

ProSense Basic M12 Inductive Proximity Sensors



ProSense Basic Series Inductive Proxes M12 (12mm)

- Operating distance 2 to 4mm
- 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 M12 Inductive Proximity Sensor Selection Chart								
Part Number	Price	Sensing Range	Mounting	Output State	Logic	Connection	Wiring	Drawing Link
Standard Distance								
PBM6-AP-1A		2mm [0.08 in]	Flush	N.O.	PNP	Cable, 3 pole, 2m [6.56 ft]	Diagram 1	PDF
PBM6-AP-1H		2mm [0.08 in]	Flush	N.O.	PNP	4-pin M12 connector	Diagram 3	PDF
PBM6-CP-1A		2mm [0.08 in]	Flush	N.C.	PNP	Cable, 3 pole, 2m [6.56 ft]	Diagram 1	PDF
PBM6-CP-1H		2mm [0.08 in]	Flush	N.C.	PNP	4-pin M12 connector	Diagram 3	PDF
PBM6-AN-1A		2mm [0.08 in]	Flush	N.O.	NPN	Cable, 3 pole, 2m [6.56 ft]	Diagram 2	PDF
PBM6-AN-1H		2mm [0.08 in]	Flush	N.O.	NPN	4-pin M12 connector	Diagram 4	PDF
PBM6-AP-2A		4mm [0.16 in]	Non-flush	N.O.	PNP	Cable, 3 pole, 2m [6.56 ft]	Diagram 1	PDF
PBM6-AP-2H		4mm [0.16 in]	Non-flush	N.O.	PNP	4-pin M12 connector	Diagram 3	PDF
PBM6-CP-2A		4mm [0.16 in]	Non-flush	N.C.	PNP	Cable, 3 pole, 2m [6.56 ft]	Diagram 1	PDF
PBM6-CP-2H		4mm [0.16 in]	Non-flush	N.C.	PNP	4-pin M12 connector	Diagram 3	PDF
PBM6-AN-2A		4mm [0.16 in]	Non-flush	N.O.	NPN	Cable, 3 pole, 2m [6.56 ft]	Diagram 2	PDF
PBM6-AN-2H		4mm [0.16 in]	Non-flush	N.O.	NPN	4-pin M12 connector	Diagram 4	PDF

Wiring diagrams

Diagram 1

PNP Cable Version

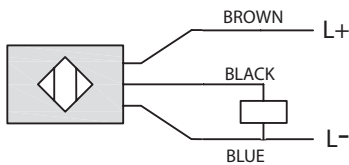


Diagram 2

NPN Cable Version

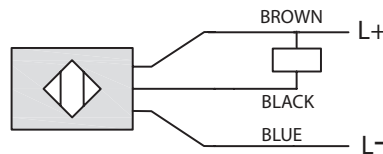


Diagram 3

PNP M12 Connector

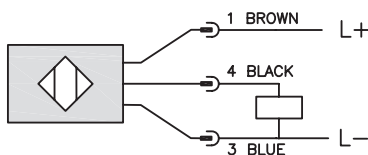
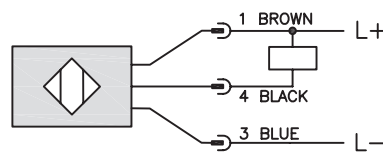


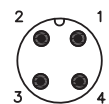
Diagram 4

NPN M12 Connector



Connector

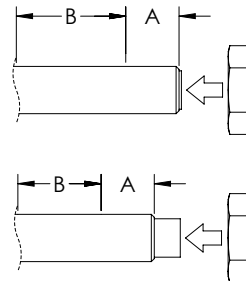
M12 connector



Prosense Basic M12 Inductive Proximity Sensors

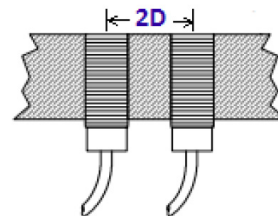
Prosense Basic M12 Inductive Proximity Sensor Specifications		
Mounting Type	Flush	Non-flush
Nominal Sensing Distance	2mm [0.08 in]	4mm [0.16 in]
Material Correction Factors	See the Material influence table	
Output Type	NPN or PNP/N.O. or N.C./3-wire	
Operating Voltage	10 to 30 VDC	
No-load Supply Current	≤ 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	110g [3.88 oz] (cable version) – 60g [2.12 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	12mm [0.47 in]
Tightening Torque for A (A = 11mm [0.43 in])	6 N•m [4.43 lb•ft]
Tightening Torque for B	10 N•m [7.38 lb•ft]



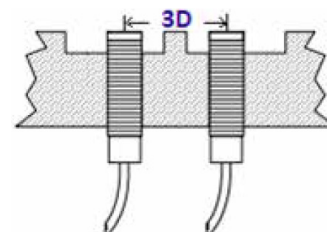
Flush Mounting

Flush models can be installed with their sensing faces flush to the metal. The distance from opposing metal surfaces must be $\geq 3sn$ (where sn =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 $\geq 2sn$ (where sn =nominal switching distance) from the metallic installation medium. The distance from opposing metal surfaces must be $\geq 3sn$, and the distance between two adjacent proximity switches must be $\geq 3D$. The metal body leaves uncovered part of the sensing area, resulting in an increased sensing distance.



Accessories for 12mm Sensors

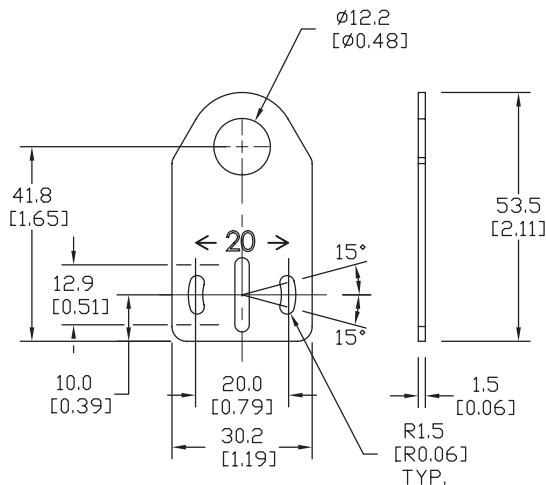
Axial Mounting Bracket

Mounting bracket, axial, available in 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 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

Dimensions

mm [inches]



ST12A

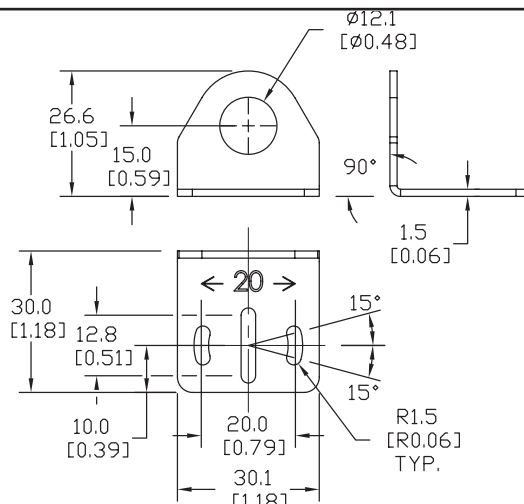
Right-angle Mounting Bracket

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)

Dimensions

mm [inches]



ST12C

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)



OPT2114, OPT2115

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).

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)

