

# 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
<b>Standard Distance</b>								
<b>PBK6-AP-1A</b>		5mm [0.20 in]	Flush	N.O.	PNP	Cable, 3 pole, 2m [6.56 ft]	Diagram 1	PDF
<b>PBK6-AP-1H</b>		5mm [0.20 in]	Flush	N.O.	PNP	4-pin M12 connector	Diagram 3	PDF
<b>PBK6-CP-1H</b>		5mm [0.20 in]	Flush	N.C.	PNP	4-pin M12 connector	Diagram 3	PDF
<b>PBK6-AN-1H</b>		5mm [0.20 in]	Flush	N.O.	NPN	4-pin M12 connector	Diagram 4	PDF
<b>PBK6-AP-2A</b>		8mm [0.31 in]	Non-flush	N.O.	PNP	Cable, 3 pole, 2m [6.56 ft]	Diagram 1	PDF
<b>PBK6-AP-2H</b>		8mm [0.31 in]	Non-flush	N.O.	PNP	4-pin M12 connector	Diagram 3	PDF
<b>PBK6-CP-2H</b>		8mm [0.31 in]	Non-flush	N.C.	PNP	4-pin M12 connector	Diagram 3	PDF
<b>PBK6-AN-2H</b>		8mm [0.31 in]	Non-flush	N.O.	NPN	4-pin M12 connector	Diagram 4	PDF

## Wiring diagrams

Diagram 1

### PNP Cable Version

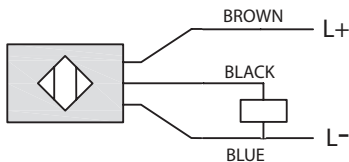


Diagram 2

### NPN Cable Version

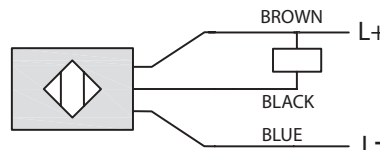


Diagram 3

### PNP M12 Connector

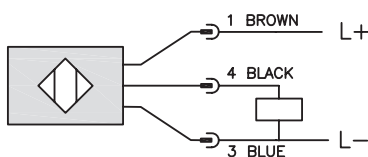
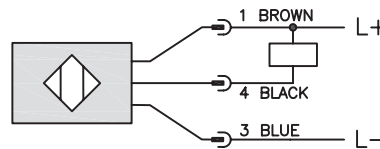


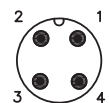
Diagram 4

### NPN M12 Connector



## Connector

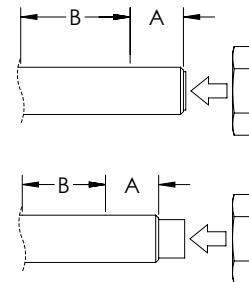
M12 connector



# Prosense Basic M18 Inductive Proximity Sensors

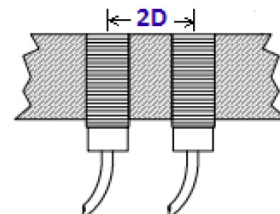
Prosense Basic M18 Inductive Proximity Sensor Specifications		
<b>Mounting Type</b>	Flush	Non-flush
<b>Nominal Sensing Distance</b>	5mm [0.20 in]	8mm [0.31 in]
<b>Material Correction Factors</b>	See the <a href="#">Material influence table</a>	
<b>Output Type</b>	NPN or PNP/N.O. or N.C./3-wire	
<b>Operating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

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



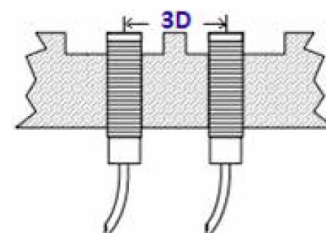
## Flush Mounting

Flush models can be installed with their sensing faces flush to the metal. The distance from opposing metal surfaces must be  $\geq 3sn$  (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 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.

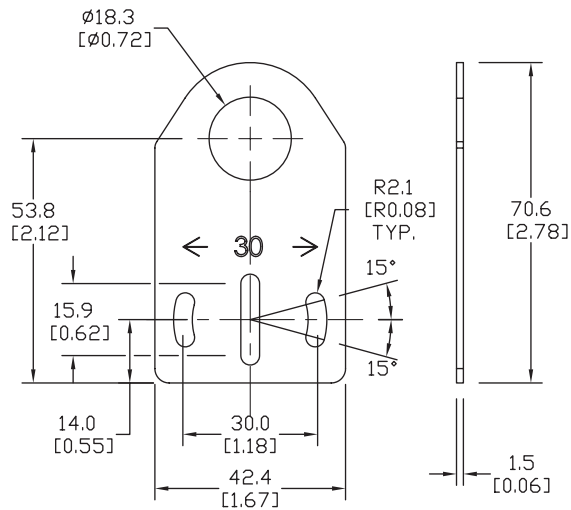


ST18A

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

### 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.

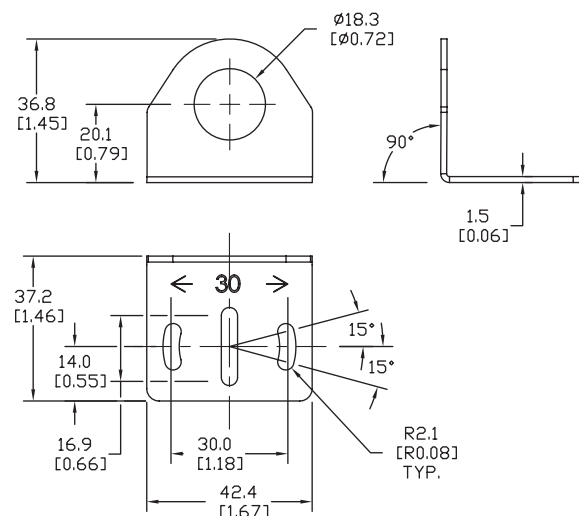


ST18C

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

### Dimensions

mm [inches]



# 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)
<a href="#">OPT2104</a>		Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	<a href="#">PDF</a>	0.06 (27.2)
<a href="#">OPT2105</a>		Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.	<a href="#">PDF</a>	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)
<a href="#">OPT2116</a>		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	<a href="#">PDF</a>	0.15 (68.0)
<a href="#">OPT2117</a>		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	<a href="#">PDF</a>	0.28 (127.0)



OPT2116, OPT2117

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)
<a href="#">OPT2109</a>		Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	<a href="#">PDF</a>	0.41 (185.97)
<a href="#">OPT2110</a>		Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	<a href="#">PDF</a>	0.60 (272.16)
<a href="#">OPT2111</a>		Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	<a href="#">PDF</a>	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)
<a href="#">OPT2108</a>		Wenglor mounting bracket, right-angle, nickel plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	<a href="#">PDF</a>	0.07 (31.8)

