



# AM series

M12 cylindrical inductive sensors



M12 cylindrical

## features

- Wide range of models: standard, short body, long distance
- Output: cable, M12 and M8 plug cable exit
- Models with 2, 3 wires
- ATEX models, cat. 3, available on request



## web contents



- Application notes
- Photos
- Catalogue / Manuals



## code description (\*)

			AM	1	/	A	P	-	1	A
series	AM	M12 inductive proximity switch								
housing	1	Standard body								
	6	Short body								
output state	A	NO output state								
	C	NC output state								
output logic	N	NPN logic output								
	0	2 wires version								
	P	PNP logic output								
distance	1	Shielded standard 2 mm								
	2	Unshielded standard 4 mm								
	3	Long distance shielded 4 mm								
	4	Unshielded long distance 8 mm								
connect.	A	Axial cable exit								
	C	Right angle cable exit								
	F	M8 plug cable exit								
	H	M12 plug cable exit								

(\*) ATEX models available, contact our Sales Dept. for further information.

## available models

diameter	installation	distance	connection	distance (mm)	NPN/NO	PNP/NO	NPN/NC	PNP/NC
M12	shielded	standard	cable	2	AM1/AN-1A	AM1/AP-1A	AM1/CN-1A	AM1/CP-1A
			cable 90°		AM1/AN-1C	AM1/AP-1C	AM1/CN-1C	AM1/CP-1C
			M8		AM1/AN-1F	AM1/AP-1F	AM1/CN-1F	AM1/CP-1F
			M12		AM1/AN-1H	AM1/AP-1H	AM1/CN-1H	AM1/CP-1H
	unshielded	standard	cable	4	AM1/AN-2A	AM1/AP-2A	AM1/CN-2A	AM1/CP-2A
			cable 90°		AM1/AN-2C	AM1/AP-2C	AM1/CN-2C	AM1/CP-2C
			M8		AM1/AN-2F	AM1/AP-2F	AM1/CN-2F	AM1/CP-2F
			M12		AM1/AN-2H	AM1/AP-2H	AM1/CN-2H	AM1/CP-2H
	shielded	long distance	cable	8	AM1/AN-3A	AM1/AP-3A	AM1/CN-3A	AM1/CP-3A
			M12		AM1/AN-3H	AM1/AP-3H	AM1/CN-3H	AM1/CP-3H
			cable		AM1/AN-4A	AM1/AP-4A	AM1/CN-4A	AM1/CP-4A
			M12		AM1/AN-4H	AM1/AP-4H	AM1/CN-4H	AM1/CP-4H

## available models

## short housing

diameter	installation	distance	connection	distance (mm)	NPN/NO	PNP/NO	NPN/NC	PNP/NC
M12	shielded	standard	cable	2	AM6/AN-1A	AM6/AP-1A	AM6/CN-1A	AM6/CP-1A
			cable 90°		AM6/AN-1C	AM6/AP-1C	AM6/CN-1C	AM6/CP-1C
			M12		AM6/AN-1H	AM6/AP-1H	AM6/CN-1H	AM6/CP-1H
			cable		AM6/AN-2A	AM6/AP-2A	AM6/CN-2A	AM6/CP-2A
	unshielded	standard	cable 90°	4	AM6/AN-2C	AM6/AP-2C	AM6/CN-2C	AM6/CP-2C
			M12		AM6/AN-2H	AM6/AP-2H	AM6/CN-2H	AM6/CP-2H
			cable		AM6/AN-3A	AM6/AP-3A	AM6/CN-3A	AM6/CP-3A
			M12		AM6/AN-3H	AM6/AP-3H	AM6/CN-3H	AM6/CP-3H
	shielded	long distance	cable	8	AM6/AN-4A	AM6/AP-4A	AM6/CN-4A	AM6/CP-4A
			M12		AM6/AN-4H	AM6/AP-4H	AM6/CN-4H	AM6/CP-4H

## available models

## DC 2 wires models

diameter	installation	distance	connection	distance (mm)	NO - NPN/NO
M12	shielded	standard	cable	2	AM1/A0-1A
			M12		AM1/A0-1H
	unshielded	standard	cable	4	AM1/A0-2A
			M12		AM1/A0-2H
	shielded	long distance	cable	8	AM1/A0-3A
			M12		AM1/A0-3H
	unshielded	long distance	cable	8	AM1/A0-4A
			M12		AM1/A0-4H



	AM*/**/-1*	AM*/**/-2*	AM*/**/-3*	AM*/**/-4*
nominal sensing distance Sn	2 mm	4 mm	4 mm	8 mm
operating distance	0...1.6 mm	0...3.2 mm	0...3.2 mm	0...6.4 mm
hysteresis	1...20%			
standard target	12x12 mm FE 360			24x24 mm FE 360
repeatability	5% UB 20-30 V Ta = 23°C ± 5°C			
operating voltage	10...30 Vdc			
max ripple content	≤ 10%			
output type	NPN or PNP - NO or NC (3 wires models), NPN/PNP - NO (2 wires models)			
output current	≤ 200 mA ( 3...100 mA for 2 wires versions)			
output voltage drop	≤ 1.8 V @ 200 mA (2,8 V @ 100 mA for 2 wires versions)			
no-load supply current	10 mA			
leakage current	10 µA (0.8 mA for 2 wires versions)			
switching frequency	2 kHz (1.5 kHz for 2 wires)		2 kHz (750 Hz for 2 wires)	
power on delay	50 ms			
ambient temperature range	-25...+70 °C			
temperature drift of Sr	10%			
short-circuit protection	●			
voltage reversal protection	●			
induction protection	●			
shocks and vibrations	IEC/EN60947-5-2			
weight	30 g connector (20 g short body) 70 g cable (60 g short body)			
LEDs	yellow LED output state			
protection degree	IP67 <sup>(1)</sup> ( EN60529 )			
EMC	in conformity with the EMC Directive, according to IEC 60947-5-2			
housing material	nickel-plated brass			
active head material	PBT			
connection	cable 2 m PVC - plug M8 or M12			
tightening torque	10 Nm			

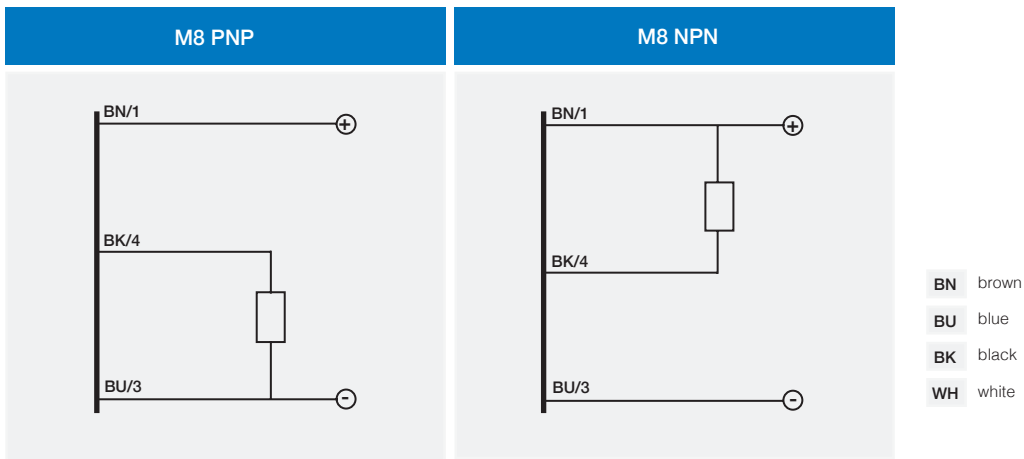
<sup>(1)</sup>Protection guaranteed only with plug cable wall mounted

## correction factors

code	steel FE 360	copper	alluminium	brass	stainless steel
AM*/**-1*	1	0.22	0.31	0.41	0.77
AM*/**-2*		0.41	0.47	0.56	1.15
AM*/**-3*		0.33	0.4	0.5	1.05
AM*/**-4*		0.41	0.46	0.52	0.71
AM*/0-1*		0.3	0.35	0.5	0.8
AM*/0-2*		0.52	0.57	0.62	0.87
AM*/A0-3*		0.42	0.47	0.55	0.8

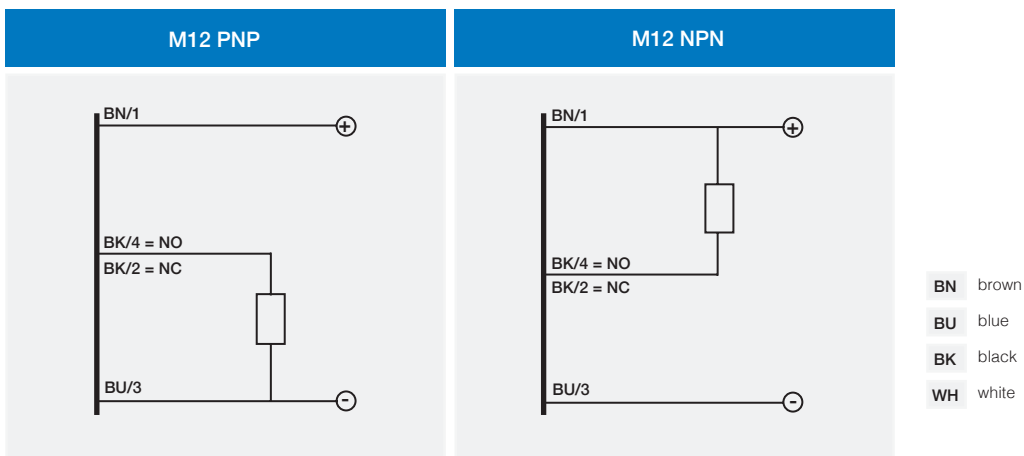
## electrical diagrams of connections

3 wires versions



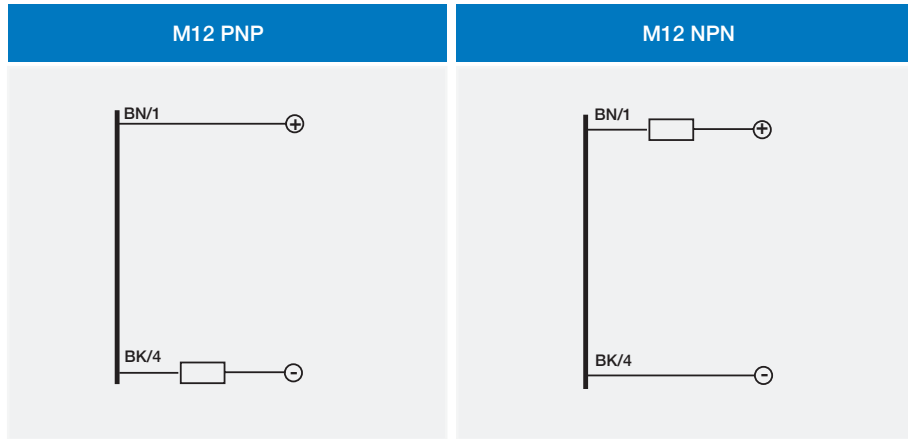
## electrical diagrams of connections

3 wires versions



# electrical diagrams of connections

2 wires versions



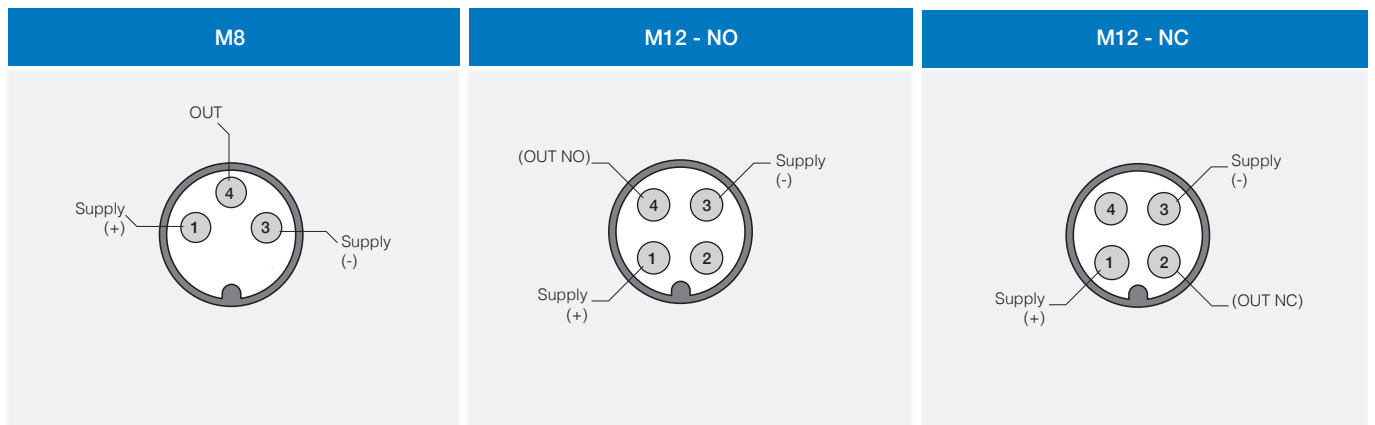
- BN** brown
- BU** blue
- BK** black
- WH** white



M12 cylindrical

## plug

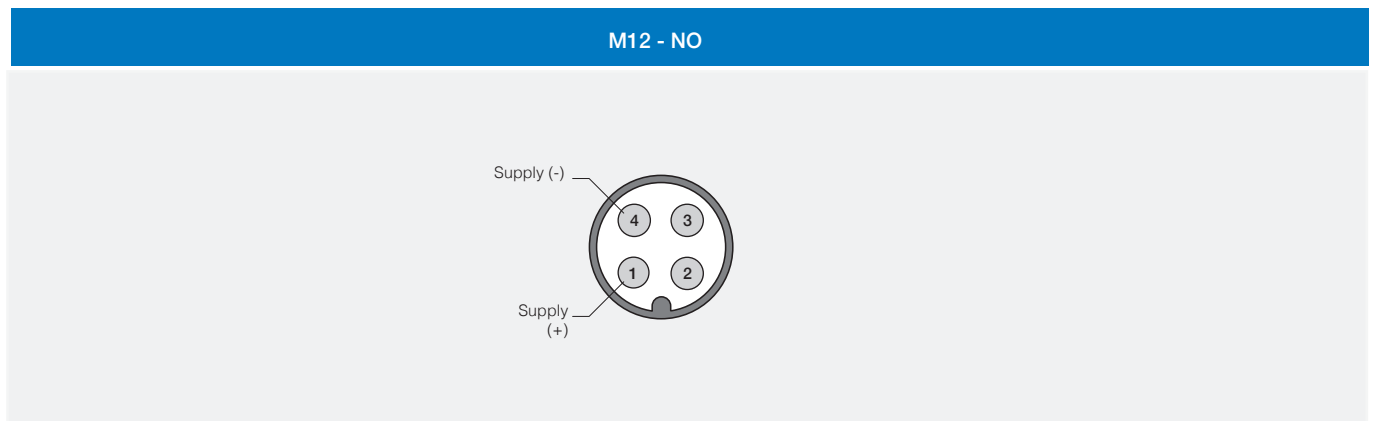
3 wires versions



Connectors CD series

## plug

2 wires versions



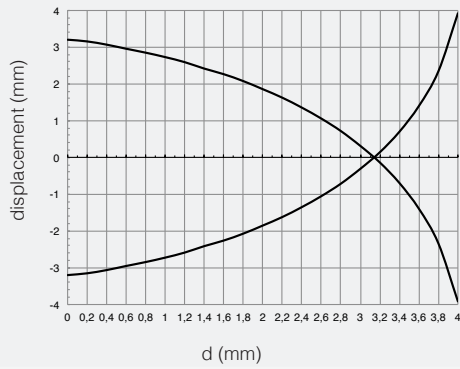
Connectors CD series



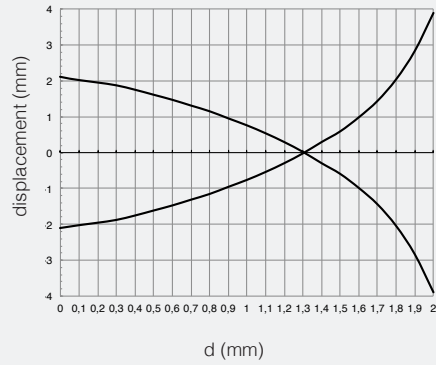
# response diagram

M12 cylindrical

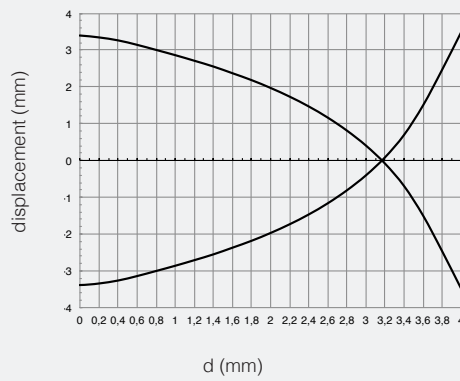
AM\*/\*\*-2\* parallel displacement



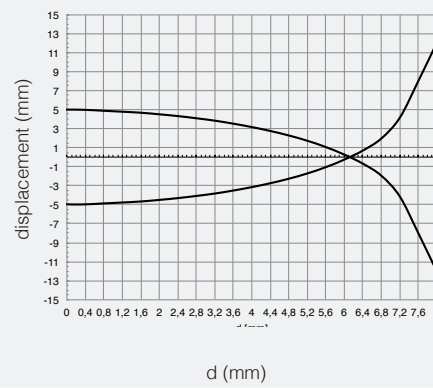
AM6/\*\*-1\* parallel displacement



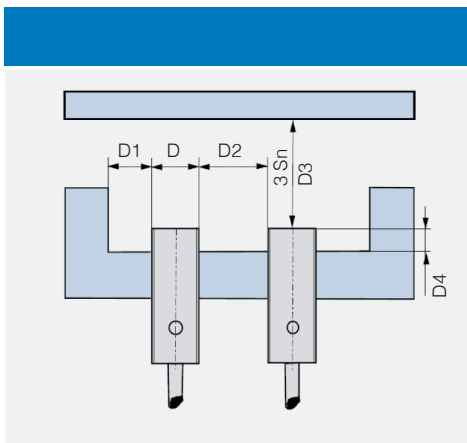
AM\*/\*\*-3\* parallel displacement



AM\*/\*\*-4\* parallel displacement



## installation



code	D4	D1	D2	D3
AM1/**-1*	≥ 0 mm	≥ 6 mm	≥ 12 mm	≥ 6 mm
AM1/**-2*	≥ 6 mm <sup>(1)</sup>	≥ 12 mm	≥ 24 mm	≥ 12 mm
AM1/**-3*	≥ 2 mm <sup>(2)</sup>	> 6 mm	≥ 12 mm	≥ 12 mm
AM1/**-4*	≥ 8 mm	≥ 12 mm	> 24 mm	≥ 24 mm
AM1/*0-1*	≥ 2.4 mm	≥ 6 mm	≥ 12 mm	≥ 6 mm
AM1/*0-2*	≥ 8 mm	≥ 12 mm	≥ 24 mm	≥ 12 mm
AM1/*0-3*	≥ 2.4 mm	≥ 6 mm	≥ 12 mm	≥ 12 mm
AM1/*0-4*	≥ 16 mm	≥ 12 mm	≥ 24 mm	≥ 24 mm
AM6/**-1*	≥ 0 mm	≥ 6 mm	≥ 12 mm	≥ 6 mm
AM6/**-2*	≥ 6 mm <sup>(3)</sup>	≥ 12 mm	≥ 24 mm	≥ 12 mm
AM6/**-3*	≥ 1.2 mm	> 6 mm	≥ 12 mm	≥ 12 mm
AM6/**-4*	≥ 8 mm	≥ 12 mm	> 24 mm	≥ 24 mm

<sup>(1)</sup> ≥ 0.6 mm for non magnetic material

<sup>(2)</sup> ≥ 0.8 mm for non magnetic material

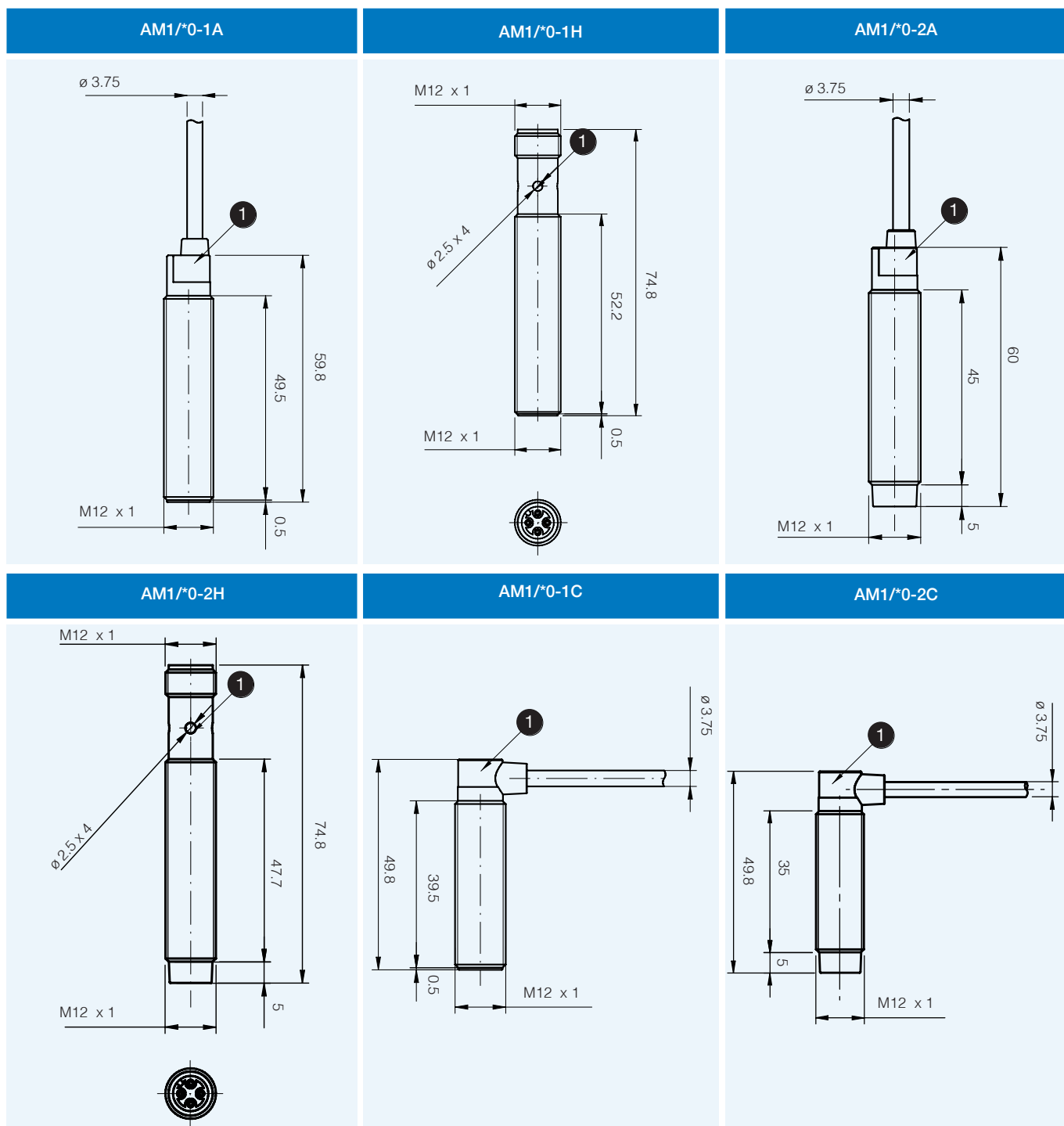
<sup>(3)</sup> ≥ 2 mm for non magnetic material

AM

# dimensions (mm)



M12 cylindrical



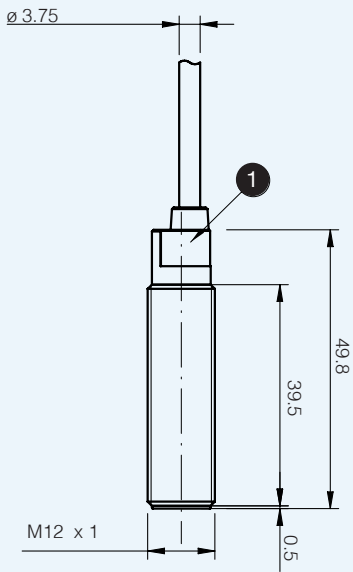
1 LED

AM

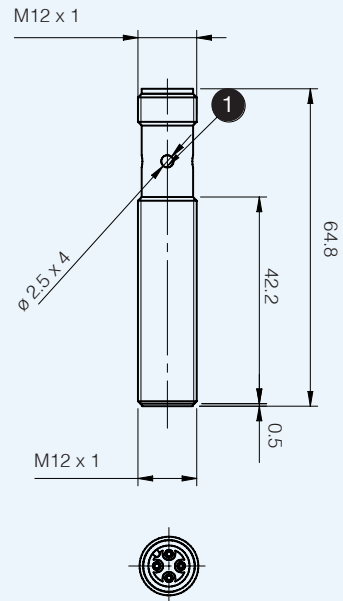
dimensions (mm)

M12 cylindrical

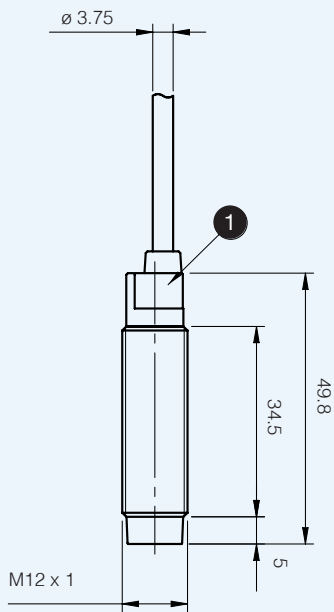
AM1/\*\*-1A  
AM1/\*\*-3A



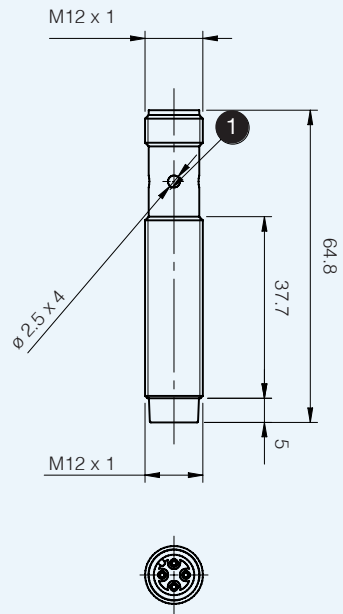
AM1/\*\*-1H  
AM1/\*\*-3H



AM1/\*\*-2A  
AM1/\*\*-4A



AM1/\*\*-2H  
AM1/\*\*-4H

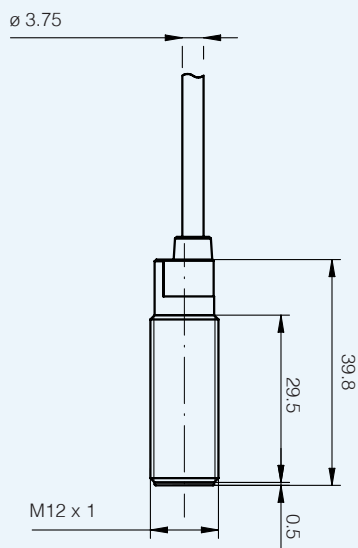


1 LED

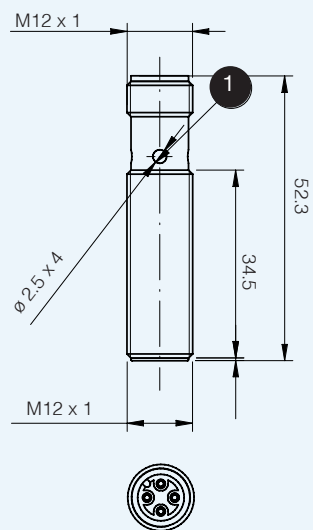




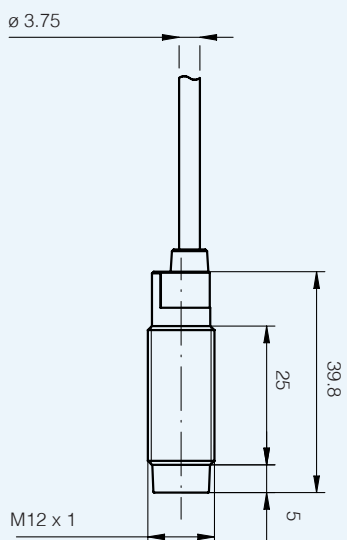
AM6/\*\*-1A  
AM6/\*\*-3A



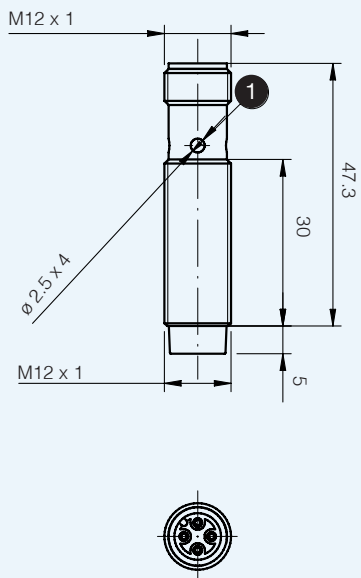
AM6/\*\*-1H  
AM6/\*\*-3H



AM6/\*\*-2A  
AM6/\*\*-4A



AM6/\*\*-2H  
AM6/\*\*-4H



1

