

# ProSense Basic M30 Inductive Proximity Sensors



## Basic Series Inductive Proxes M30 (30mm)

- Operating distance 10 to 15mm
- 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 M30 Inductive Proximity Sensor Selection Chart

| Part Number                       | Price   | Sensing Range  | Mounting  | Output State | Logic | Connection                 | Wiring    | Drawing Link        |
|-----------------------------------|---------|----------------|-----------|--------------|-------|----------------------------|-----------|---------------------|
| <b>Standard Distance</b>          |         |                |           |              |       |                            |           |                     |
| <a href="#"><b>PBT6-AP-1A</b></a> | \$16.00 | 10mm [0.39 in] | Flush     | N.O.         | PNP   | Cable, 3 pole, 2m [6.5 ft] | Diagram 1 | <a href="#">PDF</a> |
| <a href="#"><b>PBT6-AP-1H</b></a> | \$18.50 | 10mm [0.39 in] | Flush     | N.O.         | PNP   | 4-pin M12 connector        | Diagram 3 | <a href="#">PDF</a> |
| <a href="#"><b>PBT6-CP-1H</b></a> | \$18.50 | 10mm [0.39 in] | Flush     | N.C.         | PNP   | 4-pin M12 connector        | Diagram 3 | <a href="#">PDF</a> |
| <a href="#"><b>PBT6-AN-1H</b></a> | \$18.50 | 10mm [0.39 in] | Flush     | N.O.         | NPN   | 4-pin M12 connector        | Diagram 4 | <a href="#">PDF</a> |
| <a href="#"><b>PBT6-AP-2A</b></a> | \$16.00 | 15mm [0.59 in] | Non-flush | N.O.         | PNP   | Cable, 3 pole, 2m [6.5 ft] | Diagram 1 | <a href="#">PDF</a> |
| <a href="#"><b>PBT6-AP-2H</b></a> | \$18.50 | 15mm [0.59 in] | Non-flush | N.O.         | PNP   | 4-pin M12 connector        | Diagram 3 | <a href="#">PDF</a> |
| <a href="#"><b>PBT6-CP-2H</b></a> | \$18.50 | 15mm [0.59 in] | Non-flush | N.C.         | PNP   | 4-pin M12 connector        | Diagram 3 | <a href="#">PDF</a> |
| <a href="#"><b>PBT6-AN-2H</b></a> | \$18.50 | 15mm [0.59 in] | Non-flush | N.O.         | NPN   | 4-pin M12 connector        | Diagram 4 | <a href="#">PDF</a> |

## Wiring Diagrams

**Diagram 1**

**PNP Cable Version**

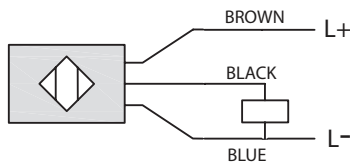
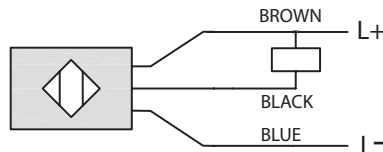


**Diagram 2**

**NPN Cable Version**



**Connector**

**M12 connector**

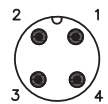


**Diagram 3**

**PNP M12 Connector**

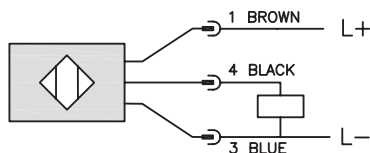
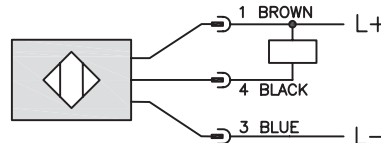


**Diagram 4**

**NPN M12 Connector**



# Prosense Basic M30 Inductive Proximity Sensors

## Basic M30 Inductive Proximity Sensor Specifications

| Mounting Type                       | Flush                                                           | Non-flush      |
|-------------------------------------|-----------------------------------------------------------------|----------------|
| Nominal Sensing Distance            | 10mm [0.39 in]                                                  | 15mm [0.59 in] |
| Material Correction Factors         | See the <a href="#">Material influence table</a>                |                |
| 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                 | 300Hz                                                           |                |
| 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 60°C [-13 to 140°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 <a href="#">Proximity Sensor Terminology</a>                |                |
| Tightening Torque                   | See Torque Table below                                          |                |
| Weight                              | 210g [7.41 oz] (cable version) – 170g [6.00 oz] (M12 connector) |                |
| Connection                          | 2m [6.5 ft] PUR Cable, 3 pole, 26AWG or M12 Connector           |                |
| Agency Approvals                    | CE cULus E328811                                                |                |

## Installation Tightening Torque

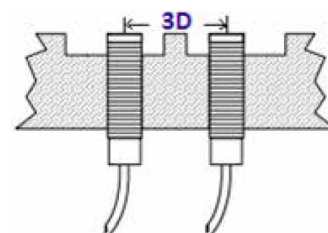
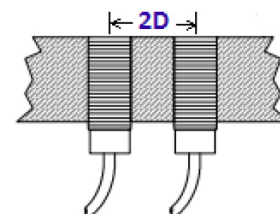
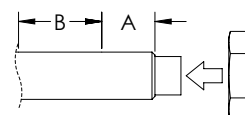
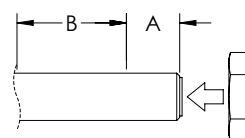
|                                              |                            |
|----------------------------------------------|----------------------------|
| Mounting                                     | Flush, non-flush mountable |
| Housing Material                             | Nickel plated brass        |
| Diameter                                     | 30mm [1.18 in]             |
| Tightening Torque for A (A = 11mm [0.43 in]) | 40 N•m [29.50 lb•ft]       |
| Tightening Torque for B                      | 60 N•m [44.25 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 proximity switches must be  $\geq 3D$ . The metal body leaves uncovered part of the sensing area, resulting in an increased sensing distance.



# Accessories for 30mm Sensors

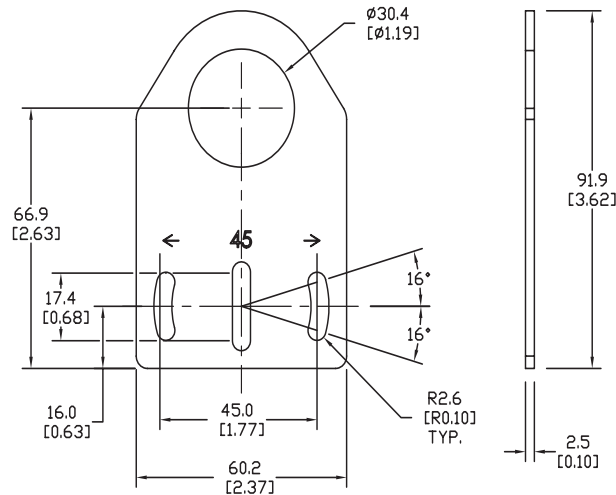
## Axial Mounting Bracket

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-adaptor sensors. Hexagonal nuts not included.

| Accessories for 30mm Sensors |        |                                                                                        |               |
|------------------------------|--------|----------------------------------------------------------------------------------------|---------------|
| Part Number                  | Price  | Description                                                                            | Weight lb [g] |
| <b>ST30A</b>                 | \$2.25 | Micro Detectors mounting bracket, axial, zinc plated steel. For use with 30mm sensors. | 0.18 [81.7]   |

### Dimensions

mm [inches]



**ST30A**

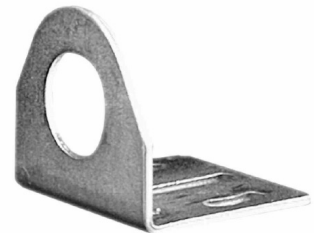
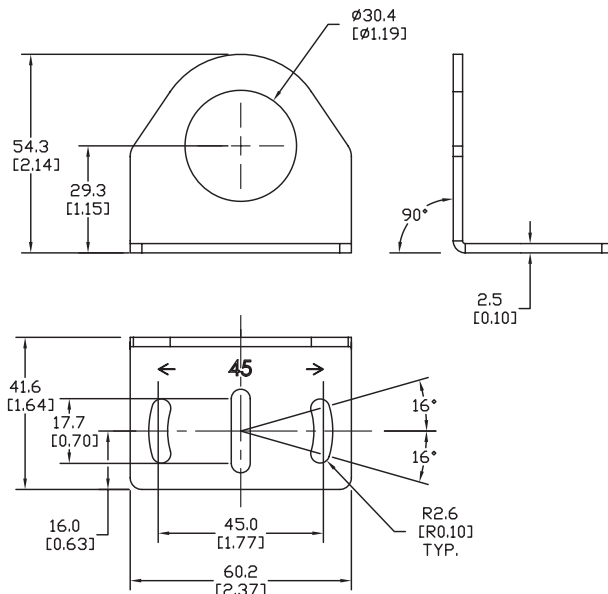
## Right-angle Mounting Bracket

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] |
| <b>ST30C</b>                 | \$2.25 | Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 30mm sensors. | 0.18 [81.7]   |

### Dimensions

mm [inches]



**ST30C**

# Accessories for 30mm Sensors

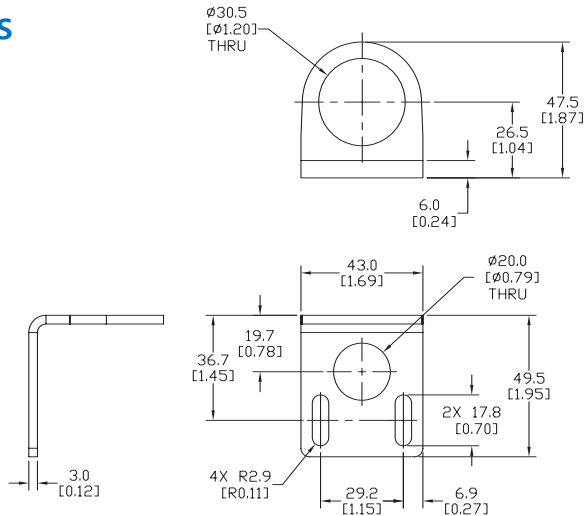
## Right-angle Mounting Bracket

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

| Accessories for FW Series Sensors |        |                                                                                                 |                |
|-----------------------------------|--------|-------------------------------------------------------------------------------------------------|----------------|
| Part Number                       | Price  | Description                                                                                     | Weight lb [g]  |
| <a href="#"><u>ST30C6W</u></a>    | \$5.50 | AutomationDirect mounting bracket, right-angle, 304 stainless steel. For use with 30mm sensors. | 0.15<br>(68.0) |

## Dimensions

mm [inches]



[ST30C6W](#)

## 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]  |
| <a href="#"><u>OPT2118</u></a> | \$11.50 | 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 | <a href="#"><u>PDF</u></a> | 0.18<br>[81.7] |
| <a href="#"><u>OPT2119</u></a> | \$21.00 | 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 | <a href="#"><u>PDF</u></a> | 0.18<br>[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](#)

# 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>                                 | \$13.00 | Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel. | <a href="#">PDF</a> | 0.41<br>[185.97] |
| <a href="#">OPT2110</a>                                 | \$16.00 | Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel. | <a href="#">PDF</a> | 0.60<br>[272.16] |
| <a href="#">OPT2111</a>                                 | \$21.00 | Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel. | <a href="#">PDF</a> | 0.98<br>[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>                        | \$16.00 | Wenglor mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111. | <a href="#">PDF</a> | 0.07<br>[31.8] |

