

ProSense Basic M18 Inductive Proximity Sensors



ProSense Basic Series Inductive Proxes M18 (18mm)

- Operating distance 5 to 8mm
- Nickel-plated brass housing
- LCP (Liquid Crystal Polymer) active face
- Normal range operating distance
- Cable or M12 connector
- PNP or NPN, N.O. or N.C.
- IP67 protection



ProSense Basic M18 Inductive Proximity Sensor Selection Chart								
Part Number	Price	Sensing Range	Mounting	Output State	Logic	Connection	Wiring	Drawing Link
Standard Distance								
PBK6-AP-1A	\$11.50	5mm [0.20 in]	Flush	N.O.	PNP	Cable, 3 pole, 2m [6.56 ft]	Diagram 1	PDF
PBK6-AP-1H	\$12.50	5mm [0.20 in]	Flush	N.O.	PNP	4-pin M12 connector	Diagram 3	PDF
PBK6-CP-1H	\$12.50	5mm [0.20 in]	Flush	N.C.	PNP	4-pin M12 connector	Diagram 3	PDF
PBK6-AN-1H	\$12.50	5mm [0.20 in]	Flush	N.O.	NPN	4-pin M12 connector	Diagram 4	PDF
PBK6-AP-2A	\$11.50	8mm [0.31 in]	Non-flush	N.O.	PNP	Cable, 3 pole, 2m [6.56 ft]	Diagram 1	PDF
PBK6-AP-2H	\$12.50	8mm [0.31 in]	Non-flush	N.O.	PNP	4-pin M12 connector	Diagram 3	PDF
PBK6-CP-2H	\$12.50	8mm [0.31 in]	Non-flush	N.C.	PNP	4-pin M12 connector	Diagram 3	PDF
PBK6-AN-2H	\$12.50	8mm [0.31 in]	Non-flush	N.O.	NPN	4-pin M12 connector	Diagram 4	PDF

Wiring diagrams

Diagram 1

PNP Cable Version

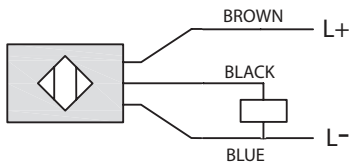


Diagram 2

NPN Cable Version

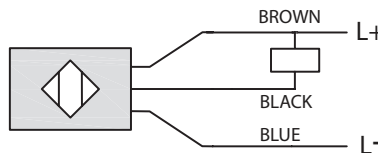


Diagram 3

PNP M12 Connector

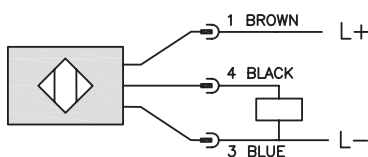
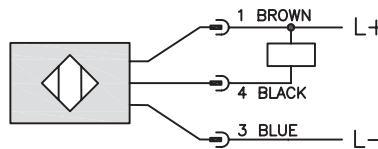


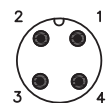
Diagram 4

NPN M12 Connector



Connector

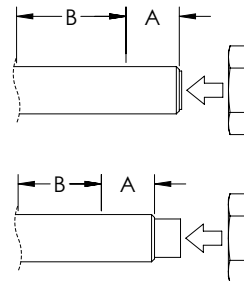
M12 connector



Prosense Basic M18 Inductive Proximity Sensors

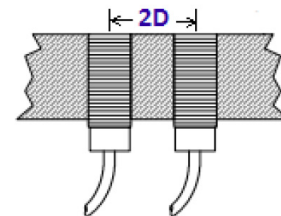
Prosense Basic M18 Inductive Proximity Sensor Specifications		
Mounting Type	Flush	Non-flush
Nominal Sensing Distance	5mm [0.20 in]	8mm [0.31 in]
Material Correction Factors	See the Material influence table	
Output Type	NPN or PNP/N.O. or N.C./3-wire	
Operating Voltage	10 to 30 VDC	
No-load Supply Current	≤ 10mA	
Operating (Load) Current	200mA	
Off-state (Leakage) Current	≤ 10mA	
Voltage Drop	≤ 1.8 V (I=100mA)	
Switching Frequency	1000Hz	
Hysteresis	< 10%	
Repeat Accuracy	< 3%	
Ripple	< 10%	
Time Delay Before Availability (tv)	< 50 ms	
Reverse Polarity Protection	Yes	
Short-Circuit Protection	Yes (auto-reset)	
Operating Temperature	-25° to 70°C (-13° to 158°F)	
Protection Degree (DIN 40050)	IP67	
Indication/Switch Status	Yellow, on when detecting	
Housing Material	Nickel-plated brass	
Sensing Face Material	LCP (Liquid Crystal Polymer)	
Shock/Vibration	See Proximity Sensor Terminology	
Tightening Torque	See Torque Table below	
Weight	145g [5.11 oz] (cable version) – 95g [3.35 oz] (M12 connector)	
Connection	2m [6.56 ft] PUR Cable, 3 pole, 26AWG or M12 Connector	
Agency Approvals	CE cULus E328811	

Installation Tightening Torque	
Mounting	Flush, non-flush mountable
Housing Material	Nickel plated brass
Diameter	18mm [0.71 in]
Tightening Torque for A (A = 11mm [0.43 in])	20 N•m [14.75 lb•ft]
Tightening Torque for B	30 N•m [22.13 lb•ft]



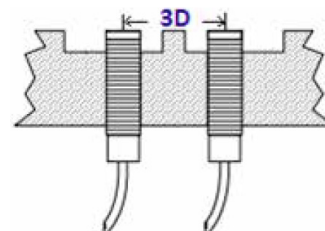
Flush Mounting

Flush models can be installed with their sensing faces flush to the metal. The distance from opposing metal surfaces must be $\geq 3s_n$ (where s_n =nominal switching distance), and the distance between two proximity switches (side by side) must be $\geq 2D$.



Non-Flush Mounting

Non-flush models can be identified by their “caps,” since they have no metal housing surrounding the area of the sensing face. The sensing face must extend $\geq 2s_n$ (where s_n =nominal switching distance) from the metallic installation medium. The distance from opposing metal surfaces must be $\geq 3s_n$, and the distance between two adjacent protrusions must be $\geq 3D$. The metal body leaves uncovered part of the sensing area, resulting in an increased sensing distance.



Accessories for 18mm Sensors

Axial Mounting Bracket

Axial mounting bracket available in zinc plated steel or 316L stainless steel. Has two mounting holes (use 4mm screws) and allows for rotation of an optical axis for right-beam-angle-adaptor sensors. Hexagonal nuts not included. For use with 18mm sensors.

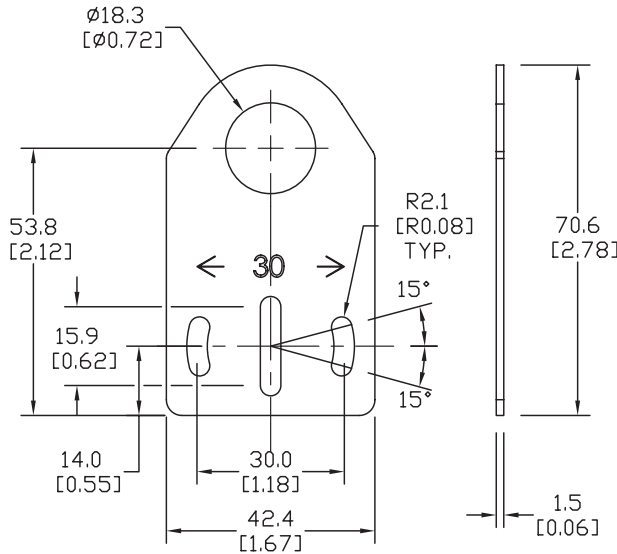
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb (g)
ST18A	\$2.00	Mounting bracket, axial, zinc plated steel. For use with 18mm sensors.	0.06 (27.2)
ST18A7W	\$6.75	Mounting bracket, axial, 316L stainless steel. For use with 18mm sensors.	0.06 (27.2)



ST18A

Dimensions

mm [inches]



Right-angle Mounting Bracket

Right-angle mounting bracket for use with 18mm sensors. Has two mounting holes (use 4mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.

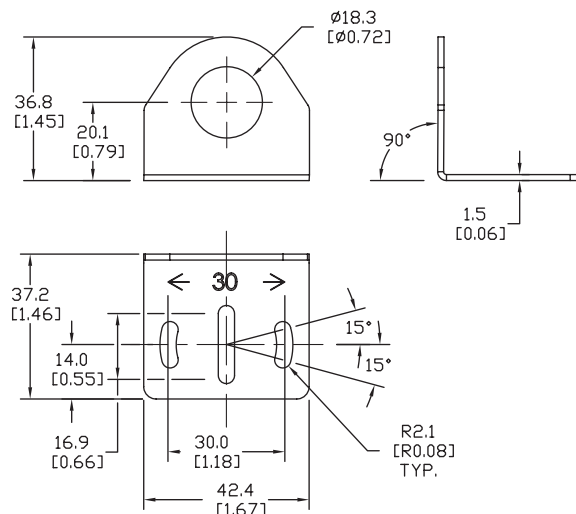
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb (g)
ST18C	\$2.00	Mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.	0.06 (27.2)
ST18C7W	\$6.75	Mounting bracket, right-angle, 316L stainless steel. For use with 18mm sensors.	0.06 (27.2)



ST18C

Dimensions

mm [inches]



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Accessories for 18mm Sensors

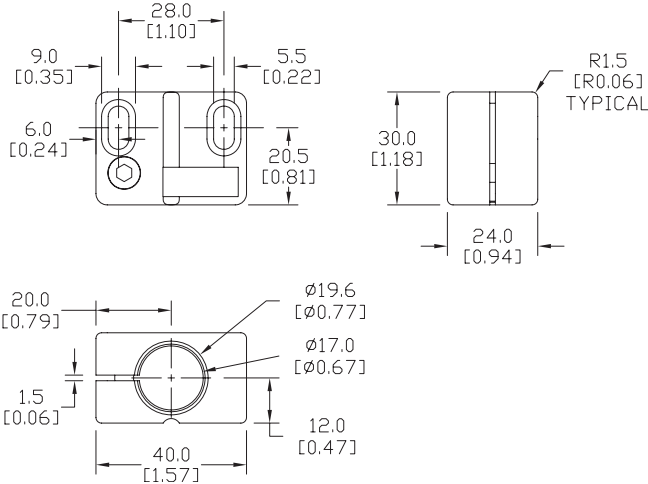
Right-angle Mounting Brackets

Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors. Available with or without fixed insertion stop.

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb (g)
OPT2104	\$8.75	Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	0.06 (27.2)
OPT2105	\$8.75	Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.	0.06 (27.2)

Dimensions

mm [inches]



OPT2104, OPT2105

Right-angle Swivel Mounting Systems

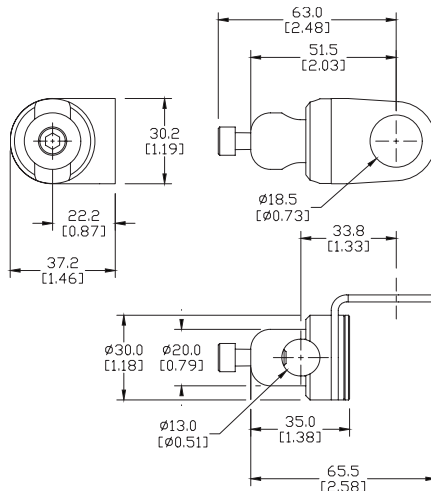
Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 12mm rod mount. For use with 18mm sensors. Available in all 304 stainless steel or with an aluminum head and a stainless steel mounting plate.

Accessories for 18mm Sensors					
Part Number	Price	Description	Mounting Head	Mounting Plate	Weight lb (g)
OPT2116	\$9.75	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 18mm sensors.	Aluminum	304 Stainless steel	0.15 (68.0)
OPT2117	\$17.50	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 18mm sensors.	304 Stainless steel	304 Stainless steel	0.28 (127.0)

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).

Dimensions

mm [inches]



OPT2116, OPT2117

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Mounting Rods

Mounting Rods

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

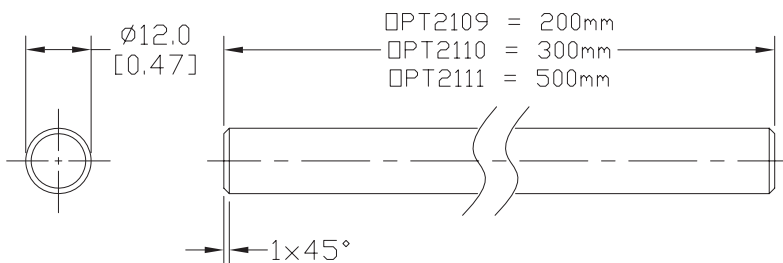
Mounting Rods for OPT2112-2127 Swivel Mounting Brackets			
Part Number	Price	Description	Weight lb (g)
OPT2109	\$11.00	Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	0.41 (185.97)
OPT2110	\$13.50	Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	0.60 (272.16)
OPT2111	\$17.50	Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	0.98 (444.52)



OPT2109, OPT2110, OPT2111

Dimensions

mm [inches]



Right-angle Mounting Bracket

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

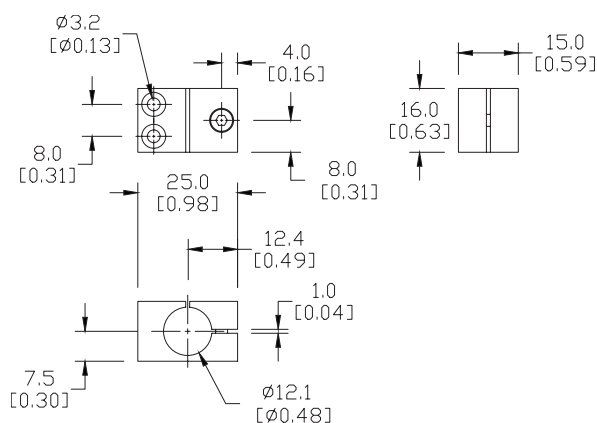
Accessories for 12mm Sensors			
Part Number	Price	Description	Weight lb (g)
OPT2108	\$13.50	Wenglor mounting bracket, right-angle, nickel plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	0.07 (31.8)



OPT2108

Dimensions

mm [inches]



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for complete engineering drawings