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

NEED CABLES?

V Series M12 AC & AC/DC Inductive Prox Selection Chart								
Part Number	Price	Sensing Range[1]	Mounting	Output State	Voltage	Connection[2]	Wiring	Dimensions
Standard								
VM1-A0-1B		2mm (0.06 in)	Flush	N.O.	20–253 VAC	2m (6.5 ft) axial cable	Diagram 2	Figure 1
VM1-A0-1H						M12 (12mm)		Figure 2
VM1-A0-2B		4mm (0.16 in)	Non-flush			2m (6.5 ft) axial cable		Figure 1
VM1-A0-2H						M12 (12mm)		Figure 2
Extended								
V3M1-R0-3A8F		4mm (0.16 in)	Flush	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				N.C. (VAC) or N.O./N.C. (VDC)			Diagram 3	Figure 3
V3M1-R0-3Q				N.O. (VAC) or N.O./N.C. (VDC)		1/2"-20 UNF, Micro AC quick-disconnect	Diagram 4	Figure 4
V3M1-S0-3Q				N.C. (VAC) or N.O./N.C. (VDC)			Diagram 5	Figure 4
V3M1-R0-4A8F		6mm (0.24 in)	Non-flush	N.O. (VAC) or N.O./N.C. (VDC)		2m (6.5 ft) axial cable	Diagram 1	Figure 3
V3M1-S0-4A8F				N.C. (VAC) or N.O./N.C. (VDC)			Diagram 3	Figure 3
V3M1-R0-4Q				N.O. (VAC) or N.O./N.C. (VDC)		1/2"-20 UNF, Micro AC quick-disconnect	Diagram 4	Figure 4
V3M1-S0-4Q				N.C. (VAC) or N.O./N.C. (VDC)			Diagram 5	Figure 4

[1] With 12mm x 12mm Fe360 target

[2] V Series sensors with 4-pin M12 connectors are incompatible with Zip Port junction blocks.
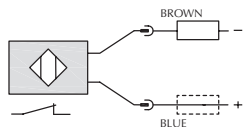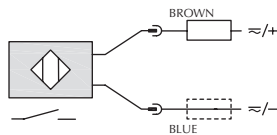
Wiring Diagrams
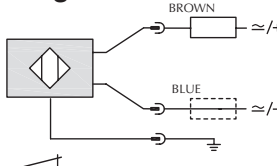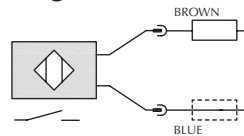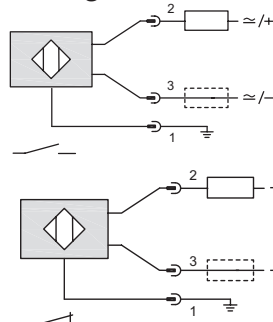
Connectors
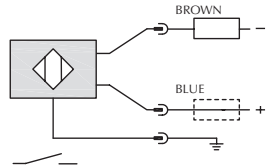
M12 connector
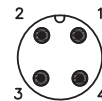
1/2 in. micro AC
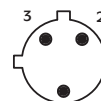
Note: Pin 2 is not present on some models.

Diagram 1

Diagram 2

Diagram 3

Diagram 4

Diagram 5
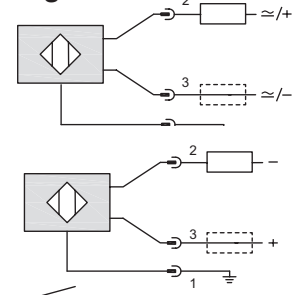
V Series AC & AC/DC Inductive Proximity Sensors

Specifications		VM1 Models		V3M1 Models	
Mounting Type		Flush	Non-flush	Flush	Non-flush
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		N.O.		N.O. or N.C. (VAC) N.O./N.C. (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	NA		200mA	
	AC	5–300 mA (RMS)		140mA	
Off-state Leakage Current	DC	NA		0.70 mA	
	AC	1.0 mA max. (RMS)		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%	
Peak Current		NA		600mA/150ms	
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	

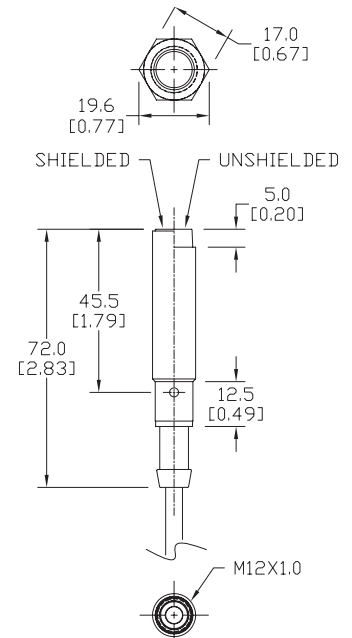## Dimensions
mm [inches]
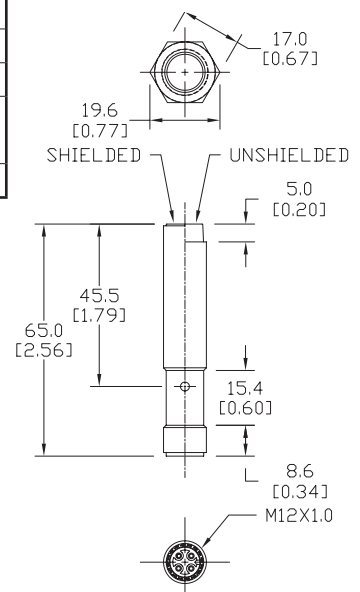
Figure 1
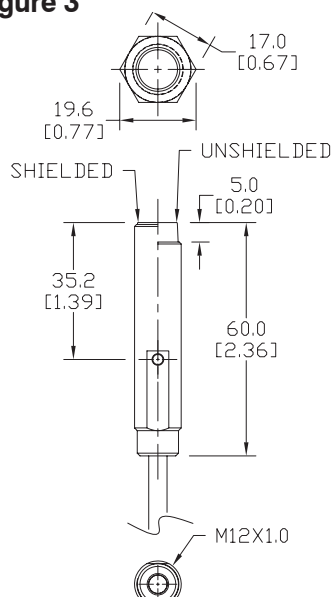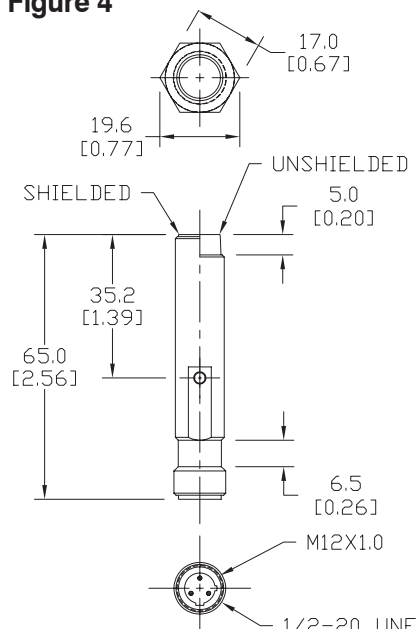

Figure 2

Figure 3

Figure 4

NOTE: Each sensor ships with jam nuts.
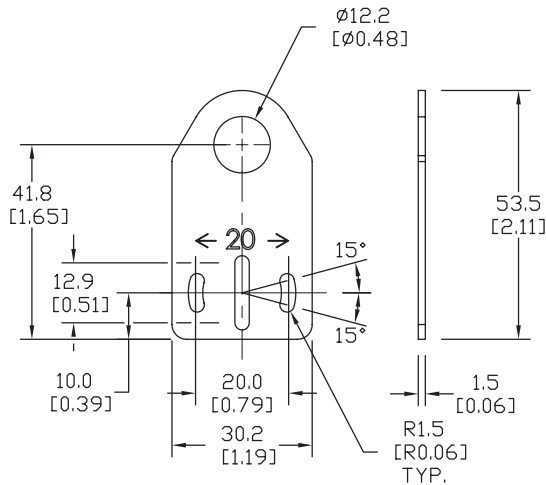
Accessories for 12mm Sensors

Axial Mounting Bracket

Mounting bracket, axial, available in 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 right-angle adapter sensors. Hexagonal nuts not included.

Accessories for 12mm Sensors			
Part Number	**Price**	**Description**	**Weight lb (g)**
ST12A		Mounting bracket, axial, zinc plated steel. For use with 12mm sensors.	0.03
ST12A7W		Mounting bracket, axial, 316L stainless steel. For use with 12mm sensors.	0.03

ST12A

Dimensions

mm [inches]

Ø12.2 [Ø0.48]
41.8 [1.65]
12.9 [0.51]
10.0 [0.39]
20.0 [0.79]
30.2 [1.19]
15°
15°
53.5 [2.11]
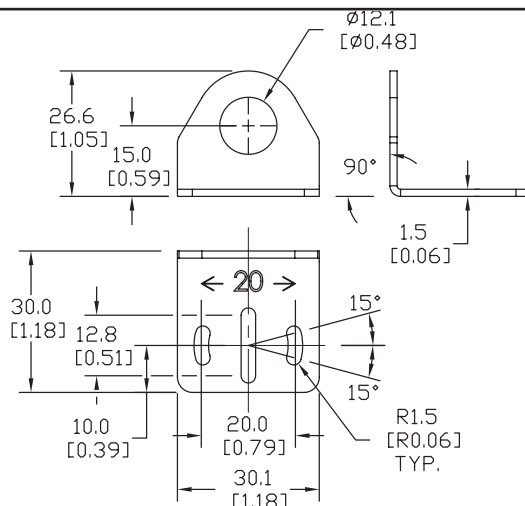1.5 [0.06]
R1.5 [R0.06] TYP.
20

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 (g)**
ST12C		Mounting bracket, right-angle, zinc plated steel. For use with 12mm sensors.	0.03 (13.6)
ST12C7W		Mounting bracket, right-angle, 316L stainless steel. For use with 12mm sensors.	0.03 (13.6)

ST12C

Dimensions

mm [inches]

Ø12.1 [Ø0.48]
26.6 [1.05]
15.0 [0.59]
90°
1.5 [0.06]
30.0 [1.18]
12.8 [0.51]
10.0 [0.39]
20.0 [0.79]
30.1 [1.18]
15°
15°
R1.5 [R0.06] TYP.
20

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	Drawing Link	Weight [lb]
OPT2035		Wenglor mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel plated steel. For use with 12mm sensors.	PDF	0.16

OPT2035

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	Drawing Link	Weight lb (g)
OPT2102		Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 12mm sensors.	PDF	0.05 (22.7)
OPT2103		Wenglor mounting bracket, right-angle, plastic. For use with 12mm sensors.	PDF	0.05 (22.7)

OPT2102, OPT2103

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	Drawing Link	Weight lb (g)
OPT2114		Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 12mm sensors.	Aluminum	Stainless steel	PDF	0.14 (63.5)
OPT2115		Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 12mm sensors.	304 Stainless steel	304 Stainless steel	PDF	0.27 (122.5)

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).

OPT2114, OPT2115