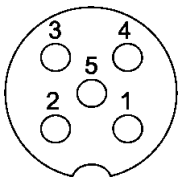
Identification	Part No.	Drawing	Dimensions in mm
M12 PCB adapter, shielded			
			
Male 5 poles, A-coding	21 03 321 1518*	 	
8 poles, A-coding	21 03 321 1818*		
Housing			
 			
for rear mounting	21 03 301 1000	   	
for front mounting	21 03 301 1001		

Further information and data sheets see www.HARTING.com
* UL approval is in preparation

M12 PCB adapter shielded A-coded



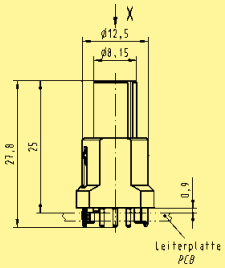
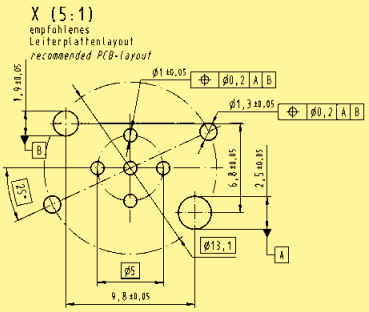
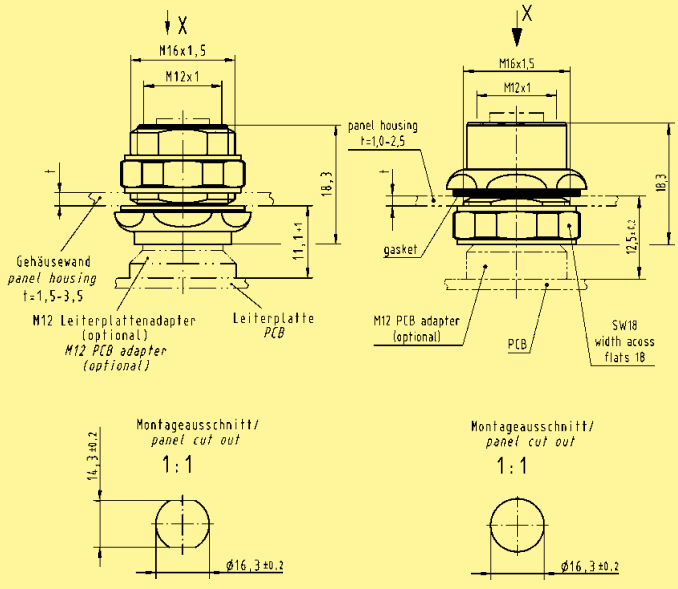
Mating face



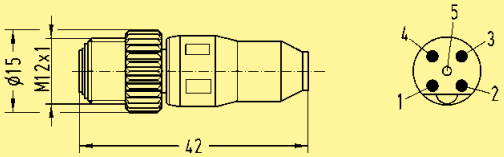
A-coding
Mating face
acc. to IEC 61076-2-101

RoHS

03

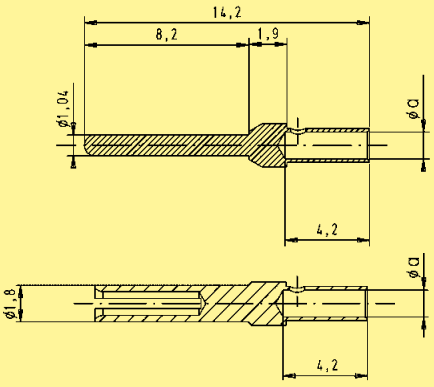
Identification	Part No.	Drawing	Dimensions in mm
M12 PCB adapter, shielded			
			
Female 5 poles, A-coding	21 03 321 2518*		
8 poles, A-coding	21 03 321 2818*		
Housing			
 			
for rear mounting	21 03 301 2000		
for front mounting	21 03 301 2001		

Further information and data sheets see www.HARTING.com
* 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 single contacts (500 mating cycles)		
turned male contacts		
AWG 22 - 18 / 0.33 - 0.82 mm²	09 67 000 3576	
AWG 24 - 20 / 0.25 - 0.52 mm²	09 67 000 8576	
AWG 26 - 22 / 0.13 - 0.33 mm²	09 67 000 5576	
		
turned female contacts		
AWG 22 - 18 / 0.33 - 0.82 mm²	09 67 000 3476	
AWG 24 - 20 / 0.25 - 0.52 mm²	09 67 000 8476	
AWG 26 - 22 / 0.13 - 0.33 mm²	09 67 000 5476	
		
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	

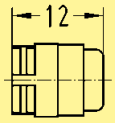
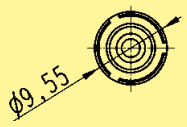
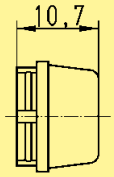
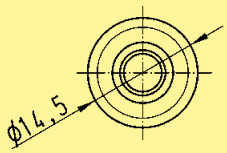
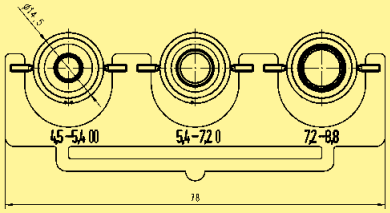
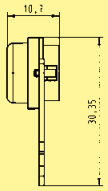
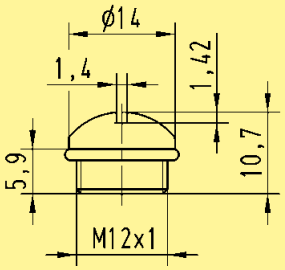
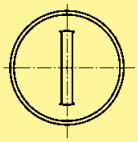
D-Sub contacts

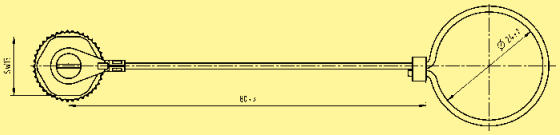
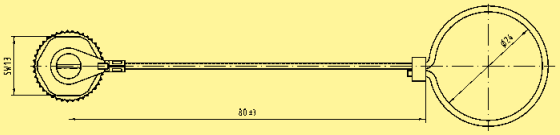
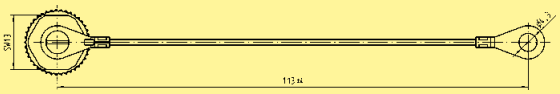
Part number	AWG	Tool settings
09 67 000 3x76	18	6
	20	6
	22	5
09 67 000 8x76	20, 22, 24	6
09 67 000 5x76	22, 24, 26	6



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

Further information and data sheets see www.HARTING.com

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		

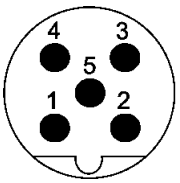
M12 B-coding

Specifications IEC 60 352-4

Approval



Mating face



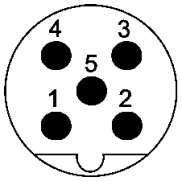
B-coding
Mating face
acc. to IEC 61076-2-101

Technical characteristics M12 – B-coding

Type M12 B-coded	*HARAX*® M12 L shielded	M12 Crimp
General data		
Conductor cross section	0.25 - 0.34 mm² AWG 24-22	0.13 - 0.75 mm² 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

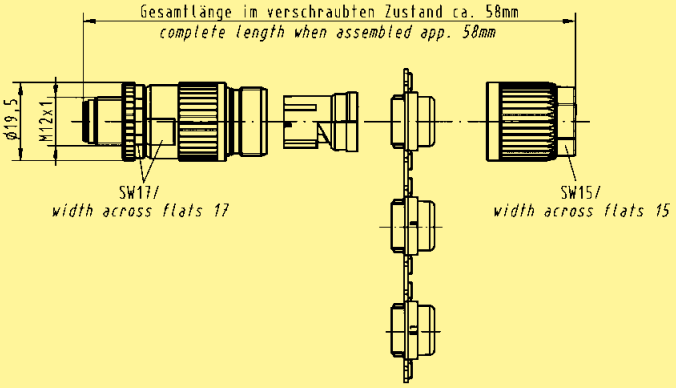


B-coding
Mating face
acc. to IEC 61076-2-101

RoHS

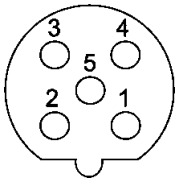
Applications / Advantages

- 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

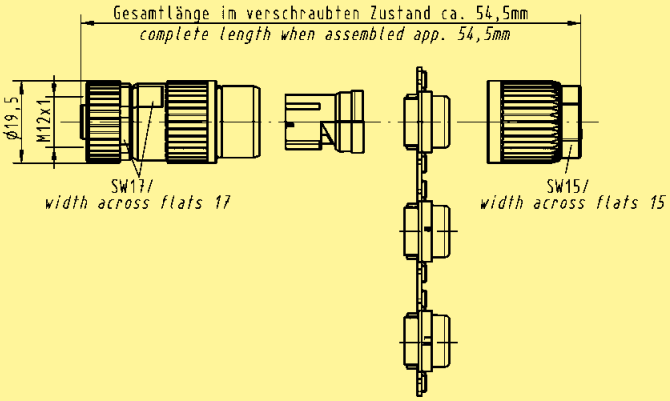
Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12-L, shielded  Male 2 poles, B-coding 0.25 - 0.34 mm² / AWG 24 - 22	21 03 241 1301		



Mating face

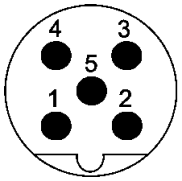


B-coding
Mating face
acc. to IEC 61076-2-101

Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12-L, shielded  Female 2 poles, B-coding 0.25 - 0.34 mm² / AWG 24 - 22	21 03 241 2301		

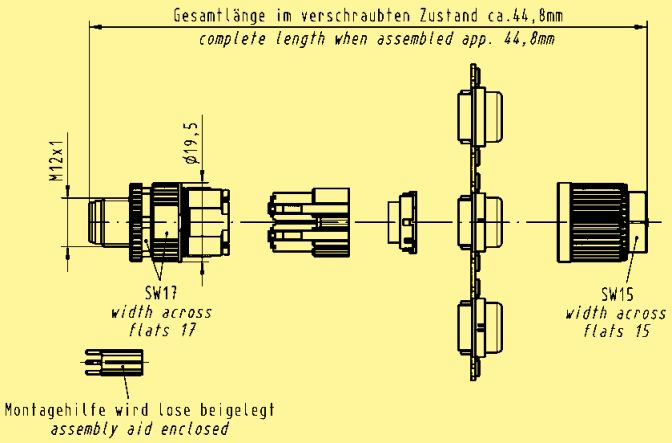


Mating face



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

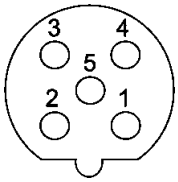
RoHS

Identification	Part No.	Drawing	Dimensions in mm
M12 Crimp  Male 5 poles, B-coding	21 03 841 1505		

M12 Crimp B-coded



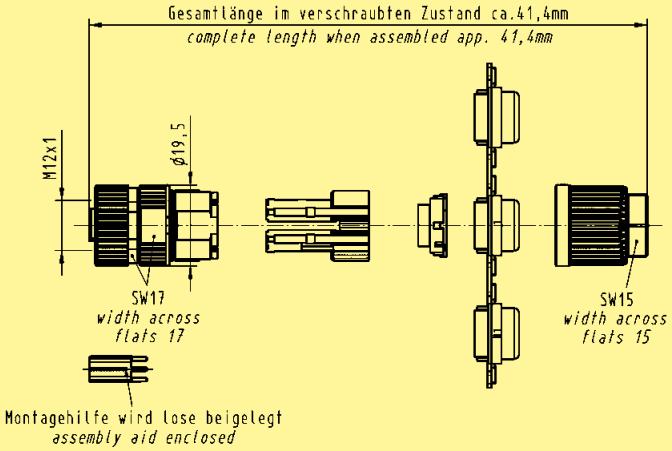
Mating face



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

RoHS

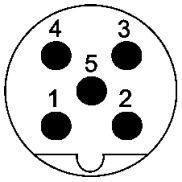
03

Identification	Part No.	Drawing	Dimensions in mm
M12 Crimp  Female 5 poles, B-coding	21 03 841 2505		

M12 Panel feed-through *HARAX*® B-coded



Mating face



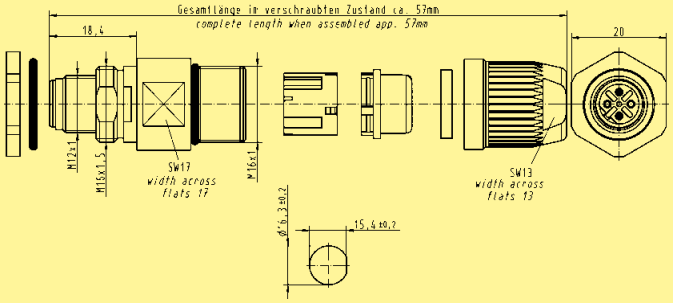
B-coding
Mating face
acc. to IEC 61076-2-101

RoHS

Applications / Advantages

03

- 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

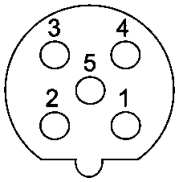
Identification	Part No.	Drawing	Dimensions in mm
HARAX® Panel feed-through  Male 2 poles and shielding, B-coding 0.25 - 0.34 mm² / AWG 24 - 22 Cable diameter: 7 - 8.8 mm Panel thickness min. 2.5 mm max. 4.5 mm	21 03 341 1425		

Further information and data sheets see www.HARTING.com

M12 Panel feed-through *HARAX*® B-coded



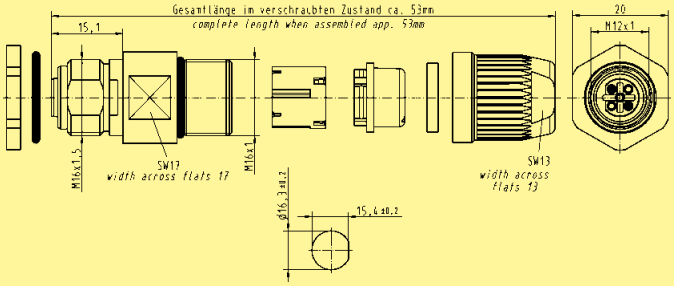
Mating face



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

RoHS

03

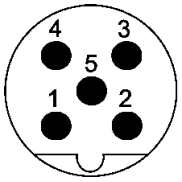
Identification	Part No.	Drawing	Dimensions in mm
HARAX® Panel feed-through  Female 2 poles and shielding, B-coding 0.25 - 0.34 mm² / AWG 24 - 22 Cable diameter: 7 - 8.8 mm Panel thickness min. 2.5 mm max. 4.5 mm	21 03 341 2425		

Further information and data sheets see www.HARTING.com

M12 Panel feed-through Crimp B-coded



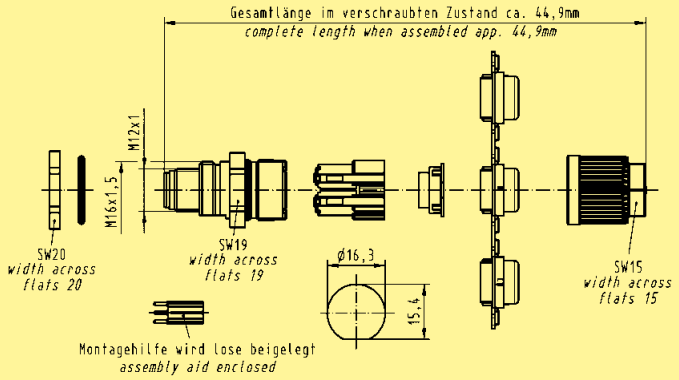
Mating face



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

RoHS

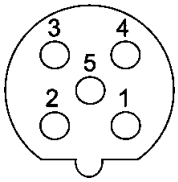
03

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		

M12 Panel feed-through Crimp B-coded

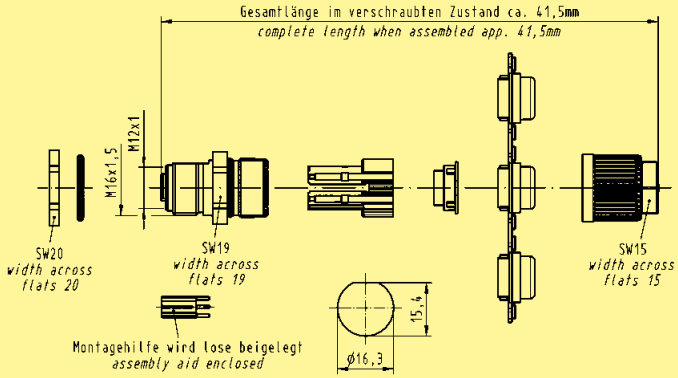


Mating face



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

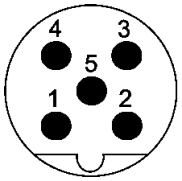
RoHS

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		

M12 Panel feed-through B-coded



Mating face



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

RoHS

03

Identification	Part No.	Drawing	Dimensions in mm

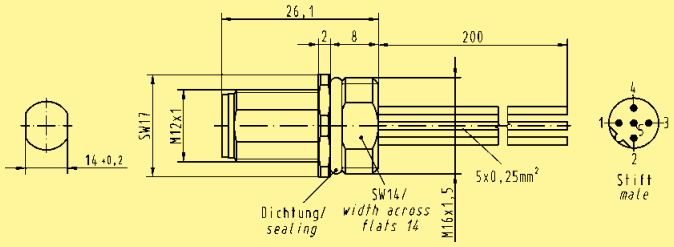
M12 Panel feed-through



Male
B-coding, 20 cm conductors,
0.25 mm²

Panel thickness
min. 2.0 mm
max. 5.0 mm

21 03 339 1301



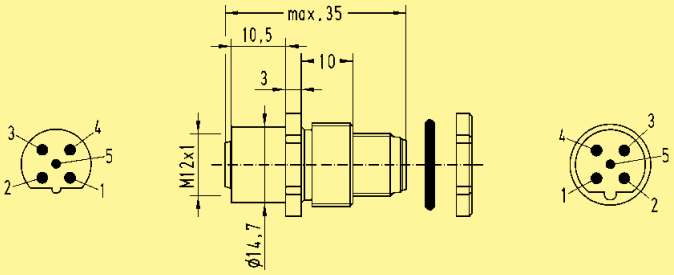
M12-male/female panel feed-through

B-coding



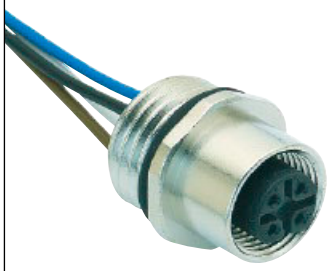
Panel thickness
min. 2.0 mm
max. 5.0 mm

21 03 330 1300

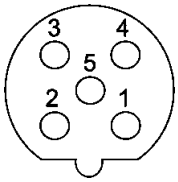


Rated voltage	24 V AC/DC
Thread	M16 x 1.5

M12 Panel feed-through B-coded

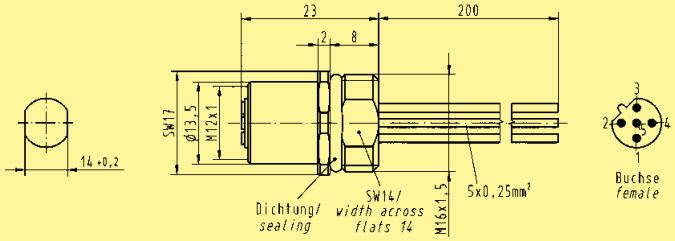


Mating face



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

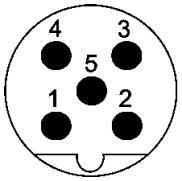
RoHS

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

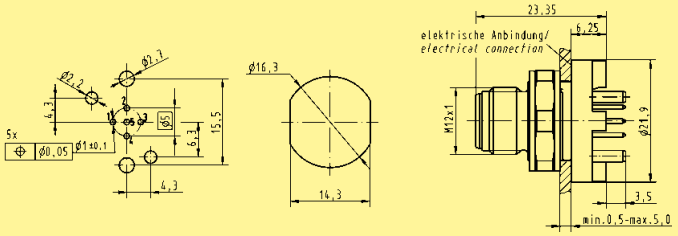


B-coding
Mating face
acc. to IEC 61076-2-101

RoHS

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

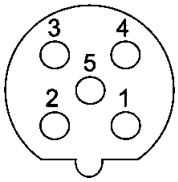
Identification	Part No.	Drawing	Dimensions in mm
M12 PCB adapter Male, B-coding, straight  5 poles, IP20	21 03 341 1505		

Further information and data sheets see www.HARTING.com

M12 PCB adapter B-coded

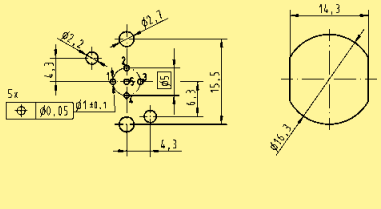


Mating face



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

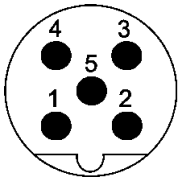
RoHS

Identification	Part No.	Drawing	Dimensions in mm
M12 PCB adapter Female, B-coding, straight  5 poles, IP20	21 03 341 2505		

M12 PCB adapter shielded B-coded



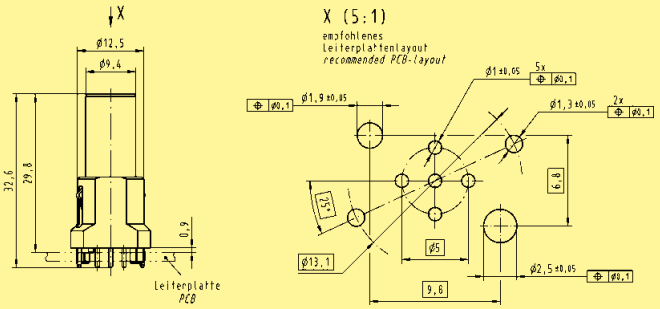
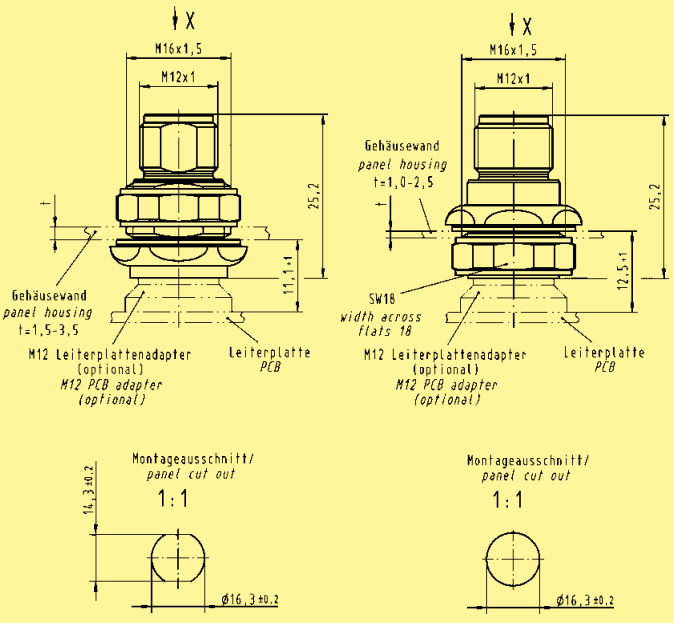
Mating face



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

RoHS

03

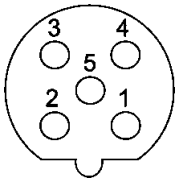
Identification	Part No.	Drawing	Dimensions in mm
M12 PCB adapter, shielded  Male 5 poles, B-coding	21 03 341 1518*		
Housing   for rear mounting for front mounting	21 03 301 1000 21 03 301 1001		

Further information and data sheets see www.HARTING.com
* UL approval is in preparation

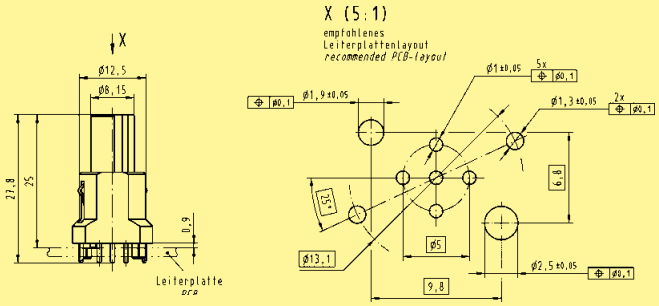
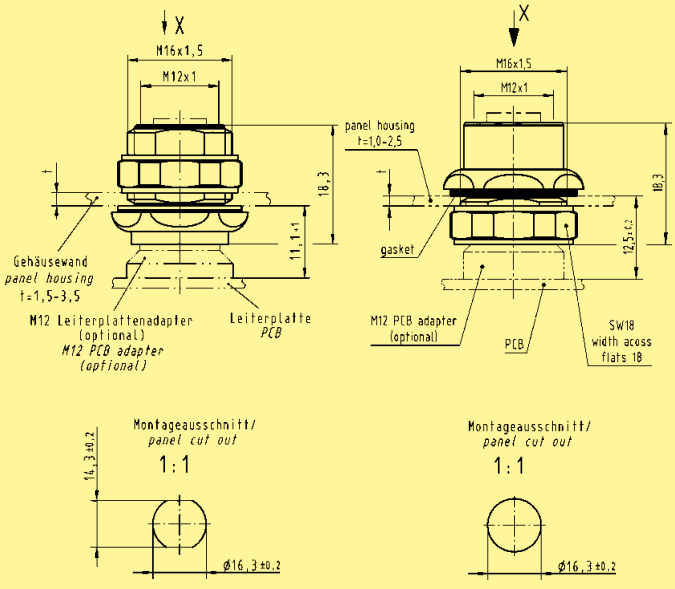
M12 PCB adapter shielded B-coded



Mating face



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

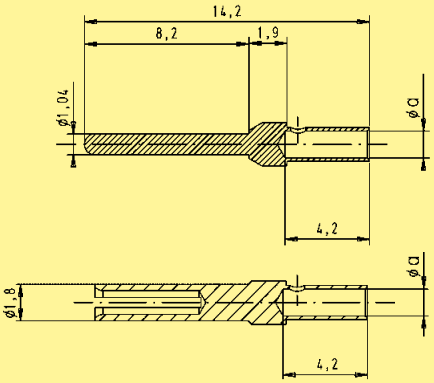
Identification	Part No.	Drawing	Dimensions in mm
M12 PCB adapter, shielded  Female 5 poles, B-coding	21 03 341 2518*		
Housing   for rear mounting for front mounting	21 03 301 2000 21 03 301 2001		

Further information and data sheets see www.HARTING.com
* UL approval is in preparation

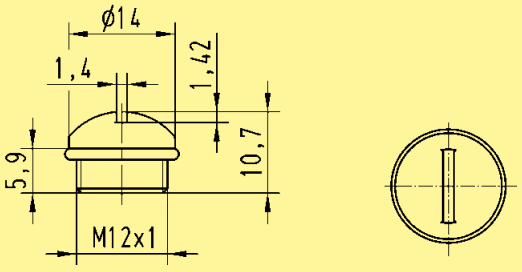
Identification	Part No.	Drawing
Crimping tool for M12 Crimp	09 99 000 0501	
Accessories M12 Crimp		
Locator	09 99 000 0531	
D-Sub single contacts (500 mating cycles)		
turned male contacts		
AWG 22-18 / 0.33-0.82 mm²	09 67 000 3576	
AWG 24-20 / 0.25-0.52 mm²	09 67 000 8576	
AWG 26-22 / 0.13-0.33 mm²	09 67 000 5576	
		
turned female contacts		
AWG 22-18 / 0.33-0.82 mm²	09 67 000 3476	
AWG 24-20 / 0.25-0.52 mm²	09 67 000 8476	
AWG 26-22 / 0.13-0.33 mm²	09 67 000 5476	
		
M12 **dynamometric screwdriver** Tightening torque 0.6 Nm		
for M12-S SW 13	09 99 000 0382	
for M12-L SW 17	09 99 000 0384	
Cap M12 for IP65 / IP67 Seals material Viton Plastic cap for female	21 01 000 0003	

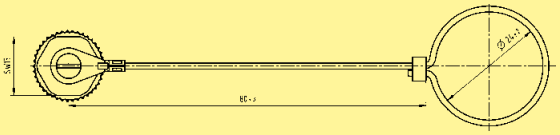
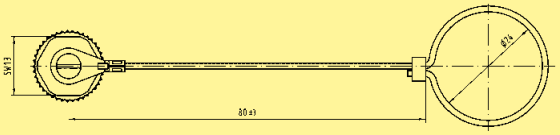
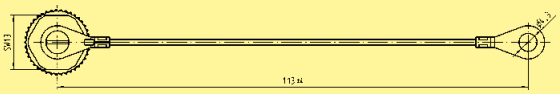
D-Sub contacts

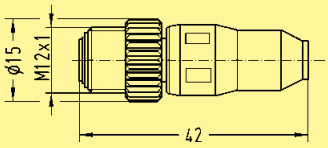
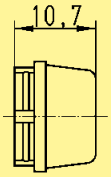
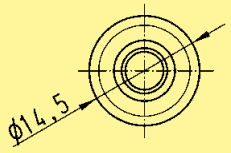
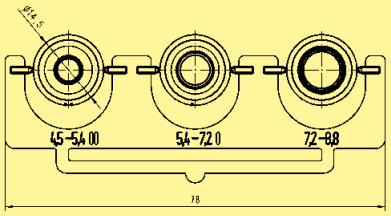
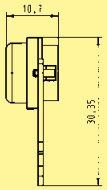
Part number	AWG	Tool settings
09 67 000 3x76	18	6
	20	6
	22	5
09 67 000 8x76	20, 22, 24	6
09 67 000 5x76	22, 24, 26	6



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



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		

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 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	 	
Accessories M12 Lock nut	21 01 000 0018		

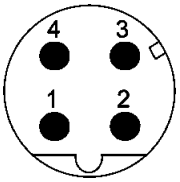
M12 D-coding

Specifications IEC 60 352-4

Approval



Mating face



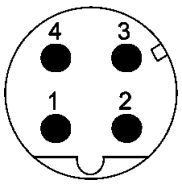
D-coding
Mating face
acc. to IEC 61076-2-101

Technical characteristics M12 – D-coding

Type M12 D-coded	*HARAX*® M12 L shielded	M12 Crimp	M12 preLink®
General data			
Conductor cross section	0.14 - 0.34 mm² AWG 26-22 0.34 - 0.5 mm² AWG 22-20	0.13 - 0.75 mm² AWG 26-18	0.10 - 0.34 mm² 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



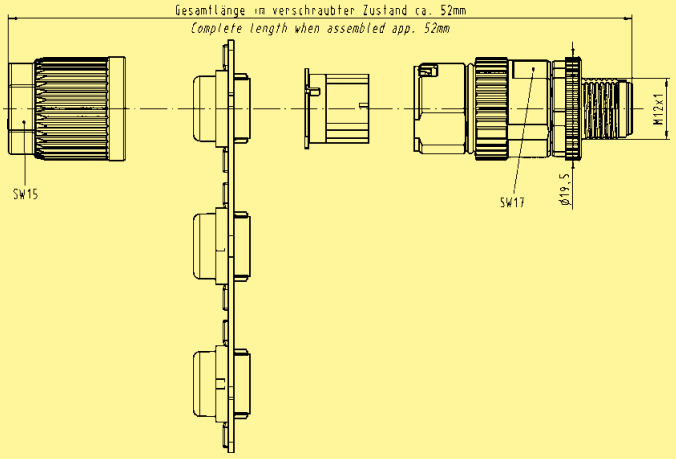
Mating face



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

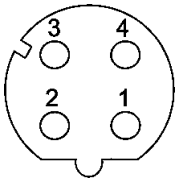
Applications / Advantages

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

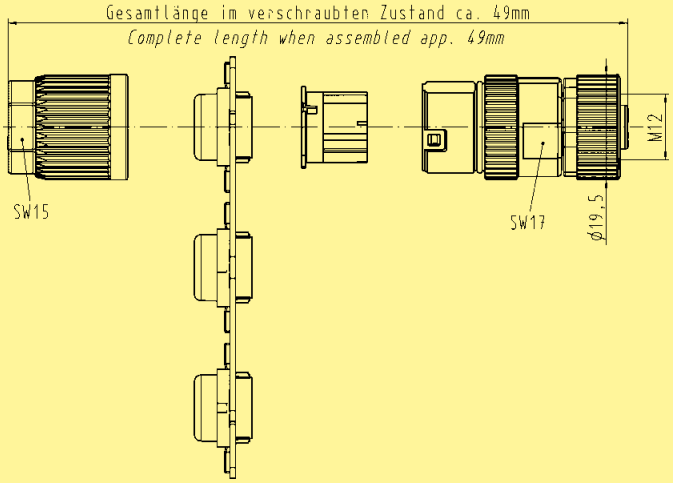
Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12-L, shielded  Male 4 poles, D-coding 0.14 - 0.34 mm², AWG 26 - 22	21 03 281 1405		
Male 4 poles, D-coding 0.34 - 0.5 mm², AWG 22 - 20	21 03 282 1405		



Mating face

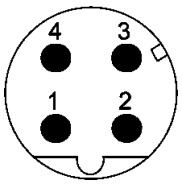


D-coding
Mating face
acc. to IEC 61 076-2-101

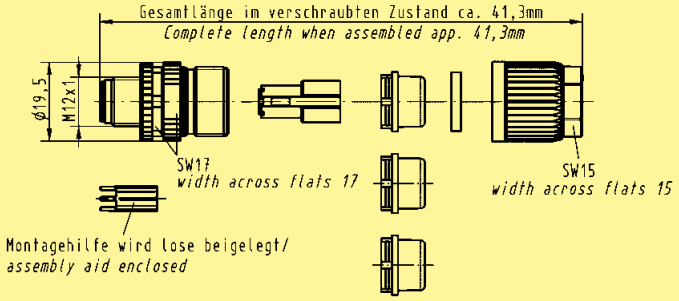
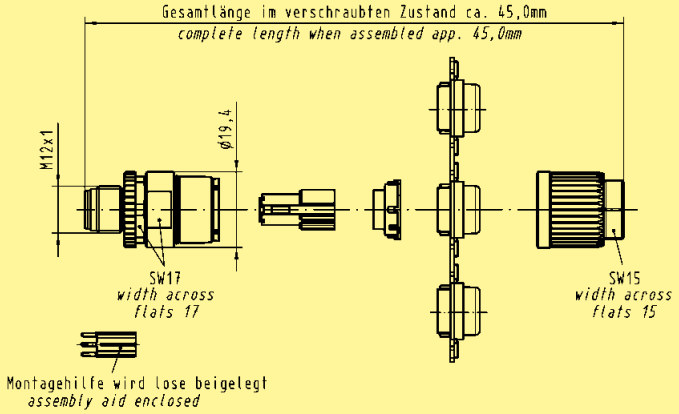
Identification	Part No.	Drawing	Dimensions in mm
***HARAX*® M12-L, shielded**			
 Female 4 poles, D-coding 0.14 - 0.34 mm², AWG 26 - 22	21 03 281 2405		
Female 4 poles, D-coding 0.34 - 0.5 mm², AWG 22 - 20	21 03 282 2405		



Mating face



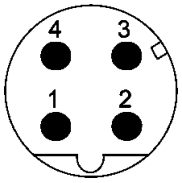
D-coding
Mating face
acc. to IEC 61076-2-101

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		

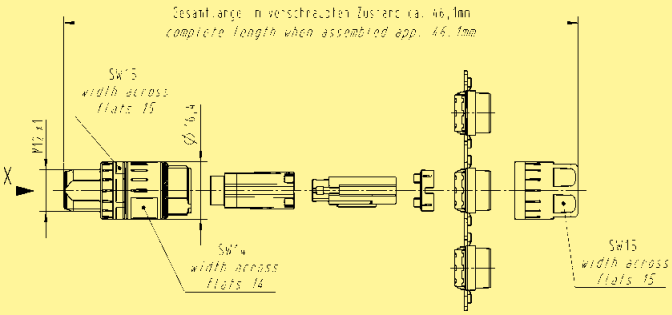
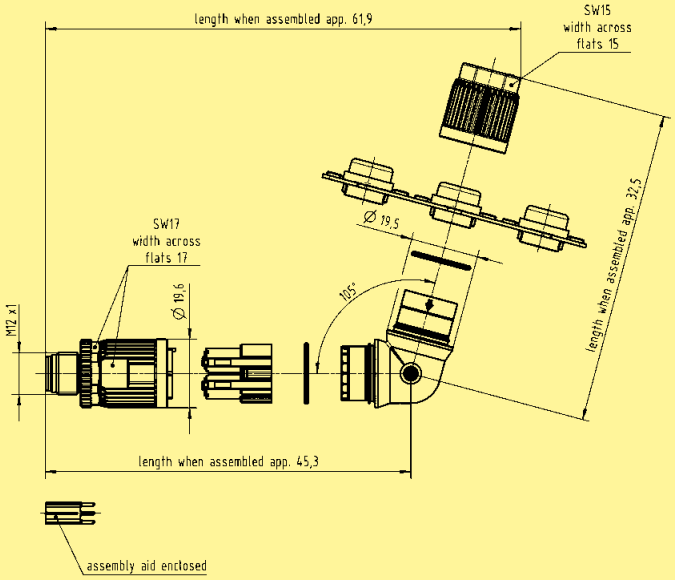
M12 Crimp D-coded



Mating face



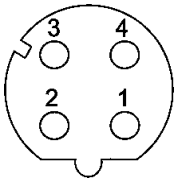
D-coding
Mating face
acc. to IEC 61076-2-101

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*		

Further information and data sheets see www.HARTING.com
* UL approval is in preparation

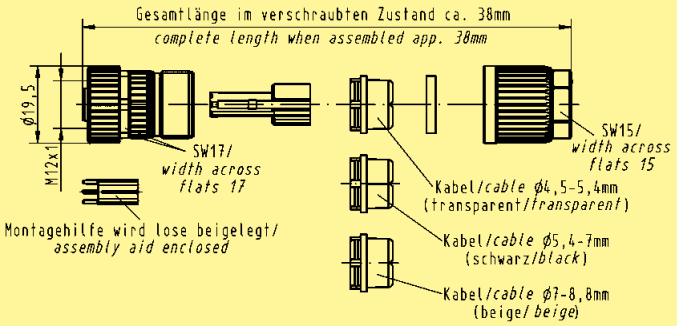


Mating face



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

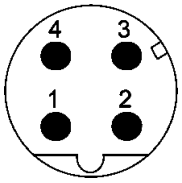
RoHS

Identification	Part No.	Drawing	Dimensions in mm
M12 Crimp, shielded  Female 4 poles, D-coding	21 03 882 2405		

M12 preLink® D-coded

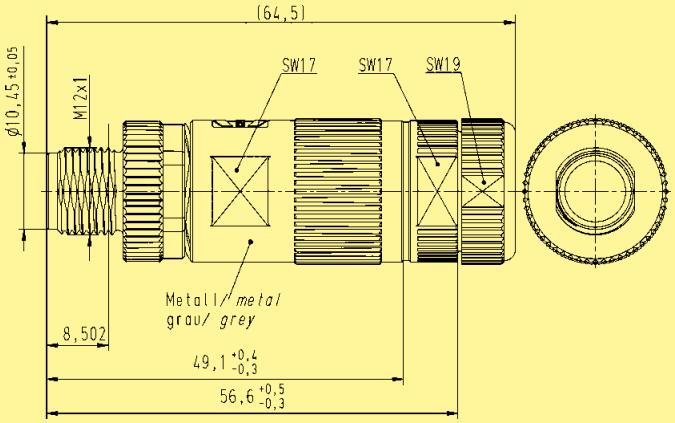
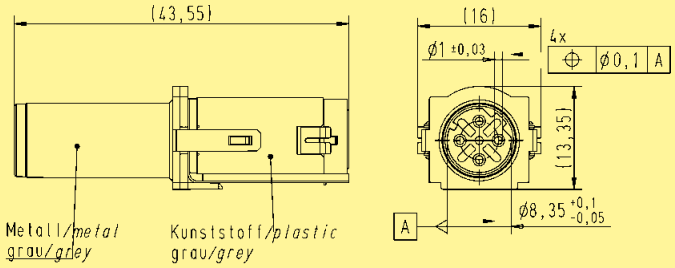
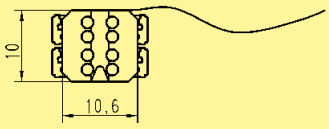
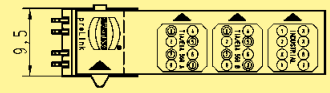
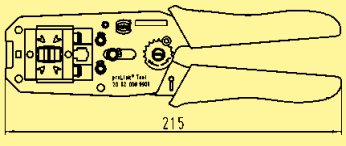


Mating face

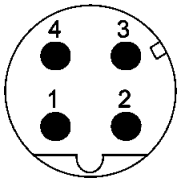


D-coding
Mating face
acc. to IEC 61076-2-101

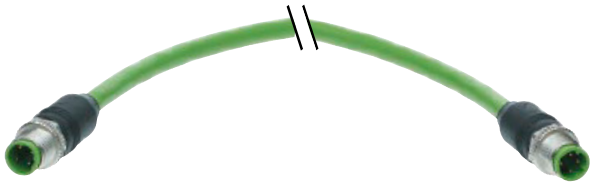
RoHS

Identification	Part No.	Drawing	Dimensions in mm
preLink® M12 housing 	20 82 000 1210		
preLink® M12 male module Male 4 poles, D-coding 	20 82 005 1214		
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: Ø 1.3 - 1.6 mm Colour: yellow	20 82 000 0001		
Conductor cross section: AWG 26/27 solid and stranded Conductor diameter: Ø 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

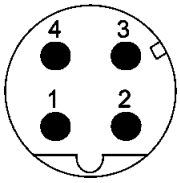
for structured cabling of industrial Ethernet networks, based on M12 Circular connectors, D-coded

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)

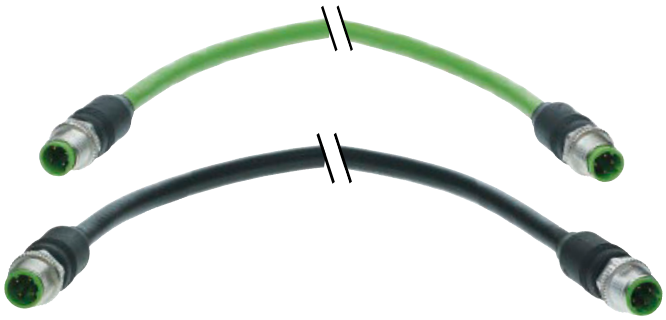
Pin assignment

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

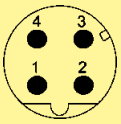
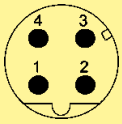
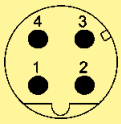
Mating face



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



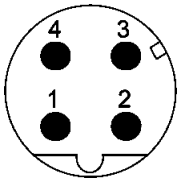
Overview system cables M12

		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*

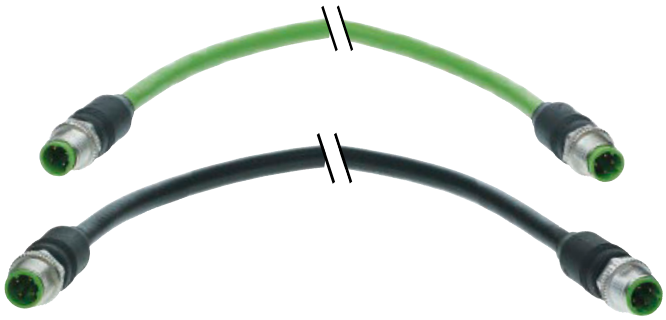
* Mid 2014 the part numbers beginning with 21 03 … or 09 47 … will be replaced by the part numbers beginning with 09 48 ...
The former part numbers will be set to status inactive.
Please use only the part numbers beginning with 09 48 … for your order.

M12 System cables, D-coding

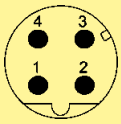
Mating face



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

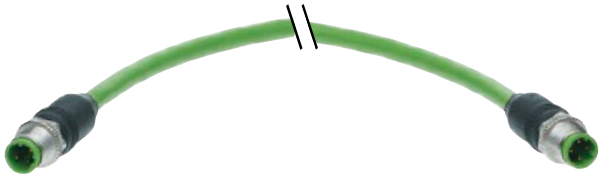


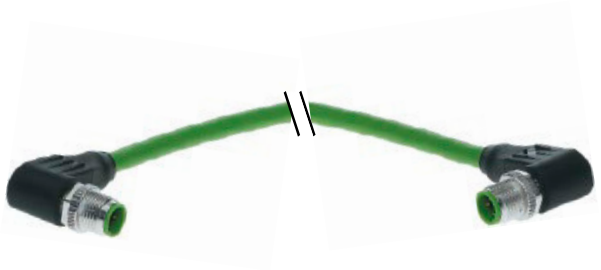
Overview system cables M12

		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*

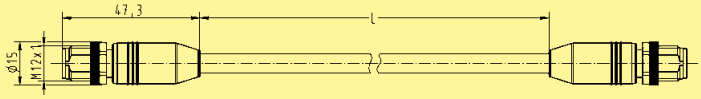
* Mid 2014 the part numbers beginning with 21 03 … or 09 47 … will be replaced by the part numbers beginning with 09 48 ...
The former part numbers will be set to status inactive.
Please use only the part numbers beginning with 09 48 … for your order.

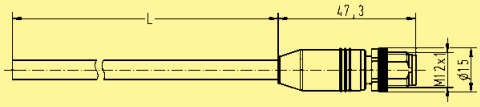
M12 System cables, D-coding

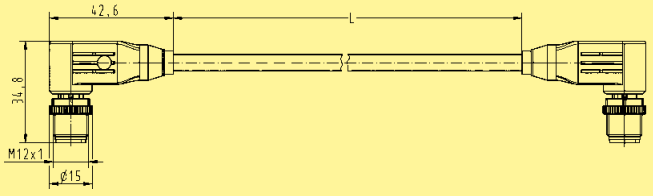


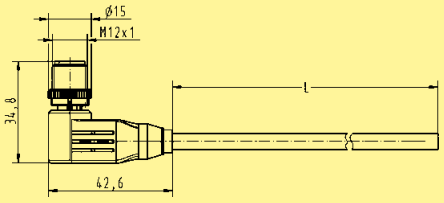


Identification	Part No.	Drawing	Dimensions in mm
2 x M12 Circular connectors, D-coding, PUR, straight		Cable: AWG 22 / 0.34 mm²	
Length*: 1.0 m	21 03 485 1401		
1.5 m	21 03 485 1451		
3.0 m	21 03 485 1403		
5.0 m	21 03 485 1405		
7.5 m	21 03 485 1457		
10.0 m	21 03 485 1410		
20.0 m	21 03 485 1420		
1 x M12 Circular connectors, D-coding, PUR, straight		Cable: AWG 22 / 0.34 mm²	
Length*: 1.0 m	21 03 585 1401		
1.5 m	21 03 585 1451		
3.0 m	21 03 585 1403		
5.0 m	21 03 585 1405		
7.5 m	21 03 585 1457		
10.0 m	21 03 585 1410		
20.0 m	21 03 585 1420		
2 x M12 Circular connectors, D-coding, PUR, angled		Cable: AWG 22 / 0.34 mm²	
Length*: 1.0 m	21 03 485 3401		
1.5 m	21 03 485 3451		
3.0 m	21 03 485 3403		
5.0 m	21 03 485 3405		
7.5 m	21 03 485 3457		
10.0 m	21 03 485 3410		
20.0 m	21 03 485 3420		
1 x M12 Circular connectors, D-coding, PUR, angled		Cable: AWG 22 / 0.34 mm²	
Length*: 1.0 m	21 03 585 3401		
1.5 m	21 03 585 3451		
3.0 m	21 03 585 3403		
5.0 m	21 03 585 3405		
7.5 m	21 03 585 3457		
10.0 m	21 03 585 3410		
20.0 m	21 03 585 3420		



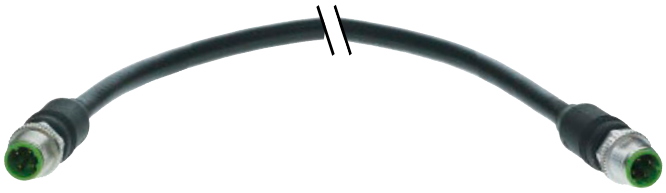






Further information and data sheets see www.HARTING.com

* other lengths on request



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

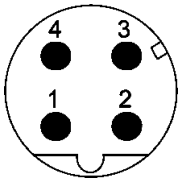
Further information and data sheets see www.HARTING.com

* other lengths on request

M12 Panel feed-through *HARAX*® D-coded



Mating face



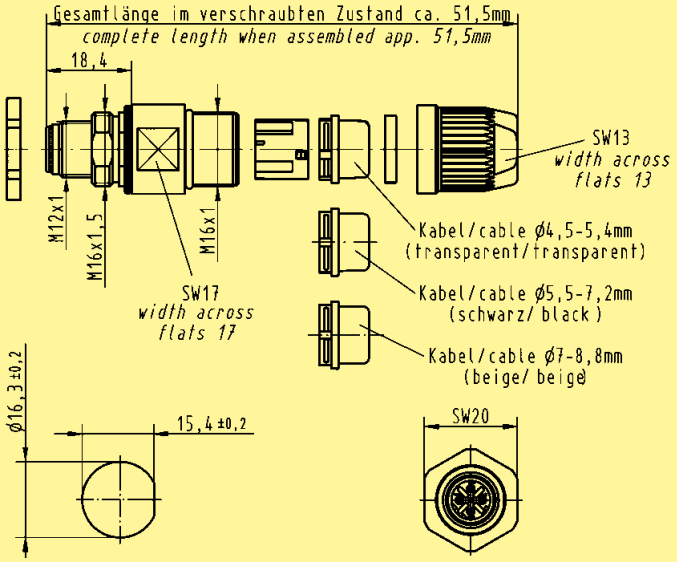
D-coding
Mating face
acc. to IEC 61076-2-101

RoHS

03

Applications / Advantages

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

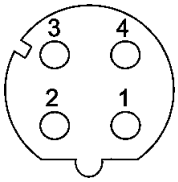
Identification	Part No.	Drawing	Dimensions in mm
HARAX® Panel feed-through  Male 4 poles, D-coding 0.14 - 0.34 mm² / AWG 26 - 22 Panel thickness min. 2.5 mm max. 4.5 mm	21 03 381 1425		

Further information and data sheets see www.HARTING.com

M12 Panel feed-through *HARAX*® D-coded



Mating face



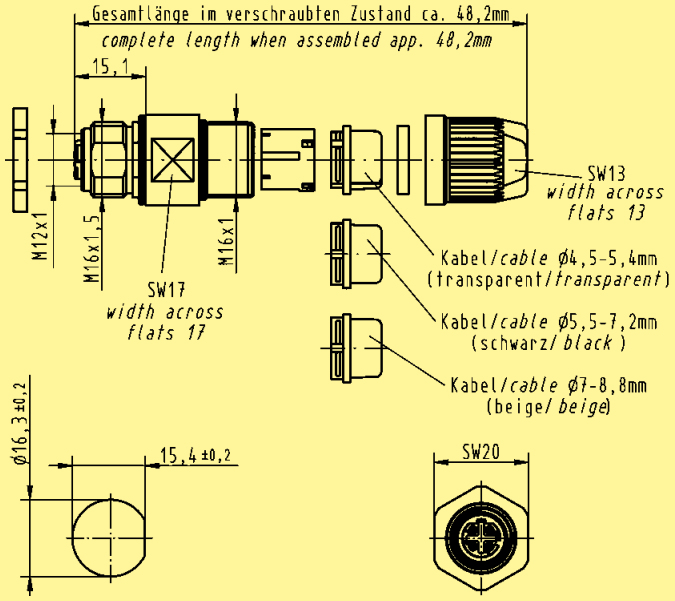
D-coding
Mating face
acc. to IEC 61076-2-101

Identification	Part No.	Drawing	Dimensions in mm
HARAX® Panel feed-through	21 03 381 2425		



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

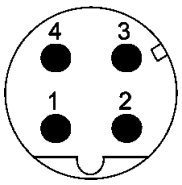
Panel thickness
min. 2.5 mm
max. 4.5 mm



M12 Panel feed-through Crimp D-coded



Mating face



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

RoHS

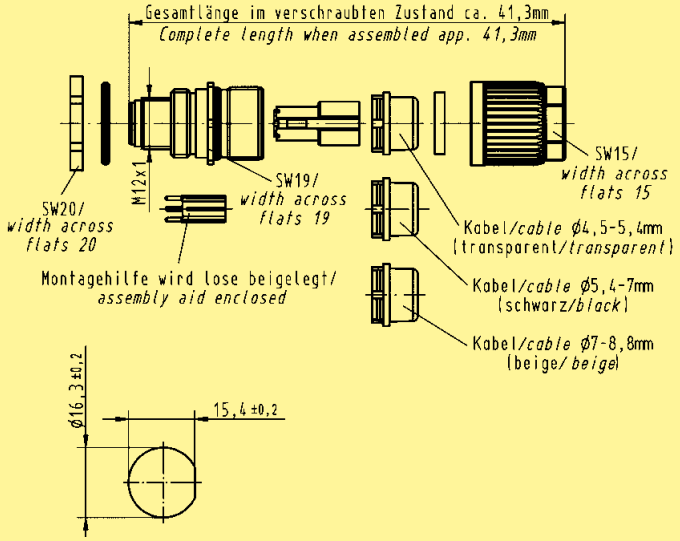
03

Identification	Part No.	Drawing	Dimensions in mm
M12 Panel feed-through Crimp	21 03 882 1425		



Male
4 poles, D-coding

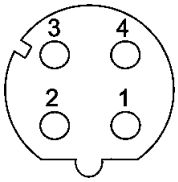
Panel thickness
min. 2.5 mm
max. 4.5 mm



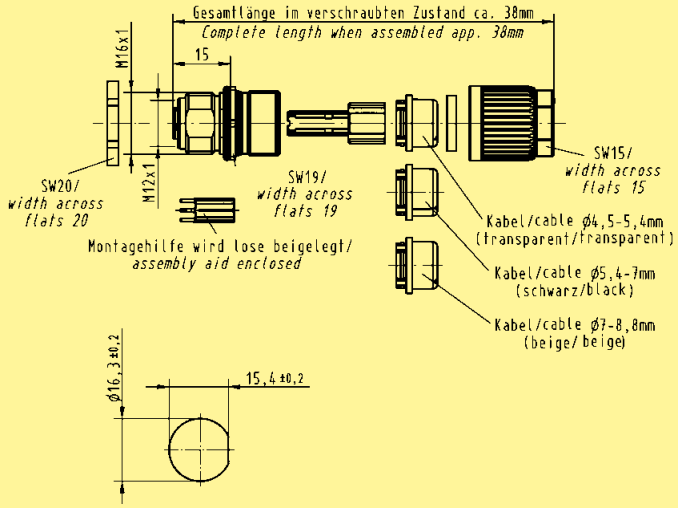
M12 Panel feed-through Crimp D-coded



Mating face



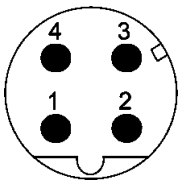
D-coding
Mating face
acc. to IEC 61076-2-101

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		

M12 Panel feed-through D-coded



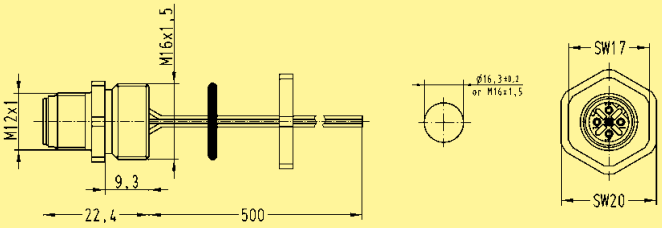
Mating face



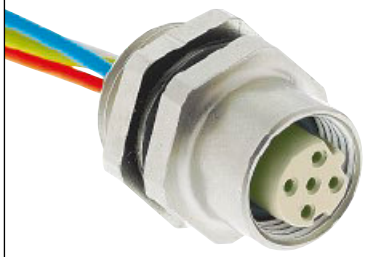
D-coding
Mating face
acc. to IEC 61076-2-101

RoHS

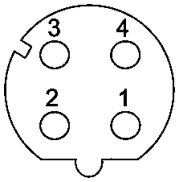
03

Identification	Part No.	Drawing	Dimensions in mm
M12 Panel feed-through  Male D-coding 50 cm conductors, AWG 22, 4 poles Panel thickness min. 2.0 mm max. 5.0 mm	21 03 371 1403		

M12 Panel feed-through D-coded

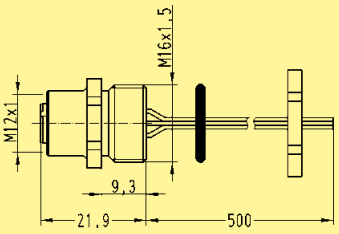
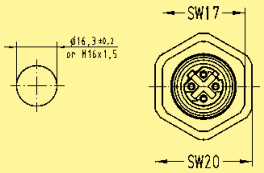


Mating face



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

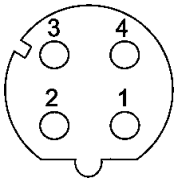
RoHS

Identification	Part No.	Drawing	Dimensions in mm
M12 Panel feed-through  Female D-coding 50 cm conductors, AWG 22, 4 poles Panel thickness min. 2.0 mm max. 5.0 mm	21 03 371 2403	  	

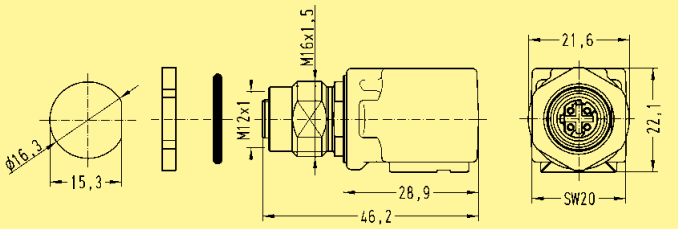
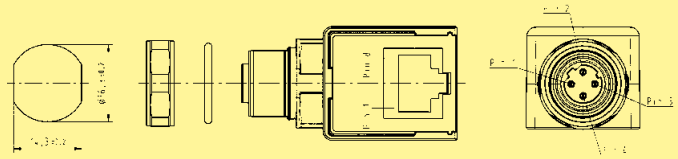
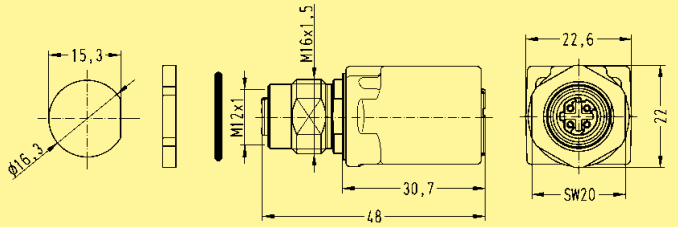
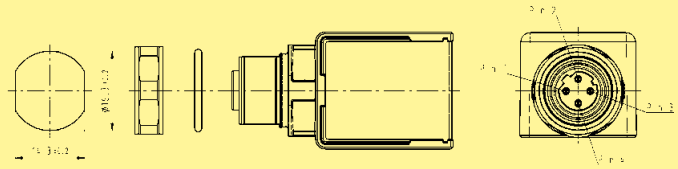
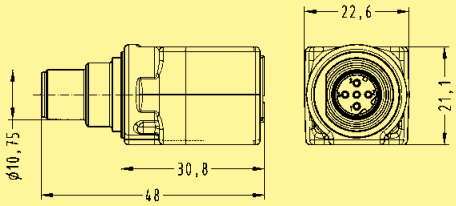
M12 Panel feed-through D-coded



Mating face



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

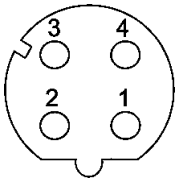
Identification	Part No.	Drawing	Dimensions in mm
M12 Female-RJ45 Panel feed-through			
	21 03 381 4400		
4 poles, D-coding angled Panel thickness min. 2.1 mm max. 4.5 mm	21 03 381 4401*		
M12 Female-RJ45 Panel feed-through			
	21 03 381 2400		
4 poles, D-coding straight Panel thickness min. 2.1 mm max. 4.5 mm	21 03 381 2401*		
M12 Male-RJ45 Adapter			
	21 03 371 1420		
4 poles, D-coding straight (coupler, without thread in the termination area)			

Further information and data sheets see www.HARTING.com
* UL approval is in preparation

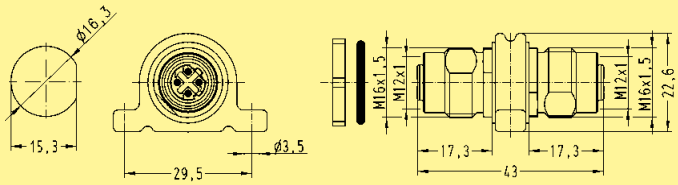
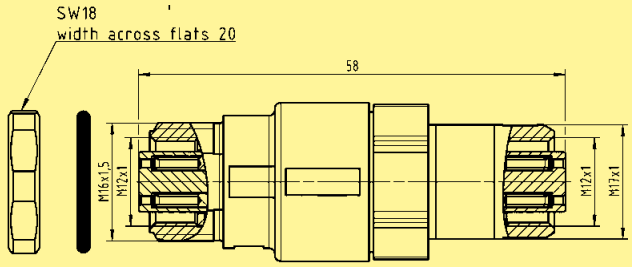
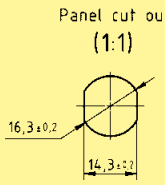
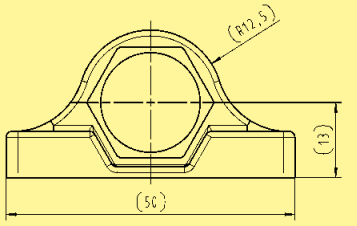
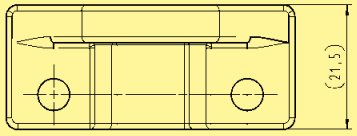
M12 Panel feed-through D-coded



Mating face



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

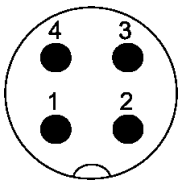
Identification	Part No.	Drawing	Dimensions in mm
M12 Gender Changer Female-Female  4 poles, D-coding Cat. 5	21 03 381 6405		
M12 Gender Changer Female-Female  4 poles, D-coding Cat. 5	21 03 381 6401*	 	
Wall bracket 	21 01 000 0036	 	

Further information and data sheets see www.HARTING.com
* UL approval is in preparation

M12 PCB adapter D-coded



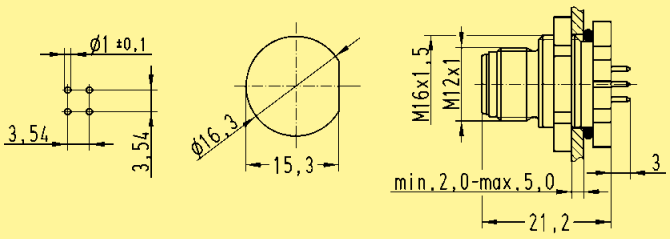
Mating face



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

Technical characteristics: M12 PCB adapter D-coded angled

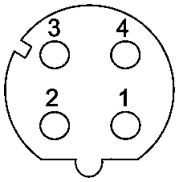
Degree of protection	IP20, IP67 (mated and locked)	Temperature during connection	-5 °C … +50 °C
Rated current	max. 4 A (dependant on PCB layout)	Termination	Reflow
Rated voltage	50 V	Contact material	Copper alloy
Mating cycles	max. 100	Contact plating (mating side)	Au over Ni
Limiting temperature	-40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

Identification	Part No.	Drawing	Dimensions in mm
M12 PCB adapter Male, D-coding, straight  4 poles, IP67	21 03 371 1400		

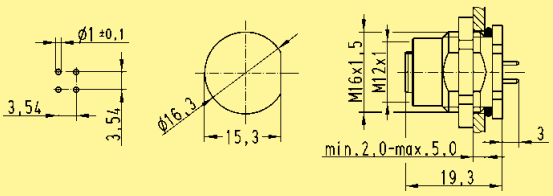
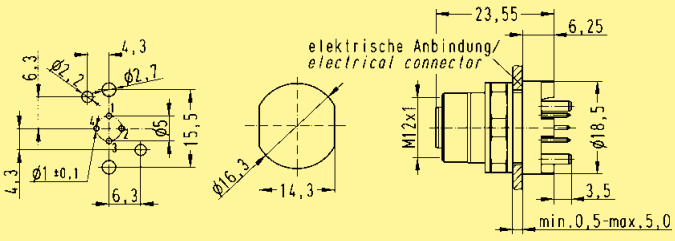
M12 PCB adapter D-coded



Mating face



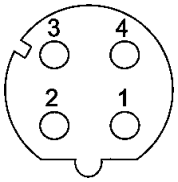
D-coding
Mating face
acc. to IEC 61076-2-101

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		

M12 PCB adapter D-coded



Mating face

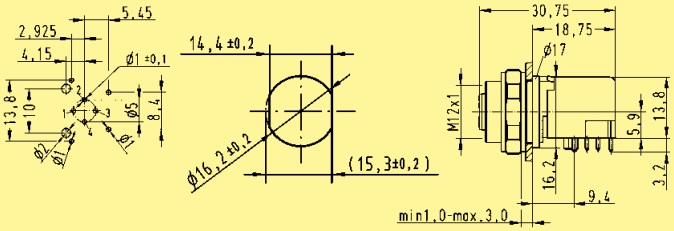


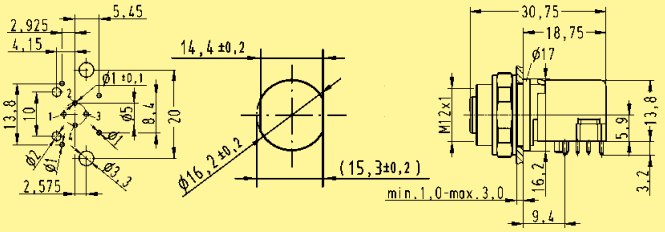
D-coding
Mating face
acc. to IEC 61076-2-101

Identification		Part No.	Drawing	Dimensions in mm
M12 PCB adapter Female, D-coding, angled, 4 poles				
without fixing hole	IP20	21 03 381 4410 [1]		
	IP20	21 03 381 4411 [2]		
	IP67	21 03 381 4430 [1]		
with fixing hole	IP20	21 03 381 4412 [1]		
	IP20	21 03 381 4413 [2]		
	IP67	21 03 381 4432 [1]		

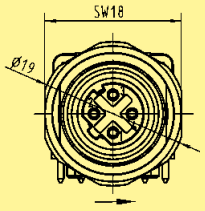




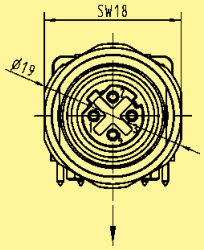




[1] Cable direction to the right



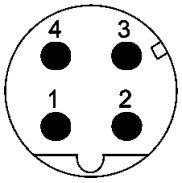
[2] Cable direction to the bottom



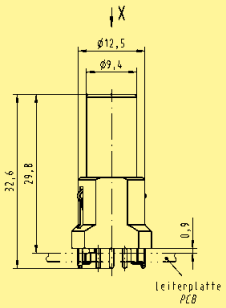
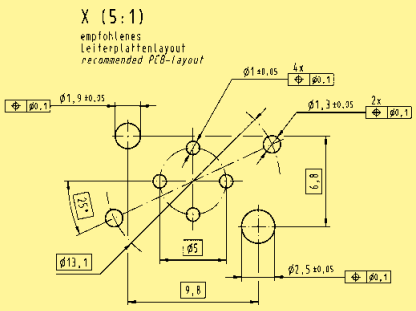
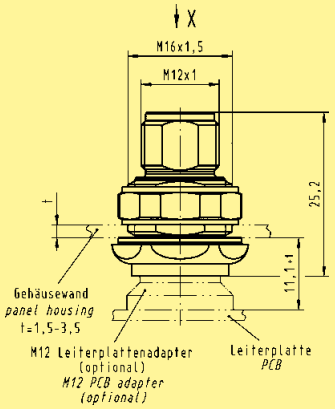
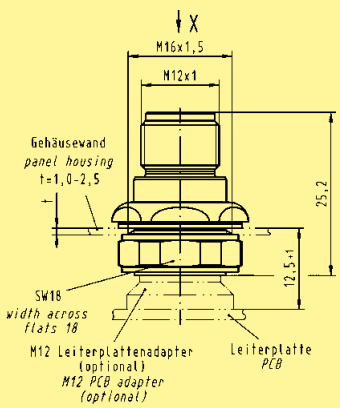
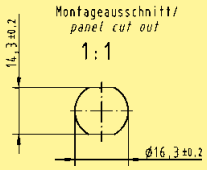
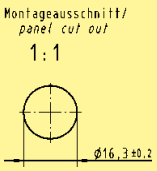
M12 PCB adapter shielded D-coded



Mating face



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

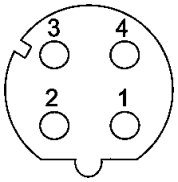
Identification	Part No.	Drawing	Dimensions in mm
M12 PCB adapter, shielded  Male 4 poles, D-coding	21 03 381 1418*	 	
Housing   for rear mounting for front mounting	21 03 301 1000 21 03 301 1001	   	

Further information and data sheets see www.HARTING.com
* UL approval is in preparation

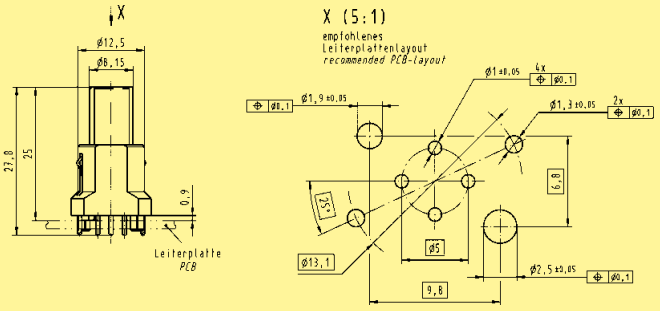
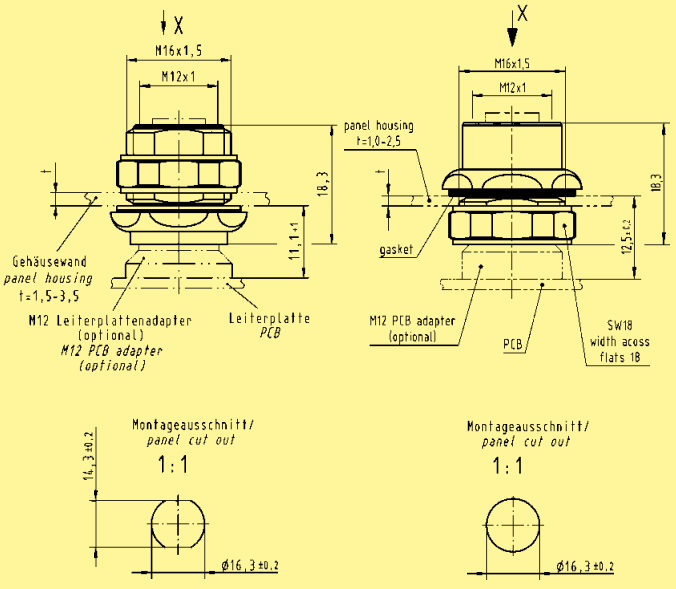
M12 PCB adapter shielded D-coded



Mating face



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

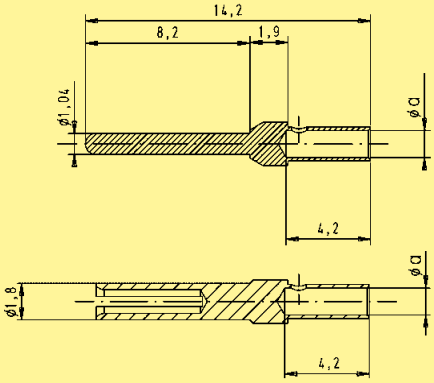
Identification	Part No.	Drawing	Dimensions in mm
M12 PCB adapter, shielded  Female 4 poles, D-coding	21 03 381 2418*		
Housing   for rear mounting for front mounting	21 03 301 2000 21 03 301 2001		

Further information and data sheets see www.HARTING.com
* UL approval is in preparation

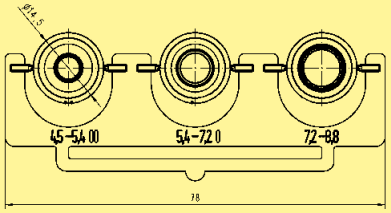
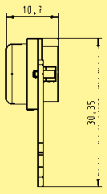
Identification	Part No.	Drawing
Crimping tool for M12 Crimp	09 99 000 0501	
Accessories M12 Crimp **Locator**	09 99 000 0531	
D-Sub single contacts **(500 mating cycles)**		
turned male contacts		
AWG 22-18 / 0.33-0.82 mm²	09 67 000 3576	
AWG 24-20 / 0.25-0.52 mm²	09 67 000 8576	
AWG 26-22 / 0.13-0.33 mm²	09 67 000 5576	
		
turned female contacts		
AWG 22-18 / 0.33-0.82 mm²	09 67 000 3476	
AWG 24-20 / 0.25-0.52 mm²	09 67 000 8476	
AWG 26-22 / 0.13-0.33 mm²	09 67 000 5476	
		

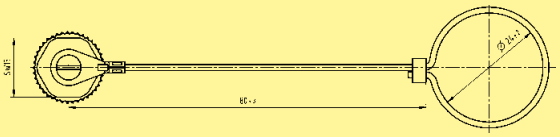
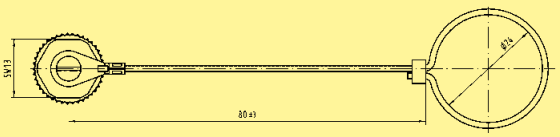
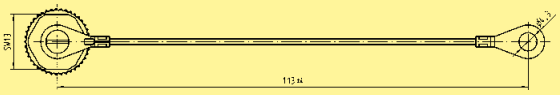
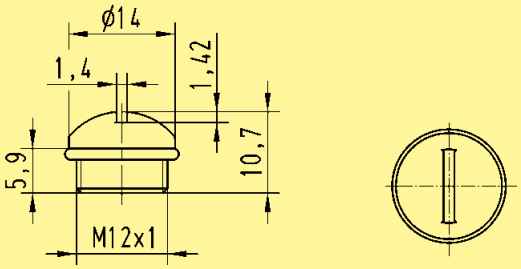
D-Sub contacts

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



	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 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		

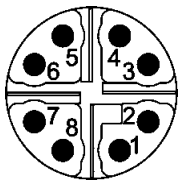
M12 X-coding

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 mm² 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

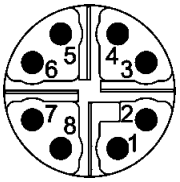
Contact material	Brass
Contact plating	Gold
Contact carrier material	LCP
Housing material	ZP410

Further information and data sheets see www.HARTING.com
* UL approval is in preparation

har-speed M12 X-coded



Mating face



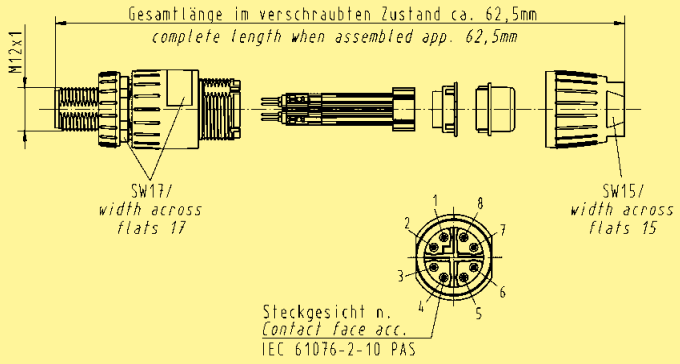
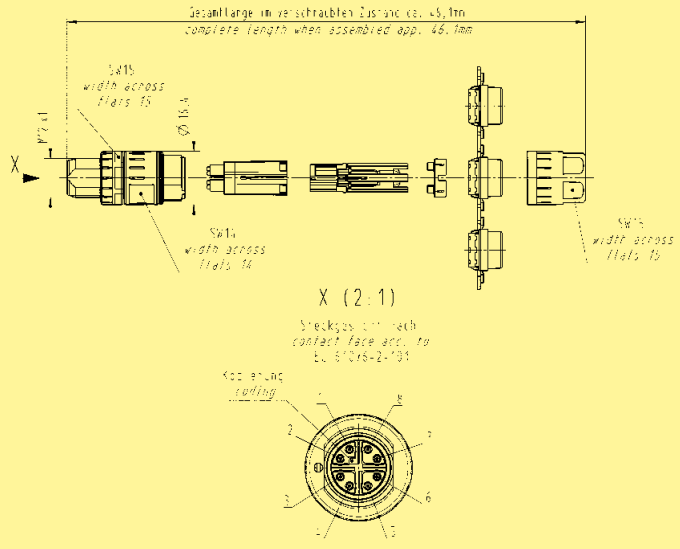
X-coding
Mating face
acc. to IEC 61076-2-101

RoHS

Applications / Advantages

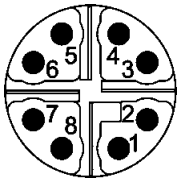
- High-Speed Ethernet applications for process automatization, e.g. camera system for process control in the production
- Maxiumum data rates through the configuration of the contacts in conformance with Ethernet technology. Transfer class E_A for 1 and 10 Gigabit
- Perfect shielding through paired shielding 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		
har-speed M12 Slim design  Male straight version 8 poles, Cat. 6_A Cable diameter: 4.5 - 8.8 mm	21 03 881 1805		

har-speed M12 System cables X-coded

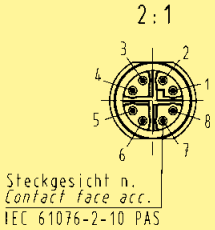
Mating face

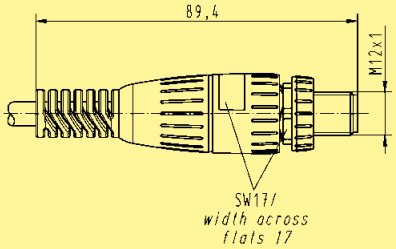


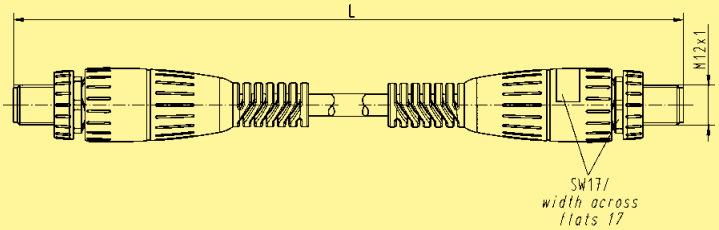
X-coding
Mating face
acc. to IEC 61076-2-101



Identification		Part No.	Drawing	Dimensions in mm
***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		



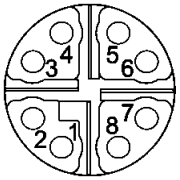




har-speed M12 Panel feed-through X-coded

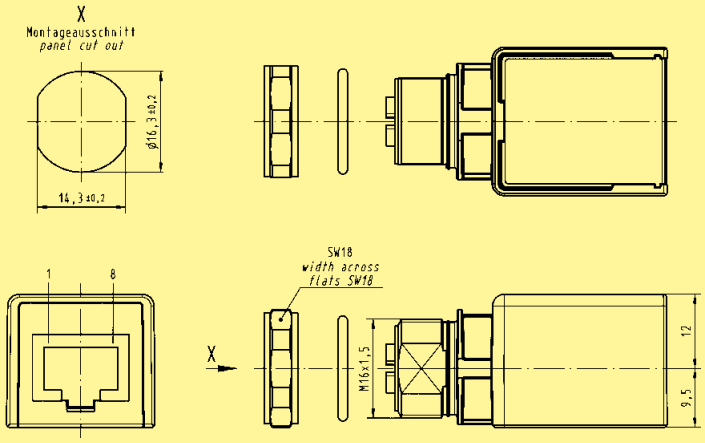
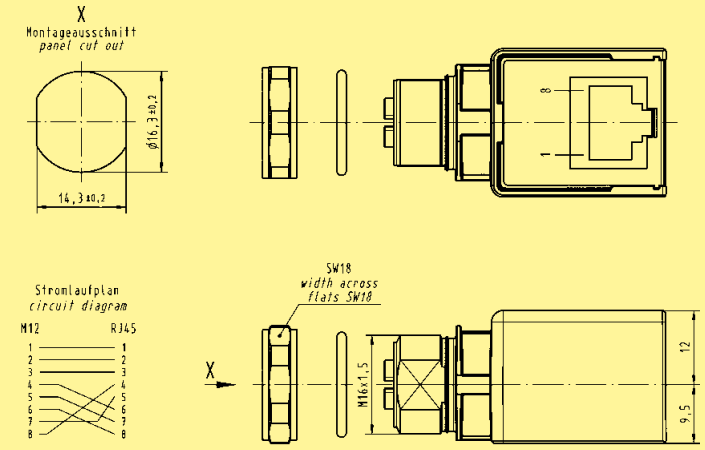


Mating face



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

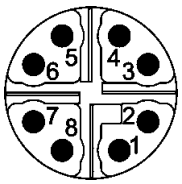
RoHS

Identification	Part No.	Drawing	Dimensions in mm
har-speed M12 Adapter M12-RJ45			
 straight, Cat. 6_A Panel thickness min. 2.1 mm max. 4.5 mm	21 03 381 2800		
 angled, Cat. 6_A Panel thickness min. 2.1 mm max. 4.5 mm	21 03 381 4800		

har-speed M12 Panel feed-through X-coded



Mating face

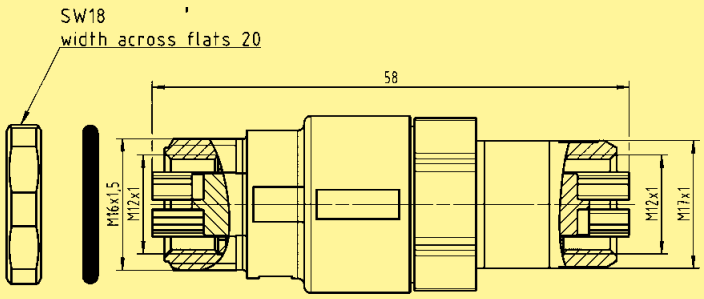


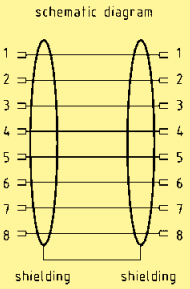
X-coding
Mating face
acc. to IEC 61076-2-101

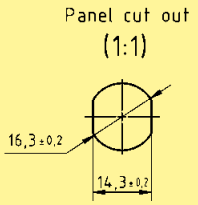
RoHS

Identification	Part No.	Drawing	Dimensions in mm
Gender changer, Cat. 6_A	21 03 381 6815		
Wall bracket	21 01 000 0036		

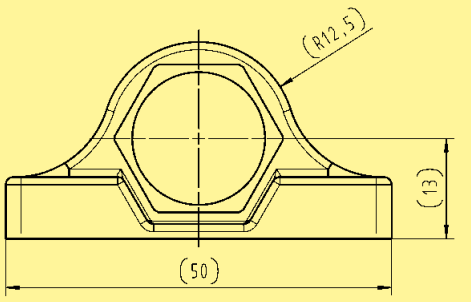


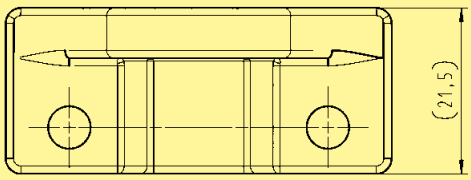








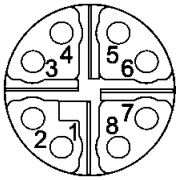




har-speed M12 PCB adapter X-coded

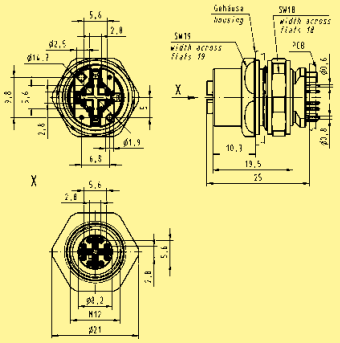
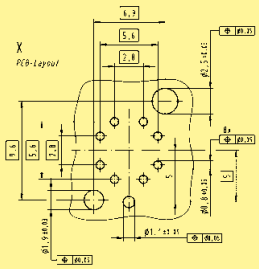
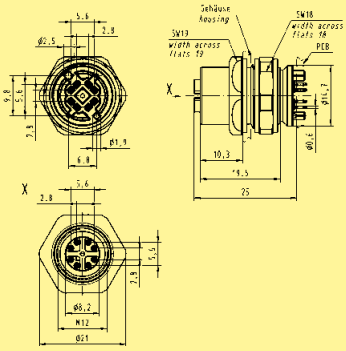
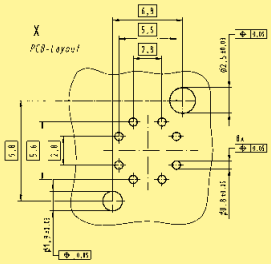
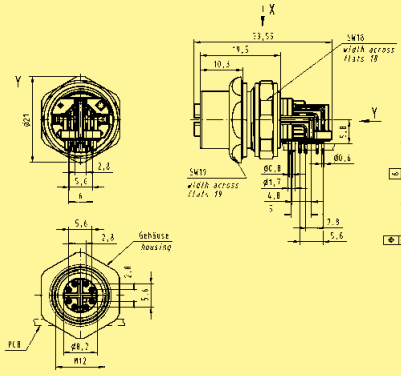
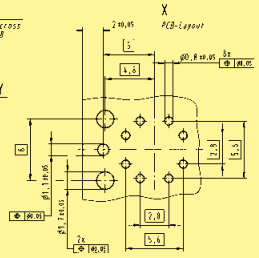


Mating face



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

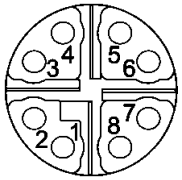
RoHS

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

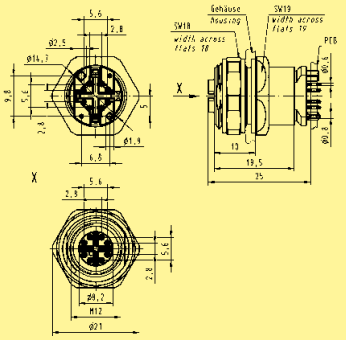
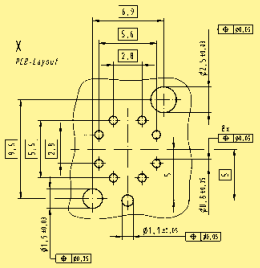
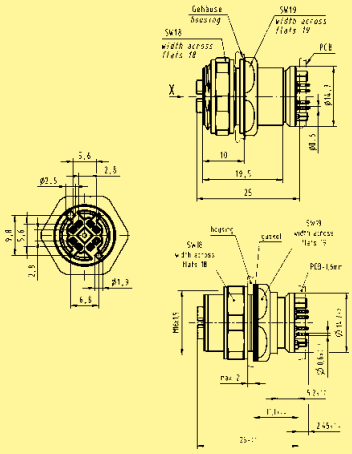
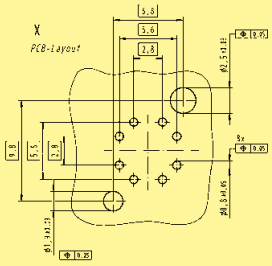
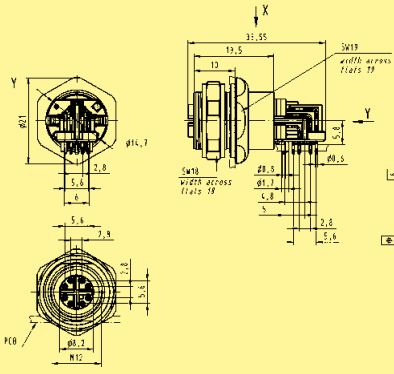
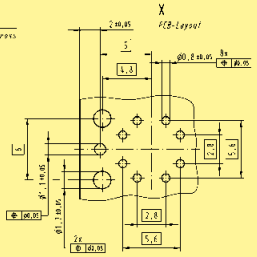


Mating face



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

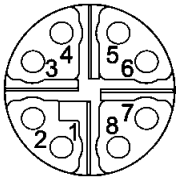
RoHS

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		

har-speed M12 PCB adapter X-coded



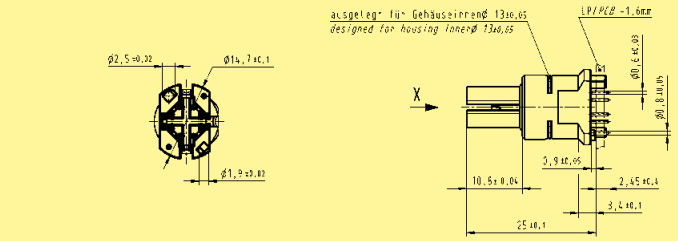
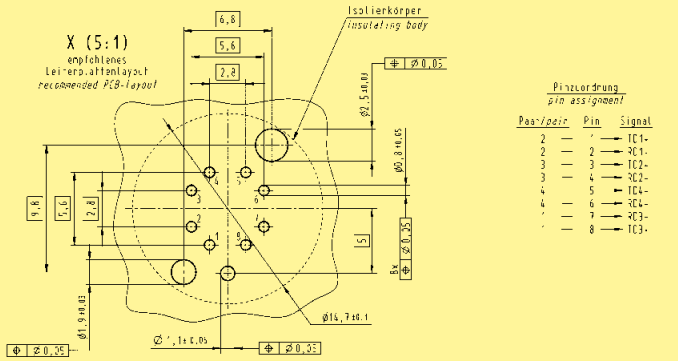
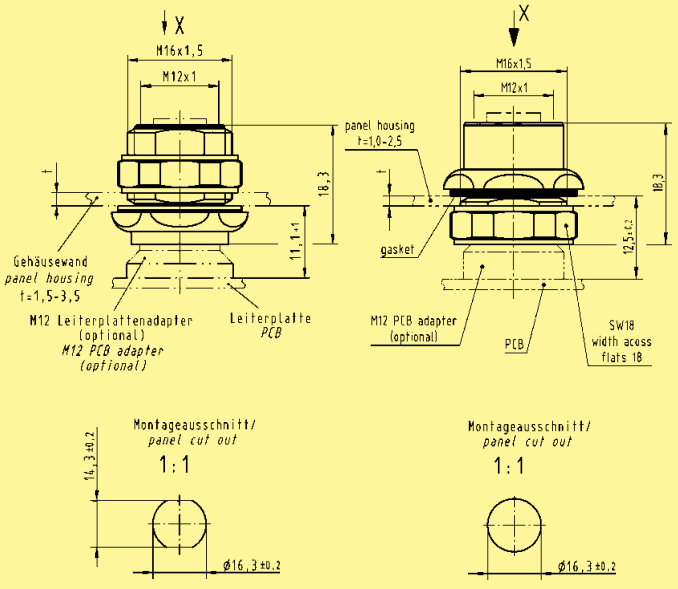
Mating face



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

RoHS

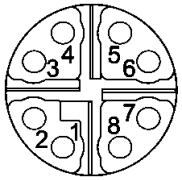
04

Identification	Part No.	Drawing	Dimensions in mm
har-speed M12 PCB adapter 			
Female 8 poles, X-coding Cat. 6$_A$	21 03 381 2806		
Female 8 poles, X-coding Cat. 5	21 03 381 2807		
Housing 			
for rear mounting	21 03 301 2000		
for front mounting	21 03 301 2001		

har-speed M12 PCB adapter X-coded



Mating face

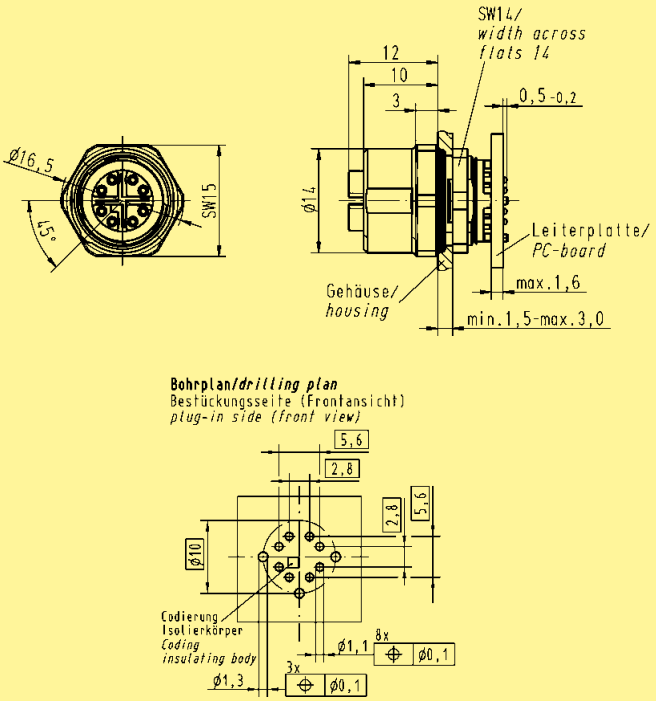


X-coding
Mating face
acc. to IEC 61076-2-101

RoHS

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 2801		

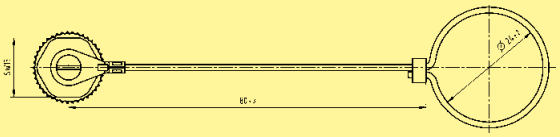
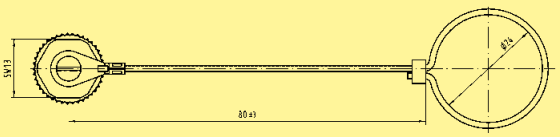
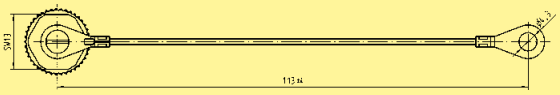
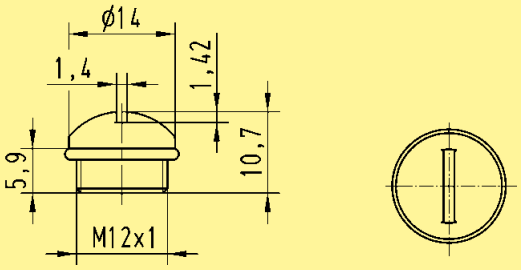




Identification	Part No.	Drawing
Crimping tool for *har*-speed M12	09 99 000 0501	
Accessories *har*-speed M12 Locator	09 99 000 0525	
Single contacts (500 mating cycles) *har*-speed M12 contacts AWG 28-24 / 0.08-0.22 mm²	21 01 100 9014	
har-speed M12 contacts AWG 26-23 / 0.13-0.25 mm²	21 01 100 9019	
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	

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

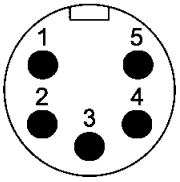
Identification	Part No.	Drawing	Dimensions in mm
Cap metal M12 for IP65 / IP67 M12 metal cap for male side with cord 	21 01 000 0033		
Cap metal M12 for IP65 / IP67 M12 metal cap for male side with cable clip 	21 01 000 0038		
Cap metal M12 for IP65 / IP67 M12 metal cap for female side with cord 	21 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 61 984

Approval , VDE



Mating face



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

Technical characteristics 7/8“ *HARAX*®

Type	7/8“ *HARAX*®

General data

Conductor cross section	0.75 - 1.5 mm² 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

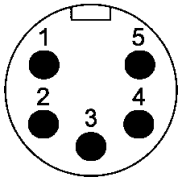
Rated current	10 A
Rated voltage	230 V / 400 V
Rated impulse voltage	4.8 kV
Contact resistance	10 mΩ
Insulation resistance	10^8 Ω
Pollution degree	3
Overvoltage category	3
Isolation group	1

Materials

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



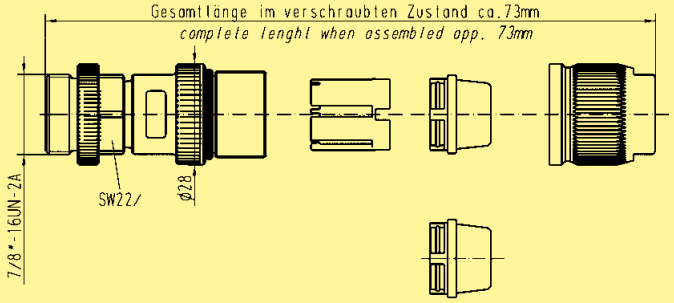
Mating face



Mating face
acc. to IEC 61076-2-101

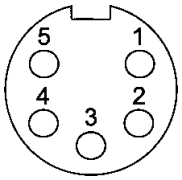
Applications / Advantages

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

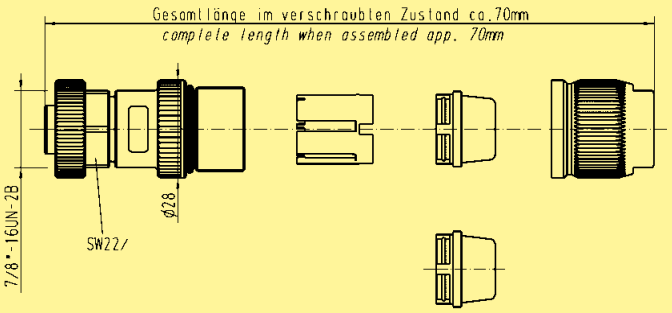
Identification	Part No.	Drawing	Dimensions in mm
7/8“ *HARAX*® Male 	21 04 116 1505		



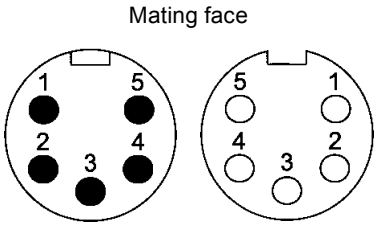
Mating face



Mating face
acc. to IEC 61076-2-101

Identification	Part No.	Drawing	Dimensions in mm
7/8“ *HARAX*® Female 	21 04 116 2505		

7/8’’ System cables



Mating face
acc. to IEC 61076-2-101



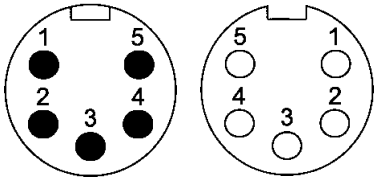
Technical characteristics

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 mm²
Standards	UL / CSA

7/8’’ System cables

Mating face



Mating face
acc. to IEC 61076-2-101

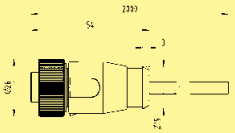
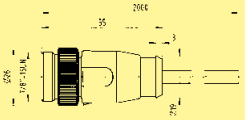


Overview system cables 7/8“

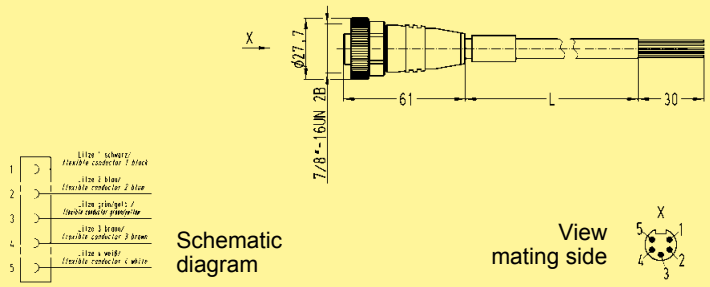
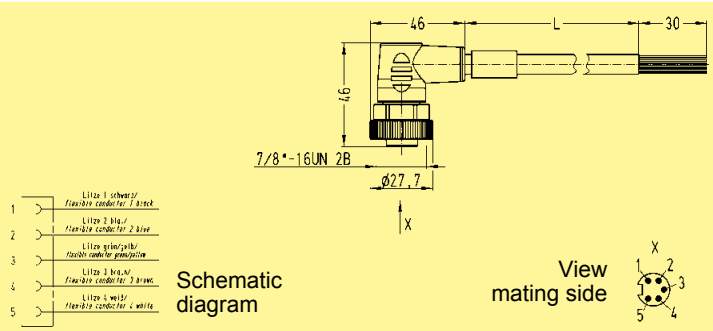
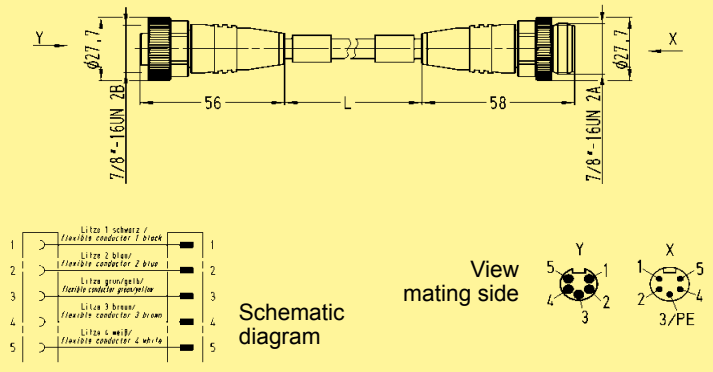
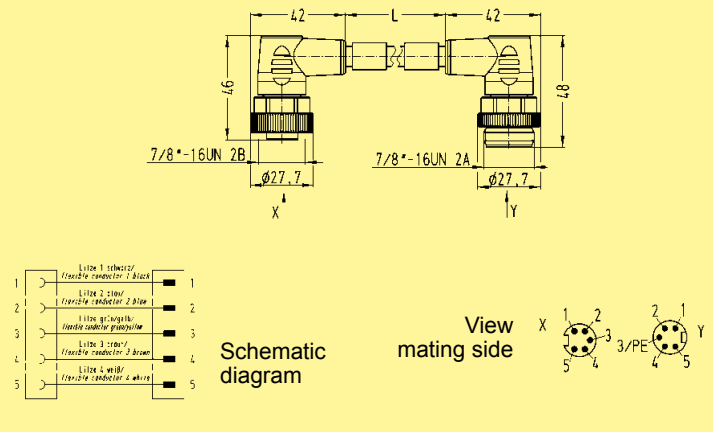
		Number of contacts	Male 7/8“ straight Cable material: PUR		Male 7/8“ angled Cable material: PUR	
Female 7/8“	straight		0.3 m	21 04 416 1501	xxx	
			0.6 m	21 04 416 1502	xxx	
			1.0 m	21 04 416 1503	xxx	
			1.5 m	21 04 416 1504	xxx	
			2.0 m	21 04 416 1505	xxx	
	angled		xxx		0.3 m	21 04 416 3501
			xxx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



Identification	Part No.	Drawing	Dimensions in mm
Overmoulded cordsets 7/8’’ Female straight 3 poles Length: 2.0 m	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	  Schematic diagram View mating side 	

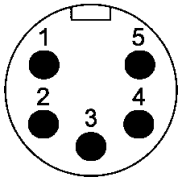


Identification			Part No.	Drawing	Dimensions in mm
Overmoulded cordsets 7/8’’ Female straight 5 poles	Length:	1.5 m	21 04 516 2501		
		3.0 m	21 04 516 2502		
		5.0 m	21 04 516 2503		
		7.5 m	21 04 516 2504		
		10.0 m	21 04 516 2505		
Overmoulded cordsets 7/8’’ Female angled 5 poles	Length:	1.5 m	21 04 516 4501		
		3.0 m	21 04 516 4502		
		5.0 m	21 04 516 4503		
		7.5 m	21 04 516 4504		
		10.0 m	21 04 516 4505		
Overmoulded cordsets 7/8’’ Male-Female straight 5 poles	Length:	0.3 m	21 04 416 1501		
		0.6 m	21 04 416 1502		
		1.0 m	21 04 416 1503		
		1.5 m	21 04 416 1504		
		2.0 m	21 04 416 1505		
Overmoulded cordsets 7/8’’ Male-Female angled 5 poles	Length:	0.3 m	21 04 416 3501		
		0.6 m	21 04 416 3502		
		1.0 m	21 04 416 3503		
		1.5 m	21 04 416 3504		
		2.0 m	21 04 416 3505		

7/8“ Panel feed-through



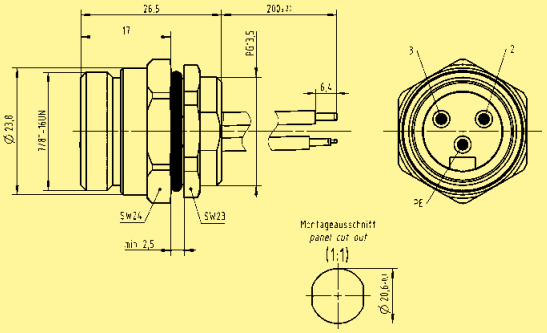
Mating face

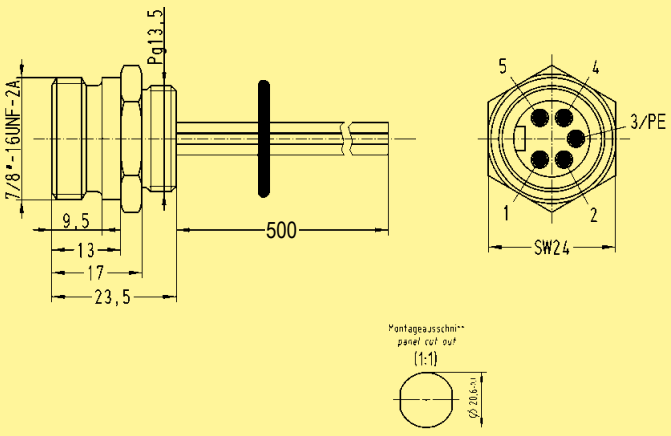


Mating face
acc. to IEC 61076-2-101

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		



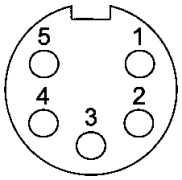




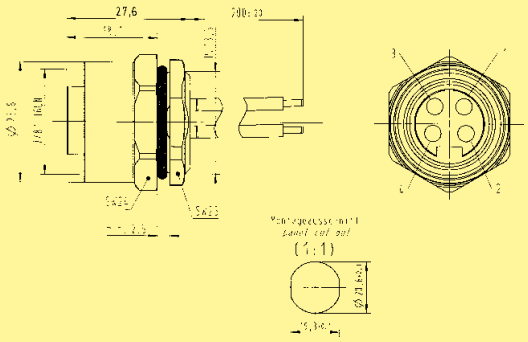
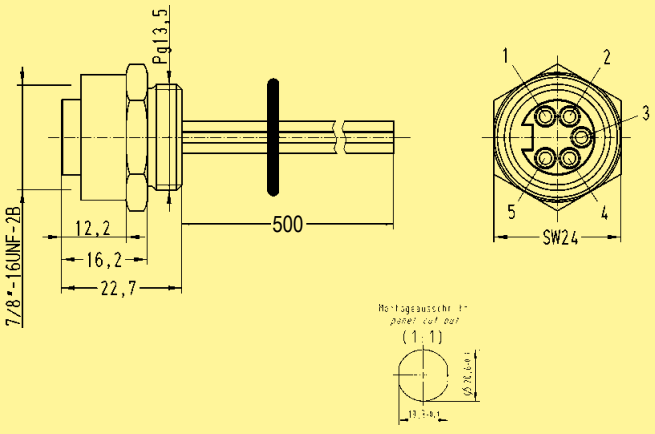
7/8“ Panel feed-through



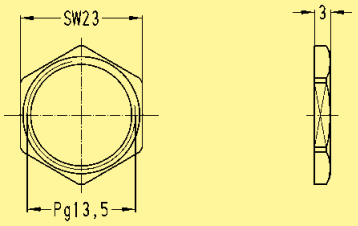
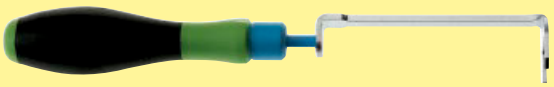
Mating face



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

Identification	Part No.	Drawing	Dimensions in mm
7/8“ Panel feed-through 20 cm conductors, AWG 18, 1 mm², 4 poles Female	21 04 316 2400		
7/8“ Panel feed-through 50 cm conductors, AWG 18, 1 mm², 5 poles Female	21 04 316 2505		

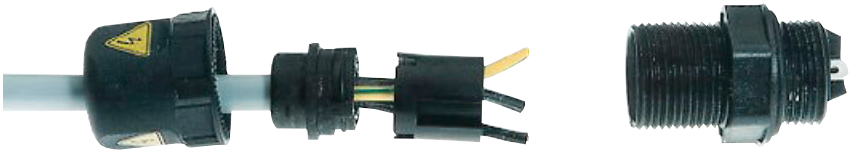


Identification	Part No.	Drawing	Dimensions in mm
Lock nut Pg 13.5 nickel plated 	21 01 000 0020		
7/8“ dynamometric screwdriver Tightening torque 1.5 Nm for 7/8“ SW 23	09 99 000 0395		

HARAX® Panel feed-through

Specifications IEC 60 352-4
DIN 61 984

Approval , VDE



Technical characteristics Panel feed-through

Type	***HARAX*® Pg 13.5/M20 Panel feed-through**

General data

Conductor cross section	0.75 - 1.5 mm² 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

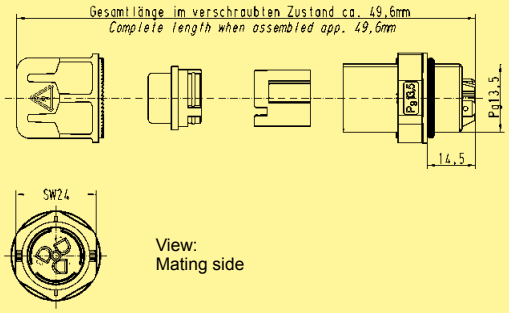
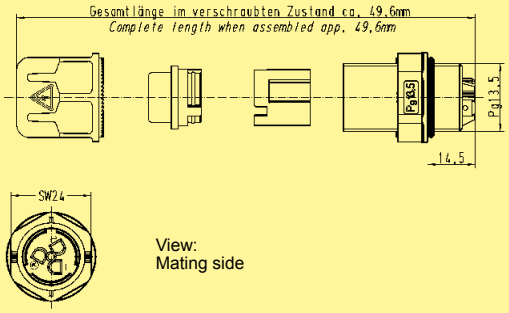
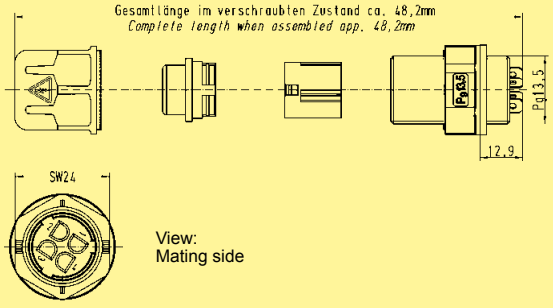
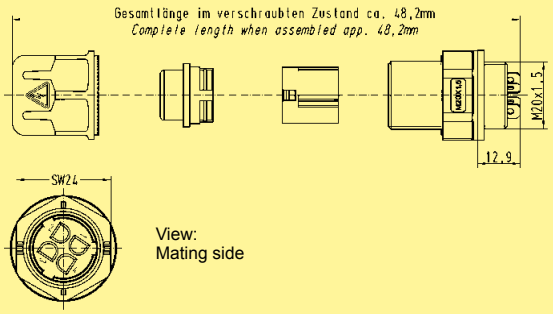
Materials

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

HARAX® Pg 13.5 / M20 Panel feed-through





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		

Further information and data sheets see www.HARTING.com

M12 INOX

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**

General data

Conductor cross section	0.34 - 0.75 mm² AWG 22 - 18	0.14 - 0.75 mm² 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

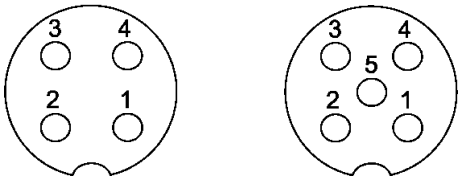
Materials

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

M12 INOX



Mating faces



A-coding
4 poles

A-coding
5 poles

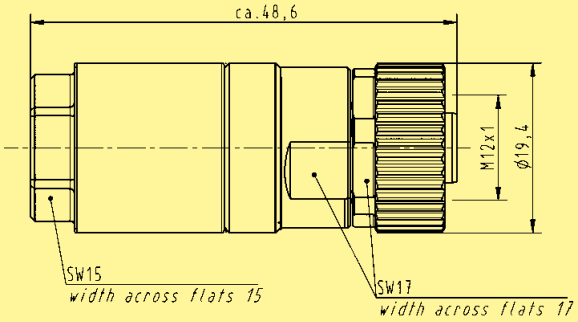
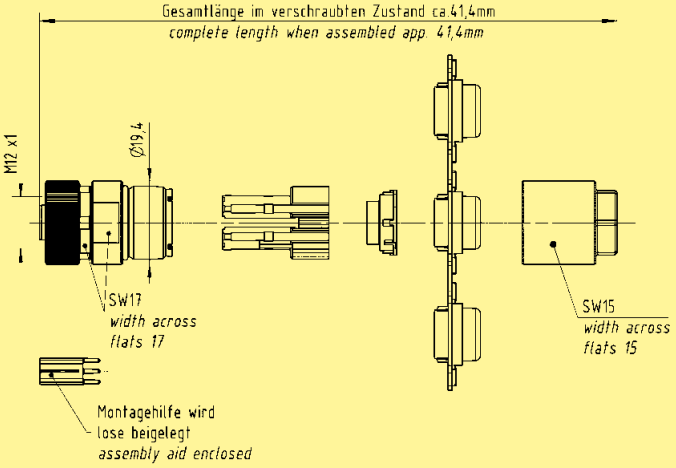
Mating faces acc. to IEC 61076-2-101

RoHS

Applications / Advantages

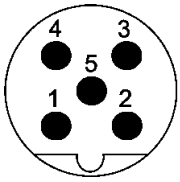
- Designed for rough outdoor applications in harsh environments
- Material V4A
- Available with crimp resp. *HARAX*® rapid termination
- Extreme robust design, quick assembly

07

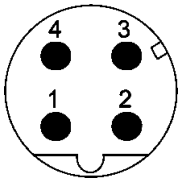
Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12-L INOX  Female, A-coding, straight version 4 poles	21 03 222 2435		
M12-L Crimp INOX  Female, A-coding, straight version 5 poles	21 03 822 2535		



Mating faces



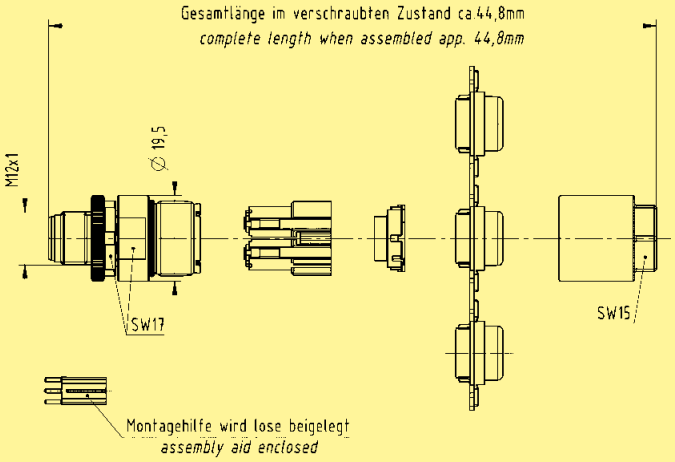
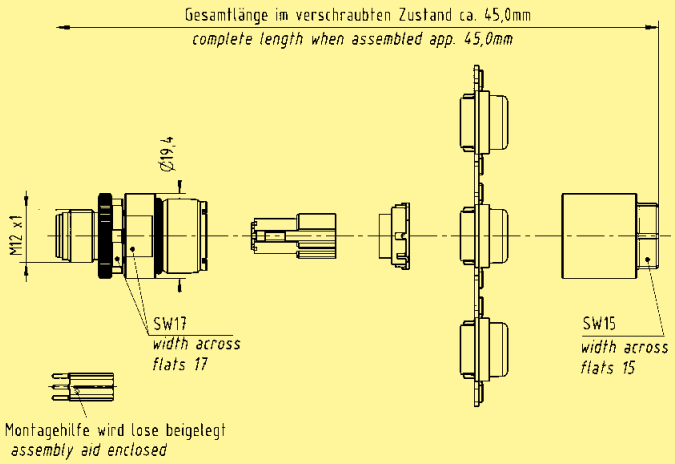
B-coding



D-coding

Mating faces acc. to IEC 61076-2-101

RoHS

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		

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