

PNM Series Inductive Proximity Sensors

M12 (12mm) Bronze-plated Brass - DC



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

PNM Series Inductive Prox Selection Chart (Short Body)

Part Number	Price	Sensing Range	Housing	Output State	Logic	Connection	Wiring	Dimensions
M12 Models (short body)								
PNM6-AN-3A	\$19.00	4mm (0.16 in)	Shielded	NO	NPN	2m axial cable	Diagram 1	Figure 1
PNM6-AN-3H	\$19.00	4mm (0.16 in)	Shielded	NO	NPN	M12 (12 mm) connector	Diagram 1	Figure 2
PNM6-AN-4A	\$19.00	7mm (0.28 in)	Unshielded	NO	NPN	2m axial cable	Diagram 1	Figure 1
PNM6-AN-4H	\$19.00	7mm (0.28 in)	Unshielded	NO	NPN	M12 (12 mm) connector	Diagram 1	Figure 2
PNM6-AP-3A	\$19.00	4mm (0.16 in)	Shielded	NO	PNP	2m axial cable	Diagram 2	Figure 1
PNM6-AP-3H	\$19.00	4mm (0.16 in)	Shielded	NO	PNP	M12 (12 mm) connector	Diagram 2	Figure 2
PNM6-AP-4A	\$19.00	7mm (0.28 in)	Unshielded	NO	PNP	2m axial cable	Diagram 2	Figure 1
PNM6-AP-4H	\$19.00	7mm (0.28 in)	Unshielded	NO	PNP	M12 (12 mm) connector	Diagram 2	Figure 2
PNM6-CN-3A	\$19.00	4mm (0.16 in)	Shielded	NC	NPN	2m axial cable	Diagram 3	Figure 1
PNM6-CN-3H	\$19.00	4mm (0.16 in)	Shielded	NC	NPN	M12 (12 mm) connector	Diagram 3	Figure 2
PNM6-CN-4A	\$19.00	7mm (0.28 in)	Unshielded	NC	NPN	2m axial cable	Diagram 3	Figure 1
PNM6-CN-4H	\$19.00	7mm (0.28 in)	Unshielded	NC	NPN	M12 (12 mm) connector	Diagram 3	Figure 2
PNM6-CP-3A	\$19.00	4mm (0.16 in)	Shielded	NC	PNP	2m axial cable	Diagram 4	Figure 1
PNM6-CP-3H	\$19.00	4mm (0.16 in)	Shielded	NC	PNP	M12 (12 mm) connector	Diagram 4	Figure 2
PNM6-CP-4A	\$19.00	7mm (0.28 in)	Unshielded	NC	PNP	2m axial cable	Diagram 4	Figure 1
PNM6-CP-4H	\$19.00	7mm (0.28 in)	Unshielded	NC	PNP	M12 (12 mm) connector	Diagram 4	Figure 2

PNM Series Inductive Prox Selection Chart (Regular Body)

Part Number	Price	Sensing Range	Housing	Output State	Logic	Connection	Wiring	Dimensions
M12 Models (regular body)								
PNM-AN-3A	\$20.00	4mm (0.16 in)	Shielded	NO	NPN	2m axial cable	Diagram 1	Figure 3
PNM-AN-3H	\$20.00	4mm (0.16 in)	Shielded	NO	NPN	M12 (12 mm) connector	Diagram 1	Figure 4
PNM-AN-4A	\$20.00	7mm (0.28 in)	Unshielded	NO	NPN	2m axial cable	Diagram 1	Figure 3
PNM-AN-4H	\$20.00	7mm (0.28 in)	Unshielded	NO	NPN	M12 (12 mm) connector	Diagram 1	Figure 4
PNM-AP-3A	\$20.00	4mm (0.16 in)	Shielded	NO	PNP	2m axial cable	Diagram 2	Figure 3
PNM-AP-3H	\$20.00	4mm (0.16 in)	Shielded	NO	PNP	M12 (12 mm) connector	Diagram 2	Figure 4
PNM-AP-4A	\$20.00	7mm (0.28 in)	Unshielded	NO	PNP	2m axial cable	Diagram 2	Figure 3
PNM-AP-4H	\$20.00	7mm (0.28 in)	Unshielded	NO	PNP	M12 (12 mm) connector	Diagram 2	Figure 4
PNM-CN-3A	\$20.00	4mm (0.16 in)	Shielded	NC	NPN	2m axial cable	Diagram 3	Figure 3
PNM-CN-3H	\$20.00	4mm (0.16 in)	Shielded	NC	NPN	M12 (12 mm) connector	Diagram 3	Figure 4
PNM-CN-4A	\$20.00	7mm (0.28 in)	Unshielded	NC	NPN	2m axial cable	Diagram 3	Figure 3
PNM-CN-4H	\$20.00	7mm (0.28 in)	Unshielded	NC	NPN	M12 (12 mm) connector	Diagram 3	Figure 4
PNM-CP-3A	\$20.00	4mm (0.16 in)	Shielded	NC	PNP	2m axial cable	Diagram 4	Figure 3
PNM-CP-3H	\$20.00	4mm (0.16 in)	Shielded	NC	PNP	M12 (12 mm) connector	Diagram 4	Figure 4
PNM-CP-4A	\$20.00	7mm (0.28 in)	Unshielded	NC	PNP	2m axial cable	Diagram 4	Figure 3
PNM-CP-4H	\$20.00	7mm (0.28 in)	Unshielded	NC	PNP	M12 (12 mm) connector	Diagram 4	Figure 4

PN Series Inductive Proximity Sensors

PN Series Specifications	M12 Models (PNM)	M18 Models (PNK)	M30 Models (PNT)
Mounting Type	Shielded or Unshielded		
Nominal Sensing Distance	Shielded: 4mm (0.16 in) Unshielded: 7mm (0.28 in)	Shielded: 8mm (0.31 in) Unshielded: 12mm (0.47 in)	Shielded: 15mm (0.6 in) Unshielded: 22mm (0.79 in)
Operating Distance	Shielded: 0 to 3.24 mm Unshielded: 0 to 5.67 mm	Shielded: 0 to 6.48 mm Unshielded: 0 to 9.72 mm	Shielded: 0 to 12.15 mm Unshielded: 0 to 17.82 mm
Material Correction Factors	See the Material influence table		
Output Type	NPN or PNP, NO or NC		
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	Shielded 400Hz; Unshielded 300Hz	100Hz
Differential Travel (% of Nominal Distance)	3 . . . 15		
Repeat Accuracy	< 10%		
Ripple	NA		
Time Delay Before Availability (tv)	≤ 300 mA		
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 axial cable. 2 lock nuts included		
Agency Approvals	M12 Connector versions cULus file E328811, CE, RoHS; Cable versions UL file E328811, CE, RoHS		

Wiring diagrams

Diagram 1

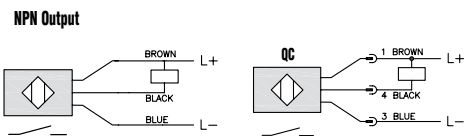
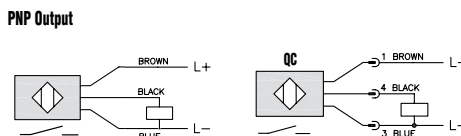


Diagram 2



Connector

M12 connector

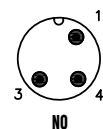


Diagram 3

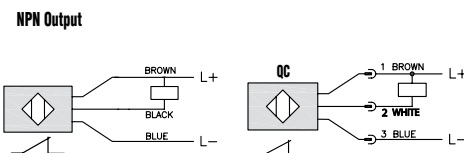
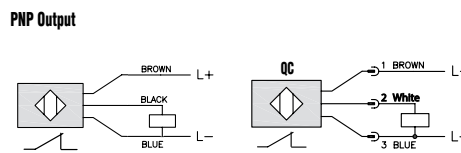
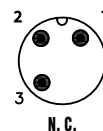


Diagram 4



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

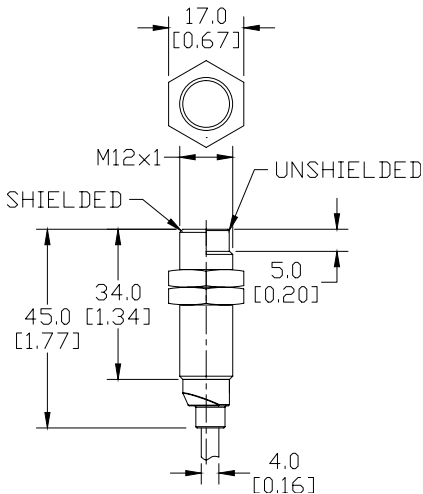


Figure 2

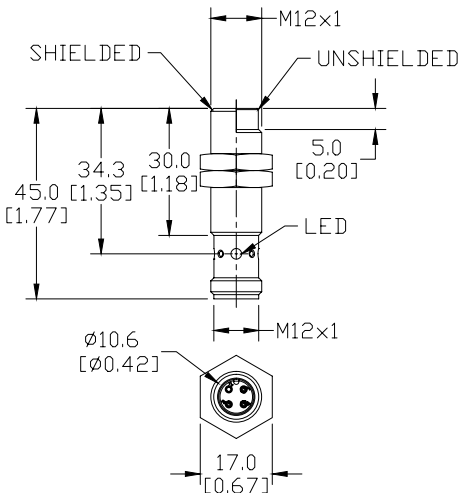


Figure 3

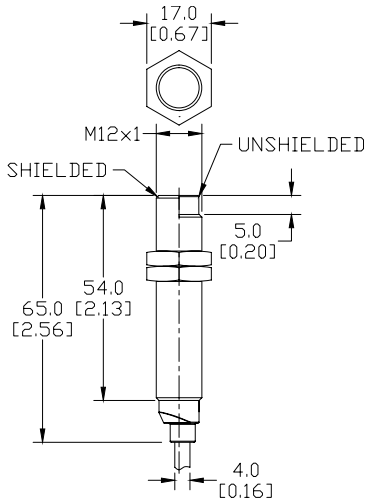


Figure 4

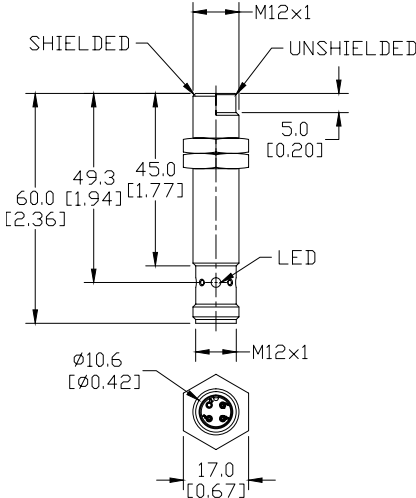


Figure 5

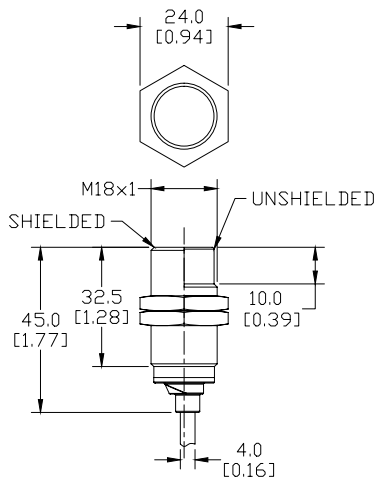
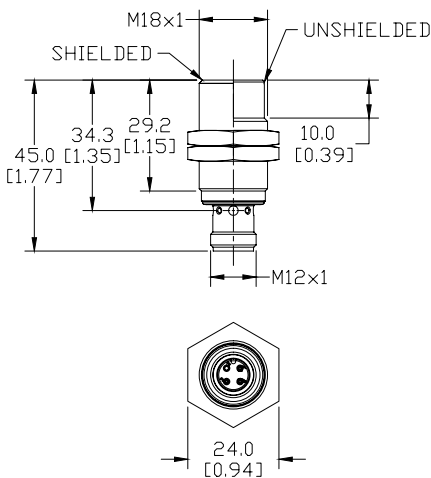


Figure 6



Accessories for 12mm Sensors

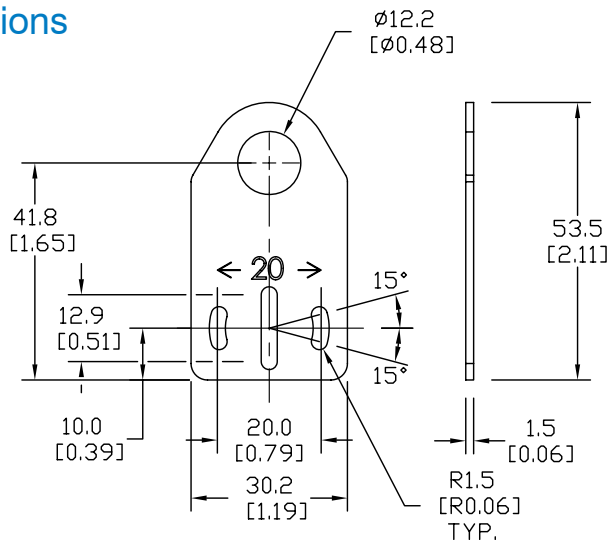
Axial Mounting Bracket

Mounting bracket, axial, zinc-plated steel. For use with 12mm sensors. Has two mounting holes (use 3mm screws) and allows the rotation of an optical axis for right-angle adapter sensors. Hexagonal nuts not included.

Accessories for 12mm Sensors			
Part Number	Price	Description	Weight (lb)
ST12A	\$2.00	Mounting bracket, axial, zinc-plated steel. For use with 12mm sensors. 1/pk.	0.03
ST12A7W	\$6.25	Mounting bracket, axial, 316L stainless steel. For use with 12mm sensors. 1/pk.	0.03

Dimensions

mm [inches]



ST12A

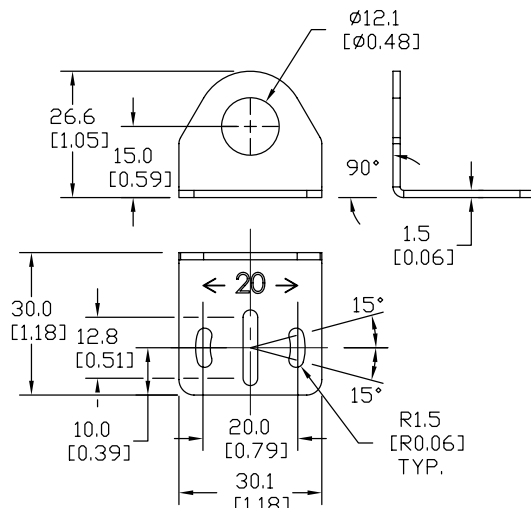
Right-angle Mounting Bracket

Mounting bracket, right-angle, zinc-plated steel or 316L stainless steel. For use with 12mm sensors. Has two mounting holes (use 3mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal screws not included.

Accessories for 12mm Sensors			
Part Number	Price	Description	Weight (lb)
ST12C	\$2.00	Mounting bracket, right angle, zinc-plated steel. For use with 12mm sensors. 1/pk.	0.03
ST12C7W	\$6.25	Mounting bracket, right angle, 316L stainless steel. For use with 12mm sensors. 1/pk.	0.03

Dimensions

mm [inches]



ST12C

See our website: www.AutomationDirect.com for complete engineering drawings

Accessories for 12mm Sensors

Right-angle Mounting Brackets

Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 12mm sensors. Available with or without fixed insertion stop.

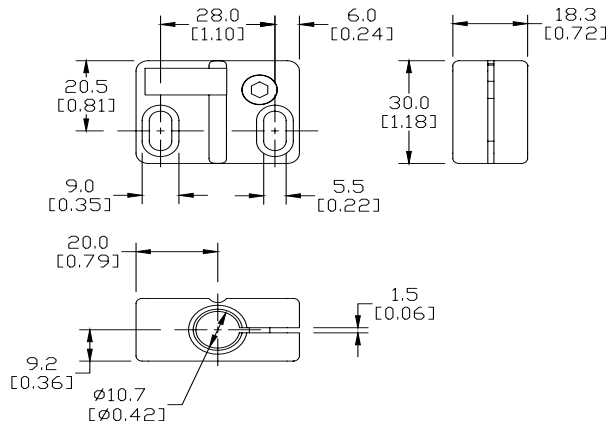
Accessories for 12mm Sensors					
Part Number	Price	Description	Weight [lb]		
OPT2102	\$6.25	Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 12mm sensors.	0.05		
OPT2103	\$6.25	Mounting bracket, right-angle, plastic. For use with 12mm sensors.	0.05		



OPT2102, OPT2103

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 12mm sensors. Available in all stainless steel or with an aluminum head and stainless steel mounting plate.

Accessories for 12mm Sensors					
Part Number	Price	Description	Mounting Head	Mounting Plate	Weight [lb]
OPT2114	\$9.25	Mounting bracket, right-angle swivel, 360 vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 12mm sensors.	Aluminum	Stainless Steel	0.14
OPT2115	\$16.50	Mounting bracket, right-angle swivel, 360 vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 12mm sensors.	304 Stainless Steel	304 Stainless Steel	0.27

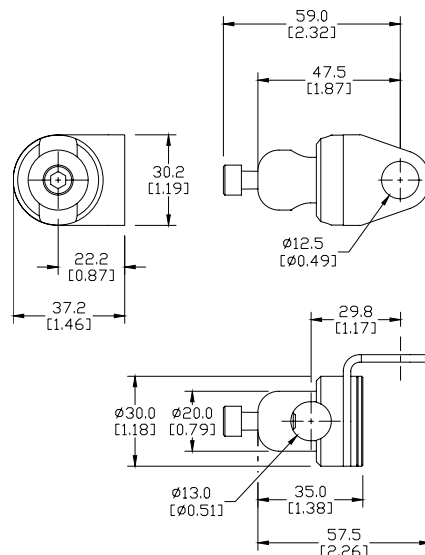
Note: 304 Stainless steel mounting rods sold separately: OPT2109 (200mm length), OPT2110 (300mm length), and OPT2111 (500mm length).



OPT2114, OPT2115

Dimensions

mm [inches]



See our website: www.AutomationDirect.com for complete engineering drawings

Mounting Rods

Mounting Rods

304 Stainless steel rods for mounting swivel brackets OPT2112 - OPT2127. Available in three lengths: 200mm, 300mm, and 500mm. 12mm diameter.

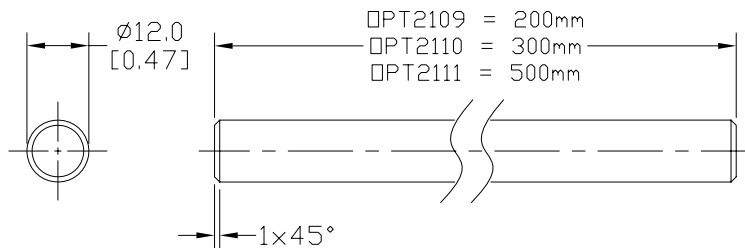
Mounting Rods for OPT2112-2127 Swivel Mounting Brackets			
Part Number	Price	Description	Weight [lb]
OPT2109	\$10.50	Mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	0.41
OPT2110	\$12.50	Mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	0.60
OPT2111	\$16.50	Mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	0.98



OPT2109, OPT2110, OPT2111

Dimensions

mm [inches]



Right-angle Mounting Bracket

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

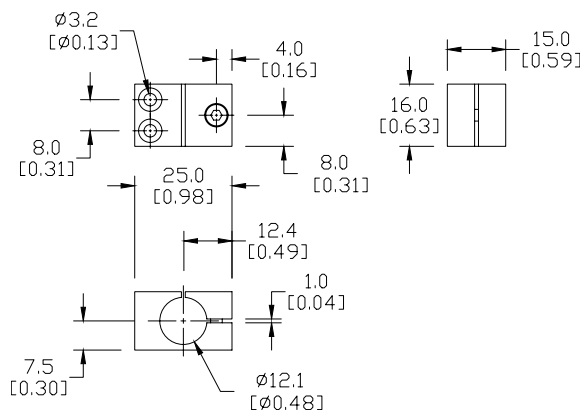
Accessories for 12mm Sensors			
Part Number	Price	Description	Weight [lb]
OPT2108	\$12.50	Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	0.07



OPT2108

Dimensions

mm [inches]



See our website: www.AutomationDirect.com for complete engineering drawings