

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 ¹ | Mounting | Output State | Voltage | Connection* | Wiring | Dimensions |
| Standard | | | | | | | | |
| VK1-A0-1B | | 5mm (0.0787 in) | Flush | N.O. | 20-253 VAC | 2m (6.5 ft) axial cable | Diagram 2 | Figure 1 |
| VK1-A0-1H | | | | | | M12 (12mm) | | Figure 2 |
| VK1-A0-2B | | 8mm (0.1574 in) | Non-flush | | | 2m (6.5 ft) axial cable | | Figure 1 |
| VK1-A0-2H | | | | | | M12 (12mm) | | Figure 2 |
| Extended | | | | | | | | |
| V3K1-R0-3A8F | | 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 | | | | N.C. (VAC) or N.O./N.C. (VDC) | | | Diagram 3 | Figure 4 |
| V3K1-R0-3Q | | | | N.O. (VAC) or N.O./N.C. (VDC) | | 1/2"-20 UNF, micro AC quick-disconnect | Diagram 4 | Figure 3 |
| V3K1-S0-3Q | | | | N.C. (VAC) or N.O./N.C. (VDC) | | | Diagram 5 | Figure 3 |
| V3K1-R0-4A8F | | 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 | | | | N.C. (VAC) or N.O./N.C. (VDC) | | | Diagram 3 | Figure 4 |
| V3K1-R0-4Q | | | | N.O. (VAC) or N.O./N.C. (VDC) | | 1/2"-20 UNF, micro AC quick-disconnect | Diagram 4 | Figure 3 |
| V3K1-S0-4Q | | | | 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.

Wiring Diagrams

Diagram 1

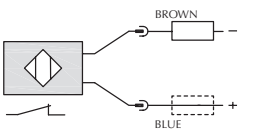
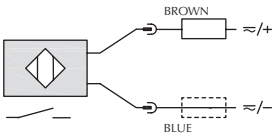


Diagram 3

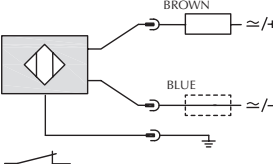
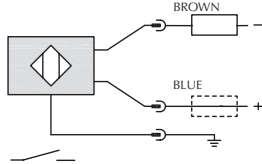
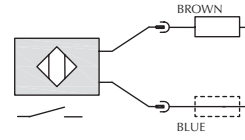


Diagram 2

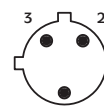


Connectors

M12 connector



1/2 in. micro AC



Note: Pin 2 is not present on some models.

Diagram 4

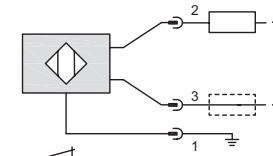
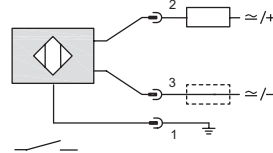
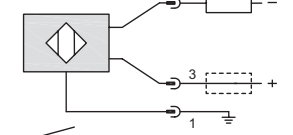
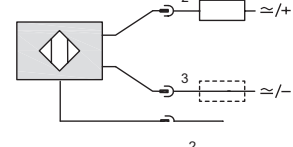


Diagram 5



V Series AC & AC/DC Inductive Proximity Sensors

| Specifications | VK1 Models | | V3K1 Models | |
|--|---|-------------------|---|-----------|
| 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 40 050) | 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 | |

Dimensions

mm [inches]

Figure 1

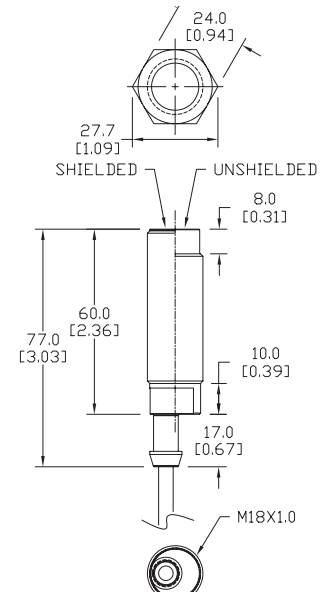


Figure 2

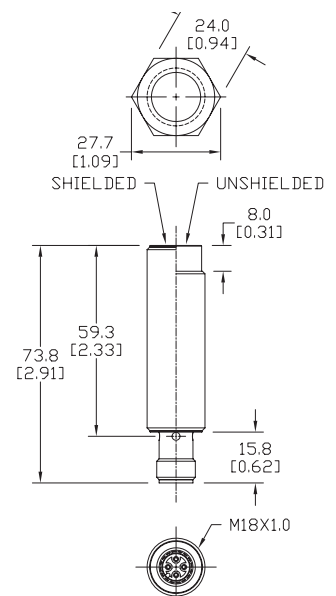


Figure 3

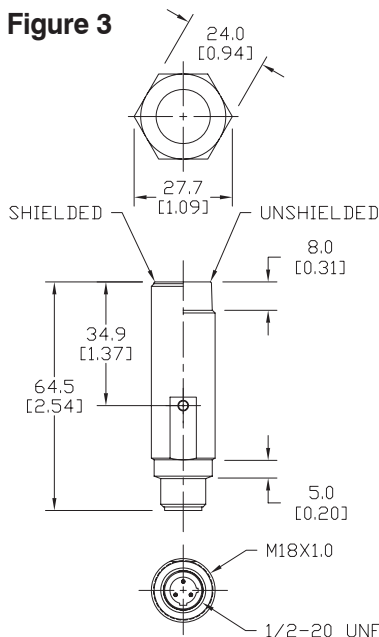
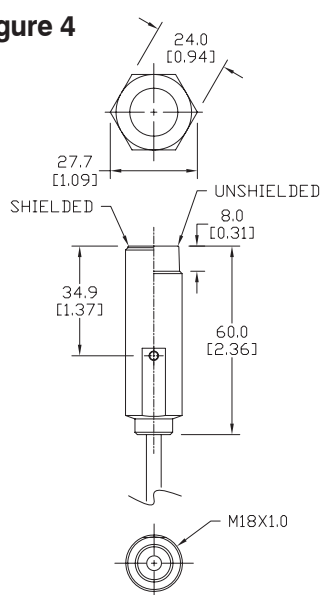


Figure 4



NOTE: Each sensor ships with jam nuts.

Accessories for 18mm Sensors

Axial Mounting Bracket

Axial mounting bracket 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.

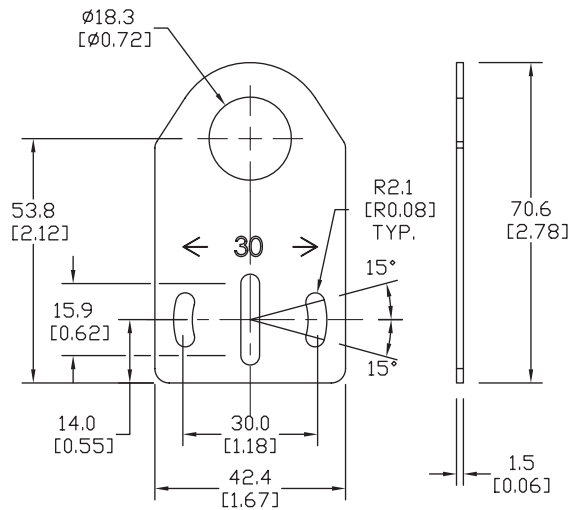


ST18A

| Accessories for 18mm Sensors | | | |
|------------------------------|-------|---|---------------|
| Part Number | Price | Description | Weight lb (g) |
| ST18A | | Mounting bracket, axial, zinc plated steel. For use with 18mm sensors. | 0.06 (27.2) |
| ST18A7W | | Mounting bracket, axial, 316L stainless steel. For use with 18mm sensors. | 0.06 (27.2) |

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.

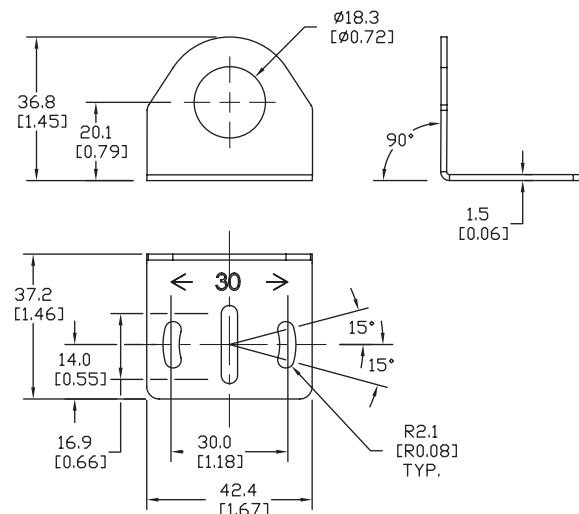


ST18C

| Accessories for 18mm Sensors | | | |
|------------------------------|-------|---|---------------|
| Part Number | Price | Description | Weight lb (g) |
| ST18C | | Mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors. | 0.06 (27.2) |
| ST18C7W | | Mounting bracket, right-angle, 316L stainless steel. For use with 18mm sensors. | 0.06 (27.2) |

Dimensions

mm [inches]

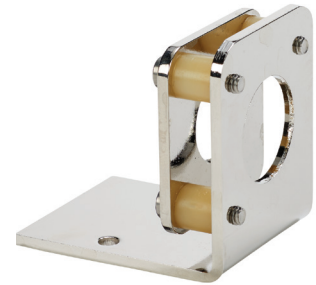


Accessories for 18mm Sensors

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 | | Wenglor mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel plated steel. For use with 18mm sensors. | PDF | 0.02 |

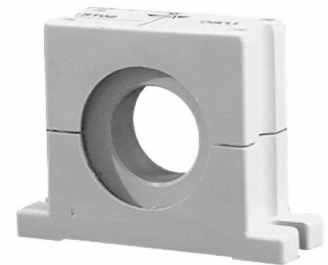


OPT2036

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).

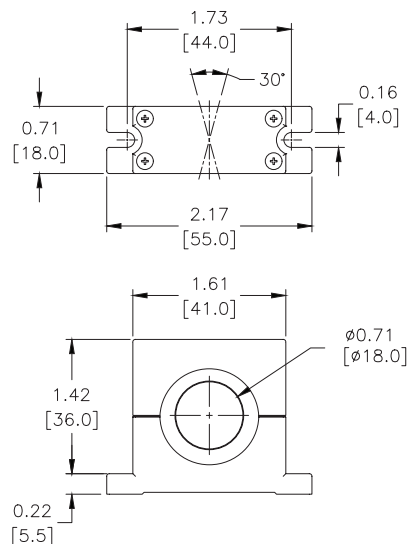
| Accessories for 18mm Sensors | | | |
|------------------------------|-------|--|-------------|
| Part Number | Price | Description | Weight [lb] |
| ST02 | | Mounting bracket, ball swivel, plastic. For use with 18mm sensors. | 0.06 |



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 | | Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors. | PDF | 0.06 (27.2) |
| OPT2105 | | 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 | | 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 | | 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).