PKW Series Inductive Proximity Sensors

M18 (18 mm) stainless steel - DC

- Twelve models available
- 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

NEED CABLES?

PKW Series M18 DC Inductive Prox Selection Chart								
Part Number		**Sensing Range**	**Housing**	**Output State**	**Logic**	**Connection**	**Wiring**	**Dimensions**
Standard Distance								
PKW-0N-1H		5 mm (0.197 in)	Shielded	NO/N.C	NPN	M12 (12 mm) connector	Diagram 3	Figure 1
PKW-0P-1H					PNP	M12 (12 mm) connector	Diagram 4	Figure 1
PKW-AN-1H		5 mm (0.197 in)	Shielded	NO	NPN	M12 (12 mm) connector	Diagram 1	Figure 4
PKW-AP-1H					PNP	M12 (12 mm) connector	Diagram 2	Figure 4
PKW-0N-2H		8 mm (0.315 in)	Unshielded	NO/N.C	NPN	M12 (12 mm) connector	Diagram 3	Figure 1
PKW-0P-2H					PNP	M12 (12 mm) connector	Diagram 4	Figure 1
Extended Distance								
PKW-AN-2H		12 mm (0.472 in)	Unshielded	NO	NPN	M12 (12 mm) connector	Diagram 1	Figure 4
PKW-AP-2H					PNP	M12 (12 mm) connector	Diagram 2	Figure 4
Triple Distance								
PKW-AN-5A		10 mm (0.394 in)	Shielded	NO	NPN	2 m (6.5') axial cable	Diagram 1	Figure 2
PKW-AP-5A					PNP	2 m (6.5') axial cable	Diagram 2	Figure 2
PKW-AN-5H					NPN	M12 (12 mm) connector	Diagram 1	Figure 3
PKW-AP-5H					PNP	M12 (12 mm) connector	Diagram 2	Figure 3

Wiring diagrams

Diagram 1

NPN Output
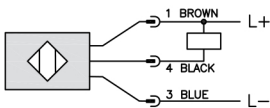
1 BROWN — L+
4 BLACK
3 BLUE — L−

Diagram 2

PNP Output
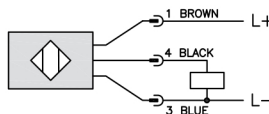
1 BROWN — L+
4 BLACK
3 BLUE — L−

Diagram 3

NPN Output

1 BROWN — L+
4 BLACK
2 WHITE — L−
3 BLUE

4:
2:

Diagram 4

PNP Output

1 BROWN — L+
4 BLACK
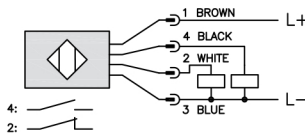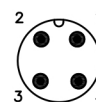2 WHITE
3 BLUE — L−

4:
2:

Connector

M12 connector

2   1
3   4
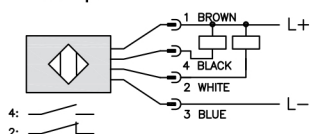
*Note: Pin 2 is not present on some models.*

PKW Series Inductive Proximity Sensors

Specifications	Standard Distance Models	Extended Distance Models	Triple Distance Models	PKW-A*-1H	PKW-A*-2H
Mounting Type	Shielded	Unshielded	Shielded	Shielded	Unshielded
Nominal Sensing Distance	5 mm (0.197 in)[1]	8 mm (0.315 in)[1]	10 mm (0.394 in)	5 mm (0.197 in)	12 mm (0.472 in)
Operating Distance	NA			0 to 4 mm	0 to 9.7 mm (0.38in)
Material Correction Factors	See the Material influence table				
Output Type	NPN or PNP and NO/NC complementary		NPN or PNP, NO only	NPN or PNP, NO only	
Operating Voltage	10 to 30 VDC			10 to 36 VDC	10 to 30 VDC
No-load Supply Current	15 mA		10 mA	20 mA	25 mA
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	1 kHz		200 Hz	100 Hz	500 Hz
Differential Travel (% of Nominal Distance)	2 to 10%		≤15%	≤20%	
Repeat Accuracy	≤5%		NA	NA	
Ripple	≤10%		≤20%	NA	
Time Delay Before Availability (tv)	100 ms		≤10 ms	negligible	
Reverse Polarity Protection	Not available			Yes	
Short-circuit Protection	Not available			Yes (non-latching)	
Operating Temperature	-25° to 70°C (-13° to 158°F)			0° to 100°C (32° to 212°F)	
Protection Degree (DIN 40050)	IEC IP67/68		IEC IP67[2] (connector) IP68[2] (cable)	IEC IP67, IP68	IEC IP65/67/68/69K
Indication/Switch Status	Yellow (NO output energized)				
Housing Material	Stainless steel				
Sensing Face Material	Polyphonylene Sulfide (PPS)		Stainless steel	Stainless steel	Stainless steel
Shock Resistance / Vibration Resistance	See Proximity Sensor Terminology				
Tightening Torque	40 Nm (29 lb-ft)		50 Nm (37 lb-ft)	50 Nm (37 lb-ft)	
Weight	70 g (2.47 oz)		114 g (4.02 oz) /50 g (1.76 oz)	56 g (1.98 oz)	
Connection	M12 connector		2 m (6.5') axial cable or M12 connector	M12 connector. 2 lock nuts included	
Agency Approvals	NA		UL file E328811, RoHS	cULus file E328811, CE, RoHS	

Notes: [1]With 12 x 12mm FE360 target [2]Fully submersible to 290 psi.

Dimensions

mm [inches]

Figure 1

Figure 2

Note: Pin 2 is not present on some models.

Figure 3

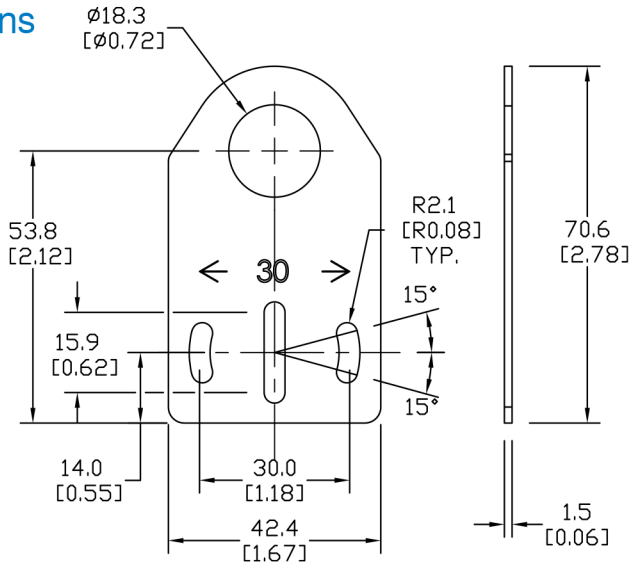**Figure 4**
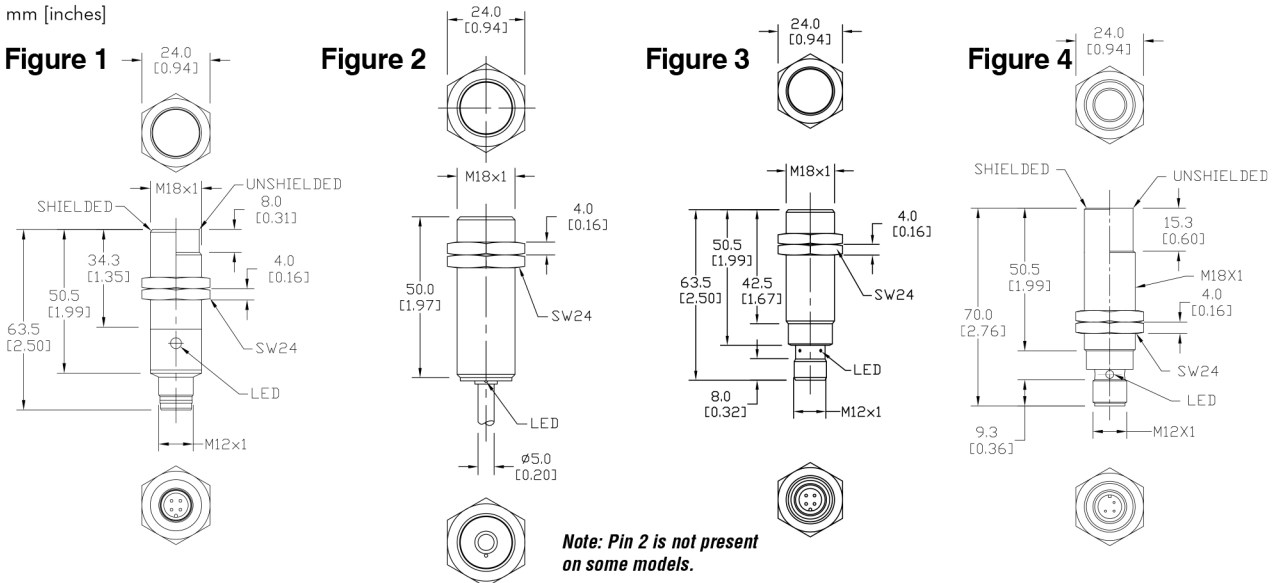
Accessories for 18mm Sensors

Axial Mounting Bracket

Axial mounting bracket for use with 18mm sensors. 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.

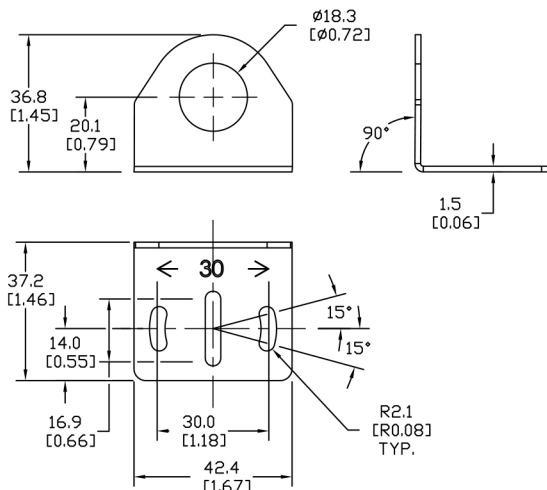| Accessories for 18mm Sensors			
Part Number		Description	Weight [lb]
ST18A		Mounting bracket, axial, zinc-plated steel. For use with 18mm sensors. 1/pk.	0.06
ST18A7W		Mounting bracket, axial, 316L stainless steel. For use with 18mm sensors. 1/pk.	0.06

Dimensions
mm [inches]

ST18A

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		Description	Weight [lb]
ST18C		Mounting bracket, right angle, zinc-plated steel. For use with 18mm sensors. 1/pk.	0.06
ST18C7W		Mounting bracket, right angle, 316L stainless steel. For use with 18mm sensors. 1/pk.	0.06

Dimensions
mm [inches]

ST18C

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	**Description**	**Weight [lb]**
OPT2104	Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	0.06
OPT2105	Mounting bracket, right-angle, plastic. For use with 18mm sensors.	0.06

OPT2104, OPT2105

Dimensions

mm [inches]
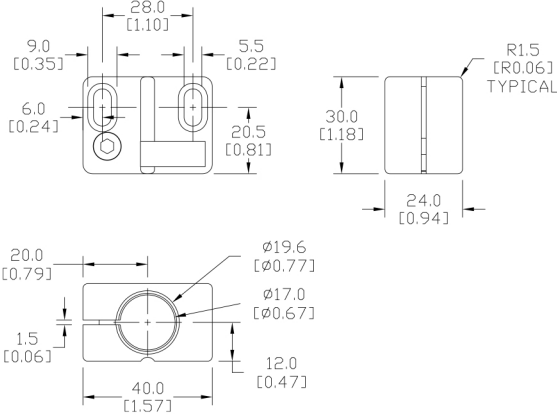
## Right-angle Swivel Mounting Systems

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	**Description**	**Mounting Head**	**Mounting Plate**	**Weight [lb]**
OPT2116	Mounting bracket, right-angle swivel, 360 vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 18mm sensors.	Aluminum	304 Stainless Steel	0.15
OPT2117	Mounting bracket, right-angle swivel, 360 vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 18mm sensors.	304 Stainless Steel	304 Stainless Steel	0.28

Note: 304 Stainless steel mounting rods sold separately: OPT2109 (200mm length), OPT2110 (300mm length), and OPT2111 (500mm length).

OPT2116, OPT2117

Dimensions

mm [inches]
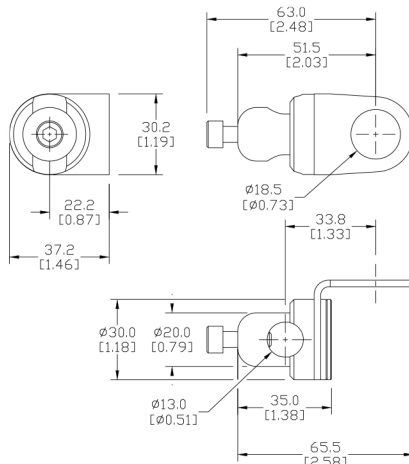
Mounting Rods

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		**Description**	**Weight [lb]**
OPT2109		Mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	0.41
OPT2110		Mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	0.60
OPT2111		Mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	0.98

OPT2109, OPT2110, OPT2111

Dimensions

mm [inches]

Ø12.0 [0.47]

OPT2109 = 200mm
OPT2110 = 300mm
OPT2111 = 500mm

1×45°
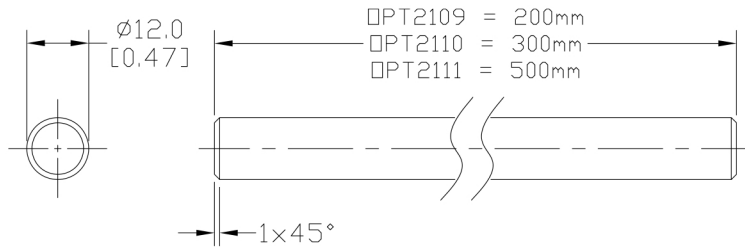
Right-angle Mounting Bracket

Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.

Accessories for 12mm Sensors			
Part Number		**Description**	**Weight [lb]**
OPT2108		Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	0.07

OPT2108

Dimensions

mm [inches]

Ø3.2 [Ø0.13]

4.0 [0.16]

15.0 [0.59]

16.0 [0.63]

8.0 [0.31]

8.0 [0.31]

25.0 [0.98]

12.4 [0.49]

1.0 [0.04]

7.5 [0.30]

Ø12.1 [Ø0.48]