

# 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 <sup>1</sup>	Housing	Output State	Voltage	Connection <sup>2</sup>	Wiring	Dimensions
<b>Standard</b>								
<b>VM1-A0-1B</b>	\$36.00	2mm (0.06 in)	Shielded	N.O.	20–253 VAC	2m (6.5 ft) axial cable	Diagram 2	Figure 1
<b>VM1-A0-1H</b>	\$36.00					M12 (12mm)		Figure 2
<b>VM1-A0-2B</b>	\$36.00	4mm (0.16 in)	Unshielded			2m (6.5 ft) axial cable		Figure 1
<b>VM1-A0-2H</b>	\$36.00					M12 (12mm)		Figure 2
<b>Extended</b>								
<b>V3M1-R0-3A8F</b>	\$37.50	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
<b>V3M1-S0-3A8F</b>	\$37.50			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 3	Figure 3
<b>V3M1-R0-3Q</b>	\$37.50			N.O. (VAC) or N.O./N.C. (VDC)		1/2"-20 UNF, Micro AC quick-disconnect	Diagram 4	Figure 4
<b>V3M1-S0-3Q</b>	\$37.50			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 5	Figure 4
<b>V3M1-R0-4A8F</b>	\$37.50	6mm (0.24 in)	Unshielded	N.O. (VAC) or N.O./N.C. (VDC)		2m (6.5 ft) axial cable	Diagram 1	Figure 3
<b>V3M1-S0-4A8F</b>	\$37.50			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 3	Figure 3
<b>V3M1-R0-4Q</b>	\$37.50			N.O. (VAC) or N.O./N.C. (VDC)		1/2"-20 UNF, Micro AC quick-disconnect	Diagram 4	Figure 4
<b>V3M1-S0-4Q</b>	\$37.50			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 5	Figure 4

<sup>1</sup>With 12mm x 12mm Fe360 target

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

## Wiring Diagrams

Diagram 1

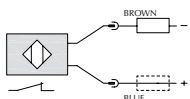
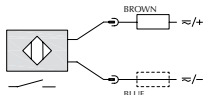


Diagram 3

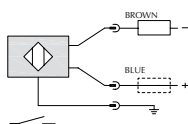
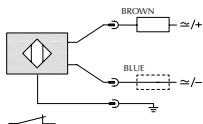


Diagram 2

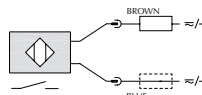
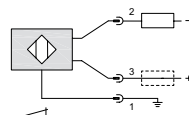
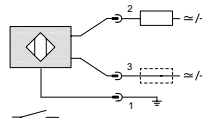
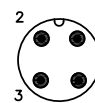


Diagram 4

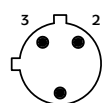


## Connectors

M12 connector

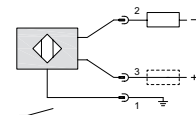
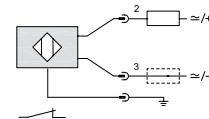


1/2 in. micro AC



Note: Pin 2 is not present on some models.

Diagram 5



# V Series AC & AC/DC Inductive Proximity Sensors

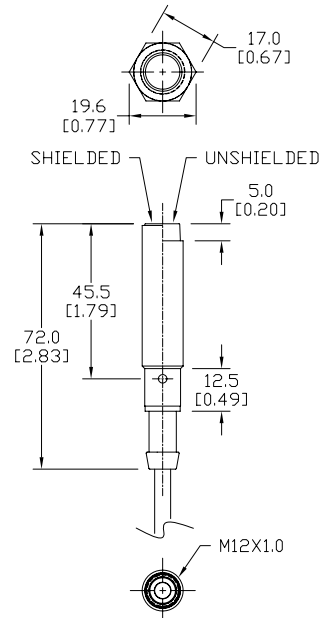
## M12 (12mm)

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

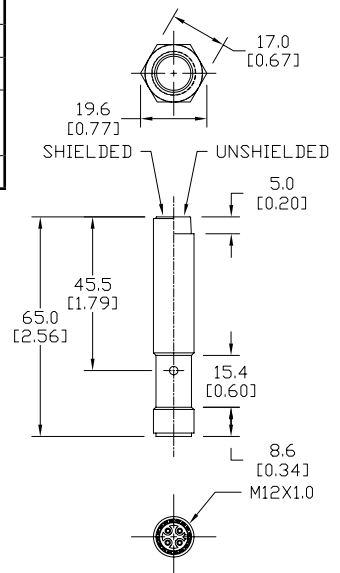
### Dimensions

mm [inches]

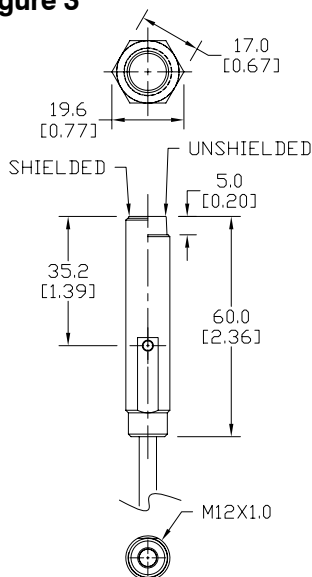
**Figure 1**



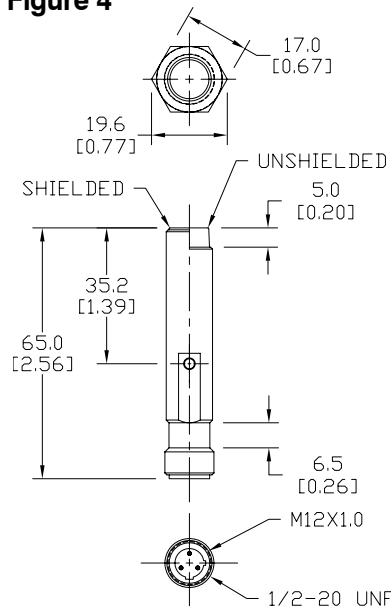
**Figure 2**



**Figure 3**



**Figure 4**



**NOTE:** Each sensor ships with jam nuts.

# Accessories for 12mm Sensors

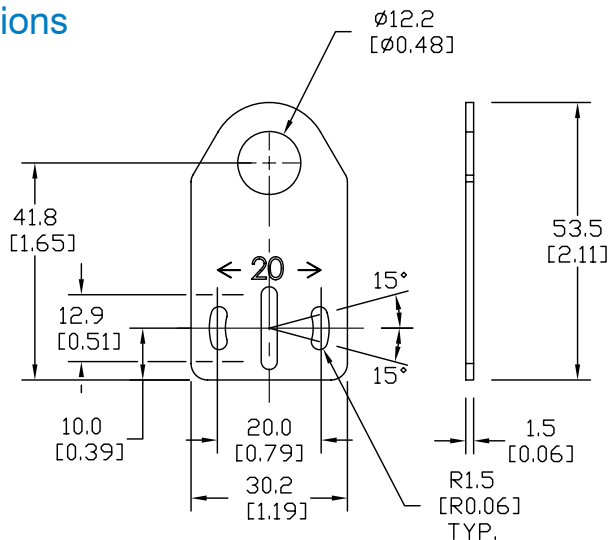
## Axial Mounting Bracket

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	\$6.25	Mounting bracket, axial, 316L stainless steel. For use with 12mm sensors. 1/pk.	0.03

### Dimensions

mm [inches]



ST12A

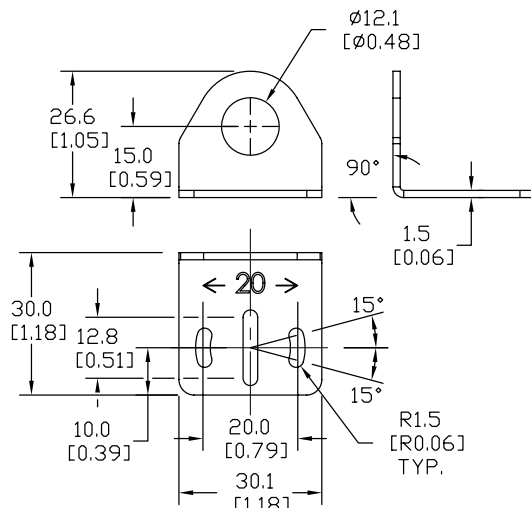
## Right-angle Mounting Bracket

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](http://www.AutomationDirect.com) for complete engineering drawings

# Accessories for 12mm Sensors

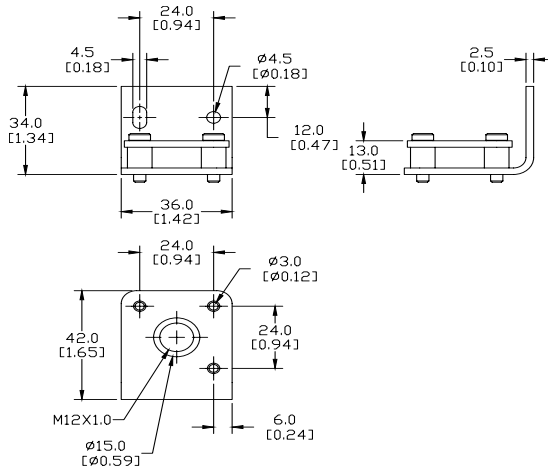
## Right-angle Fine Tune Mounting Bracket

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](http://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.

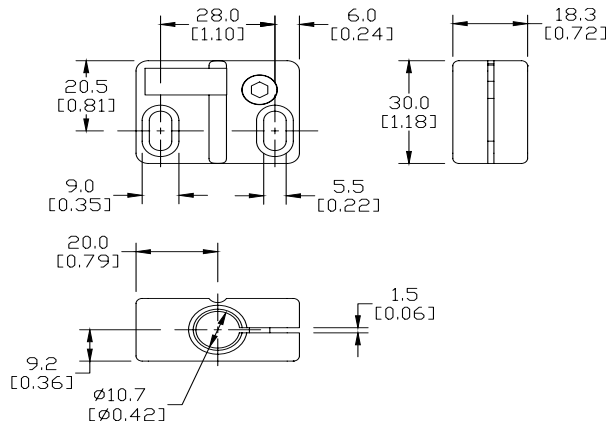
Accessories for 12mm Sensors					
Part Number	Price	Description	Weight [lb]		
<b>OPT2102</b>	\$6.25	Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 12mm sensors.	0.05		
<b>OPT2103</b>	\$6.25	Mounting bracket, right-angle, plastic. For use with 12mm sensors.	0.05		



**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]
<b>OPT2114</b>	\$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
<b>OPT2115</b>	\$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

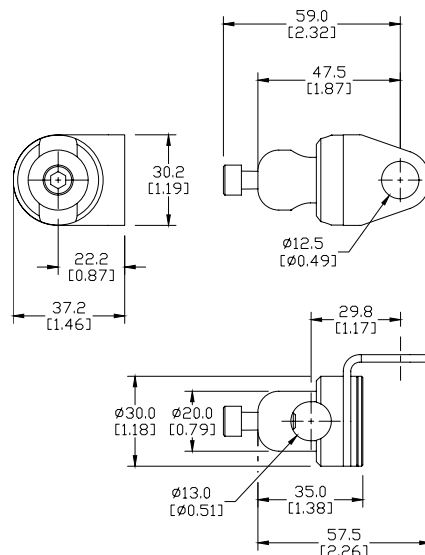
**Note: 304 Stainless steel mounting rods sold separately: OPT2109 (200mm length), OPT2110 (300mm length), and OPT2111 (500mm length).**



**OPT2114, OPT2115**

## Dimensions

mm [inches]



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