

V Series AC & AC/DC Inductive Proximity Sensors



M18 (18mm)

- 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

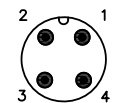
Part Number	Price	Sensing Range ¹	Mounting	Output State	Voltage	Connection ²	Wiring	Dimensions
Standard								
VK1-A0-1B	\$-09jn:	5mm [0.0787 in]	Flush	N.O.	20–253 VAC	2m [6.5 ft] axial cable	Diagram 2	Figure 1
VK1-A0-1H	\$-09jo:					M12 [12mm]		Figure 2
VK1-A0-2B	\$-09jp:	8mm [0.1574 in]	Non-flush			2m [6.5 ft] axial cable		Figure 1
VK1-A0-2H	\$-09jq:					M12 [12mm]		Figure 2
Extended								
V3K1-R0-3A8F	\$-1oi8:	6mm [0.236 in]	Flush	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	\$-1oi9:			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 3	Figure 4
V3K1-R0-3Q	\$-1oia:			N.O. (VAC) or N.O./N.C. (VDC)		1/2"-20 UNF, micro AC quick-disconnect	Diagram 4	Figure 3
V3K1-S0-3Q	\$-1oib:			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 5	Figure 3
V3K1-R0-4A8F	\$-1oic:	10mm [0.394 in]	Non-flush	N.O. (VAC) or N.O./N.C. (VDC)		2m [6.5 ft] axial cable	Diagram 1	Figure 4
V3K1-S0-4A8F	\$-1oid:			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 3	Figure 4
V3K1-R0-4Q	\$-1oie:			N.O. (VAC) or N.O./N.C. (VDC)		1/2"-20 UNF, micro AC quick-disconnect	Diagram 4	Figure 3
V3K1-S0-4Q	\$;-1oif:			N.C. (VAC) or N.O./N.C. (VDC)			Diagram 5	Figure 3

¹With 18mm x 18mm Fe360 target

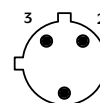
²V Series sensors with 4-pin M12 connectors are incompatible with Zip Port junction blocks.

Connectors

M12 connector



1/2 in. micro AC



Note: Pin 2 is not present on some models.

Wiring Diagrams

Diagram 1

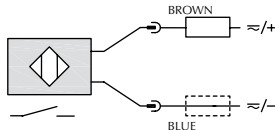


Diagram 2

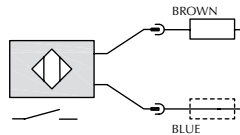


Diagram 3

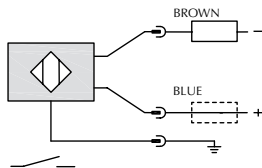
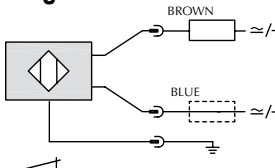


Diagram 4

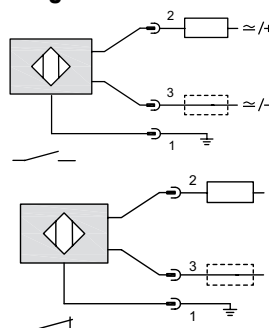
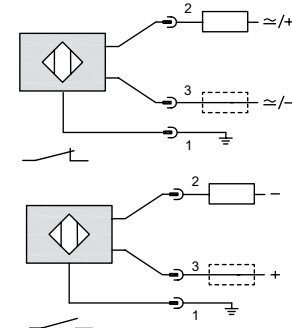


Diagram 5



V Series AC & AC/DC Inductive Proximity Sensors

Dimensions

mm [inches]

Specifications				
Model	VK1		V3K1	
Mounting Type	Flush	Non-flush	Flush	Non-flush
Nominal Sensing Distance (mm)	5	8	6	10
Operating Distance	NA		0–4.9 mm	0–8 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	≤ 7.5 VAC		≤ 7.5 VAC / ≤ 8VDC	
Switching Frequency	25Hz		600Hz	550Hz
Differential Travel (% of Nominal Distance)	2–10%		1–20%	
Repeat Accuracy	5%		≤ 5%	
Peak Current	NA		600mA/150ms Max.	
Time Delay Before Availability (tv)	200ms		100ms	
Reverse Polarity Protection	NA		Yes	
Short Circuit Protection: Overload	No		Yes	
Overvoltage			Yes	
Operating Temperature	-25 to +70°C [-13 to 158°F]		-25 to +70°C [-13 to 158°F]	
Protection Degree (DIN 40050)	IEC IP67		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	25 N·m [18.44 lb·ft]		15 N·m [11.0 lb·ft]	
Weight	120g [4.23 oz]		49g Plug; 100g 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	

Figure 1

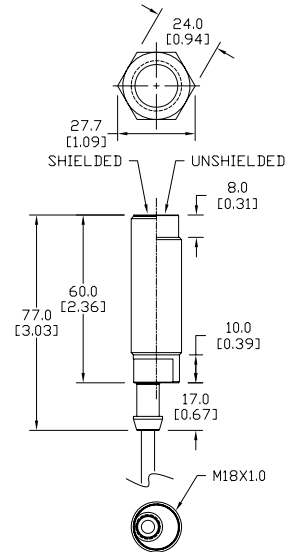


Figure 2

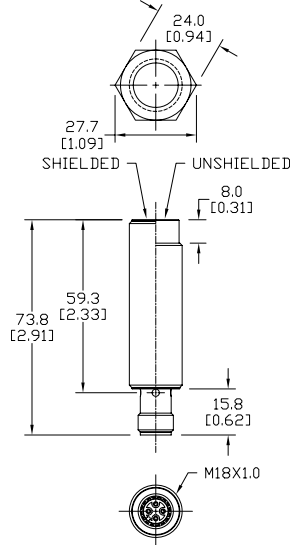


Figure 3

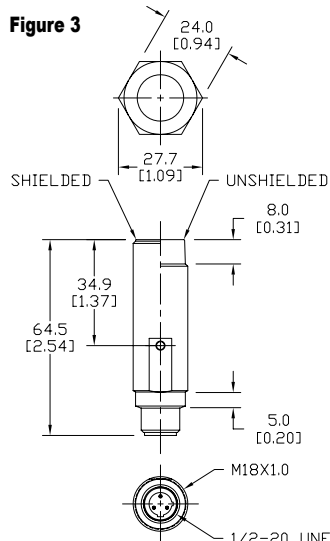
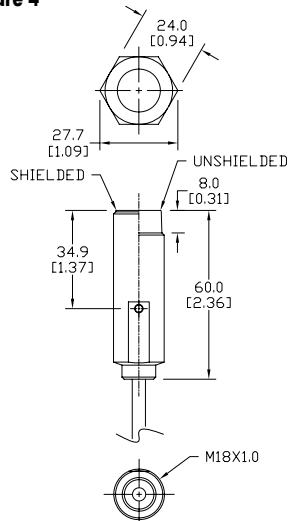


Figure 4



NOTE: Each sensor ships with jam nuts.

Accessories for 18mm Sensors

Axial Mounting Bracket

Axial mounting bracket available in zinc plated steel or 316L stainless steel. 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. For use with 18mm sensors.

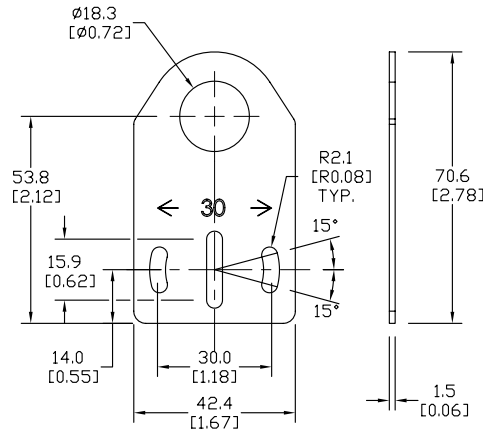
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
ST18A	\$97.:	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
ST18A7W	\$980:	Micro Detectors mounting bracket, axial, 316L stainless steel. For use with 18mm sensors.	0.06 [27.2]



ST18A

Dimensions

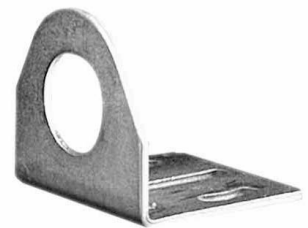
mm [inches]



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.

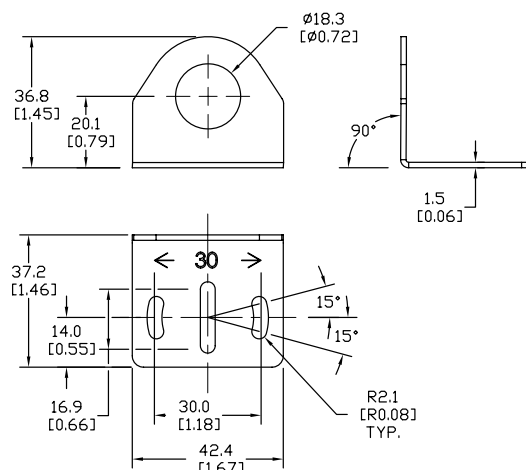
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
ST18C	\$981:	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
ST18C7W	\$982:	Micro Detectors mounting bracket, right-angle, 316L stainless steel. For use with 18mm sensors.	0.06 [27.2]



ST18C

Dimensions

mm [inches]



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	Drawing Link	Weight [lb]
OPT2036	\$-1nlk:	Wenglor mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel plated steel. For use with 18mm sensors.	PDF	0.02

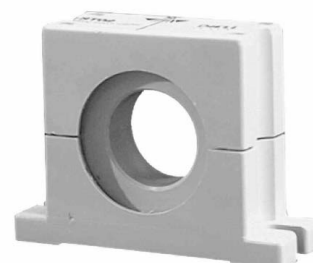


OPT2036

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).

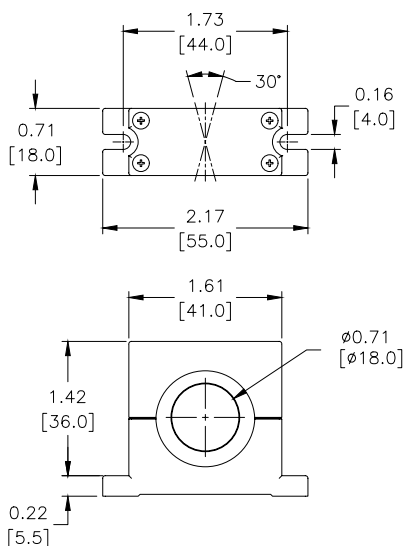
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight [lb]
ST02	\$05h#:	Micro Detectors mounting bracket, ball swivel, plastic. For use with 18mm sensors.	0.06



ST02

Dimensions

mm [inches]



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	Drawing Link	Weight lb [g]
OPT2104	\$;-1nlt:	Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]
OPT2105	\$;-1nlu:	Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]



[OPT2104](#), [OPT2105](#)

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	Drawing Link	Weight lb [g]
OPT2116	\$;-1n#:	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 18mm sensors.	Aluminum	304 Stainless steel	PDF	0.15 [68.0]
OPT2117	\$;-1nll:	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 18mm sensors.	304 Stainless steel	304 Stainless steel	PDF	0.28 [127.0]



[OPT2116](#), [OPT2117](#)

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).