

# M12 Inductive DC Proximity Switches AM1/AM6



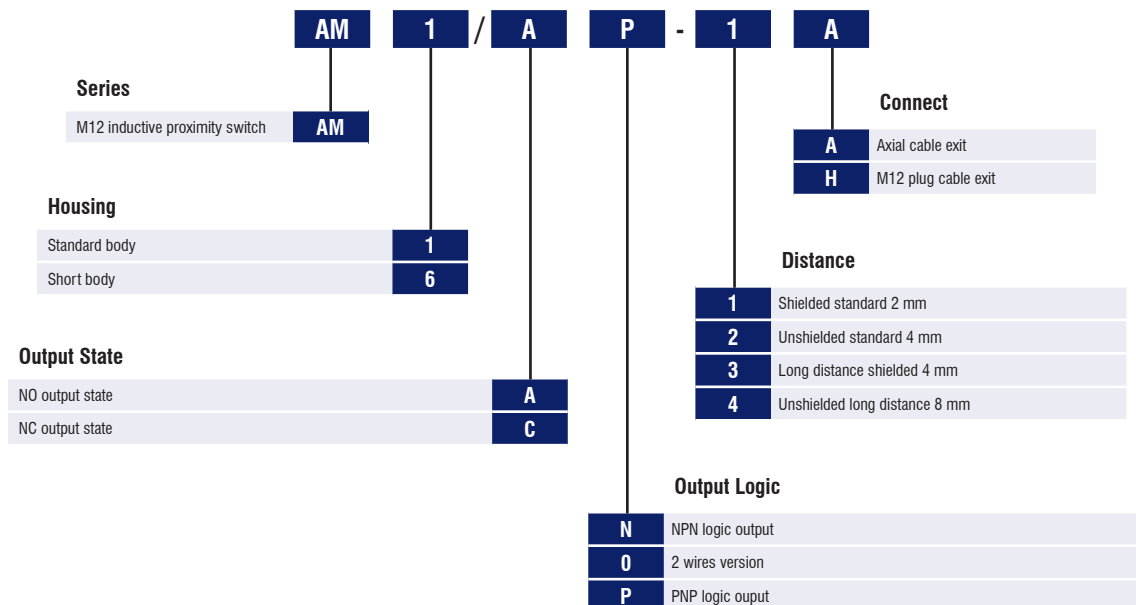
Compact inductive proximity switches for DC operation

- Wide range of models: standard, short body, long distance
- Shielded and unshielded models
- Output: cable, M12 and M8 plug cable exit
- Models with 2, 3 wires
- IP67 nickel-plated brass housing
- Short-circuit protection
- LED status indicator 360° visible
- 2 wire DC (AM1)
- Additional cable exit options available
- Nominal sensing range: Shielded 2mm
- Unshielded 4mm
- Long distance: Shielded 4mm
- Unshielded 8mm
- UL and CUL approved



## Options and Ordering Codes

Note: The feasibility of a code number does not mean the effective availability of a product



**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
			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
			M12		AM1/AN-2H	AM1/AP-2H	AM1/CN-2H	AM1/CP-2H
	Shielded	Long Distance	Cable	4	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
			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
			M12		AM6/AN-2H	AM6/AP-2H	AM6/CN-2H	AM6/CP-2H
	Shielded	Long Distance	Cable	4	AM6/AN-3A	AM6/AP-3A	AM6/CN-3A	AM6/CP-3A
			M12		AM6/AN-3H	AM6/AP-3H	AM6/CN-4A	AM6/CP-4A
	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	4	AM1/A0-3A
			M12		AM1/A0-3H
	Unshielded		Cable	8	AM1/A0-4A
			M12		AM1/A0-4H

**Technical Specification**

	AM*/**-1*	AM*/**-2*	AM*/**-3*	AM*/**-4*
				
Nominal sensing distance S <sub>n</sub>	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 T <sub>a</sub> = 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	10µA (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 S <sub>r</sub>	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			

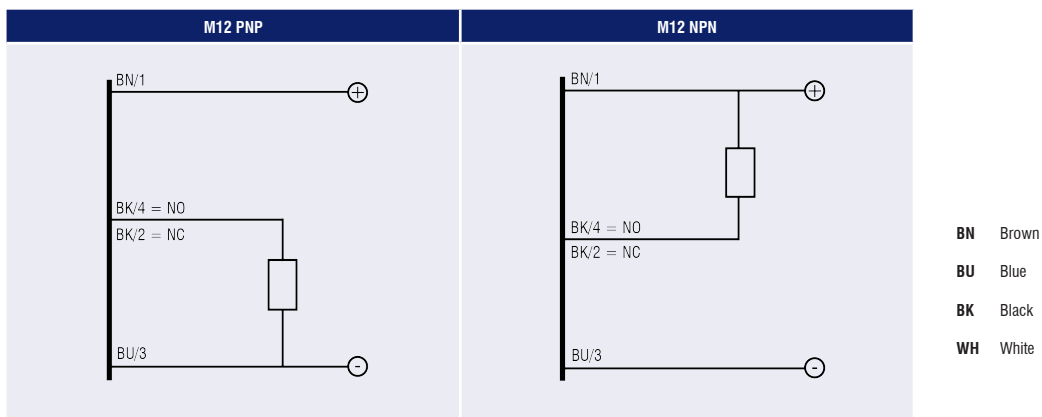
<sup>(1)</sup> Protection guaranteed only with plug cable well mounted

**Correction Factors**

Code	Steel FE 360	Copper	Aluminium	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

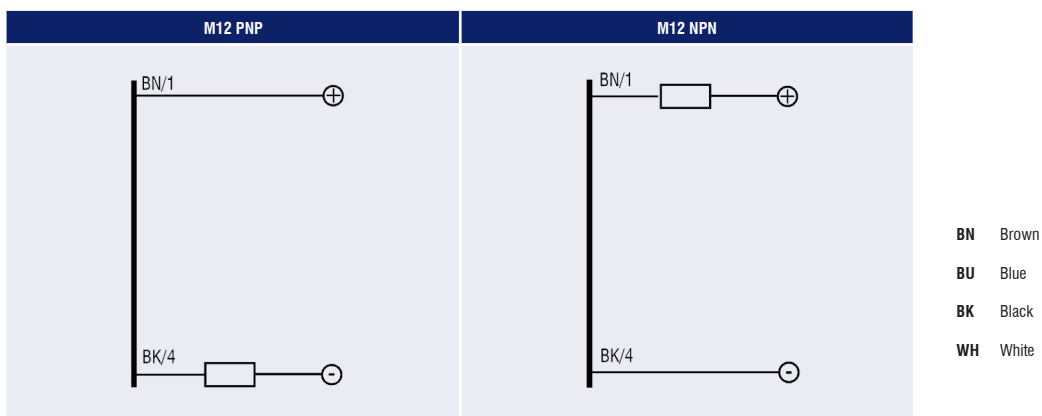
**Electrical Diagrams Of Connections**

**3 Wires Versions**



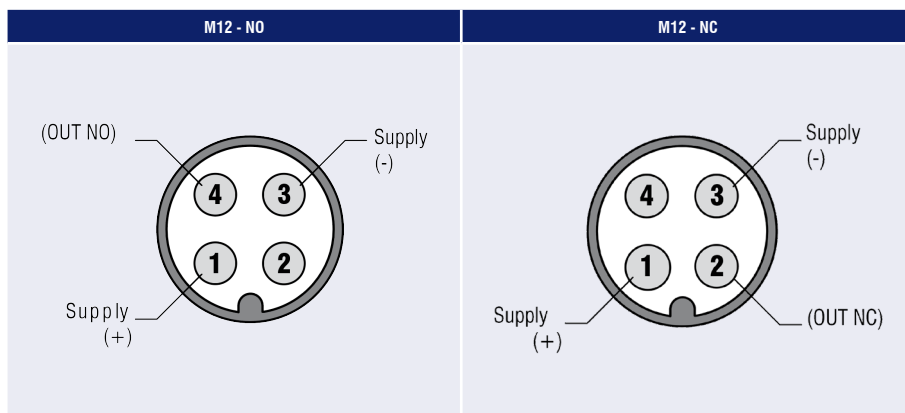
**Electrical Diagrams Of Connections**

**2 Wires Versions**



## Plug

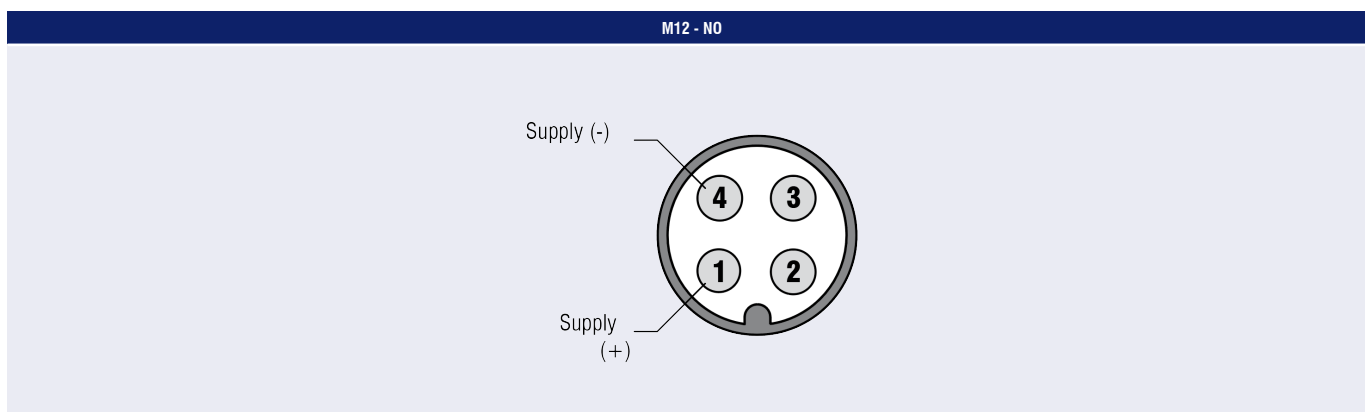
### 3 Wires Versions



Connectors M12F Series

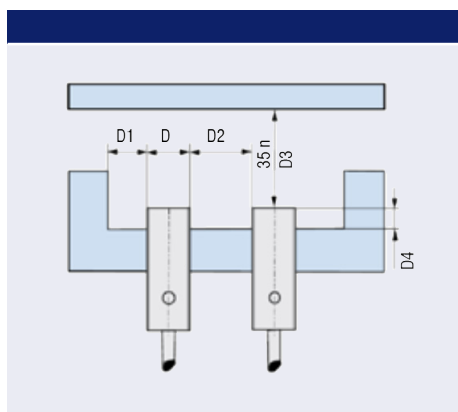
## Plug

### 2 Wires Versions



Connectors M12F Series

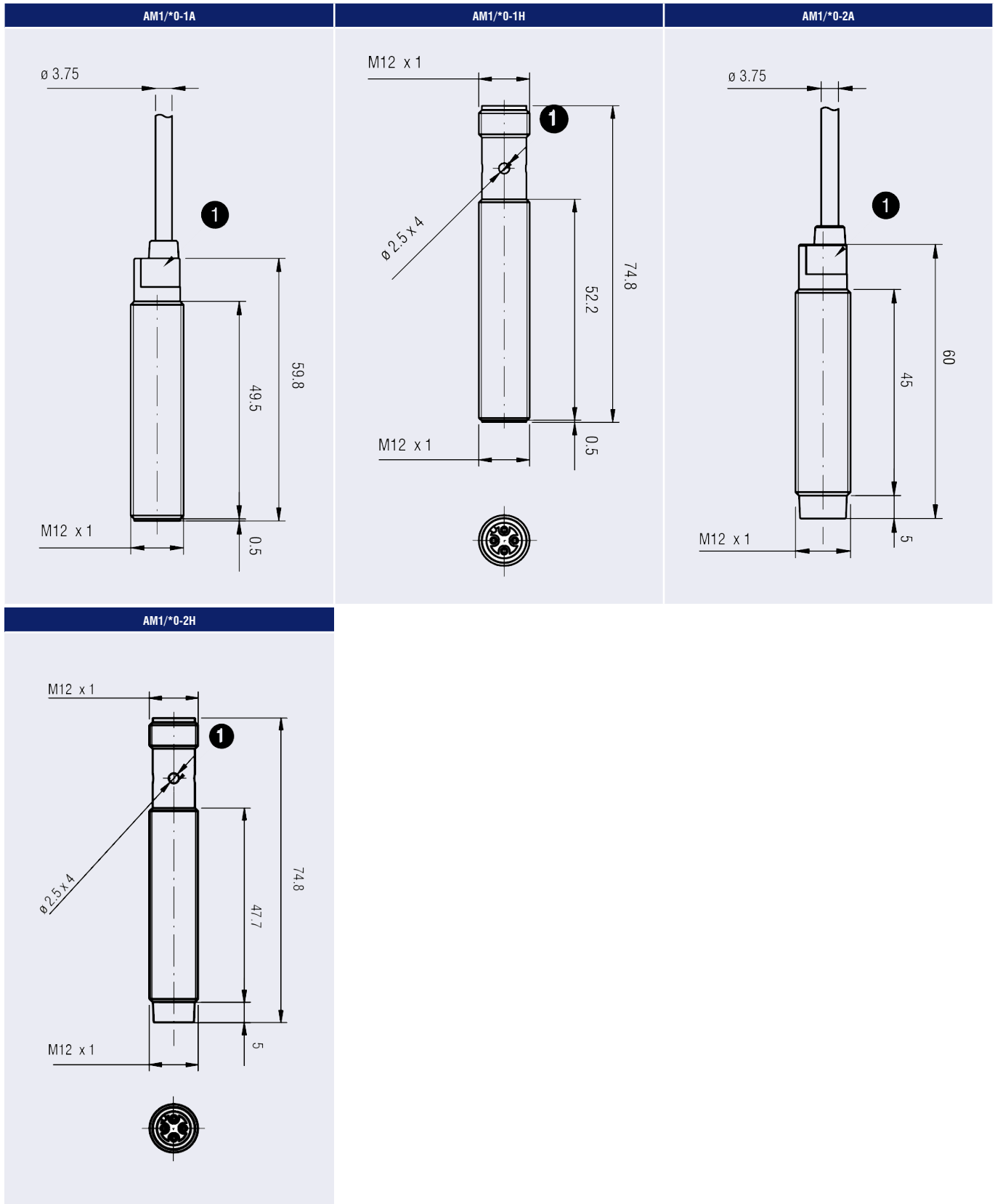
## Installation



Code	D4	D1	D2	D3
AM*/**~1*	≥ 0 mm	≥ 6 mm	≥ 12 mm	≥ 6 mm
AM*/**~2*	≥ 1.2 mm	≥ 12 mm	≥ 24 mm	≥ 12 mm
AM*/**~3*	≥ 12 mm <sup>(1)</sup>	> 7 mm	≥ 12 mm	
AM*/**~4*	≥ 8 mm	≥ 12 mm	> 27 mm	≥ 24 mm
AM*/~0-1*	≥ 2.4 mm	≥ 6 mm	≥ 12 mm	≥ 6 mm
AM*/~0-2*	≥ 8 mm	≥ 12 mm	≥ 24 mm	≥ 12 mm
AM*/A0-3*	≥ 2.4 mm	≥ 6 mm	≥ 12 mm	
AM*/A0-4*	≥ 16 mm	≥ 12 mm	≥ 24 mm	≥ 24 mm

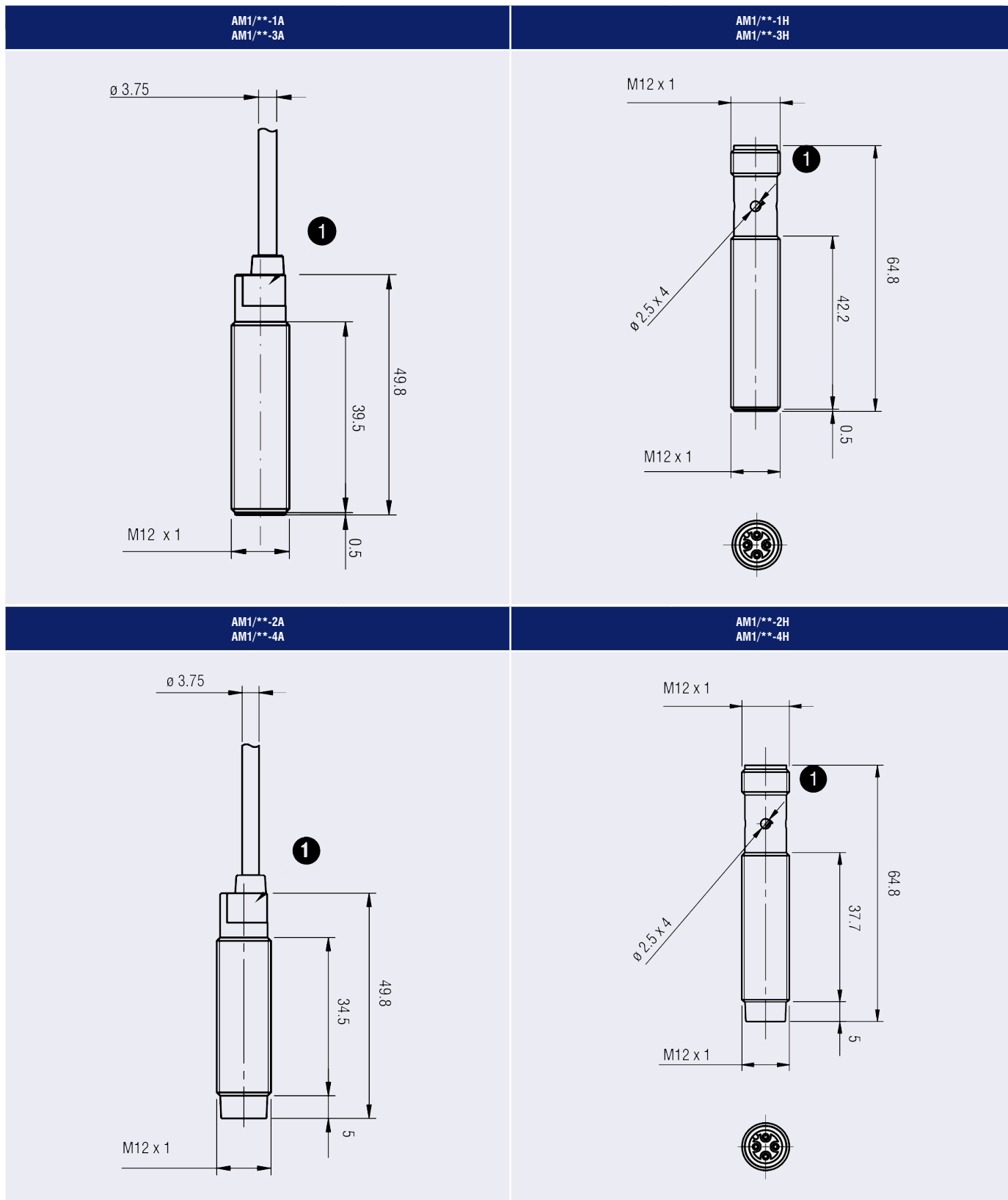
<sup>(1)</sup> ≥ 2 mm for non magnetic material

Dimensions (mm)



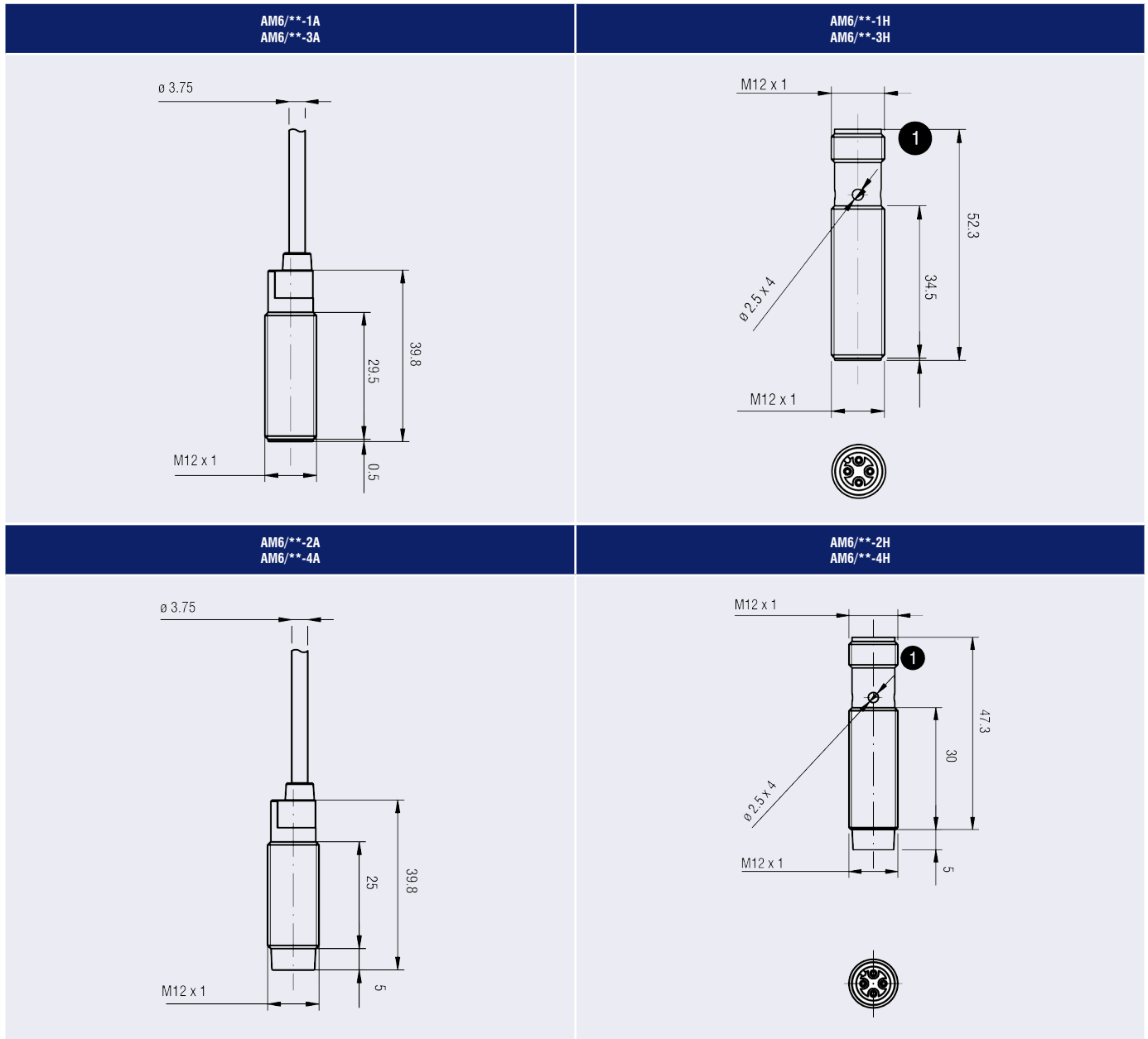
1 LED

Dimensions (mm)



1 LED

Dimensions (mm)



1 LED

