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

NEED CABLES?

PKW Series M18 DC Inductive Proximity Selection Chart								
Part Number	Price	Sensing Range	Mounting	Output State	Logic	Connection	Wiring	Dimensions
Standard Distance								
PKW-0N-1H		5mm [0.197 in]	Flush	N.O./N.C.	NPN	M12 [12mm] connector	Diagram 3	Figure 1
PKW-0P-1H					PNP	M12 [12mm] connector	Diagram 4	Figure 1
PKW-0N-2H		8mm [0.315 in]	Non-flush	N.O./N.C.	NPN	M12 [12mm] connector	Diagram 3	Figure 1
PKW-0P-2H					PNP	M12 [12mm] connector	Diagram 4	Figure 1
Triple Distance								
PKW-AN-5A		10mm [0.394 in]	Flush	N.O.	NPN	2m [6.5 ft] axial cable	Diagram 1	Figure 2
PKW-AP-5A					PNP	2m [6.5 ft] axial cable	Diagram 2	Figure 2
PKW-AN-5H					NPN	M12 [12mm] connector	Diagram 1	Figure 3
PKW-AP-5H					PNP	M12 [12mm] connector	Diagram 2	Figure 3

Wiring Diagrams

Diagram 1
NPN Output

1 BROWN — L+
4 BLACK
3 BLUE — L−

Diagram 2
PNP Output

BROWN — L+
4 BLACK
3 BLUE — L−

Connector
M12 connector

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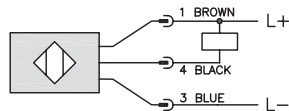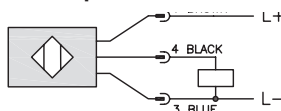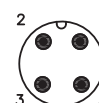
Note: Pin 2 is not present on some models.

Diagram 3
NPN Output

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

Diagram 4
PNP Output

1 BROWN — L+
4 BLACK
2 WHITE
3 BLUE — L−
4:
2:
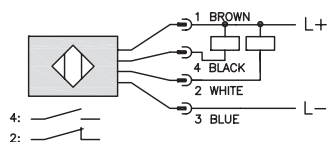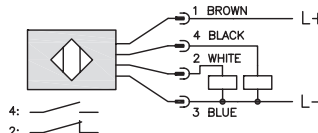
PKW Series Inductive Proximity Sensors

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][1]	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 Material influence table			
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 [-13 to 158°F]	-25 to 70°C [-13 to 158°F]	-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 [N.O. output energized]			
Housing Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Sensing Face Material	Polyphonylene Sulfide [PPS]	Stainless steel	Stainless steel	Stainless steel
Shock Resistance / Vibration Resistance	See Proximity Sensor Terminology			
Tightening Torque	40Nm [29 lb-ft]	50Nm [37 lb-ft]	50Nm [37 lb-ft]	
Weight	70g [2.47 oz]	114g [4.02 oz] 50g [1.76 oz]	56g [1.98 oz]	
Connection	M12 connector	2m [6.5 ft] 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.
To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.
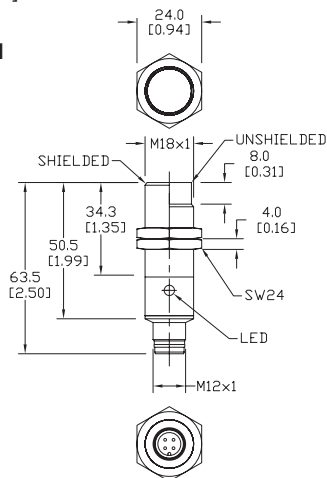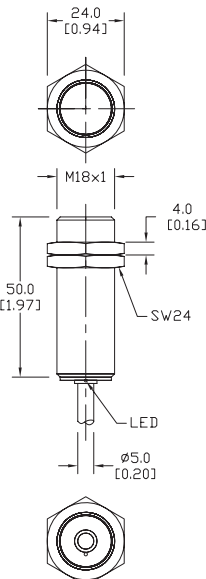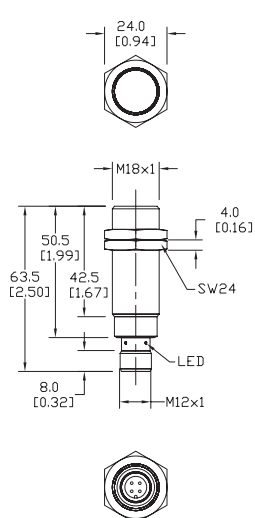
Dimensions

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-adapter sensors. Hexagonal nuts not included. For use with 18mm sensors.

Accessories for 18mm Sensors			
Part Number	**Price**	**Description**	**Weight lb [g]**
ST18A		Micro Detectors mounting bracket, axial, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
ST18A7W		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 lb [g]**
ST18C		Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
ST18C7W		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.

OPT2104, OPT2105

Accessories for 18mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
OPT2104		Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]
OPT2105		Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]

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.

OPT2116, OPT2117

Accessories for 18mm Sensors						
Part Number	Price	Description	Mounting Head	Mounting Plate	Drawing Link	Weight lb [g]
OPT2116		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		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).

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		Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	PDF	0.41 [185.97]
OPT2110		Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	PDF	0.60 [272.16]
OPT2111		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		Wenglor mounting bracket, right-angle, nickel plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	PDF	0.07 [31.8]