

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

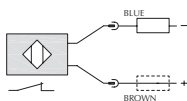
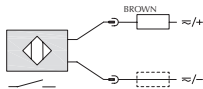


Diagram 3

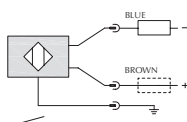
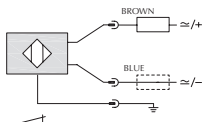


Diagram 2

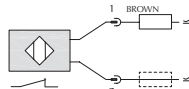
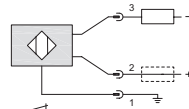
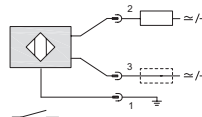
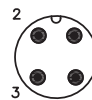


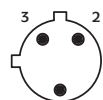
Diagram 4



M12 connector

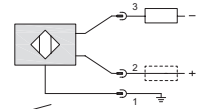
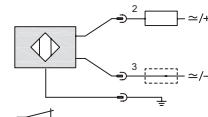


1/2 in. micro AC



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

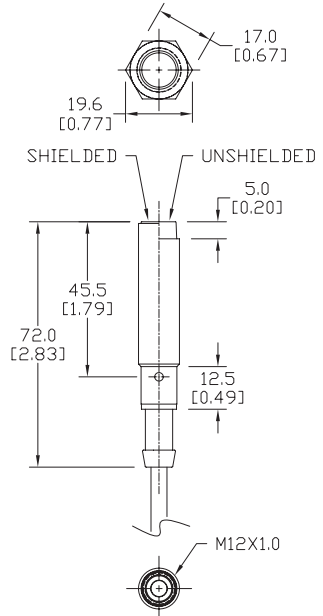


Figure 2

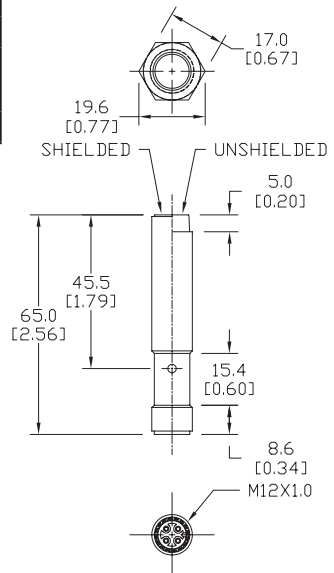


Figure 3

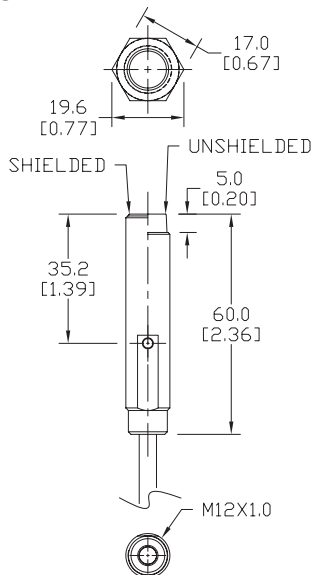
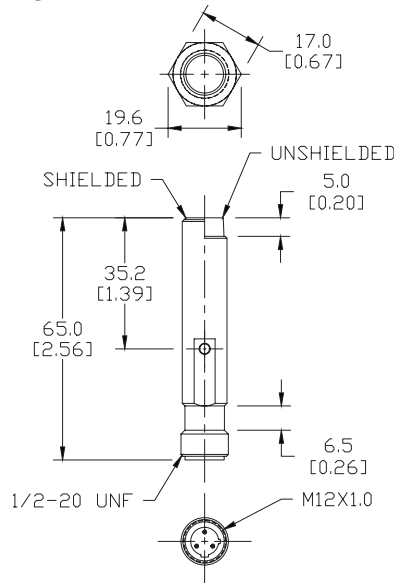


Figure 4



NOTE: Each sensor ships with jam nuts.

Accessories for 12mm Sensors

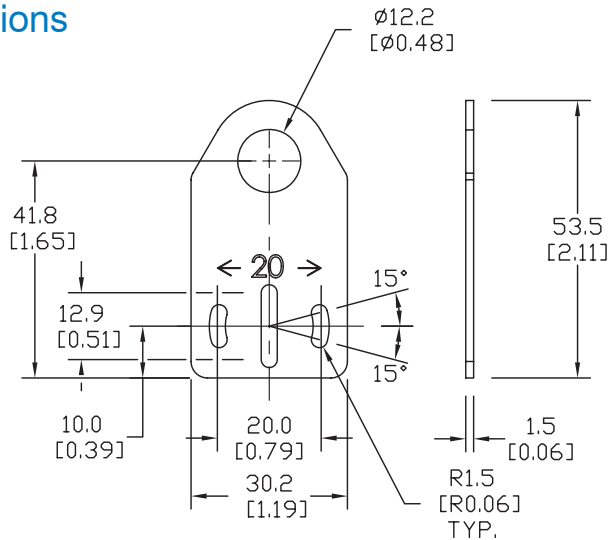
Axial Mounting Bracket

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 |

Dimensions

mm [inches]



ST12A

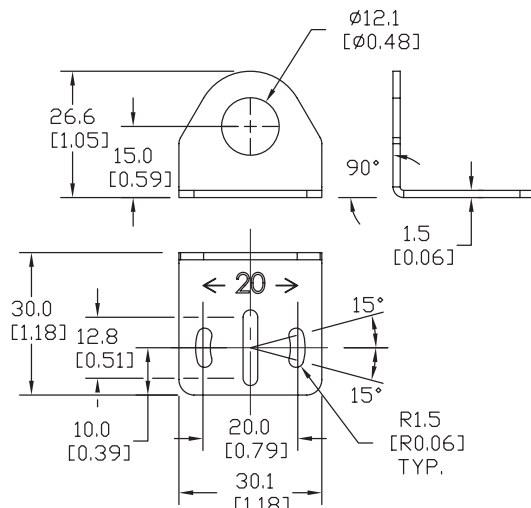
Right-angle Mounting Bracket

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 | \$6.00 | 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

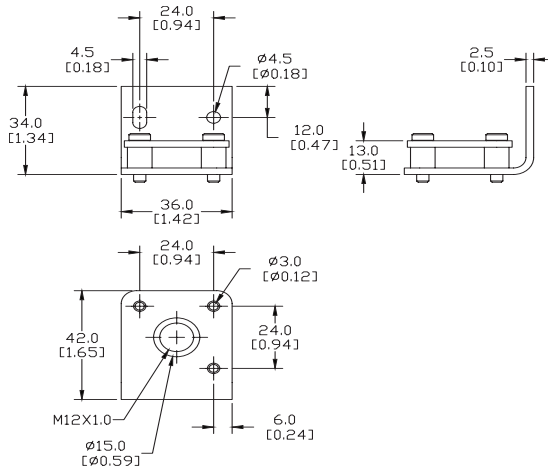
Right-angle Fine Tune Mounting Bracket

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.

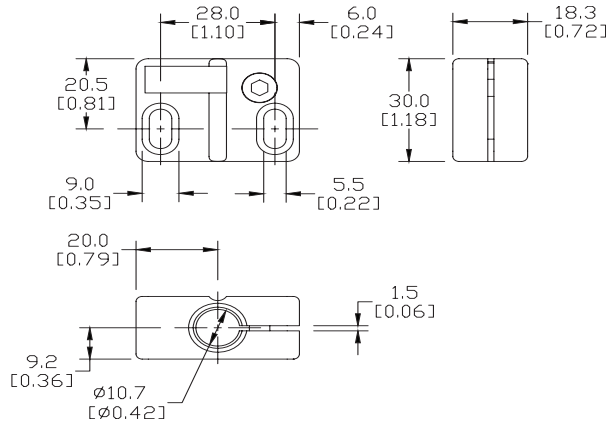
| Accessories for 12mm Sensors | | | | | |
|------------------------------|--------|---|-------------|--|--|
| Part Number | Price | Description | Weight [lb] | | |
| OPT2102 | \$6.00 | Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 12mm sensors. | 0.05 | | |
|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

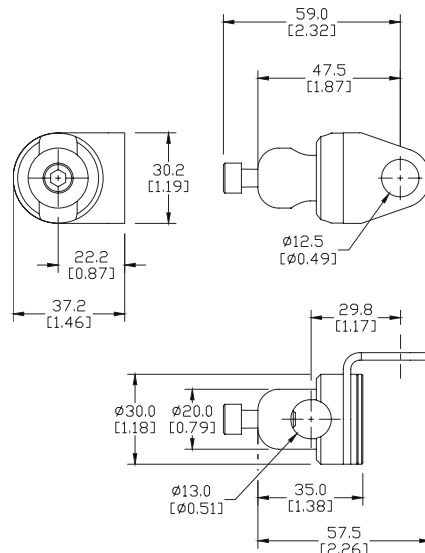
Note: 304 Stainless steel mounting rods sold separately: OPT2109 (200mm length), OPT2110 (300mm length), and OPT2111 (500mm length).



OPT2114, OPT2115

Dimensions

mm [inches]



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