AM Series Inductive Proximity Sensors

M12 (12mm) metal – DC

- 26 standard length models available
- 8 short body length models available
- 2-wire and 3-wire models
- Metal housing
- Axial cable or M12 quick-disconnect models

- Complete overload protection
- IP67 rated
- LED status indicator
- DC powered
- Several sensing distances available
- Lifetime warranty

NEED CABLES?

AM1 Series Standard Length M12 DC Inductive Prox Selection Chart								
Part Number	**Price**	**Sensing Range**	**Mounting**	**Output State**	**Logic**	**Connection**	**Wiring**	**Dimensions**
Standard Distance								
AM1-AN-1A		0 to 2 mm (0-0.08 in)	Flush	N.O.	NPN	2m (6.5') axial cable	Diagram 1	Figure 1
AM1-AP-1A					PNP	2m (6.5') axial cable	Diagram 1	Figure 1
AM1-A0-1A					Sink/source	2m (6.5') axial cable	Diagram 2	Figure 7
AM1-AN-1H					NPN	M12 (12 m) connector	Diagram 1	Figure 6
AM1-AP-1H					PNP	M12 (12mm) connector	Diagram 1	Figure 6
AM1-A0-1H					Sink/source	M12 (12mm) connector	Diagram 2	Figure 2
AM1-AN-2A		0 to 4 mm (0-0.157 in)	Non-flush	N.O.	NPN	2m (6.5') axial cable	Diagram 1	Figure 1
AM1-AP-2A					PNP	2m (6.5') axial cable	Diagram 1	Figure 1
AM1-A0-2A					Sink/source	2m (6.5') axial cable	Diagram 2	Figure 7
AM1-AN-2H					NPN	M12 (12mm) connector	Diagram 1	Figure 6
AM1-AP-2H					PNP	M12 (12mm) connector	Diagram 1	Figure 6
AM1-A0-2H					Sink/source	M12 (12mm) connector	Diagram 2	Figure 2
Extended Distance								
AM1-AN-3A		0 to 4 mm (0-0.157 in)	Flush	N.O.	NPN	2m (6.5') axial cable	Diagram 1	Figure 1
AM1-AP-3A					PNP	2m (6.5') axial cable	Diagram 1	Figure 1
AM1-A0-3A					Sink/source	2m (6.5') axial cable	Diagram 2	Figure 1
AM1-AN-3H					NPN	M12 (12mm) connector	Diagram 1	Figure 6
AM1-AP-3H					PNP	M12 (12mm) connector	Diagram 1	Figure 6
AM1-A0-3H					Sink/source	M12 (12mm) connector	Diagram 2	Figure 6
AM1-AN-4A		0 to 8 mm (0-0.314 in)	Non-flush	N.O.	NPN	2m (6.5') axial cable	Diagram 1	Figure 1
AM1-AP-4A					PNP	2m (6.5') axial cable	Diagram 1	Figure 1
AM1-A0-4A					Sink/source	2m (6.5') axial cable	Diagram 2	Figure 1
AM1-AN-4H					NPN	M12 (12mm) connector	Diagram 1	Figure 6
AM1-AP-4H					PNP	M12 (12mm) connector	Diagram 1	Figure 6
AM1-A0-4H					Sink/source	M12 (12mm) connector	Diagram 2	Figure 6
Triple Distance								
AM1-AN-5H		6 mm (0.236 in)	Semi-flush	N.O.	NPN	M12 (12mm) connector	Diagram 1	Figure 3
AM1-AP-5H					PNP	M12 (12mm) connector	Diagram 1	Figure 3

AM6 Series Short Body M12 DC Inductive Prox Selection Chart								
Part Number	**Price**	**Sensing Range**	**Mounting**	**Output State**	**Logic**	**Connection**	**Wiring**	**Dimensions**
Extended Distance								
AM6-AN-3A		0 to 4 mm (0-0.157 in)	Flush	N.O.	NPN	2m (6.5') axial cable	Diagram 1	Figure 4
AM6-AP-3A					PNP	2m (6.5') axial cable	Diagram 1	Figure 4
AM6-AN-3H					NPN	M12 (12mm) connector	Diagram 1	Figure 5
AM6-AP-3H					PNP	M12 (12mm) connector	Diagram 1	Figure 5
AM6-AN-4A		0 to 8 mm (0-0.314 in)	Non-flush	N.O.	NPN	2m (6.5') axial cable	Diagram 1	Figure 4
AM6-AP-4A					PNP	2m (6.5') axial cable	Diagram 1	Figure 4
AM6-AN-4H					NPN	M12 (12mm) connector	Diagram 1	Figure 5
AM6-AP-4H					PNP	M12 (12mm) connector	Diagram 1	Figure 5

AM Series Inductive Proximity Sensors

AM Series Specifications					
Mounting Type	Standard Distance Models		Extended Distance Models		Triple Distance Models
	Flush	Non-flush	Flush	Non-flush	Semi-flush
Nominal Sensing Distance	2 mm (0.08 in)	4 mm (0.157 in)	4 mm (0.157 in)	8 mm (0.315 in)	6 mm (0.236 in)
Operating Distance	NA				
Material Correction Factors	See the Material influence table				
Output Type	NPN or PNP/N.O. only/3-wire				
Operating Voltage	10 to 30 VDC				
No-load Supply Current	≤20mA		≤10mA		
Operating (Load) Current	3-wire: ≤ 200mA / 2-wire: 3-100mA		3-wire: ≤ 200mA / 2-wire: 3-100mA		≤ 200mA
Off-state (Leakage) Current	3-wire: ≤ 10µA / 2-wire: ≤ 0.8 mA		3-wire: ≤ 120µA / 2-wire: ≤0.8mA		≤ 100µA
Voltage Drop	3-wire:1.2 volts max. / 2-wire: 2.8 volts max.				≤ 2.0 V
Switching Frequency	3-wire: 2kHz / 2 wire: 1.5 kHz		3-wire: 2kHz / 2 wire: 750Hz		800 Hz
Differential Travel (% of Nominal Distance)	2 to 10%		1 to 20		
Repeat Accuracy	≤ 2%		≤ 5%		
Ripple	≤ 10%			≤ 20%	
Time Delay Before Availability (tv)	3-wire: 100ms / 2 wire: 50ms		100ms		
Reverse Polarity Protection	Yes				
Short-Circuit Protection	Yes (switch auto-resets after overload is removed)				
Operating Temperature	-25° to +70°C (-13° to 158°F)				
Protection Degree (DIN 40050)	IEC IP67				
Indication/Switch Status	Yellow (output energized)				
Housing Material	Nickel-plated brass			Chrome-plated brass	
Sensing Face Material	Polybutylene Terephthalate (PBT)				
Shock/Vibration	See Proximity Sensor Terminology				
Tightening Torque	10 Nm (7.37 lb-ft)				
Weight (cable/M12 connector)	70g (2.47 oz)/30g (1.06 oz)			96g (3.39 oz)/34g (1.2 oz)	
Connection	2 meter PVC axial cable / M12 connector				
Agency Approvals	NA			UL file E328811	

Wiring diagrams

Diagram 1

NPN Output

PNP Output

Connector

M12 connector

Diagram 2

Sink/Source Output
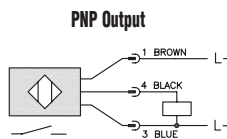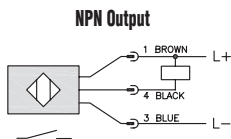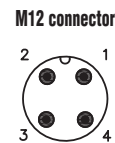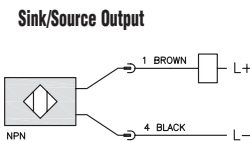
Wiring diagram when sensor is wired in sinking mode used with a sourcing module.

Sink/Source Output
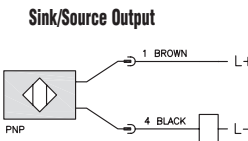
Wiring diagram when sensor is wired in sourcing mode used with a sinking module.

Note: Negative (-) lead is Black on M12 quick-disconnect cables and Blue on axial cables.

AM Series Inductive Proximity Sensors
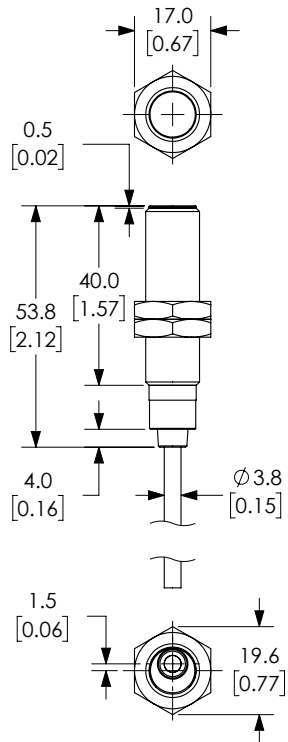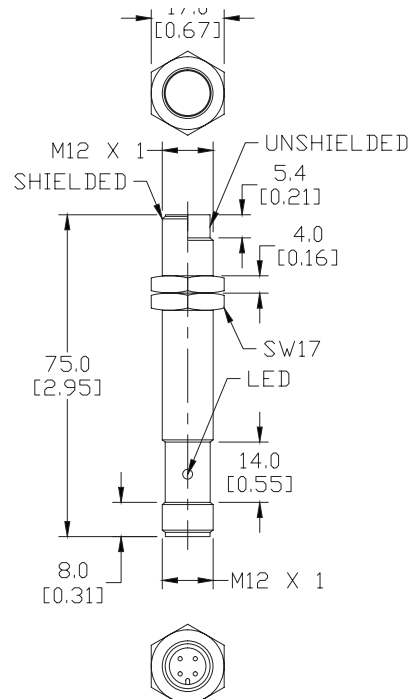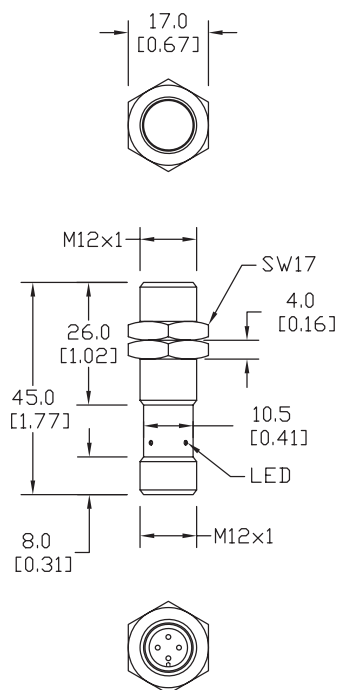
Dimensions

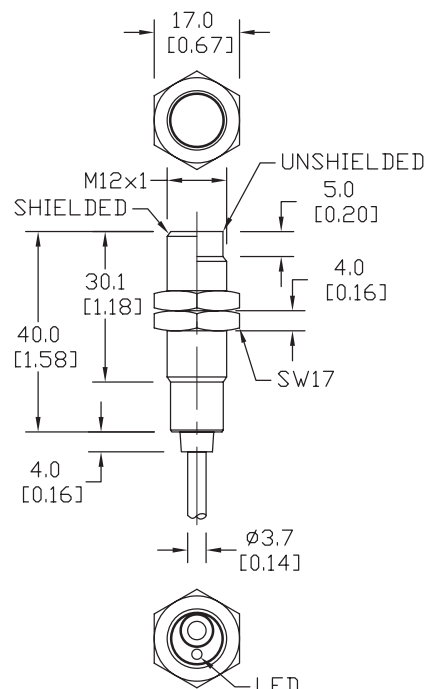mm [inches]

Figure 1

Figure 2

Figure 3

Figure 4

AM Series Inductive Proximity Sensors

Dimensions

mm [inches]

Figure 5

17.0 [0.67]

M12×1
SHIELDED
UNSHIELDED
5.0 [0.20]
4.0 [0.16]
35.0 [1.38]
52.5 [2.07]
SW17
LED
Ø2.0 [Ø0.08]
8.0 [0.31]
M12×1

Figure 6

17.0 [0.67]

M12 X 1
SHIELDED
UNSHIELDED
5.4 [0.21]
4.0 [0.16]
65.0 [2.56]
SW17
LED
14.0 [0.55]
8.0 [0.31]
M12 X 1

Figure 7

17.0 [0.67]
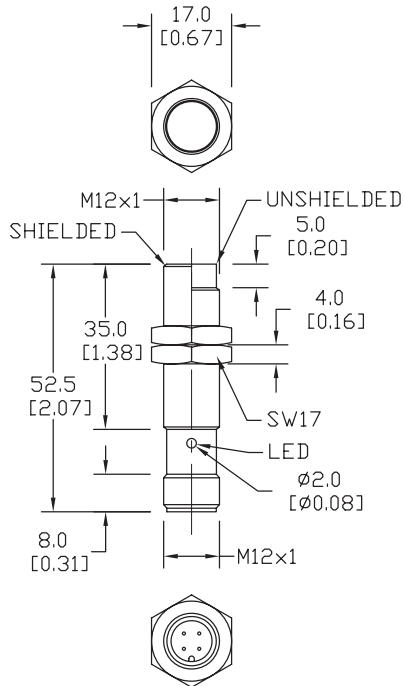
0.5 [0.02]
49.5 [1.95]
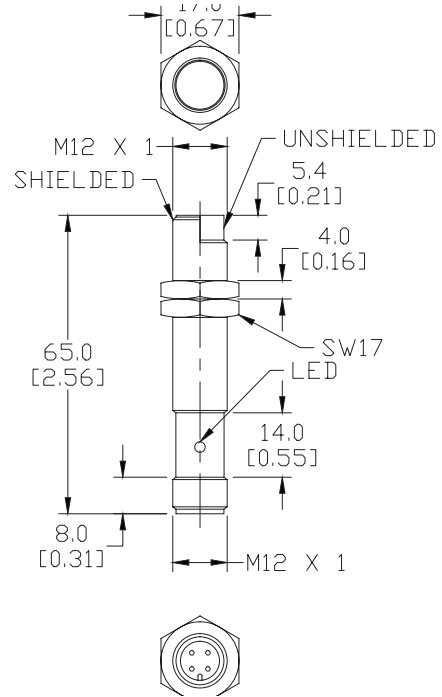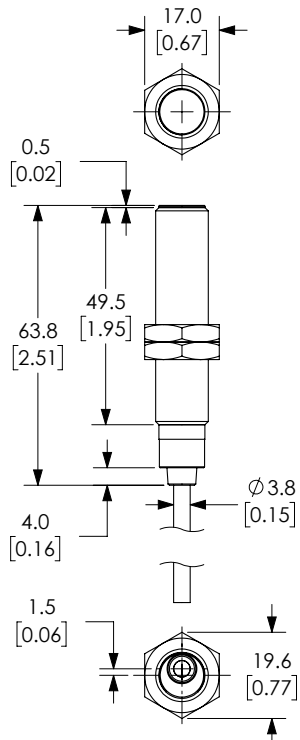63.8 [2.51]
4.0 [0.16]
Ø3.8 [0.15]
1.5 [0.06]
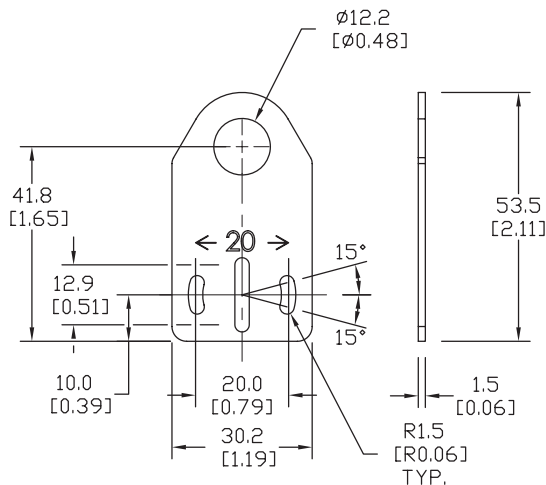19.6 [0.77]

Accessories for 12mm Sensors

Axial Mounting Bracket

Mounting bracket, axial, available in zinc-plated steel or 316L staineless steel. For use with 12mm sensors. Has two mounting holes (use 3mm screws) and allows the rotation of an optical axis for right-angle adapter sensors. Hexagonal nuts not included.

Accessories for 12mm Sensors			
Part Number	Price	Description	Weight lb (g)
ST12A		Mounting bracket, axial, zinc plated steel. For use with 12mm sensors.	0.03
ST12A7W		Mounting bracket, axial, 316L stainless steel. For use with 12mm sensors.	0.03

**ST12A**

Dimensions

mm [inches]

Right-angle Mounting Bracket

Mounting bracket, right-angle, zinc-plated steel or 316L stainless steel. For use with 12mm sensors. Has two mounting holes (use 3mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal screws not included.

Accessories for 12mm Sensors			
Part Number	Price	Description	Weight lb (g)
ST12C		Mounting bracket, right-angle, zinc plated steel. For use with 12mm sensors.	0.03 (13.6)
ST12C7W		Mounting bracket, right-angle, 316L stainless steel. For use with 12mm sensors.	0.03 (13.6)

ST12C

Dimensions

mm [inches]
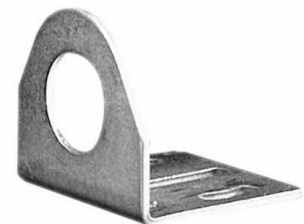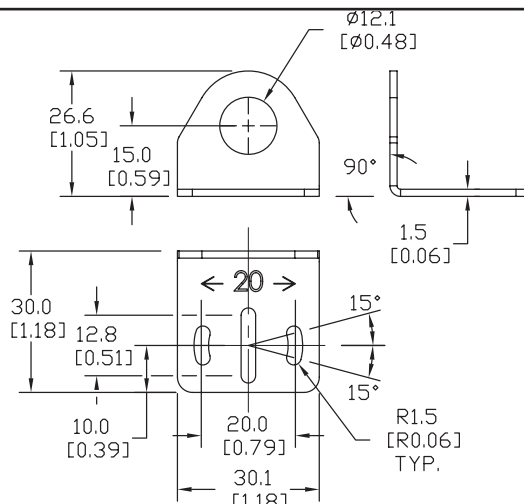
Accessories for 12mm Sensors

Right-angle Mounting Brackets

Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 12mm sensors. Available with or without fixed insertion stop.

Accessories for 12mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb (g)
OPT2102		Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 12mm sensors.	PDF	0.05 (22.7)
OPT2103		Wenglor mounting bracket, right-angle, plastic. For use with 12mm sensors.	PDF	0.05 (22.7)

OPT2102, OPT2103

Right-angle Swivel Mounting Systems

Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 12mm rod mount. For use with 12mm sensors. Available in all stainless steel or with an aluminum head and stainless steel mounting plate.

Accessories for 12mm Sensors						
Part Number	Price	Description	Mounting Head	Mounting Plate	Drawing Link	Weight lb (g)
OPT2114		Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 12mm sensors.	Aluminum	Stainless steel	PDF	0.14 (63.5)
OPT2115		Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 12mm sensors.	304 Stainless steel	304 Stainless steel	PDF	0.27 (122.5)

Note: 304 stainless steel mounting rods sold separately: OPT2109 (200mm [7.87 in] length), OPT2110 (300mm [11.81 in] length), and OPT2111 (500mm [19.69 in] length).

OPT2114, OPT2115

Mounting Rods and Brackets

Mounting Rods

304 Stainless steel rods for mounting swivel brackets OPT2112 - OPT2127.
Available in three lengths: 200mm, 300mm, and 500mm. 12mm diameter.

Mounting Rods for OPT2112-2127 Swivel Mounting Brackets				
Part Number	Price	Description	Drawing Link	Weight lb (g)
OPT2109		Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	PDF	0.41 (185.97)
OPT2110		Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	PDF	0.60 (272.16)
OPT2111		Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	PDF	0.98 (444.52)

Right-angle Mounting Bracket

Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.

Right-angle Mounting Brackets for 12mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb (g)
OPT2108		Wenglor mounting bracket, right-angle, nickel plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	PDF	0.07 (31.8)