

# PKW Series Inductive Proximity Sensors



## M18 (18mm) Stainless Steel - DC

- Low cost/high performance
- LED status indicators are visible at a wide angle.
- Axial cable or M12 quick-disconnect models
- Purchase cable separately (for quick-disconnect models).
- Lifetime warranty

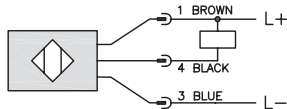


### PKW Series M18 DC Inductive Proximity Selection Chart

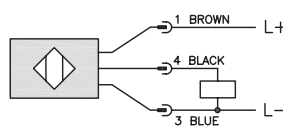
| Part Number                      | Price    | Sensing Range   | Mounting  | Output State | Logic | Connection              | Wiring    | Dimensions |
|----------------------------------|----------|-----------------|-----------|--------------|-------|-------------------------|-----------|------------|
| Standard Distance                |          |                 |           |              |       |                         |           |            |
| <a href="#"><u>PKW-0N-1H</u></a> | \$50.00  | 5mm [0.197 in]  | Flush     | N.O./N.C.    | NPN   | M12 [12mm] connector    | Diagram 3 | Figure 1   |
| <a href="#"><u>PKW-0P-1H</u></a> | \$50.00  |                 |           |              | PNP   | M12 [12mm] connector    | Diagram 4 | Figure 1   |
| <a href="#"><u>PKW-0N-2H</u></a> | \$50.00  | 8mm [0.315 in]  | Non-flush | N.O./N.C.    | NPN   | M12 [12mm] connector    | Diagram 3 | Figure 1   |
| <a href="#"><u>PKW-0P-2H</u></a> | \$50.00  |                 |           |              | PNP   | M12 [12mm] connector    | Diagram 4 | Figure 1   |
| Triple Distance                  |          |                 |           |              |       |                         |           |            |
| <a href="#"><u>PKW-AN-5A</u></a> | \$114.00 | 10mm [0.394 in] | Flush     | N.O.         | NPN   | 2m [6.5 ft] axial cable | Diagram 1 | Figure 2   |
| <a href="#"><u>PKW-AP-5A</u></a> | \$114.00 |                 |           |              | PNP   | 2m [6.5 ft] axial cable | Diagram 2 | Figure 2   |
| <a href="#"><u>PKW-AN-5H</u></a> | \$114.00 |                 |           |              | NPN   | M12 [12mm] connector    | Diagram 1 | Figure 3   |
| <a href="#"><u>PKW-AP-5H</u></a> | \$114.00 |                 |           |              | PNP   | M12 [12mm] connector    | Diagram 2 | Figure 3   |

## Wiring Diagrams

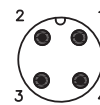
**Diagram 1**  
NPN Output



**Diagram 2**  
PNP Output

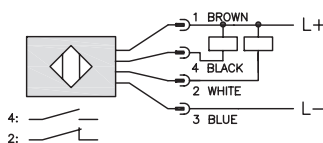


**Connector**  
M12 connector

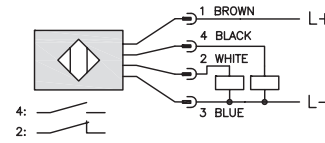


Note: Pin 2 is not present on some models.

**Diagram 3**  
NPN Output



**Diagram 4**  
PNP Output



# PKW Series Inductive Proximity Sensors

## PKW Series M18 DC Inductive Proximity Specifications

| Models                                      | Standard Distance                                | Triple Distance                                                | PKW-A-1H                            | PKW-A*-2H                   |
|---------------------------------------------|--------------------------------------------------|----------------------------------------------------------------|-------------------------------------|-----------------------------|
| Mounting Type                               | Flush                                            | Flush                                                          | Flush                               | Non-flush                   |
| Nominal Sensing Distance                    | 5 mm [0.197 in] <sup>1</sup>                     | 10 mm [0.394 in]                                               | 5 mm [0.197 in]                     | 12 mm (0.472 in)            |
| Operating Distance                          | NA                                               | NA                                                             | 0 to 4 mm                           | 0 to 9.7 mm (0.38in)        |
| Material Correction Factors                 | See the <a href="#">Material influence table</a> |                                                                |                                     |                             |
| Output Type                                 | NPN or PNP and N.O./N.C. complementary           | NPN or PNP, N.O. only                                          | NPN or PNP, N.O. only               |                             |
| Operating Voltage                           | 10 to 30 VDC                                     | 10 to 30 VDC                                                   | 10 to 36 VDC                        | 10 to 30 VDC                |
| No-load Supply Current                      | 15mA                                             | 10mA                                                           | 20mA                                | 25mA                        |
| Operating (Load) Current                    | ≤ 400 mA                                         | ≤ 200 mA                                                       | 100 mA                              |                             |
| Off-state (Leakage) Current                 | ≤ 10μA                                           | ≤ 100μA                                                        | <0.1 mA                             |                             |
| Voltage Drop                                | ≤ 0.8 V                                          | ≤ 2.0 V                                                        | < 2.5 V                             |                             |
| Switching Frequency                         | 1kHz                                             | 200Hz                                                          | 100Hz                               | 500Hz                       |
| Differential Travel (% of Nominal Distance) | 2 to 10%                                         | ≤ 15%                                                          | ≤ 20%                               |                             |
| Repeat Accuracy                             | ≤ 5%                                             | NA                                                             | NA                                  |                             |
| Ripple                                      | ≤ 10%                                            | ≤ 20%                                                          | NA                                  |                             |
| Time Delay Before Availability (tv)         | 100ms                                            | ≤ 10ms                                                         | negligible                          |                             |
| Reverse Polarity Protection                 | Not available                                    |                                                                | Yes                                 |                             |
| Short-circuit Protection                    | Not available                                    |                                                                | Yes [non-latching]                  |                             |
| Operating Temperature                       | -25 to 70°C<br>[-13 to 158°F]                    | -25 to 70°C<br>[-13 to 158°F]                                  | -25 to 70°C<br>[-13 to 158°F]       | 0 to 100°C<br>[32 to 212°F] |
| Protection Degree (DIN 40050)               | IEC IP67/68                                      | IEC IP67 <sup>2</sup> [connector]<br>IP68 <sup>2</sup> [cable] | IEC IP67, IP68                      | IEC IP65/67/68/69K          |
| Indication/Switch Status                    | Yellow [N.O. output energized]                   |                                                                |                                     |                             |
| Housing Material                            | Stainless steel                                  | Stainless steel                                                | Stainless steel                     | Stainless steel             |
| Sensing Face Material                       | Polyphenylene Sulfide [PPS]                      | Stainless steel                                                | Stainless steel                     | Stainless steel             |
| Shock Resistance / Vibration Resistance     | See <a href="#">Proximity Sensor Terminology</a> |                                                                |                                     |                             |
| Tightening Torque                           | 40Nm [29 lb-ft]                                  | 50Nm [37 lb-ft]                                                | 50Nm [37 lb-ft]                     |                             |
| Weight                                      | 70g [2.47 oz]                                    | 114g [4.02 oz]<br>50g [1.76 oz]                                | 56g [1.98 oz]                       |                             |
| Connection                                  | M12 connector                                    | 2m [6.5 ft] axial cable or<br>M12 connector                    | M12 connector. 2 lock nuts included |                             |
| Agency Approvals                            | NA                                               | UL file E328811, RoHS                                          | cULus file E328811, CE, RoHS        |                             |

Notes: <sup>1</sup>With 12 x 12mm FE360 target<sup>2</sup>Fully submersible to 290 psi.

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

## Dimensions

mm [inches]

Figure 1

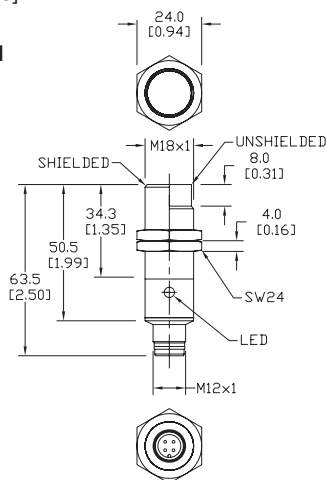


Figure 2

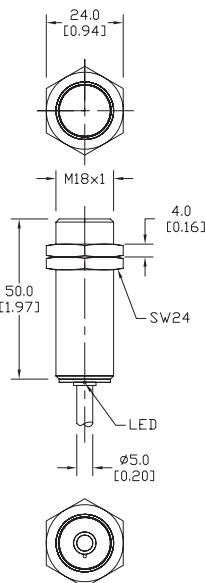
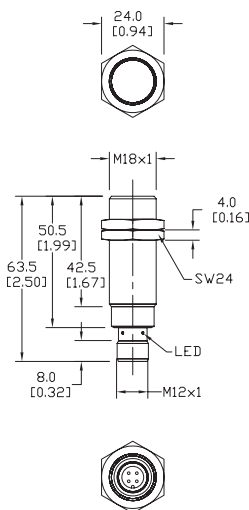


Figure 3



Note: Pin 2 is not present on some models.

# 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.

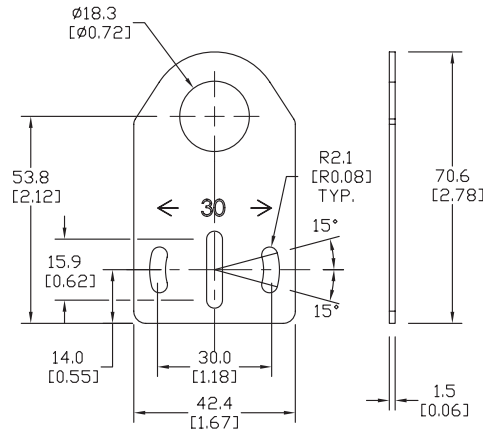
| Accessories for 18mm Sensors   |        |                                                                                           |                  |
|--------------------------------|--------|-------------------------------------------------------------------------------------------|------------------|
| Part Number                    | Price  | Description                                                                               | Weight<br>lb [g] |
| <a href="#"><u>ST18A</u></a>   | \$2.00 | Micro Detectors mounting bracket, axial, zinc plated steel. For use with 18mm sensors.    | 0.06 [27.2]      |
| <a href="#"><u>ST18A7W</u></a> | \$7.25 | Micro Detectors mounting bracket, axial, 316L stainless steel. For use with 18mm sensors. | 0.06 [27.2]      |



**ST18A**

## Dimensions

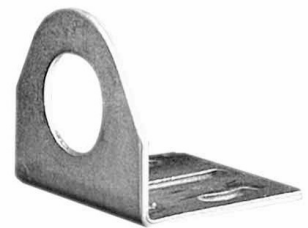
mm [inches]



## 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.

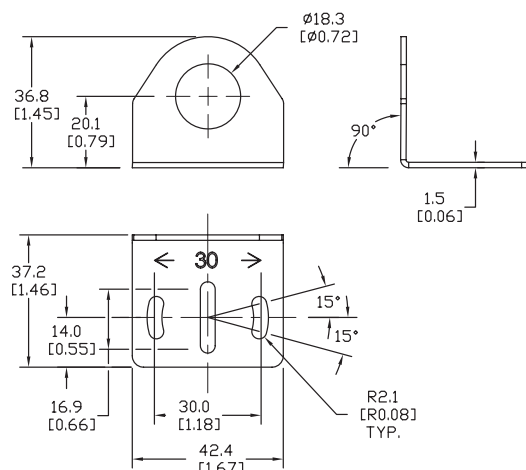
| Accessories for 18mm Sensors   |        |                                                                                                 |                  |
|--------------------------------|--------|-------------------------------------------------------------------------------------------------|------------------|
| Part Number                    | Price  | Description                                                                                     | Weight<br>lb [g] |
| <a href="#"><u>ST18C</u></a>   | \$2.00 | Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.    | 0.06 [27.2]      |
| <a href="#"><u>ST18C7W</u></a> | \$7.25 | Micro Detectors mounting bracket, right-angle, 316L stainless steel. For use with 18mm sensors. | 0.06 [27.2]      |



**ST18C**

## 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>      | \$10.50 | 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>      | \$10.50 | 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>      | \$11.50 | 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>      | \$21.00 | 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>                                 | \$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] |

