

# V Series AC & AC/DC Inductive Proximity Sensors



## M18 (18mm)

- 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 M18 AC & AC/DC Inductive Prox Selection Chart								
Part Number	Price	Sensing Range <sup>1</sup>	Housing	Output State	Voltage	Connection*	Wiring	Dimensions
<b>Standard</b>								
VK1-A0-1B	\$31.00	5mm (0.0787 in)	Shielded	N.O.	20-253 VAC	2m (6.5 ft) axial cable	Diagram 2	Figure 1
VK1-A0-1H	\$31.00					M12 (12mm)		Figure 2
VK1-A0-2B	\$31.00	8mm (0.1574 in)	Unshielded			2m (6.5 ft) axial cable		Figure 1
VK1-A0-2H	\$31.00					M12 (12mm)		Figure 2
<b>Extended</b>								
V3K1-R0-3A8F	\$37.00	6mm (0.236 in)	Shielded	N.O. (VAC) or N.O./N.C. (VDC)	20-250 VAC/VDC	2m (6.5 ft) axial cable	Diagram 1	Figure 4
V3K1-S0-3A8F	\$37.00			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 3	Figure 4
V3K1-R0-3Q	\$37.00			N.O. (VAC) or N.O./N.C. (VDC)		1/2"-20 UNF, micro AC quick-disconnect	Diagram 4	Figure 3
V3K1-S0-3Q	\$37.00			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 5	Figure 3
V3K1-R0-4A8F	\$37.00	10mm (0.394 in)	Unshielded	N.O. (VAC) or N.O./N.C. (VDC)		2m (6.5 ft) axial cable	Diagram 1	Figure 4
V3K1-S0-4A8F	\$37.00			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 3	Figure 4
V3K1-R0-4Q	\$37.00			N.O. (VAC) or N.O./N.C. (VDC)		1/2"-20 UNF, micro AC quick-disconnect	Diagram 4	Figure 3
V3K1-S0-4Q	\$37.00			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 5	Figure 3

<sup>1</sup>With 18x18 Fe360 target

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

## Wiring Diagrams

Diagram 1

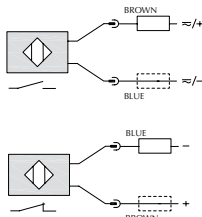


Diagram 3

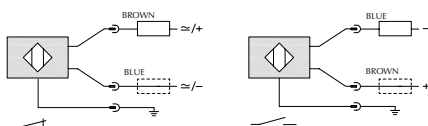


Diagram 2

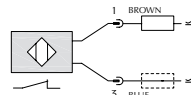
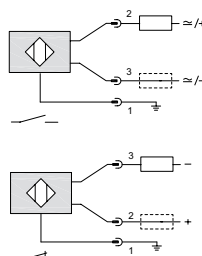
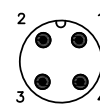


Diagram 4

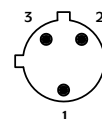


## Connectors

M12 connector

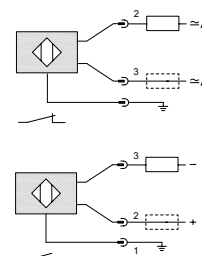


1/2 in. micro AC



Note: Pin 2 is not present on some models.

Diagram 5



# V Series AC & AC/DC Inductive Proximity Sensors

## M18 (18mm)

Specifications	VK1 Models		V3K1 Models	
	Shielded	Unshielded	Shielded	Unshielded
<b>Mounting Type</b>	Shielded	Unshielded	Shielded	Unshielded
<b>Nominal Sensing Distance (mm)</b>	5	8	6	10
<b>Operating Distance</b>	NA		0-4.9 mm	0-8 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>	5-300 mA (RMS)	200mA	
	<b>AC</b>	NA	140mA	
<b>Off-state Leakage Current</b>	<b>DC</b>	1.0 mA max. (RMS)	0.70 mA	
	<b>AC</b>	NA	1mA	
<b>Voltage Drop</b>	≤ 7.5 VAC		≤ 7.5 VAC / ≤ 8VDC	
<b>Switching Frequency</b>	25Hz		600Hz	550Hz
<b>Differential Travel (% of Nominal Distance)</b>	2-10%		1-20%	
<b>Repeat Accuracy</b>	5%		≤ 5%	
<b>Ripple</b>	NA		600mA/150ms Max.	
<b>Time Delay Before Availability (tv)</b>	200ms		100ms	
<b>Reverse Polarity Protection</b>	NA		Yes	
<b>Short Circuit Protection:</b>	No		<b>Overload</b>	
			Yes	
			<b>Overvoltage</b>	
	Yes			
<b>Operating Temperature</b>	-25° to +70°C (-13° to 158°F)		-25° to +70°C (-13° to 158°F)	
<b>Protection Degree (DIN 40 050)</b>	IEC IP67		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>	25 N-m (18.44 lb-ft)		15 N-m (11.0 lb-ft)	
<b>Weight</b>	120g (4.23 oz)		49g Plug; 100g 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

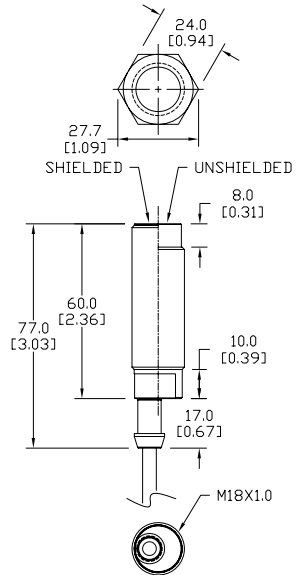


Figure 2

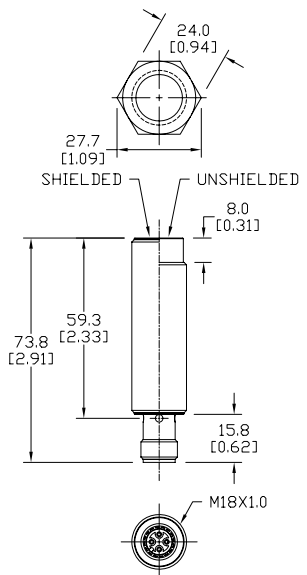


Figure 3

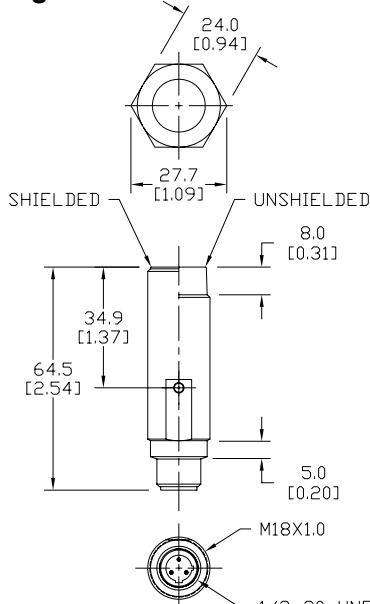
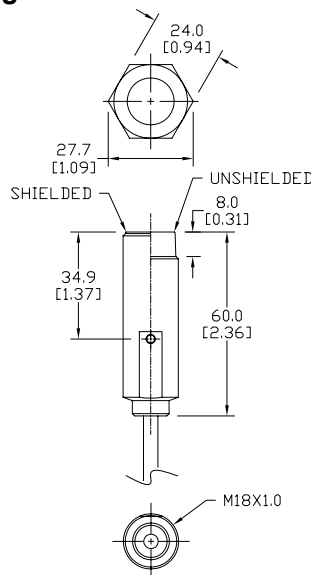


Figure 4



NOTE: Each sensor ships with jam nuts.

# Accessories for 18mm Sensors

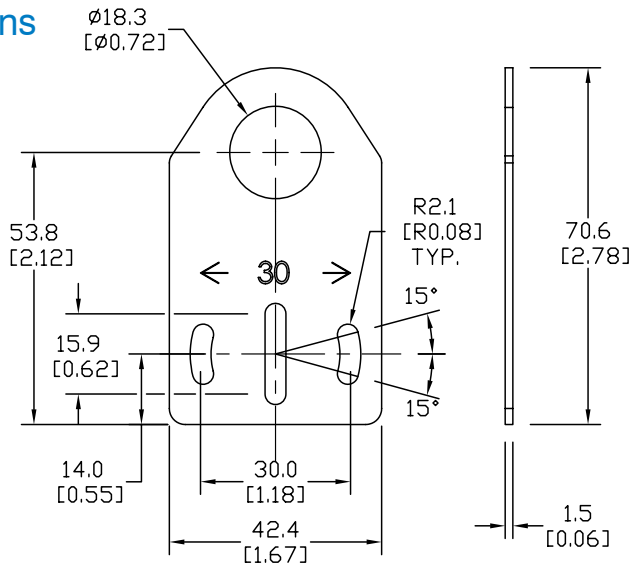
## Axial Mounting Bracket

Axial mounting bracket for use with 18mm sensors. Has two mounting holes (use 4mm screws) and allows for rotation of an optical axis for right-beam-angle-adaptor sensors. Hexagonal nuts not included.

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight [lb]
ST18A	\$1.25	Mounting bracket, axial, zinc-plated steel. For use with 18mm sensors. 1/pk.	0.06
ST18A7W	\$6.00	Mounting bracket, axial, 316L stainless steel. For use with 18mm sensors. 1/pk.	0.06

### Dimensions

mm [inches]



ST18A

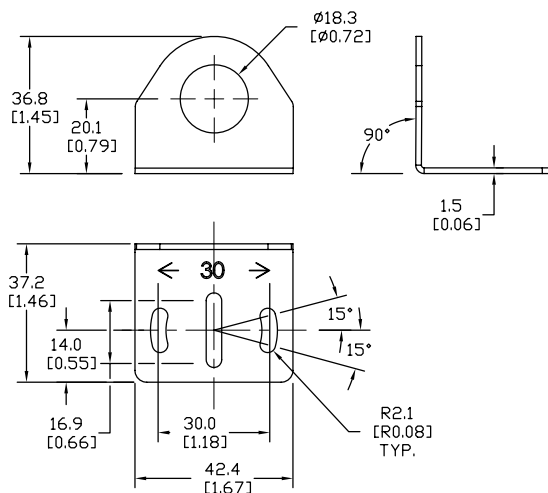
## Right-angle Mounting Bracket

Right-angle mounting bracket for use with 18mm sensors. Has two mounting holes (use 4mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight [lb]
ST18C	\$1.25	Mounting bracket, right angle, zinc-plated steel. For use with 18mm sensors. 1/pk.	0.06
ST18C7W	\$6.00	Mounting bracket, right angle, 316L stainless steel. For use with 18mm sensors. 1/pk.	0.06

### Dimensions

mm [inches]



ST18C

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# Accessories for 18mm Sensors

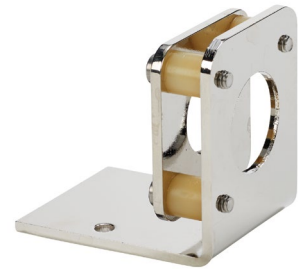
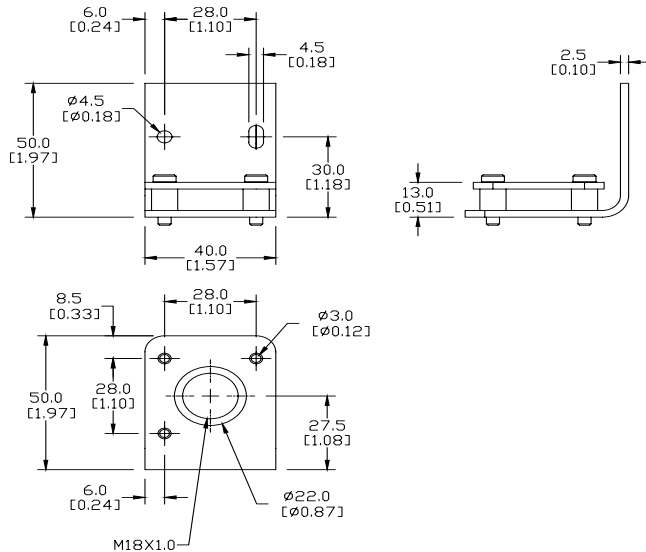
## Right-angle Fine Tune Mounting Bracket

Mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel-plated steel. For use with 18mm sensors. Allows for fine tuning vertical and horizontal placement.

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight [lb]
OPT2036	\$30.00	Mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel-plated steel. For use with 18mm sensors.	0.02

### Dimensions

mm [inches]



OPT2036

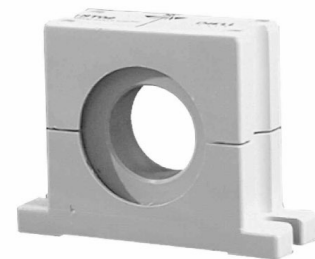
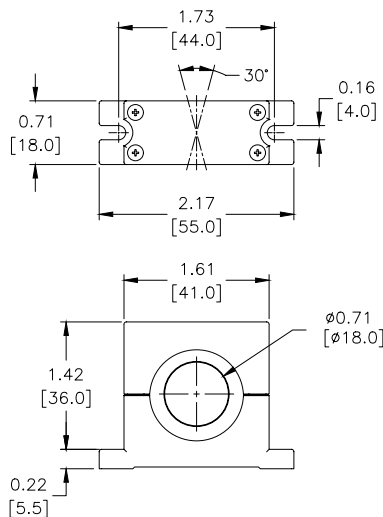
## Swivel Mounting Bracket

Mounting bracket, ball swivel, plastic. For use with 18mm sensors. Has a ball-joint and set screws to adjust sensor orientation. Allows angular orientation up to 15 degrees (from center) in all directions for photoelectric sensors (Will not work with C18 series).

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight [lb]
ST02	\$8.25	Mounting bracket, ball swivel, plastic. For use with 18mm sensors.	0.06

### Dimensions

mm [inches]



ST02

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# Accessories for 18mm Sensors

## Right-angle Mounting Brackets

Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors. Available with or without fixed insertion stop.

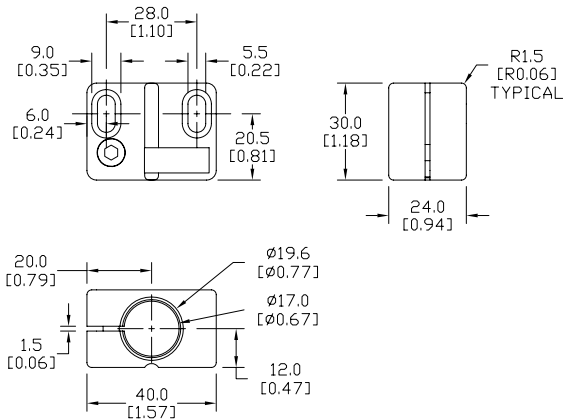
Accessories for 18mm Sensors					
Part Number	Price	Description	Mounting Head	Mounting Plate	Weight [lb]
<b>OPT2104</b>	\$8.00	Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	Aluminum	304 Stainless Steel	0.06
<b>OPT2105</b>	\$8.00	Mounting bracket, right-angle, plastic. For use with 18mm sensors.	304 Stainless Steel	304 Stainless Steel	0.06



**OPT2104, OPT2105**

## 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 18mm sensors. Available in all 304 stainless steel or with an aluminum head and a stainless steel mounting plate.

Accessories for 18mm Sensors					
Part Number	Price	Description	Mounting Head	Mounting Plate	Weight [lb]
<b>OPT2116</b>	\$9.00	Mounting bracket, right-angle swivel, 360 vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 18mm sensors.	Aluminum	304 Stainless Steel	0.15
<b>OPT2117</b>	\$16.00	Mounting bracket, right-angle swivel, 360 vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 18mm sensors.	304 Stainless Steel	304 Stainless Steel	0.28

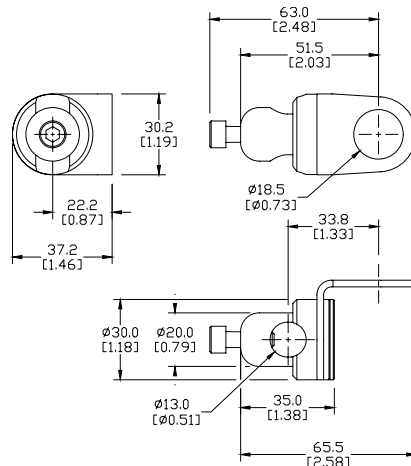


**OPT2116, OPT2117**

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

## Dimensions

mm [inches]



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