

V Series AC & AC/DC Inductive Proximity Sensors



M12 (12mm)

- Twelve models available
- Low cost/high performance
- LED status indicators are visible at a wide angle
- Axial cable, M12 and 1/2 in. micro AC quick-disconnect models
- Purchase cable separately (for quick-disconnect models)
- Lifetime warranty



V Series M12 AC & AC/DC Inductive Prox Selection Chart

Part Number	Price	Sensing Range ¹	Housing	Output State	Voltage	Connection ²	Wiring	Dimensions
Standard								
VM1-A0-1B	\$35.50	2mm (0.06 in)	Shielded	N.O.	20–253 VAC	2m (6.5 ft) axial cable	Diagram 2	Figure 1
VM1-A0-1H	\$35.50					M12 (12mm)		Figure 2
VM1-A0-2B	\$35.50	4mm (0.16 in)	Unshielded			2m (6.5 ft) axial cable		Figure 1
VM1-A0-2H	\$35.50					M12 (12mm)		Figure 2
Extended								
V3M1-R0-3A8F	\$37.00	4mm (0.16 in)	Shielded	N.O. (VAC) or N.O./N.C. (VDC)	20–250 VAC/VDC	2m (6.5 ft) axial cable	Diagram 1	Figure 3
V3M1-S0-3A8F	\$37.00			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 3	Figure 3
V3M1-R0-3Q	\$37.00			N.O. (VAC) or N.O./N.C. (VDC)		1/2"–20 UNF, Micro AC quick-disconnect	Diagram 4	Figure 4
V3M1-S0-3Q	\$37.00			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 5	Figure 4
V3M1-R0-4A8F	\$37.00	6mm (0.24 in)	Unshielded	N.O. (VAC) or N.O./N.C. (VDC)		2m (6.5 ft) axial cable	Diagram 1	Figure 3
V3M1-S0-4A8F	\$37.00			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 3	Figure 3
V3M1-R0-4Q	\$37.00			N.O. (VAC) or N.O./N.C. (VDC)		1/2"–20 UNF, Micro AC quick-disconnect	Diagram 4	Figure 4
V3M1-S0-4Q	\$37.00			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 5	Figure 4

¹With 12x12 Fe360 target

²V Series sensors with 4-pin M12 connectors are incompatible with Zip Port junction blocks.

Wiring Diagrams

Diagram 1

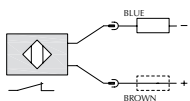
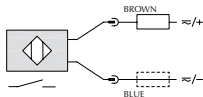


Diagram 3

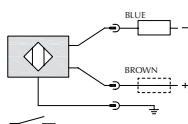
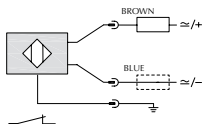


Diagram 2

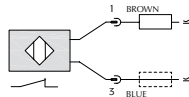
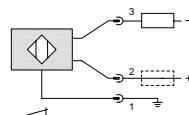
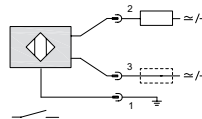
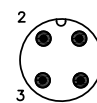


Diagram 4

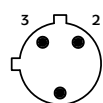


Connectors

M12 connector

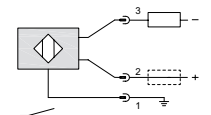
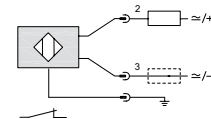


1/2 in. micro AC



Note: Pin 2 is not present on some models.

Diagram 5



V Series AC & AC/DC Inductive Proximity Sensors

M12 (12mm)

Specifications	VM1 Models		V3M1 Models	
	Shielded	Unshielded	Shielded	Unshielded
Mounting Type	Shielded	Unshielded	Shielded	Unshielded
Nominal Sensing Distance (mm)	2	4	4	6
Operating Distance	NA		0-3.2 mm	0-4.9 mm
Material Correction Factors	See Material Influence Table			
Output Type	NO		NO or NC (VAC) NO/NC (VDC)	
Operating Voltage	20-253 VAC, 50/60 Hz		20-250 VAC/VDC	
No-load Supply Current	NA		1mA (VAC); 0.7 mA (VDC)	
Operating (Load) Current	DC	5-300 mA (RMS)	200mA	
	AC	NA	140mA	
Off-state Leakage Current	DC	1.0 mA max. (RMS)	0.70 mA	
	AC	NA	1mA	
Voltage Drop	≤ 25VAC		≤ 7.5 VAC / ≤ 8VDC	
Switching Frequency	25Hz		750Hz	500Hz
Differential Travel (% of Nominal Distance)	2-10%		1-20%	
Repeat Accuracy	5%		≤ 5%	
Ripple	NA		600mA/150ms Plug; 150mA/150ms Cable	
Time Delay Before Availability (tv)	200ms		100ms	
Reverse Polarity Protection	NA		Yes	
Short Circuit Protection	Overload	No	Yes	
	Overvoltage	NA	Yes	
Operating Temperature	-25° to +70°C (-13° to 158°F)			
Protection Degree (DIN 40 050)	IEC IP67			
LED Indicators	Yellow (output energized)			
Housing Material	Nickel-plated brass			
Sensing Face Material	Polybutylene Terephthalate (PBT)		PA4T	
Shock/Vibration	IEC 60947-5-2			
Tightening Torque	10 N·m (7.3 lb-ft)		7 N·m (5 lb-ft)	
Weight	70g (2.47 oz)		20g Plug; 80g Cable	
Connection	2m (6.5 ft) axial cable or M12 (12mm) connector		2m (6.5 ft) axial cable or 1/2"-20 UNF, micro AC quick-disconnect	
Agency Approvals	CE, UL Recognized file E130644		CE, UL E187310	

Dimensions

mm [inches]

Figure 1

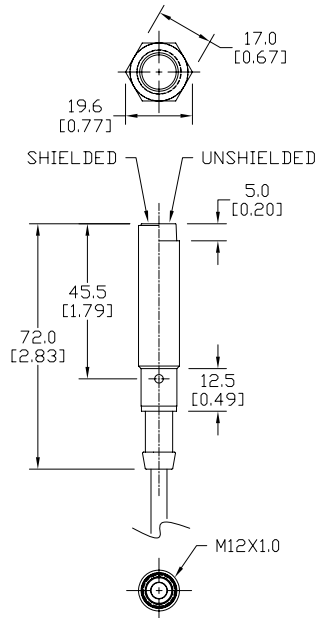


Figure 2

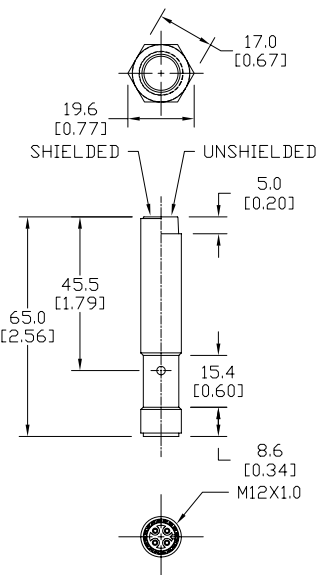


Figure 3

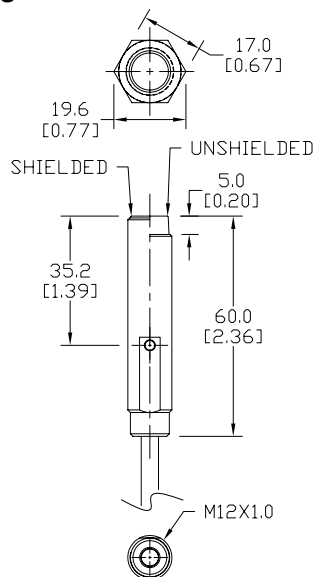
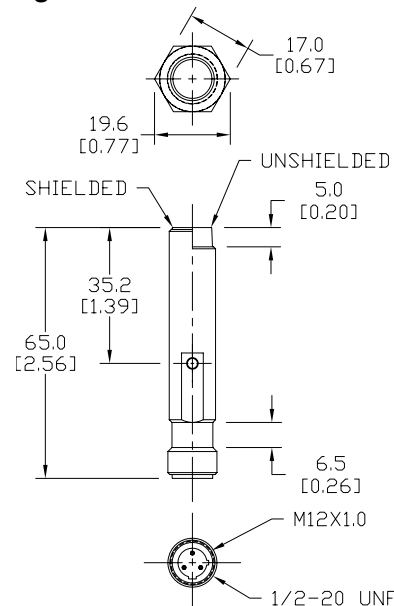


Figure 4



NOTE: Each sensor ships with jam nuts.

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.

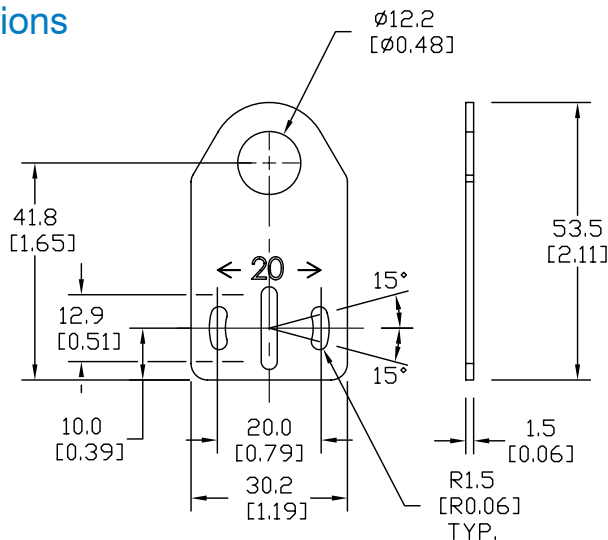
Accessories for 12mm Sensors			
Part Number	Price	Description	Weight (lb)
ST12A	\$2.00	Mounting bracket, axial, zinc-plated steel. For use with 12mm sensors. 1/pk.	0.03
ST12A7W	\$6.00	Mounting bracket, axial, 316L stainless steel. For use with 12mm sensors. 1/pk.	0.03



ST12A

Dimensions

mm [inches]



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.

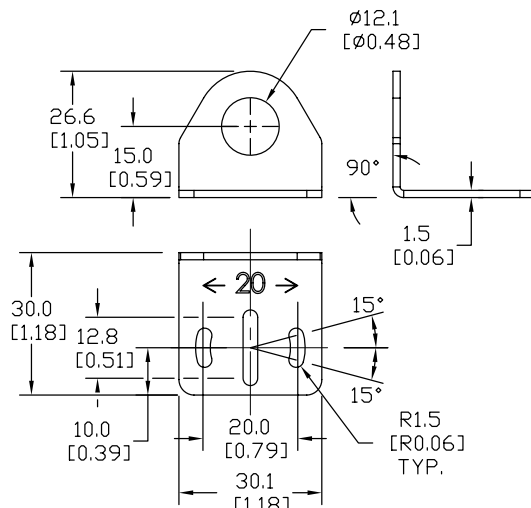
Accessories for 12mm Sensors			
Part Number	Price	Description	Weight (lb)
ST12C	\$2.00	Mounting bracket, right angle, zinc-plated steel. For use with 12mm sensors. 1/pk.	0.03
ST12C7W	\$6.00	Mounting bracket, right angle, 316L stainless steel. For use with 12mm sensors. 1/pk.	0.03



ST12C

Dimensions

mm [inches]



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

Accessories for 12mm Sensors

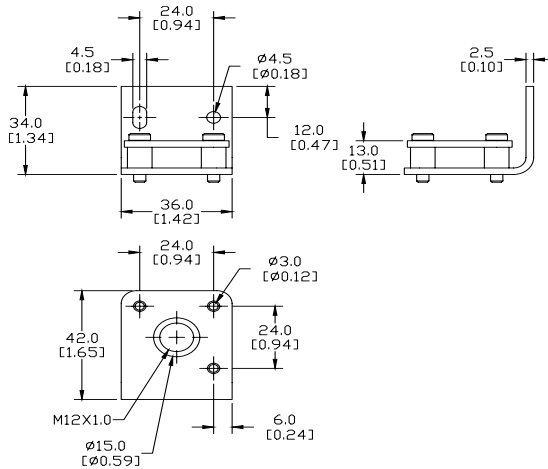
Right-angle Fine Tune Mounting Bracket

Mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel-plated steel. For use with 12mm sensors. Enables fine tuning vertical and horizontal placement.

Accessories for 12mm Sensors			
Part Number	Price	Description	Weight [lb]
OPT2035	\$30.00	Mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel-plated steel. For use with 12mm sensors.	0.16

Dimensions

mm [inches]



OPT2035

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.

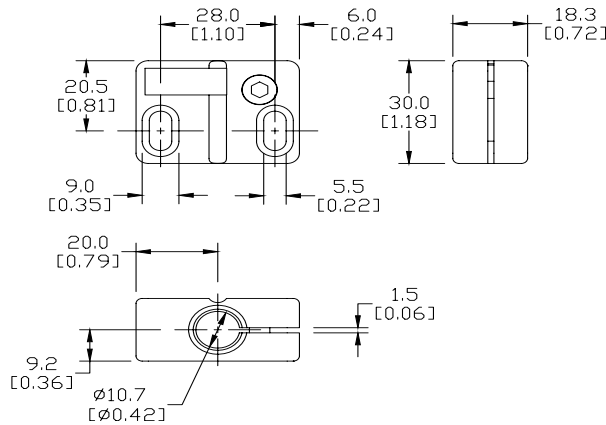
Accessories for 12mm Sensors					
Part Number	Price	Description	Weight [lb]		
OPT2102	\$6.00	Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 12mm sensors.	0.05		
OPT2103	\$6.00	Mounting bracket, right-angle, plastic. For use with 12mm sensors.	0.05		



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	\$9.00	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	\$16.00	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

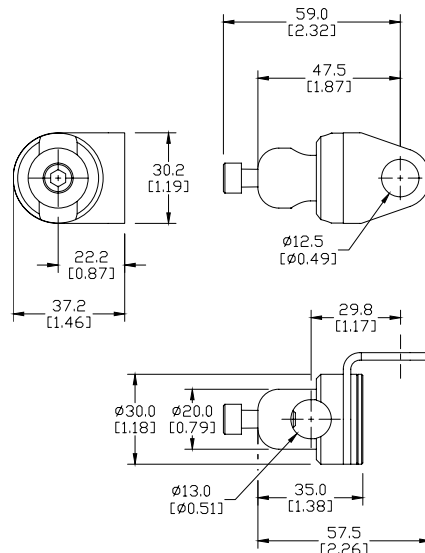
Note: 304 Stainless steel mounting rods sold separately: OPT2109 (200mm length), OPT2110 (300mm length), and OPT2111 (500mm length).



OPT2114, OPT2115

Dimensions

mm [inches]



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