

# PNK Series Inductive Proximity Sensors



## M18 (18mm) Bronze-plated Brass - DC

- Low cost/high performance
- Short and regular body styles
- IP65 / IP66 / IP67 / IP68 / IP69K rated
- Axial cable / M12 quick-disconnect; purchase cable separately
- Lifetime warranty



### PNK Series Inductive Proximity Selection Chart (Short Body)

Part Number	Price	Sensing Range	Mounting	Output State	Logic	Connection	Wiring	Dimensions
<b>M18 Models (short body)</b>								
<a href="#">PNK6-AN-3A</a>	\$;0t_d:	8mm [0.32 in]	Flush	N.O.	NPN	2m [6.5 ft] axial cable	Diagram 1	Figure 5
<a href="#">PNK6-AN-3H</a>	\$;0t_e:	8mm [0.32 in]	Flush	N.O.	NPN	M12 (12mm) connector	Diagram 1	Figure 6
<a href="#">PNK6-AN-4A</a>	\$;0t_f:	12mm [0.47 in]	Non-flush	N.O.	NPN	2m [6.5 ft] axial cable	Diagram 1	Figure 5
<a href="#">PNK6-AN-4H</a>	\$;0t_g:	12mm [0.47 in]	Non-flush	N.O.	NPN	M12 (12mm) connector	Diagram 1	Figure 6
<a href="#">PNK6-AP-3A</a>	\$;0t_h:	8mm [0.32 in]	Flush	N.O.	PNP	2m [6.5 ft] axial cable	Diagram 2	Figure 5
<a href="#">PNK6-AP-3H</a>	\$;0t_i:	8mm [0.32 in]	Flush	N.O.	PNP	M12 (12mm) connector	Diagram 2	Figure 6
<a href="#">PNK6-AP-4A</a>	\$;0t_j:	12mm [0.47 in]	Non-flush	N.O.	PNP	2m [6.5 ft] axial cable	Diagram 2	Figure 5
<a href="#">PNK6-AP-4H</a>	\$;0t_k:	12mm [0.47 in]	Non-flush	N.O.	PNP	M12 (12mm) connector	Diagram 2	Figure 6
<a href="#">PNK6-CN-3A</a>	\$;0t_l:	8mm [0.32 in]	Flush	N.C.	NPN	2m [6.5 ft] axial cable	Diagram 3	Figure 5
<a href="#">PNK6-CN-3H</a>	\$;0t_n:	8mm [0.32 in]	Flush	N.C.	NPN	M12 (12mm) connector	Diagram 3	Figure 6
<a href="#">PNK6-CN-4A</a>	\$;0t_o:	12mm [0.47 in]	Non-flush	N.C.	NPN	2m [6.5 ft] axial cable	Diagram 3	Figure 5
<a href="#">PNK6-CN-4H</a>	\$;0t_p:	12mm [0.47 in]	Non-flush	N.C.	NPN	M12 (12mm) connector	Diagram 3	Figure 6
<a href="#">PNK6-CP-3A</a>	\$;0t_q:	8mm [0.32 in]	Flush	N.C.	PNP	2m [6.5 ft] axial cable	Diagram 4	Figure 5
<a href="#">PNK6-CP-3H</a>	\$;0t_s:	8mm [0.32 in]	Flush	N.C.	PNP	M12 (12mm) connector	Diagram 4	Figure 6
<a href="#">PNK6-CP-4A</a>	\$;0t_t:	12mm [0.47 in]	Non-flush	N.C.	PNP	2m [6.5 ft] axial cable	Diagram 4	Figure 5
<a href="#">PNK6-CP-4H</a>	\$;0t_u:	12mm [0.47 in]	Non-flush	N.C.	PNP	M12 (12mm) connector	Diagram 4	Figure 6

### PNK Series Inductive Proximity Selection Chart (Regular Body)

Part Number	Price	Sensing Range	Mounting	Output State	Logic	Connection	Wiring	Dimensions
<b>M18 Models (regular body)</b>								
<a href="#">PNK-AN-3A</a>	\$;-0t#l:	8mm [0.32 in]	Flush	N.O.	NPN	2m [6.5 ft] axial cable	Diagram 1	Figure 7
<a href="#">PNK-AN-3H</a>	\$;0t#n:	8mm [0.32 in]	Flush	N.O.	NPN	M12 (12mm) connector	Diagram 1	Figure 8
<a href="#">PNK-AN-4A</a>	\$;0t#o:	12mm [0.47 in]	Non-flush	N.O.	NPN	2m [6.5 ft] axial cable	Diagram 1	Figure 7
<a href="#">PNK-AN-4H</a>	\$;0t#p:	12mm [0.47 in]	Non-flush	N.O.	NPN	M12 (12mm) connector	Diagram 1	Figure 8
<a href="#">PNK-AP-3A</a>	\$;0t#q:	8mm [0.32 in]	Flush	N.O.	PNP	2m [6.5 ft] axial cable	Diagram 2	Figure 7
<a href="#">PNK-AP-3H</a>	\$;0t#s:	8mm [0.32 in]	Flush	N.O.	PNP	M12 (12mm) connector	Diagram 2	Figure 8
<a href="#">PNK-AP-4A</a>	\$;0t#t:	12mm [0.47 in]	Non-flush	N.O.	PNP	2m [6.5 ft] axial cable	Diagram 2	Figure 7
<a href="#">PNK-AP-4H</a>	\$;0t#u:	12mm [0.47 in]	Non-flush	N.O.	PNP	M12 (12mm) connector	Diagram 2	Figure 8
<a href="#">PNK-CN-3H</a>	\$;0t#x:	8mm [0.32 in]	Flush	N.C.	NPN	M12 (12mm) connector	Diagram 3	Figure 8
<a href="#">PNK-CN-4A</a>	\$;0t#y:	12mm [0.47 in]	Non-flush	N.C.	NPN	2m [6.5 ft] axial cable	Diagram 3	Figure 7
<a href="#">PNK-CN-4H</a>	Retired	12mm [0.47 in]	Non-flush	N.C.	NPN	M12 (12mm) connector	Diagram 3	Figure 8
<a href="#">PNK-CP-3A</a>	\$;0t#j:	8mm [0.32 in]	Flush	N.C.	PNP	2m [6.5 ft] axial cable	Diagram 4	Figure 7
<a href="#">PNK-CP-3H</a>	Retired	8mm [0.32 in]	Flush	N.C.	PNP	M12 (12mm) connector	Diagram 4	Figure 8
<a href="#">PNK-CP-4A</a>	\$;0t#:	12mm [0.47 in]	Non-flush	N.C.	PNP	2m [6.5 ft] axial cable	Diagram 4	Figure 7
<a href="#">PNK-CP-4H</a>	\$;0t##:	12mm [0.47 in]	Non-flush	N.C.	PNP	M12 (12mm) connector	Diagram 4	Figure 8

# PN Series Inductive Proximity Sensors

PN Series Specifications			
Sensor	M12 Models (PNM)	M18 Models (PNK)	M30 Models (PNT)
Mounting Type	Flush or Non-flush		
Nominal Sensing Distance	Flush: 4mm [0.16 in] Non-flush: 7mm [0.28 in]	Flush: 8mm [0.31 in] Non-flush: 12mm [0.47 in]	Flush: 15mm [0.6 in] Non-flush: 22mm [0.79 in]
Operating Distance	Flush: 0 to 3.24 mm Non-flush: 0 to 5.67 mm	Flush: 0 to 6.48 mm Non-flush: 0 to 9.72 mm	Flush: 0 to 12.15 mm Non-flush: 0 to 17.82 mm
Material Correction Factors	See the Material influence table		
Output Type	NPN or PNP, N.O. or N.C.		
Operating Voltage	10 to 30 VDC		
No-load Supply Current	<10 mA		
Operating (Load) Current	100mA		
Off-state (Leakage) Current	For 3-wire (< 50μ)		
Voltage Drop	<2.5 V		
Switching Frequency	700Hz	Flush 400Hz; Non-flush 300Hz	100Hz
Differential Travel (% of Nominal Distance)	3 - 15		
Repeat Accuracy	< 10%		
Ripple	NA		
Time Delay Before Availability (tv)	NA		
Reverse Polarity Protection	Yes		
Short-circuit Protection	Yes, pulsed		
Operating Temperature	-40 to 85°C [-40 to 185°F]		
Protection Degree (DIN 40050)	IP65, IP66, IP67, IP68, IP69K		
Indication/Switch Status	Yellow (output energized), 1 LED prewired/4 LEDs for quick disconnect		
Housing Material	Housing: brass, bronze-plated; PEI; Lock nuts: brass		
Sensing Face Material	Polybutylene Terephthalate (PBT)		
Shock/Vibration	See Proximity Sensor Terminology		
Tightening Torque	Connector type: 7Nm [1.57 lb-ft] Cable type: 12Nm [2.70 lb-ft]	25 Nm [5.62 lb-ft]	50Nm [11.21 lb-ft]
Weight	NA		
Connectors	M12 connector/2m [6.5 ft] axial cable. 2 lock nuts included		
Agency Approvals	M12 Connector versions cULus file E328811, CE, RoHS; Cable versions UL file E328811, CE, RoHS		

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

## Wiring diagrams

Diagram 1

NPN Output

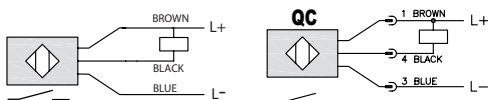


Diagram 2

PNP Output

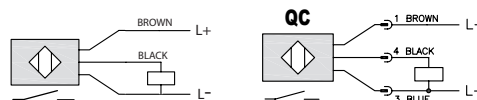


Diagram 3

NPN Output

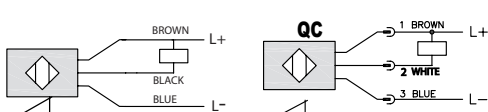
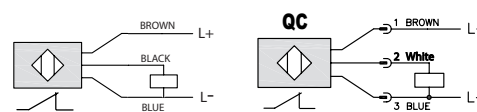


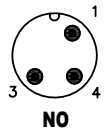
Diagram 4

PNP Output

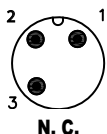


Connector

M12 connector



M12 connector



\*Note: Use M12 4 connector cable. M12 3 connector cable will not work for normally closed units.

# PN Series Inductive Proximity Sensors

## Dimensions

mm [inches]

Figure 1

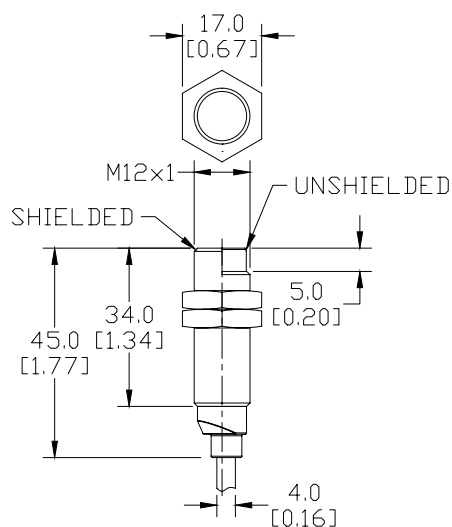


Figure 2

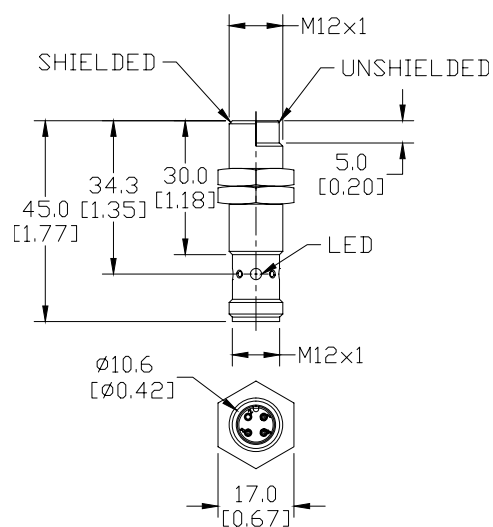


Figure 3

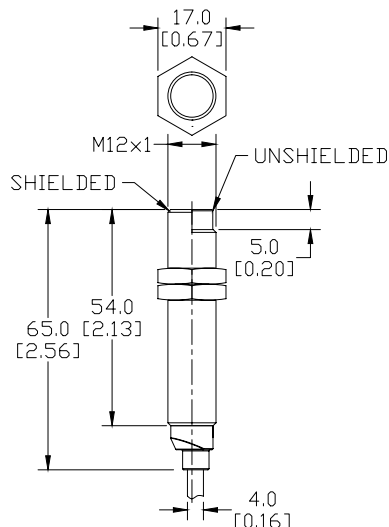


Figure 4

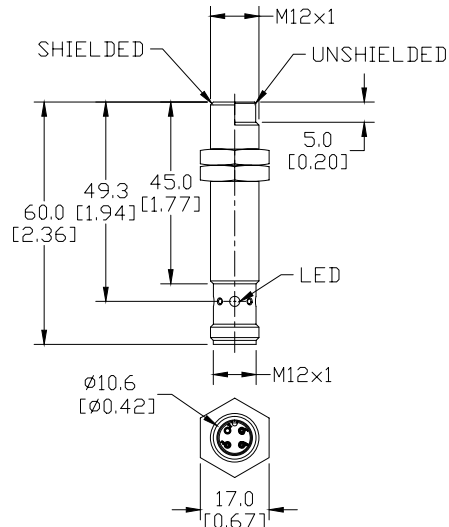


Figure 5

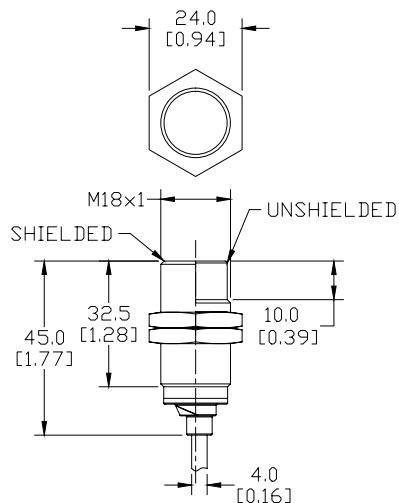
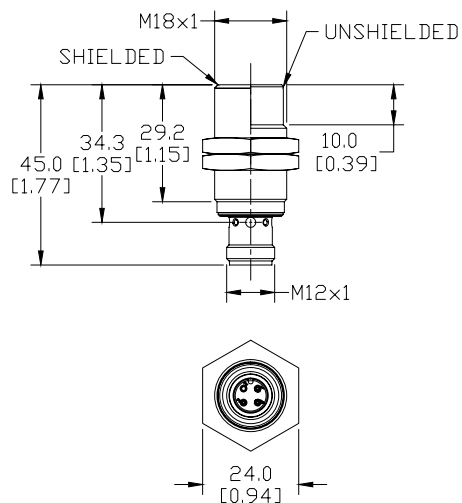


Figure 6



# PN Series Inductive Proximity Sensors

Figure 7

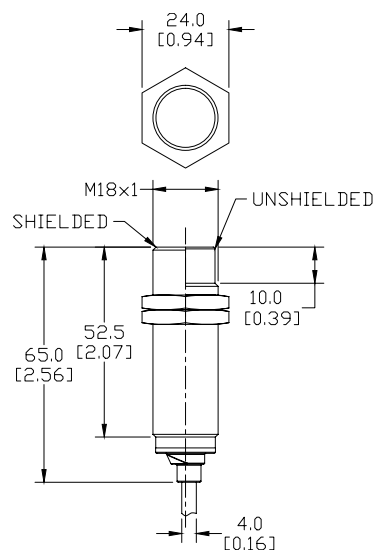


Figure 9

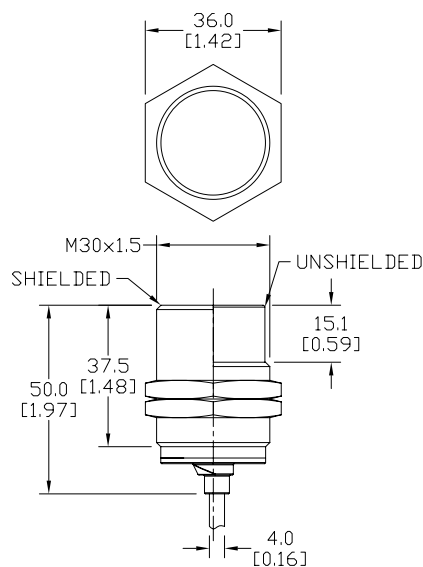


Figure 11

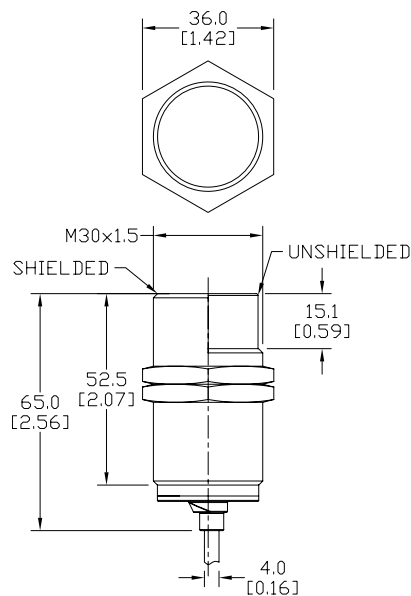


Figure 8

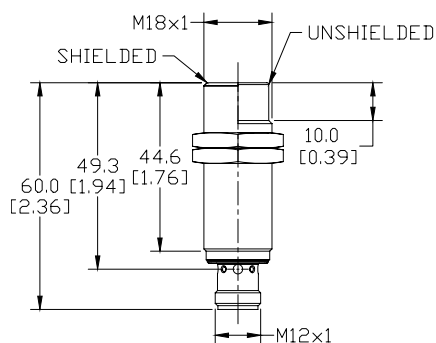


Figure 10

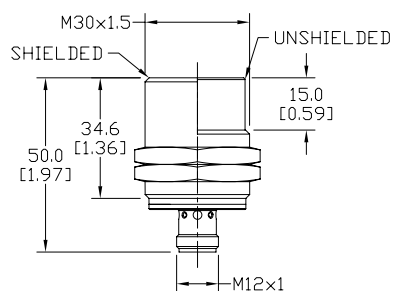
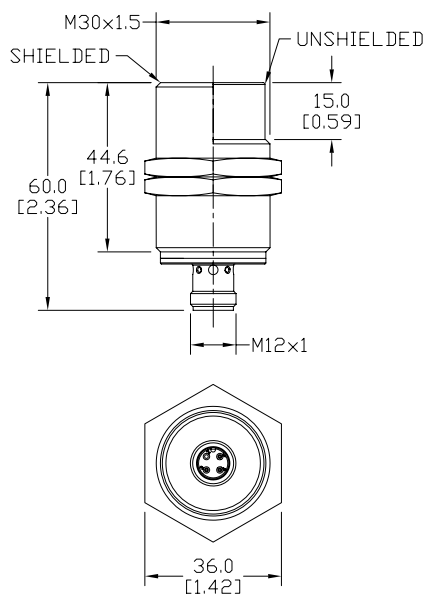


Figure 12



## Axial Mounting Bracket

**ST18A**

## Dimensions

Technical drawing of a mechanical part, likely a valve or plug, showing front and side views with dimensions in millimeters and inches in brackets.

**Front View Dimensions:**

- Top circular feature:  $\varnothing 18.3$  [ $\varnothing 0.72$ ]
- Overall height: 53.8 [2.12]
- Distance from top to center of main body: 15.9 [0.62]
- Distance from bottom to center of main body: 14.0 [0.55]
- Overall width: 42.4 [1.67]
- Distance from center to side features: 30.0 [1.18]
- Side features: 30 (width), 15° (angle), 15° (angle)
- Radius of side features: R2.1 [R0.08] TYP.

**Side View Dimensions:**

- Overall height: 70.6 [2.78]
- Bottom flange thickness: 1.5 [0.06]

**ST18C**

## Dimensions

# 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>	\$;-1nlt:	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>	\$;-1nlu:	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>	\$;-1n#:	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>	\$;-1nll:	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>	\$1nn9:	Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	<a href="#">PDF</a>	0.41 [185.97]
<a href="#">OPT2110</a>	\$1nna:	Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	<a href="#">PDF</a>	0.60 [272.16]
<a href="#">OPT2111</a>	\$1nnb:	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>	\$-1nly:	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]

