AM series

M12 cylindrical inductive sensors

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
	B	NO + NC complementary 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

standard housing

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		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		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
	unshielded		cable	8	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
	unshielded		cable	4	AM6/AN-2A	AM6/AP-2A	AM6/CN-2A	AM6/CP-2A
			cable 90°		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
	shielded	long distance	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
	unshielded		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/PNP
M12	shielded	standard	cable	2	AM1/A0-1A
			M12		AM1/A0-1H
	unshielded		cable	4	AM1/A0-2A
			M12		AM1/A0-2H
	shielded	long distance	cable		AM1/A0-3A
			M12		AM1/A0-3H
	unshielded		cable	8	AM1/A0-4A
			M12		AM1/A0-4H

available models

4 wires models

diameter	installation	distance	connection	distance (mm)	short housing		standard housing	
					NPN/NO+NC	PNP/NO+NC	NPN/NO+NC	PNP/NO+NC
M12	shielded	standard	cable	2	AM6/BN-1A	AM6/BP-1A	AM1/BN-1A	AM1/BP-1A
			M12		AM6/BN-1H	AM6/BP-1H	AM1/BN-1H	AM1/BP-1H
	unshielded		cable	4	AM6/BN-2A	AM6/BP-2A	AM1/BN-2A	AM1/BP-2A
			M12		AM6/BN-2H	AM6/BP-2H	AM1/BN-2H	AM1/BP-2H
	shielded	long distance	cable		AM6/BN-3A	AM6/BP-3A	AM1/BN-3A	AM1/BP-3A
			M12		AM6/BN-3H	AM6/BP-3H	AM1/BN-3H	AM1/BP-3H
	unshielded		cable	8	AM6/BN-4A	AM6/BP-4A	AM1/BN-4A	AM1/BP-4A
			M12		AM6/BN-4H	AM6/BP-4H	AM1/BN-4H	AM1/BP-4H

technical specification

	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
repeatibility	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), NPN or PNP - NO+ NC (4 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[1] (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			

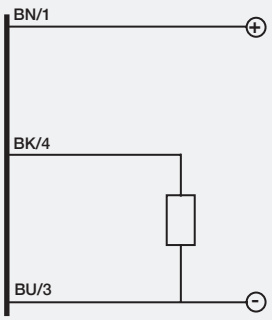
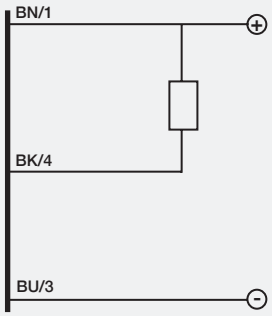
[1] Protection guaranteed only with plug cable wall mounted

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

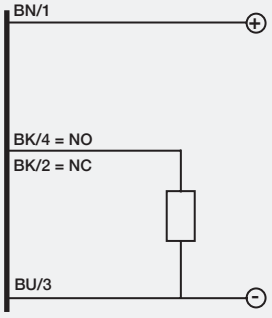
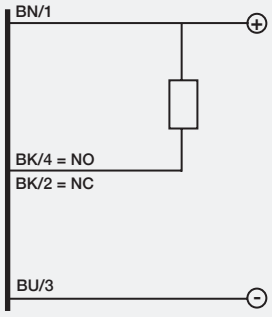
3 wires versions

M8 PNP	M8 NPN
	

BN	brown
BU	blue
BK	black
WH	white

electrical diagrams of connections

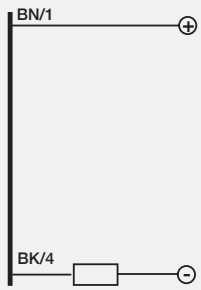
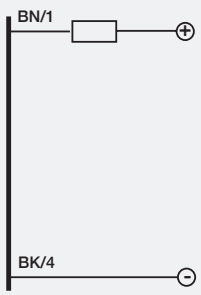
3 wires versions

M12 PNP	M12 NPN
	

BN	brown
BU	blue
BK	black
WH	white

electrical diagrams of connections

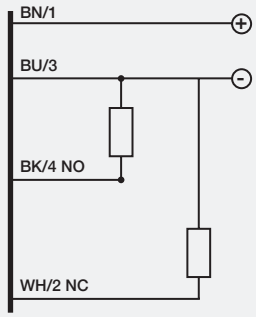
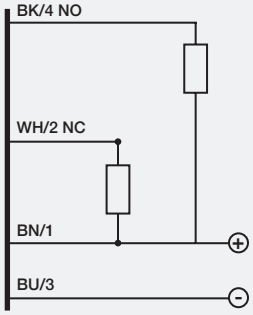
2 wires versions

M12 PNP	M12 NPN
	

BN	brown
BU	blue
BK	black
WH	white

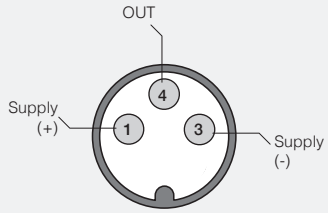
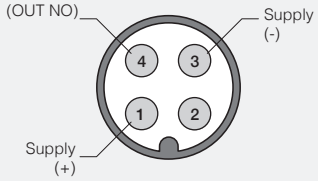
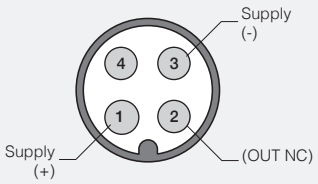
electrical diagrams of connections

4 wires versions

PNP - NO + NC	NPN - NO + NC
	

plug

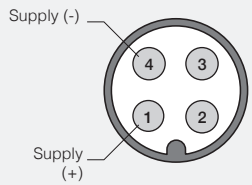
3 wires versions

M8	M12 - NO	M12 - NC
		

Connectors CD series

plug

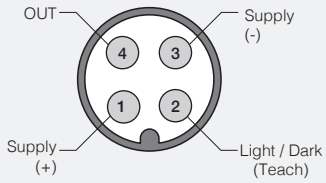
2 wires versions

M12 - NO


Connectors CD series

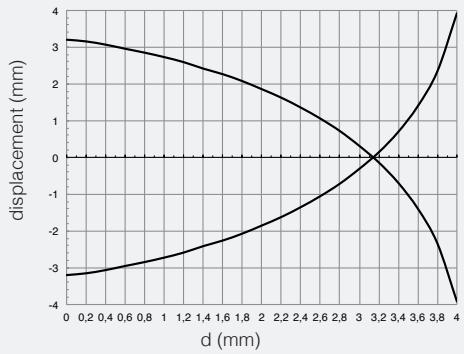
plug

4 wires versions

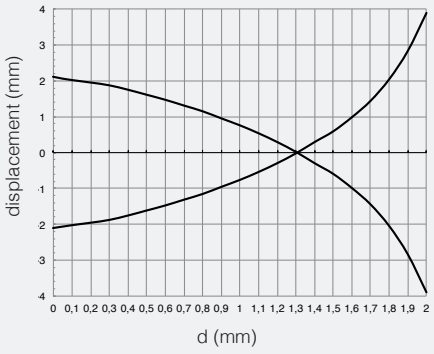
M12 - NO


response diagram

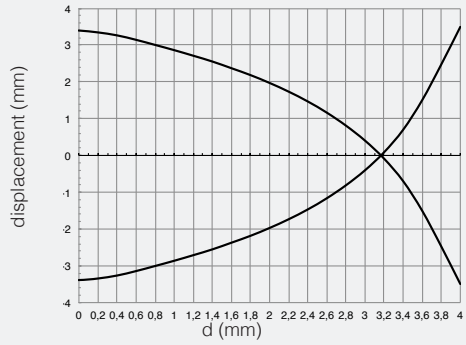
AM*/**-2* parallel displacement



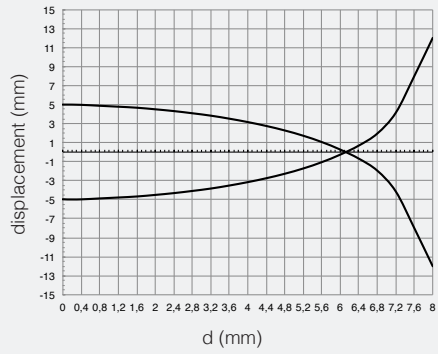
AM6/**-1* parallel displacement



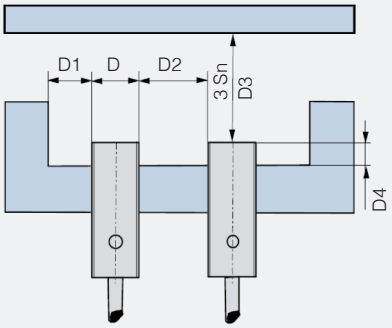
AM*/**-3* parallel displacement



AM*/**-4* parallel displacement



installation

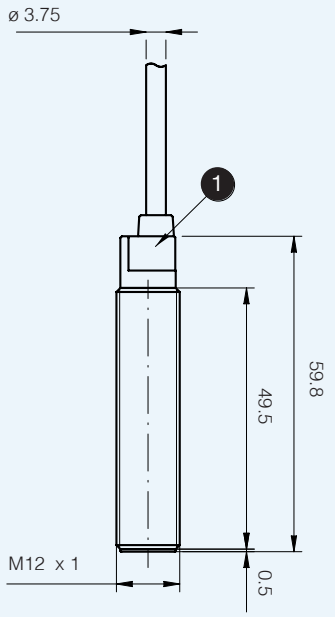


code	D4	D1	D2	D3
AM1/**-1*	≥ 0 mm	≥ 6 mm	≥ 12 mm	≥ 6 mm
AM1/**-2*	≥ 6 mm (1)	≥ 12 mm	≥ 24 mm	≥ 12 mm
AM1/**-3*	≥ 2 mm (2)	> 6 mm	≥ 12 mm	
AM1/**-4*	≥ 8 mm	≥ 12 mm	> 24 mm	≥ 24 mm
AM1/*0-1*	≥ 2.4 mm	≥ 6 mm	≥ 12 mm	≥ 6 mm
AM1/*0-2*	≥ 8 mm	≥ 12 mm	≥ 24 mm	≥ 12 mm
AM1/*0-3*	≥ 2.4 mm	≥ 6 mm	≥ 12 mm	
AM1/*0-4*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

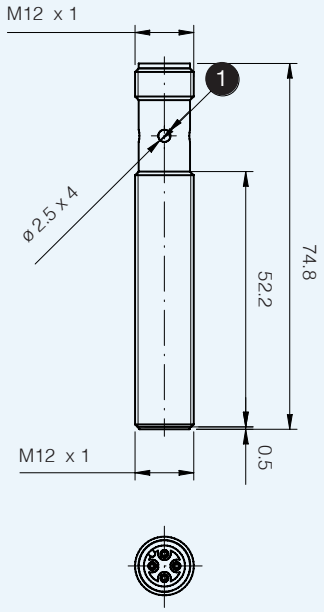
(1) ≥ 0.6 mm for non magnetic material
(2) ≥ 0.8 mm for non magnetic material
(3) ≥ 2 mm for non magnetic material

dimensions (mm)

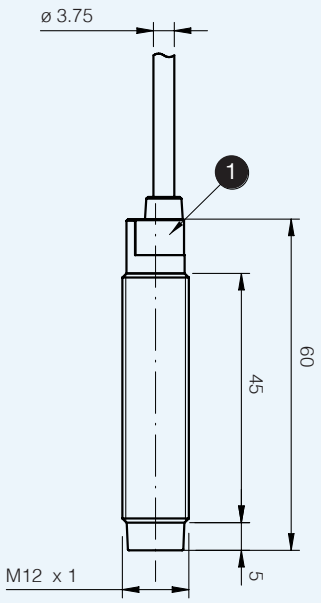
AM1/*0-1A



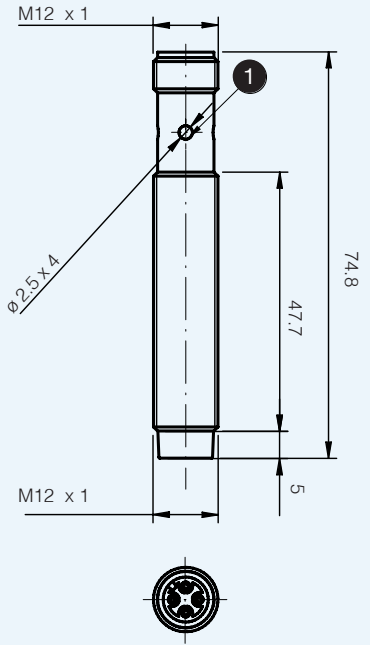
AM1/*0-1H



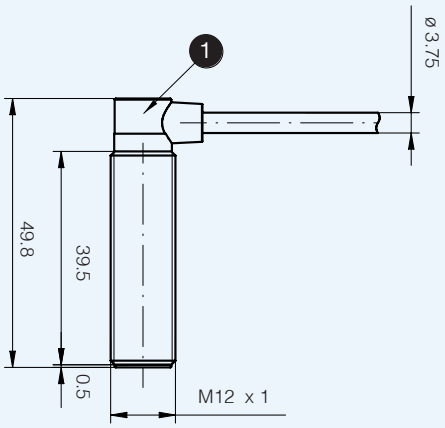
AM1/*0-2A



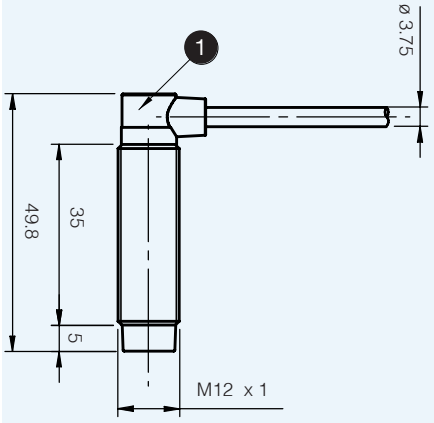
AM1/*0-2H



AM1/*0-1C



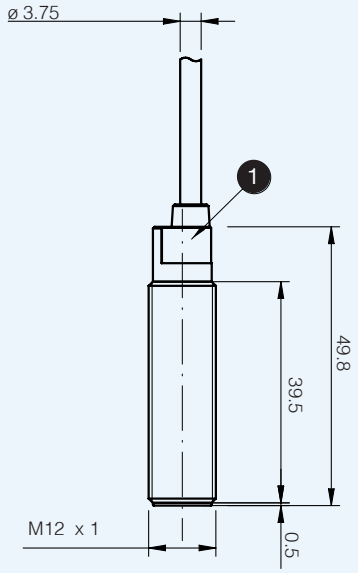
AM1/*0-2C



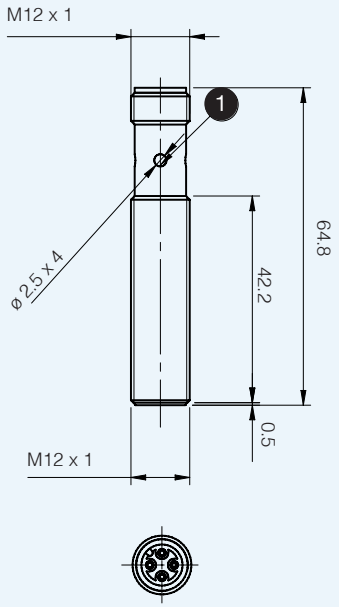
1 LED

dimensions (mm)

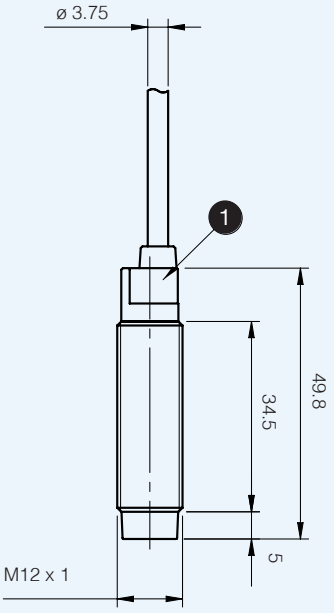
AM1/**-1A
AM1/**-3A



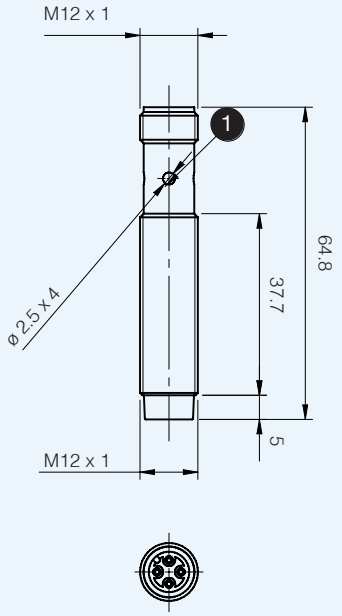
AM1/**-1H
AM1/**-3H



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



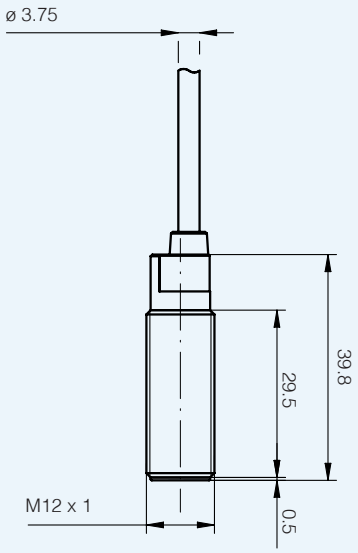
AM1/**-2H
AM1/**-4H



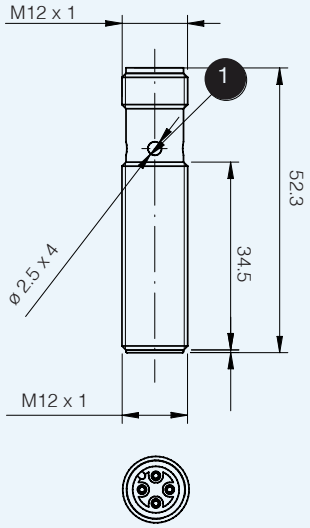
1 LED

dimensioni (mm)

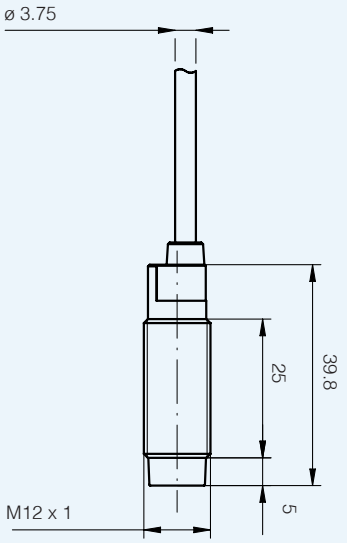
AM6/-1A**
AM6/-3A**



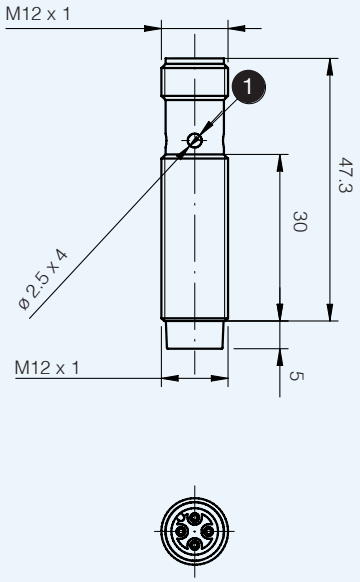
AM6/-1H**
AM6/-3H**



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



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



1

dimensions (mm)

accessories included

