AT Series Inductive Proximity Sensors

M30 (30mm) Metal – DC

- Standard and extended distance models available
- 2-wire and 3-wire models
- Axial cable or M12 quick-disconnect models
- LED status indicators are visible 360° around the cylinder
- Complete overload protection
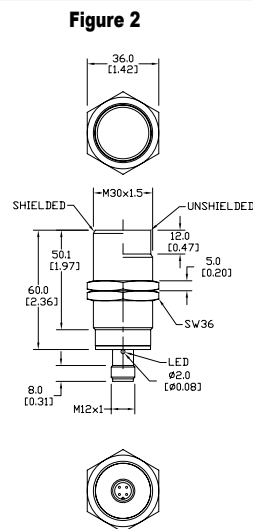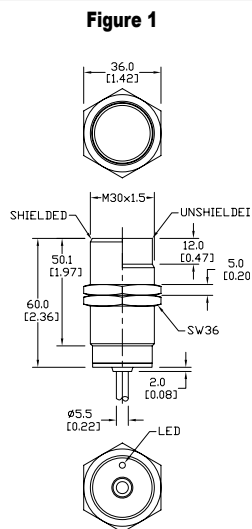- IP67 rated
- Lifetime warranty

NEED CABLES?

AT Series M30 DC Inductive Proximity Selection Chart							
Part Number	*Price*	*Sensing Range*	*Mounting*	*Output State*	*Logic*	*Connection*	*Wiring*	*Dimensions*
Standard Distance								
AT1-AN-1A	$09g6:	10mm [0.394 in]	Flush	N.O.	NPN	2m [6.5 ft] axial cable	Diagram 1	Figure 1
AT1-AP-1A	$09ga:				PNP	2m [6.5 ft] axial cable	Diagram 1	Figure 1
AT1-A0-1A	$09g2:				Sink/source	2m [6.5 ft] axial cable	Diagram 2	Figure 1
AT1-AN-1H	$09g7:				NPN	M12 [12mm] connector	Diagram 1	Figure 2
AT1-AP-1H	$09gb:				PNP	M12 [12mm] connector	Diagram 1	Figure 2
AT1-A0-1H	$09g3:				Sink/source	M12 [12mm] connector	Diagram 2	Figure 2
AT1-AN-2A	$09g8:	15mm [0.591 in]	Non-flush	N.O.	NPN	2m [6.5 ft] axial cable	Diagram 1	Figure 1
AT1-AP-2A	$09gc:				PNP	2m [6.5 ft] axial cable	Diagram 1	Figure 1
AT1-A0-2A	$09g4:				Sink/source	2m [6.5 ft] axial cable	Diagram 2	Figure 1
AT1-AN-2H	$09g9:				NPN	M12 [12mm] connector	Diagram 1	Figure 2
AT1-AP-2H	$09gd:				PNP	M12 [12mm] connector	Diagram 1	Figure 2
AT1-A0-2H	$09g5:				Sink/source	M12 [12mm] connector	Diagram 2	Figure 2
Extended Distance								
AT1-AN-3A	$;09fz:	15mm [0.591 in]	Flush	N.O.	NPN	2m [6.5 ft] axial cable	Diagram 1	Figure 1
AT1-AP-3A	$;09f#:				PNP	2m [6.5 ft] axial cable	Diagram 1	Figure 1
AT1-A0-3A	$;09fu:				Sink/source	2m [6.5 ft] axial cable	Diagram 2	Figure 1
AT1-AN-3H	$;;09f]:				NPN	M12 [12mm] connector	Diagram 1	Figure 2
AT1-AP-3H	$;;09f!:				PNP	M12 [12mm] connector	Diagram 1	Figure 2
AT1-A0-3H	$;09fv:				Sink/source	M12 [12mm] Sensor	Diagram 2	Figure 2
AT1-AN-4A	$;;09f[:	20mm [0.787 in]	Non-flush	N.O.	NPN	2m [6.5 ft] axial cable	Diagram 1	Figure 1
AT1-AP-4A	$;09f?:				PNP	2m [6.5 ft] axial cable	Diagram 1	Figure 1
AT1-A0-4A	$;09fx:				Sink/source	2m [6.5 ft] axial cable	Diagram 2	Figure 1
AT1-AN-4H	$;09f_:				NPN	M12 [12mm] connector	Diagram 1	Figure 2
AT1-AP-4H	$;;09f,:				PNP	M12 [12mm] connector	Diagram 1	Figure 2
AT1-A0-4H	$;09fy:				Sink/source	M12 [12mm] connector	Diagram 2	Figure 2

Dimensions

mm[inches]

Figure 1

36.0 [1.42]
M30×1.5
SHIELDED
UNSHIELDED
12.0 [0.47]
5.0 [0.20]
50.1 [1.97]
60.0 [2.36]
SW36
2.0 [0.08]
ø5.5 [0.22]
LED

Figure 2

36.0 [1.42]
M30×1.5
SHIELDED
UNSHIELDED
12.0 [0.47]
5.0 [0.20]
50.1 [1.97]
60.0 [2.36]
SW36
LED
ø2.0 [ø0.08]
8.0 [0.31]
M12×1

AT Series Inductive Proximity Sensors

| AT Series M30 DC Inductive Proximity Specifications				
Mounting Type	**Standard Distance Models**		**Extended Distance Models**	
	Flush	**Non-flush**	**Flush**	**Non-flush**
Nominal Sensing Distance	10mm [0.394 in]	15mm [0.591 in]	15mm [0.591 in]	20mm [0.787 in]
Operating Distance	NA			
Material Correction Factors	See the Material influence table			
Output Type	Three wire: NPN or PNP/N.O. (normally open) / Two wire: sink/source, N.O. only			
Operating Voltage	10 to 30 VDC			
No-load Supply Current	≤ 20 mA			
Operating (Load) Current	3 wire: ≤ 400mA / 2-wire: 3-100mA		2-wire and 3-wire:≤ 400mA	
Off-state (Leakage) Current	3-wire:≤ 10µA / 2-wire: ≤ 0.8mA max.		3-wire ≤ 8µA / 2-wire: ≤ 0.8mA max.	
Voltage Drop	3-wire: ≤ 1 volt max. / 2-wire: ≤2.8V≤10%		3-wire: ≤1 volt max. / 2-wire: ≤ 2.8 V	
Switching Frequency	3-wire: 200Hz / 2-wire: 150Hz		2-and 3-wire:150Hz	
Differential Travel	2 to 10%		2 to 15%	
Repeat Accuracy	3-wire: 2% / 2-wire: 5%		2-wire and 3-wire: 5%	
Ripple	≤10%			
Time Delay Before Availability (tv)	3-wire: 100ms / 2-wire: 50ms		3-wire:100ms / 2-wire: 50ms	
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]; drift: 10% Sr			
Protection Degree (DIN 40050)	IEC IP67			
Indication/Switch Status	Yellow [N.O. output energized]			
Housing Material	Nickel-plated brass			
Sensing Face Material	Polybutylene Terephthalate [PBT]			
Shock/Vibration	See Proximity Sensor Terminology			
Tightening Torque	50 Nm [36.88 lbs-ft]			
Weight	A type [w/ cable]: 180g [6.35 oz] H type: 110g [3.88 oz]			
Connection	2 meter [6.5 ft] axial cable or M12 connector			
Agency Approvals	NA			

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

Wiring diagrams

Diagram 1

NPN Output

PNP Output

Connector

M12 connector

Diagram 2
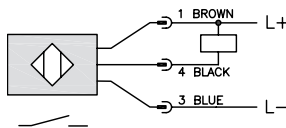
Sink/Source Output

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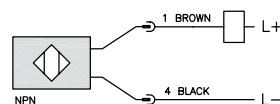
Wiring diagram when sensor is wired in sinking mode used with a sourcing module.
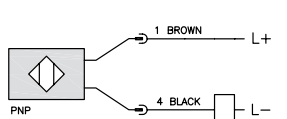
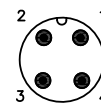*Wiring diagram when sensor is wired in sourcing mode used with a sinking module.*

Note: Negative (-) lead is Black on M12 quick- disconnect cables and Blue on axial cables.
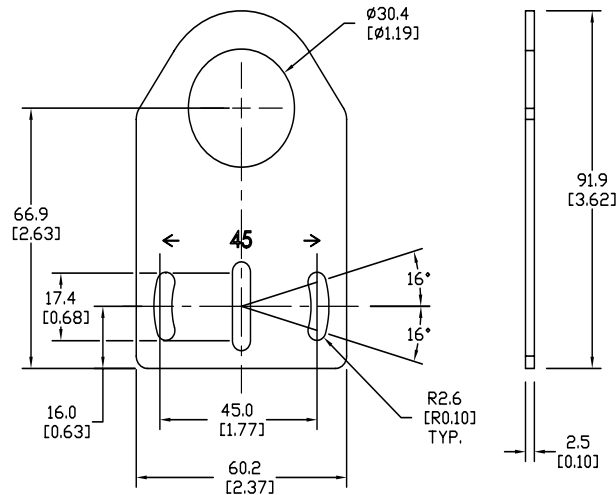
Accessories for 30mm Sensors

Axial Mounting Bracket

Mounting bracket, axial, zinc-plated steel. For use with 30mm sensors. Has two mounting holes (use 5mm screws) and allows the rotation of an optical axis for right-beam-angle-adapter sensors. Hexagonal nuts not included.

Accessories for 30mm Sensors			
Part Number	**Price**	**Description**	**Weight lb [g]**
ST30A	$983:	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 30mm sensors.	0.18 [81.7]

Dimensions

mm [inches]

ST30A

ø30.4 [ø1.19]
66.9 [2.63]
17.4 [0.68]
16.0 [0.63]
45
45.0 [1.77]
60.2 [2.37]
16°
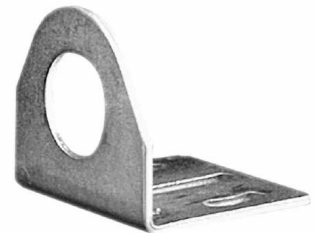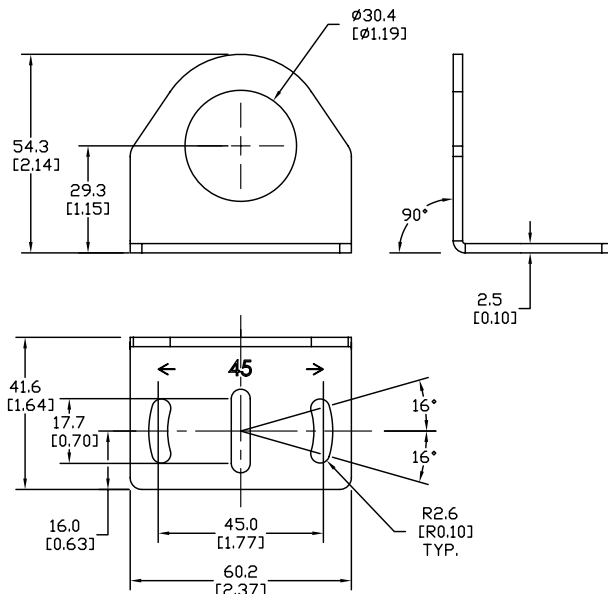16°
R2.6 [R0.10] TYP.
91.9 [3.62]
2.5 [0.10]

Right-angle Mounting Bracket

Mounting bracket, right-angle, zinc-plated steel. For use with 30mm sensors. Has two mounting holes (use 5mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.

Accessories for 30mm Sensors			
Part Number	**Price**	**Description**	**Weight lb [g]**
ST30C	$984:	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 30mm sensors.	0.18 [81.7]

Dimensions

mm [inches]

ST30C

ø30.4 [ø1.19]
54.3 [2.14]
29.3 [1.15]
90°
2.5 [0.10]
41.6 [1.64]
17.7 [0.70]
16.0 [0.63]
45
45.0 [1.77]
60.2 [2.37]
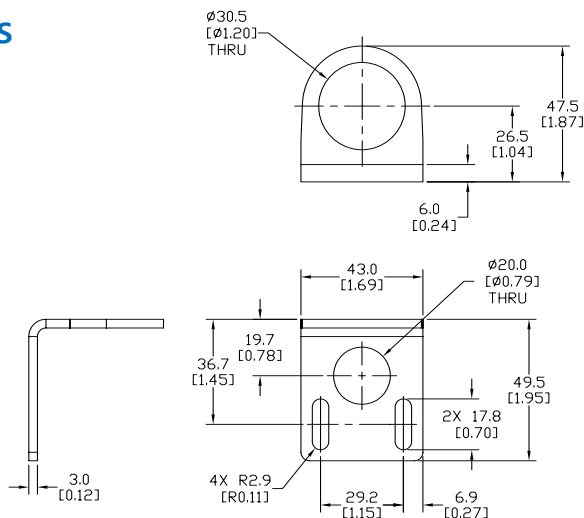16°
16°
R2.6 [R0.10] TYP.

Accessories for 30mm Sensors

Right-angle Mounting Bracket

Mounting bracket, right-angle, 304 stainless steel. For use with 30mm sensors.

Accessories for FW Series Sensors			
Part Number	Price	Description	Weight lb [g]
ST30C6W	$-5i1:	AutomationDirect mounting bracket, right-angle, 304 stainless steel. For use with 30mm sensors.	0.15 (68.0)

Dimensions

mm [inches]

ST30C6W

Ø30.5 [Ø1.20] THRU
47.5 [1.87]
26.5 [1.04]
6.0 [0.24]

43.0 [1.69]
Ø20.0 [Ø0.79] THRU
19.7 [0.78]
36.7 [1.45]
49.5 [1.95]
2X 17.8 [0.70]
3.0 [0.12]
4X R2.9 [R0.11]
29.2 [1.15]
6.9 [0.27]

Right-angle Swivel Mounting Systems

Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 12mm rod mount. For use with 30mm sensors. Available in all 304 stainless steel or with an aluminum head with a 304 stainless steel mounting plate.

Accessories for 30mm Sensors						
Part Number	Price	Description	Mounting Head	Mounting Plate	Drawing Link	Weight lb [g]
OPT2118	$-1nl?:	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 30mm sensors.	Aluminum	304 Stainless steel	PDF	0.18 [81.7]
OPT2119	$;-1nl,:	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 30mm sensors.	304 Stainless Steel	304 Stainless steel	PDF	0.18 [81.7]

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).

OPT2118, OPT2119

Sensor Accessories

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	$1nn9:	Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	PDF	0.41 [185.97]
OPT2110	$1nna:	Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	PDF	0.60 [272.16]
OPT2111	$1nnb:	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	$-1nly:	Wenglor mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	PDF	0.07 [31.8]