SU Series Ultrasonic Sensors



M18 (18mm) Plastic – PNP or Analog Output

- High resolution
- 2 analog models available
- Complete overload protection
- IP67 rated
- Purchase cable separately (for quick-disconnect model)



| SU Series Ultrasonic Analog Output Sensor Selection Chart | | | | | | | |
|---|----------|--------------------------------|----------------------|----------------------|-----------|--|--|
| Part Number Price | | Sensing Range | Sensing Range Output | | Wiring | | |
| SU1-B1-0E | \$317.00 | 100 to 600 mm [3.94-23.62 in] | 0-10 VDC | M12 [12mm] connector | Diagram 2 | | |
| SU2-A1-0E | \$346.00 | 200 to 1500 mm [7.87-59.06 in] | 0-10 VDC | M12 [12mm] connector | Diagram 2 | | |

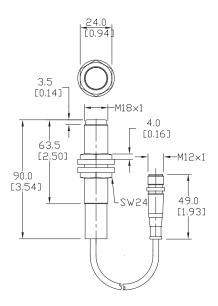
| Specifications Specification Specificati | | | | | | |
|--|-------------------------------|--------------------------------|--|--|--|--|
| Mounting Type | <u>SU1-B1-0E</u> | <u>SU2-A1-0E</u> | | | | |
| Nominal Sensing Distance | 100 to 600 mm [3.94-23.62 in] | 200 to 1500 mm [7.87-59.06 in] | | | | |
| Operating Distance | N/ | A | | | | |
| Output Type | 0-10 | VDC | | | | |
| Operating Voltage | 18-30 | VDC | | | | |
| No-load Supply Current | ≤ 35 | mA | | | | |
| Operating (Load) Current | ≤ 5 | mA | | | | |
| Off-state (Leakage) Current | ≤ 10 | μΑ | | | | |
| Voltage Drop | - | - | | | | |
| Switching Frequency | N. | A | | | | |
| Differential Travel | - | - | | | | |
| Repeat Accuracy | ±2 r | mm | | | | |
| Time Delay Before Availability (tv) | ≤ 50 | 0ms | | | | |
| Reverse Polarity Protection | Ye | es | | | | |
| Short-Circuit Protection | Yes (switch auto-resets a | fter overload is removed) | | | | |
| Linearity Error | ≤ 0. | 3% | | | | |
| Ultrasonic Frequency | 300kHz | 180kHz | | | | |
| Ultrasonic Beam Angle | 8 | • | | | | |
| Max. Response Time | 50ms | 150ms | | | | |
| Control Input | Hold / | Sync | | | | |
| Sensitivity Adjustment | - | | | | | |
| Input Voltage Transient Protection | Yes, only if transient peak | does not exceed 30 VDC | | | | |
| Operating Temperature | -25 to +70°C [| -13 to 158°F] | | | | |
| Temperature Compensation | Y€ | es | | | | |
| Protection Degree | IEC I | P67 | | | | |
| Indication/Switch Status | - | | | | | |
| Housing Material | Polybutylene Tere | ephthalate [PBT] | | | | |
| Shock/Vibration | See Proximity Se | nsor Terminology | | | | |
| Tightening Torque | 3 Nm [2. | 21 lb-ft] | | | | |
| Weight | 38g [1. | 34 oz] | | | | |
| Connection | M12 [12 mm |] connector | | | | |
| Agency Approvals | CE, UL listed | file E187310 | | | | |

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

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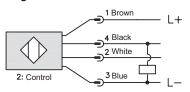
Dimensions

mm [inches]

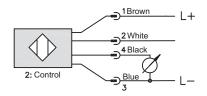


Wiring Diagrams









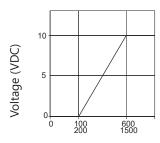
Connector



Must be used with 2M or 7M cable (4-wire)

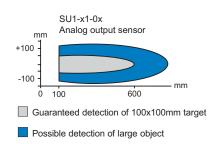
Characteristic Curves

Analog Output

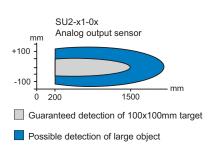


Distance (mm)

Detection Area SU1 Analog output



Detection Area SU2 Analog output



^{*}Note: Control wire can be used to inhibit sensor or to synchronize with another sensor.

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-adapter sensors. Hexagonal nuts not included. For use with 18mm sensors.

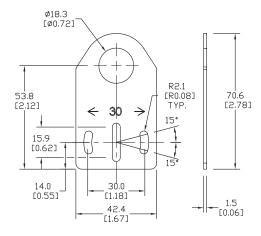
| Accessories for 18mm Sensors | | | | | |
|------------------------------------|--------|---|-------------|--|--|
| Part Nilmner Price Hescrintion | | Weight lb [g] | | | |
| <u>ST18A</u> | \$2.00 | Micro Detectors mounting bracket, axial, zinc plated steel. For use with 18mm sensors. | 0.06 [27.2] | | |
| <u>ST18A7W</u> | \$7.25 | 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

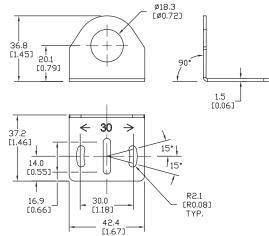
Right-angle mounting bracket for use with 18mm sensors. Has two mounting holes (use 4mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.

| Accessories for 18mm Sensors | | | | | |
|-------------------------------|--------|---|-------------|--|--|
| Part Number Price Description | | | | | |
| ST18C | \$2.00 | Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors. | 0.06 [27.2] | | |
| <u>ST18C7W</u> | \$7.25 | Micro Detectors 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 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] | | | |
| <u>OPT2104</u> | \$10.50 | Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors. | PDF | 0.06 [27.2] | | | |
| <u>OPT2105</u> | \$10.50 | Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors. | <u>PDF</u> | 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] | | |
| <u>OPT2116</u> | \$11.50 | 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 | <u>PDF</u> | 0.15 [68.0] | | |
| <u>OPT2117</u> | \$21.00 | 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 | <u>PDF</u> | 0.28 [127.0] | | |



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).

Mounting Rods and Brackets

Mounting Rods

304 Stainless steel rods for mounting swivel brackets <u>OPT2112</u> - <u>OPT2127</u> Available in three lengths: 200mm, 300mm, and 500mm. 12mm diameter.

| Mounting Rods for OPT2112-2127 Swivel Mounting Brackets | | | | | | |
|---|---------|---|-----------------|------------------|--|--|
| Part Number | Price | Description | Drawing Link | Weight lb (g) | | |
| <u>OPT2109</u> | \$13.00 | Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel. | PDF | 0.41 [185.97] | | |
| <u>OPT2110</u> | \$16.00 | Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel. | PDF | 0.60 [272.16] | | |
| <u>OPT2111</u> | \$21.00 | Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel. | PDF | 0.98 [444.52] | | |



Right-angle Mounting Bracket

Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.

| Right-angle Mounting Brackets for 12mm Sensors | | | | | | |
|--|---------|---|------------------|----------------|--|--|
| Part Number Price Description | | Drawing Link | Weight Ib [g] | | | |
| <u>OPT2108</u> | \$16.00 | Wenglor mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111. | <u>PDF</u> | 0.07 [31.8] | | |

