ProSense Basic M18 Inductive Proximity Sensors

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

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	$4n4p:	5mm [0.20 in]	Flush	N.O.	PNP	Cable, 3 pole, 2m [6.5 ft]	Diagram 1	PDF
PBK6-AP-1H	$4n4s:	5mm [0.20 in]	Flush	N.O.	PNP	4-pin M12 connector	Diagram 3	PDF
PBK6-CP-1H	$;4n4t:	5mm [0.20 in]	Flush	N.C.	PNP	4-pin M12 connector	Diagram 3	PDF
PBK6-AN-1H	$4n4u:	5mm [0.20 in]	Flush	N.O.	NPN	4-pin M12 connector	Diagram 4	PDF
PBK6-AP-2A	$4n4v:	8mm [0.31 in]	Non-flush	N.O.	PNP	Cable, 3 pole, 2m [6.5 ft]	Diagram 1	PDF
PBK6-AP-2H	$4n4x:	8mm [0.31 in]	Non-flush	N.O.	PNP	4-pin M12 connector	Diagram 3	PDF
PBK6-CP-2H	$4n4z:	8mm [0.31 in]	Non-flush	N.C.	PNP	4-pin M12 connector	Diagram 3	PDF
PBK6-AN-2H	$;4n4]:	8mm [0.31 in]	Non-flush	N.O.	NPN	4-pin M12 connector	Diagram 4	PDF

Wiring Diagrams

Diagram 1

PNP Cable Version
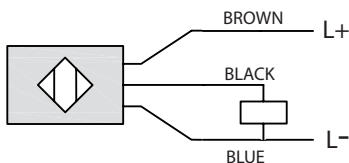
Diagram 2

NPN Cable Version
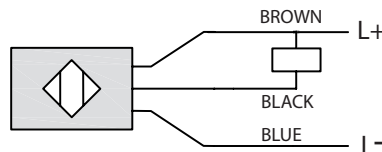
Connector

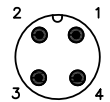**M12 connector**
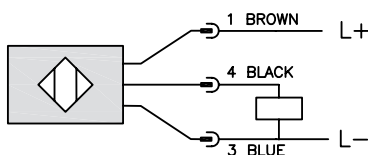

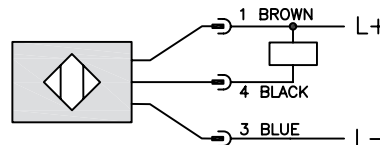**Diagram 3**

PNP M12 Connector

Diagram 4

NPN M12 Connector

ProSense Basic M18 Inductive Proximity Sensors

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 [6.5 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]
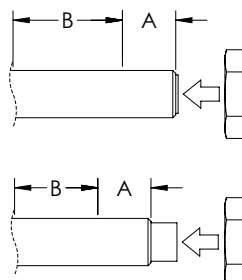
### Flush Mounting

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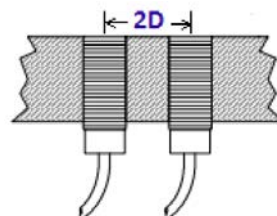
Non-Flush Mounting

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 ≥2sn (where sn=nominal switching distance) from the metallic installation medium. The distance from opposing metal surfaces must be ≥3sn, and the distance between two adjacent proximity switches must be ≥3D. The metal body leaves uncovered part of the sensing area, resulting in an increased sensing distance.
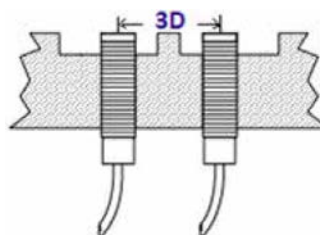
Accessories for 18mm Sensors

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-adapter sensors. Hexagonal nuts not included. For use with 18mm sensors.
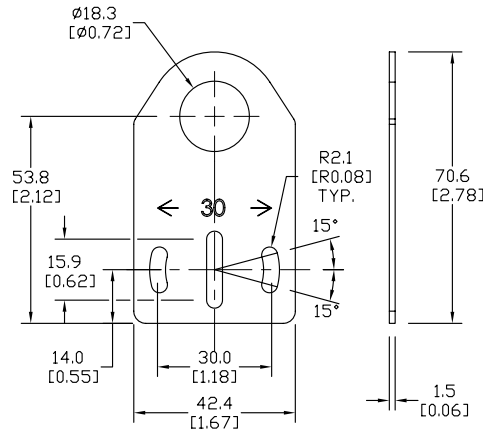
Accessories for 18mm Sensors			
Part Number	**Price**	**Description**	**Weight lb [g]**
ST18A	$;97,:	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
ST18A7W	$980:	Micro Detectors mounting bracket, axial, 316L stainless steel. For use with 18mm sensors.	0.06 [27.2]

ST18A

Dimensions

mm [inches]

Ø18.3 [Ø0.72]
53.8 [2.12]
30
R2.1 [R0.08] TYP.
70.6 [2.78]
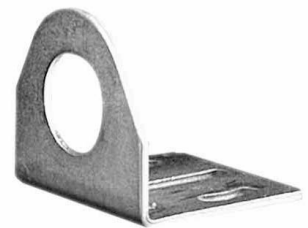15°
15.9 [0.62]
15°
14.0 [0.55]
30.0 [1.18]
42.4 [1.67]
1.5 [0.06]

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.
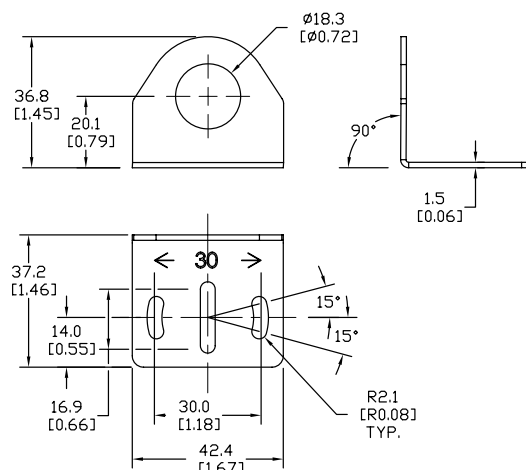
Accessories for 18mm Sensors			
Part Number	**Price**	**Description**	**Weight lb [g]**
ST18C	$981:	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
ST18C7W	$982:	Micro Detectors mounting bracket, right-angle, 316L stainless steel. For use with 18mm sensors.	0.06 [27.2]

ST18C

Dimensions

mm [inches]

Ø18.3 [Ø0.72]
36.8 [1.45]
20.1 [0.79]
90°
1.5 [0.06]
37.2 [1.46]
30
14.0 [0.55]
15°
15°
16.9 [0.66]
30.0 [1.18]
42.4 [1.67]
R2.1 [R0.08] TYP.

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	Drawing Link	Weight lb [g]
OPT2104	$;-1nlt:	Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]
OPT2105	$-1nlu:	Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]

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	Drawing Link	Weight lb [g]
OPT2116	$-1nl#:	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	PDF	0.15 [68.0]
OPT2117	$;-1nl!:	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	PDF	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).

OPT2116, OPT2117

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]