



# AT series

M30 cylindrical inductive sensors



M30 cylindrical inductives

## features

- Wide range of models: standard, long distance
- Output: cable, M12 and plug cable exit
- Models with 2, 3, and 4 wires
- ATEX models, cat. 3, available on request
- Models with complementary output (NO + NC)
- Complete protection against electrical damages



## web contents



- Application notes
- Photos
- Catalogue / Manuals



## code description (\*)

	AT	1	/	A	P	-	1	A
series	AT	M30 inductive proximity switch						
housing	1	Standard body						
	6	Short body						
output state	A	NO output state						
	C	NC output state						
	B	NO+NC complementary output						
output logic	N	NPN logic output						
	0	2 wires version						
	P	PNP logic output						
distance	1	Shielded standard 10 mm						
	2	Unshielded standard 15 mm						
	3	Long distance shielded 15 mm						
	4	Long distance unshielded 20 mm						
connect.	A	Axial cable exit						
	B	Axial cable exit with tang						
	H	M12 plug cable exit						

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

## available models

### 4 wires standard housing

diameter	installation	distance	plug	distance (mm)	PNP/NO+NC
M30	shielded	standard	M12	10	AT1/BP-1H
	unshielded			15	AT1/BP-2H
	shielded	long distance		20	AT1/BP-3H
	unshielded			AT1/BP-4H	

## available models

### 3 wires standard housing

diameter	installation	distance	plug	distance (mm)	NPN/NO	NPN/NC	PNP/NO	PNP/NC	
M30	shielded	standard	cable with tang M12	10	AT1/AN-1A	AT1/CN-1A	AT1/AP-1A	AT1/CP-1A	
					AT1/AN-1B	AT1/CN-1B	AT1/AP-1B	AT1/CP-1B	
			AT1/AN-1H		AT1/CN-1H	AT1/AP-1H	AT1/CP-1H		
			AT1/AN-2A		AT1/CN-2A	AT1/AP-2A	AT1/CP-2A		
			AT1/AN-2B		AT1/CN-2B	AT1/AP-2B	AT1/CP-2B		
			AT1/AN-2H		AT1/CN-2H	AT1/AP-2H	AT1/CP-2H		
	unshielded	long distance	cable M12	15	AT1/AN-3A	AT1/CN-3A	AT1/AP-3A	AT1/CP-3A	
					AT1/AN-3H	AT1/CN-3H	AT1/AP-3H	AT1/CP-3H	
			cable M12		20	AT1/AN-4A	AT1/CN-4A	AT1/AP-4A	AT1/CP-4A
						AT1/AN-4H	AT1/CN-4H	AT1/AP-4H	AT1/CP-4H

## available models

### DC 2 wires models





diameter	installation	distance	plug	distance (mm)	NO	
M30	shielded	standard	cable M12	10	AT1/A0-1A	
					AT1/A0-1H	
			unshielded		cable M12	AT1/A0-2A
						AT1/A0-2H
	unshielded	long distance	cable M12		AT1/A0-3A	
					AT1/A0-3H	
			cable M12		AT1/A0-4A	
					AT1/A0-4H	

## available models

### short housing

diameter	plug	distance	installation	distance (mm)	NPN/NO	PNP/NO	NPN/NO+NC	PNP/NO+NC	
M30	cable	standard	shielded	10	AT6/AN-1A	AT6/AP-1A	AT6/BN-1A	AT6/BP-1A	
			unshielded	15	AT6/AN-2A	AT6/AP-2A	AT6/BN-2A	AT6/BP-2A	
			shielded		AT6/AN-3A	AT6/AP-3A	AT6/BN-3A	AT6/BP-3A	
			unshielded	20	AT6/AN-4A	AT6/AP-4A	AT6/BN-4A	AT6/BP-4A	
		M12	standard	shielded	10	AT6/AN-1H	AT6/AP-1H	AT6/BN-1H	AT6/BP-1H
				unshielded	15	AT6/AN-2H	AT6/AP-2H	AT6/BN-2H	AT6/BP-2H
			long distance	shielded		20	AT6/AN-3H	AT6/AP-3H	AT6/BN-3H
				unshielded	AT6/AN-4H		AT6/AP-4H	AT6/BN-4H	AT6/BP-4H



	AT <sup>*/**</sup> -1 <sup>*</sup>	AT <sup>*/**</sup> -2 <sup>*</sup>	AT <sup>*/**</sup> -3 <sup>*</sup>	AT <sup>*/**</sup> -4 <sup>*</sup>
nominal sending distance	 10 mm	 15 mm	 15 mm	 20 mm
operating distance	0...8.1 mm	0...12.1 mm	0...12.1 mm	0...16.2 mm
hysteresis	1...20%			
standard target	30 x 30 mm FE 360	45 x 45 mm FE 360	45 x 45 mm FE 360	60 x 60 mm FE 360
repeatability	5% U <sub>b</sub> 20-30 V Ta = 23°C ± 5°C			
operating voltage	10...30 Vdc			
output type	NPN or PNP - NO or NC (3 wires models), PNP - NO + NC (4 wires models), NPN/PNP - NO (2 wires models)			
max ripple content	≤ 10%			
output current	≤ 400 mA ( 3...100 mA for 2 wires versions)			
output voltage drop	≤ 1V @ 400 mA (2.8 V @ 100 mA for 2 wires versions)			
no-load supply current	20 mA			
leakage current	10 µA / 0,8 mA for 2 wires versions			
switching frequency	200 Hz / 100 Hz for 2 wires versions		200 Hz / 100 Hz for 2 wires versions	
power on delay	100 ms (50 ms for 2 wires versions)			
ambient temperature range	-25...+70 °C			
temperature drift of Sr	10%			
short-circuit protection	●			
voltage reversal protection	●			
induction protection	●			
shocks and vibrations	IEC 60947-5-2 / 7.4			
weight	150 g connector, 230 g cable			
LEDs	yellow LED output state			
protection degree	IP 67 <sup>(1)</sup> ( EN60529 )			
EMC	in conformity with the EMC Directive according to IEC 60947-5-2			
shocks and vibrations	IEC 60947-5-2			
housing material	nickel-plated brass			
active head material	PBT			
connection	cable 2 m PVC - plug M12			
tightening torque	50 Nm			

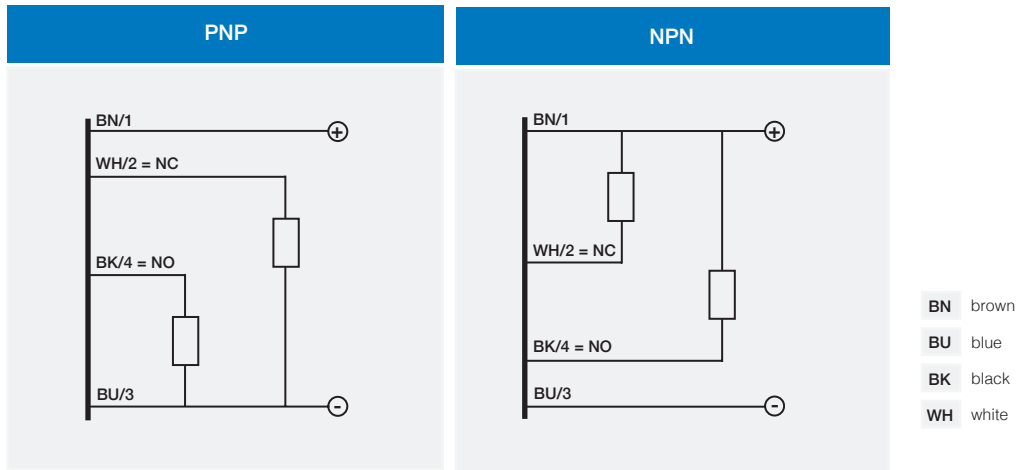
<sup>(1)</sup> Protection guaranteed only with plug cable well mounted.

## correction factors

code	steel FE 360	copper	alluminium	brass	stainless steel
AT1 <sup>*/**</sup> -1 <sup>*</sup>	1	0.35	0.45	0.50	0.75
AT1 <sup>*/**</sup> -2 <sup>*</sup>		0.45	0.50	0.55	0.80
AT1 <sup>*/**</sup> -3 <sup>*</sup>		0.35	0.45	0.50	0.70
AT1 <sup>*/**</sup> -4 <sup>*</sup>		0.45	0.50	0.55	0.75
AT6 <sup>*/**</sup> -1 <sup>*</sup>		0.41	0.47	0.52	0.84
AT6 <sup>*/**</sup> -2 <sup>*</sup>		0.44	0.49	0.53	0.80
AT6 <sup>*/**</sup> -3 <sup>*</sup>		0.41	0.47	0.52	0.80
AT6 <sup>*/**</sup> -4 <sup>*</sup>		0.46	0.50	0.54	0.78

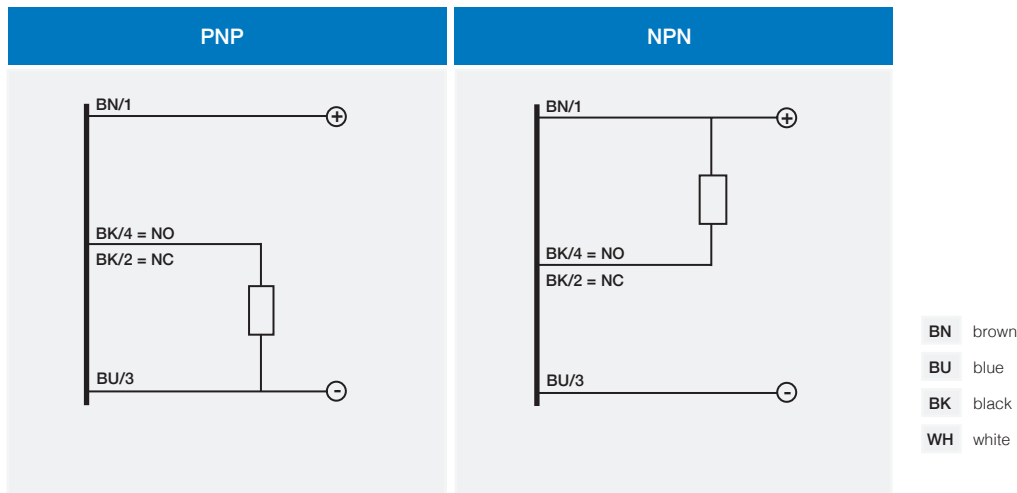
## electrical diagrams of connections

4 wires versions



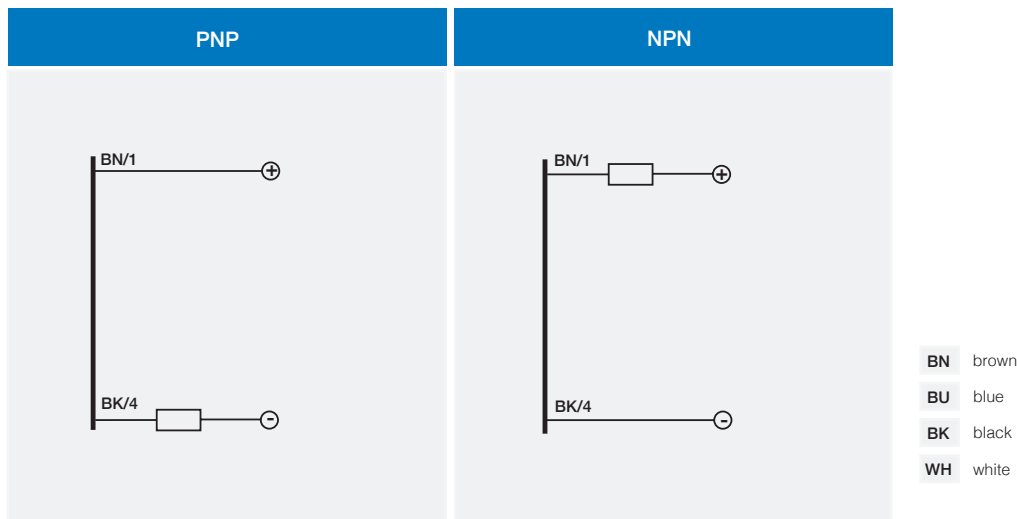
## electrical diagrams of connections

3 wires versions



## electrical diagrams of connections

2 wires versions



# plug

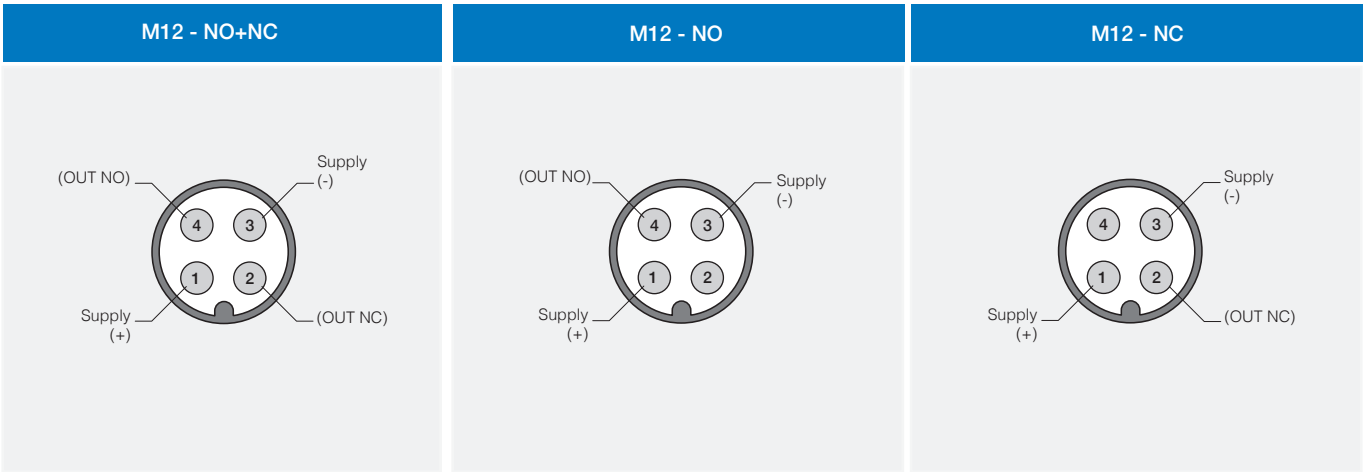
4 wires versions

# plug

3 wires versions

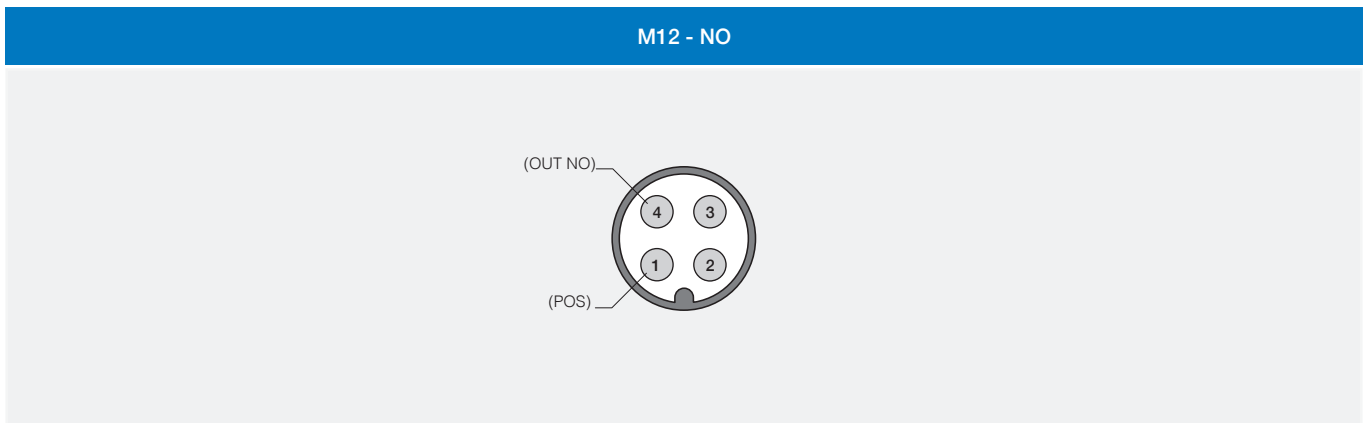


M30 cylindrical inductives

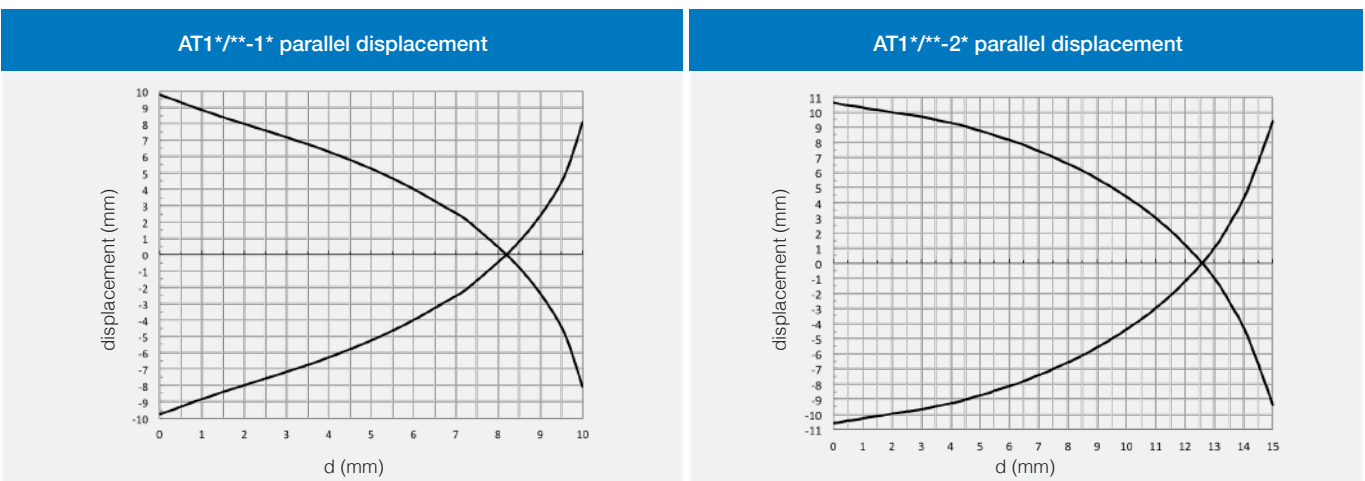


# plug

2 wires versions



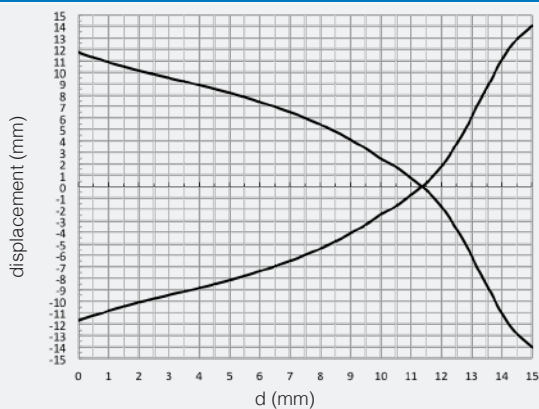
# response diagram



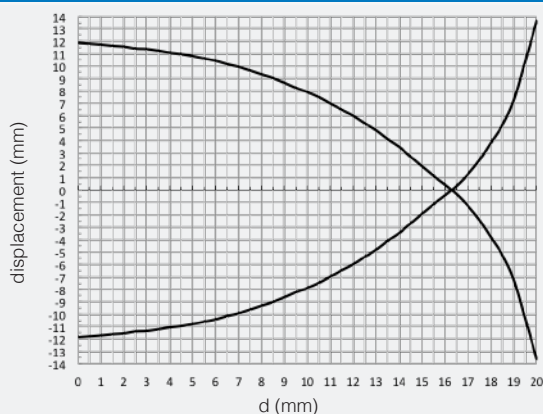
AT

## response diagram

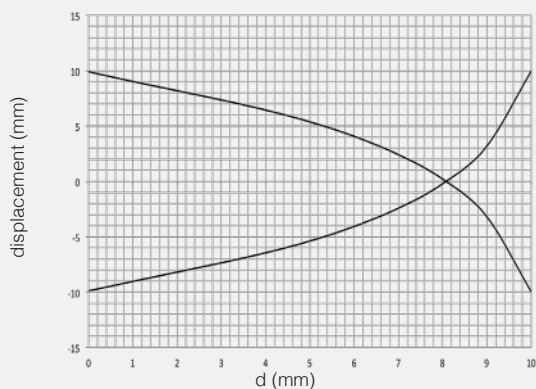
AT1/\*\*-3\* parallel displacement



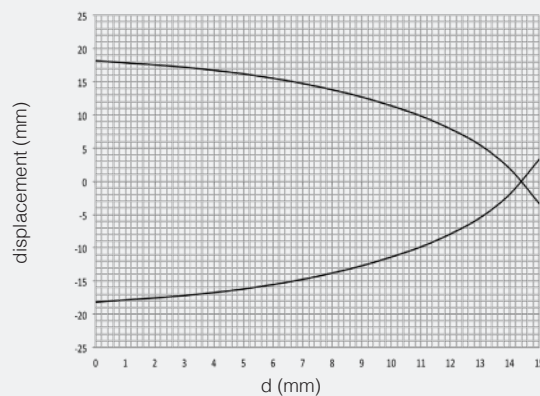
AT1/\*\*-4\* parallel displacement



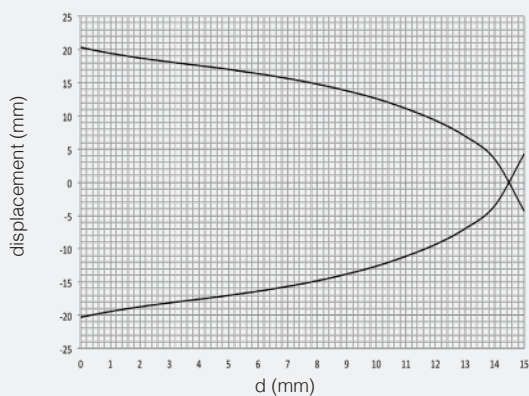
AT6/\*\*-1\* parallel displacement



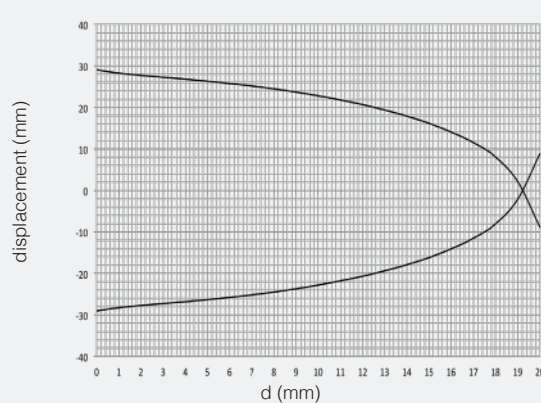
AT6/\*\*-2\* parallel displacement



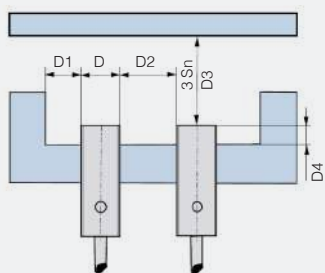
AT6/\*\*-3\* parallel displacement



AT6/\*\*-4\* parallel displacement



## installation



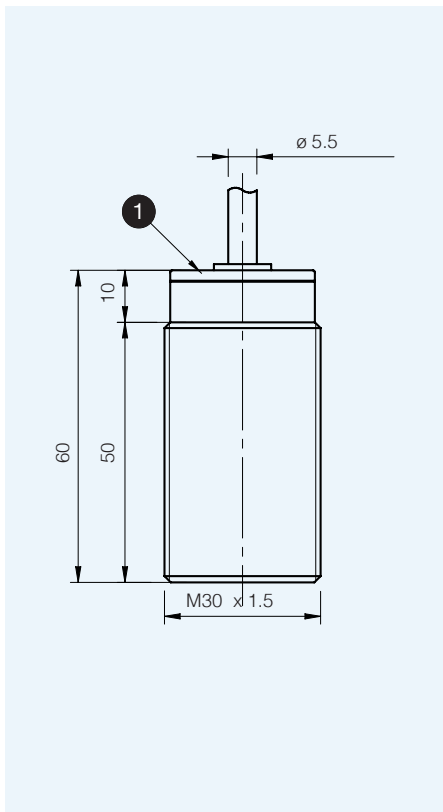
code	D4	D1	D2	D3
AT1/**-1*	≥ 0 mm	≥ 10 mm	≥ 30 mm	≥ 30 mm
AT1/**-2*	≥ 18 mm <sup>(1)</sup>	≥ 15 mm	≥ 45 mm	≥ 45 mm
AT1/**-3	≥ 3 mm	≥ 15 mm	≥ 40 mm	≥ 45 mm
AT1/**-4*	≥ 20 mm <sup>(1)</sup>	≥ 20 mm	≥ 60 mm	≥ 60 mm
AT6/**-1*	≥ 0 mm	≥ 0 mm	≥ 5 mm	≥ 30 mm
AT6/**-2*	≥ 14 mm <sup>(2)</sup>	≥ 15 mm	≥ 10 mm	≥ 45 mm
AT6/**-3*	≥ 3 mm <sup>(3)</sup>	≥ 3 mm	≥ 15 mm	≥ 45 mm
AT6/**-4*	≥ 17 mm <sup>(2)</sup>	≥ 15 mm	≥ 15 mm	≥ 60 mm

<sup>(1)</sup> ≥ 9 mm for non magnetic materials  
<sup>(2)</sup> ≥ 12 mm for non magnetic materials  
<sup>(3)</sup> ≥ 0 mm for non magnetic materials

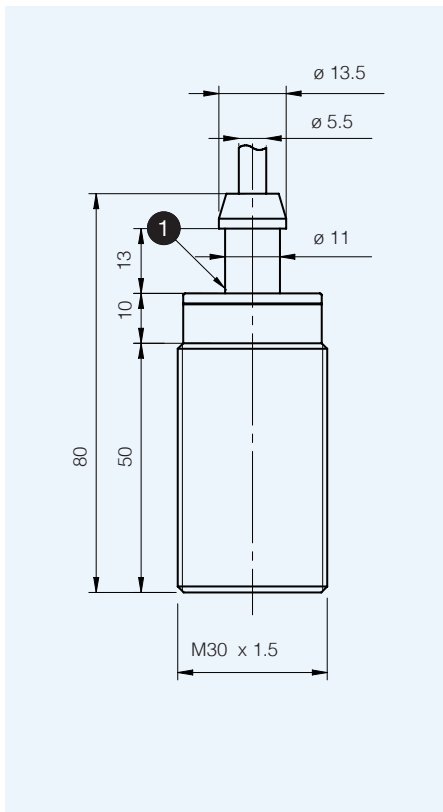
dimensions (mm)



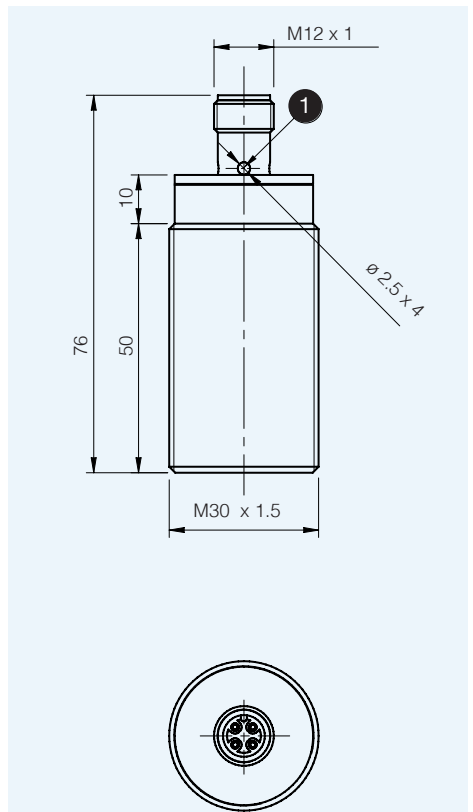
AT1/\*\*-1A  
AT1/\*\*-3A



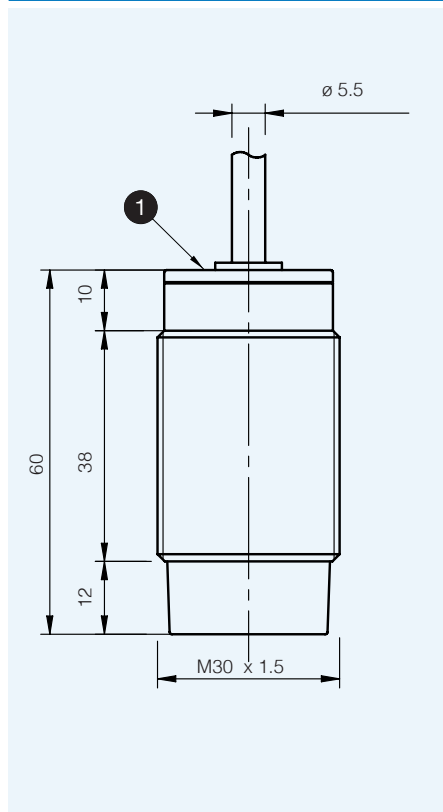
AT1/\*\*-1B  
AT1/\*\*-3B



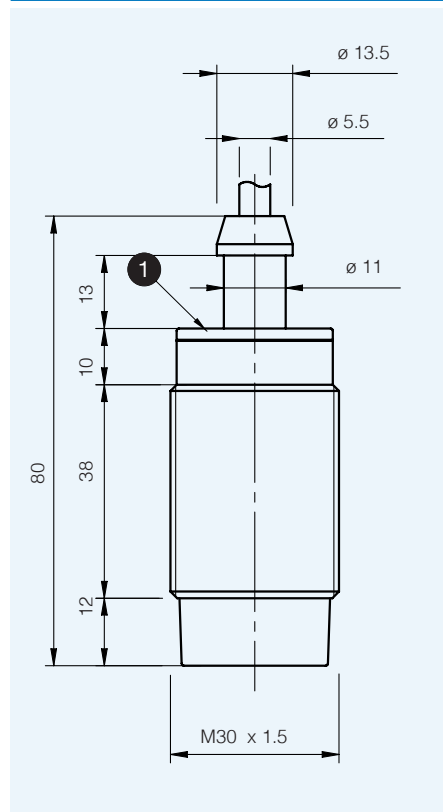
AT1/\*\*-1H  
AT1/\*\*-3H



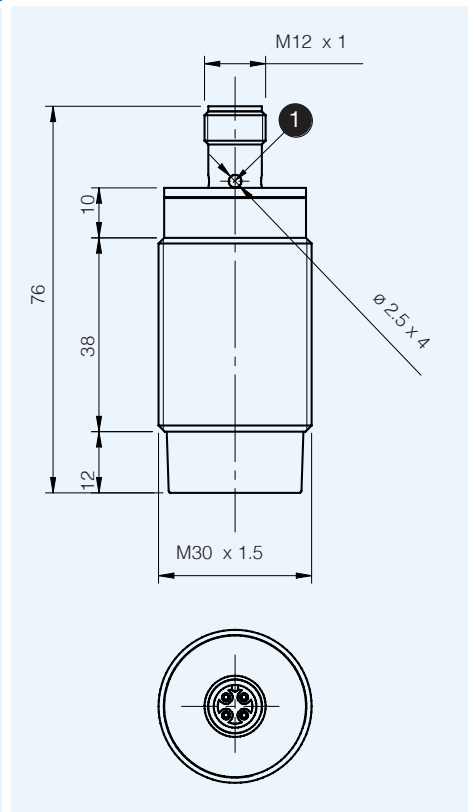
AT1/\*\*-2A  
AT1/\*\*-4A



AT1/\*\*-2B  
AT1/\*\*-4B

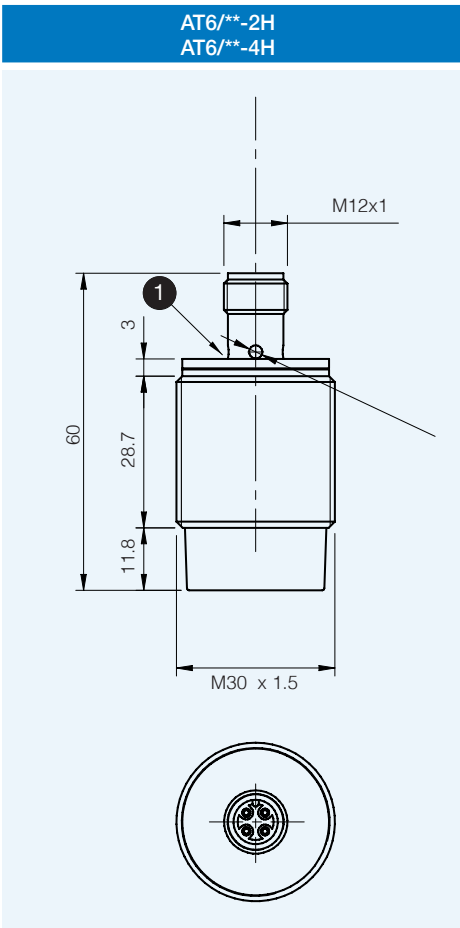
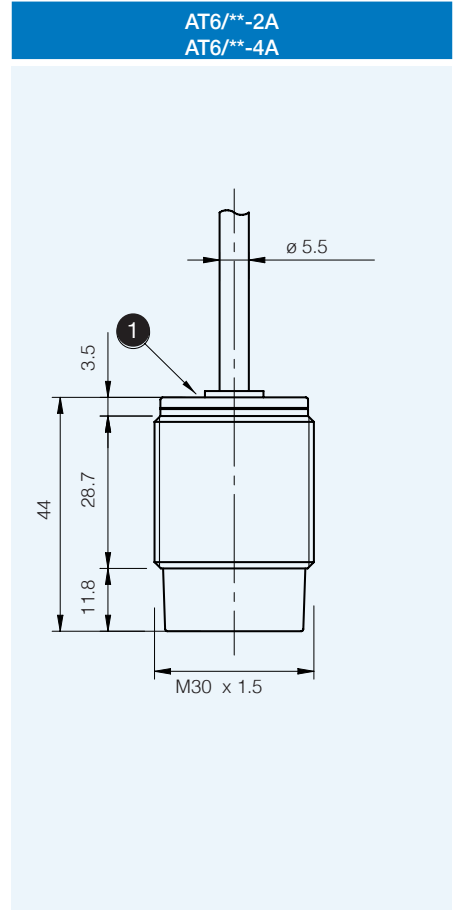
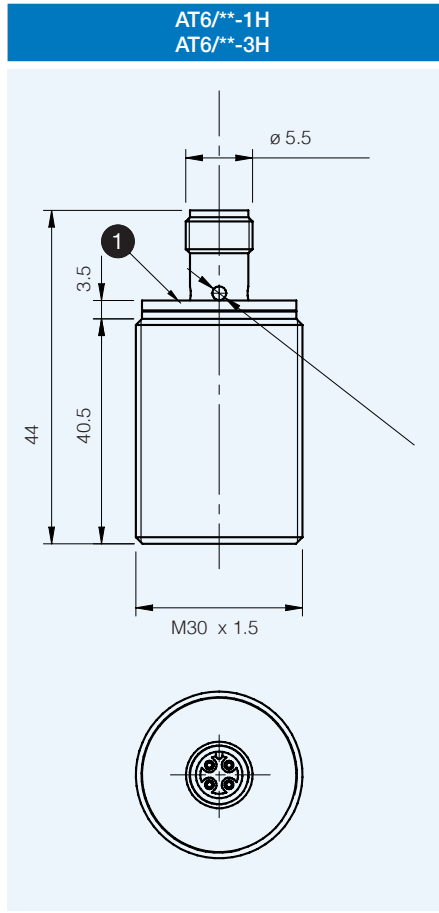
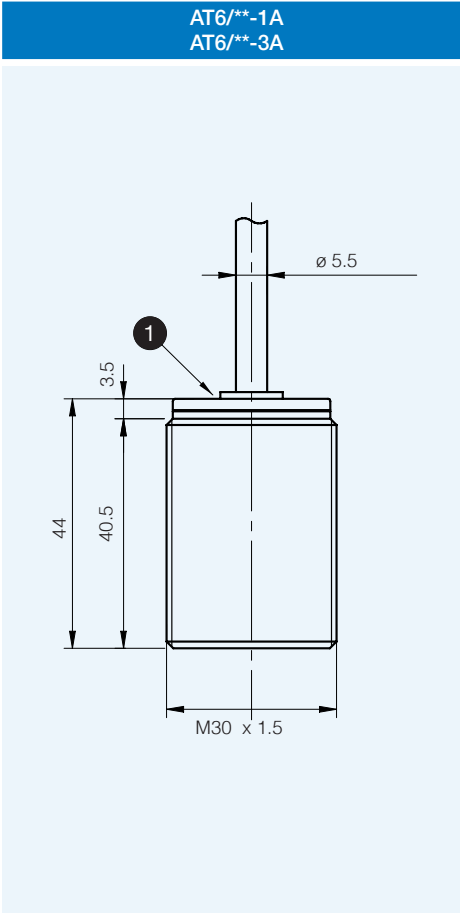


AT1/\*\*-2H  
AT1/\*\*-4H



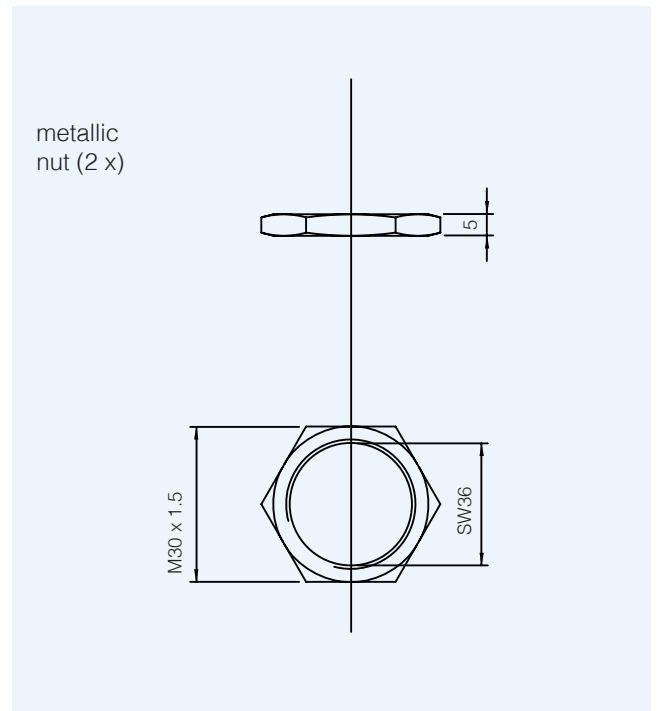
1 LED

## dimensions (mm)



## dimensions (mm)

accessories included in all models



1 LED