

TU Series Ultrasonic Sensors



M30 (30 mm) Plastic – PNP or Analog Output

- High resolution
- PNP output model with adjustable sensitivity
- Complete overload protection
- IP67 rated
- LED status indicator on PNP models
- Purchase cable separately
- Lifetime warranty



TU Series Ultrasonic PNP Output Sensor Selection Chart

| Part Number | Price | Sensing Range | Output State | Logic | Connection | Wiring |
|-------------|----------|---------------------------------|--------------|-------|-----------------------|-----------|
| TU1-C0-0E | \$371.00 | 300 to 2500 mm [11.81-98.43 in] | N.O. | PNP | M12 [12 mm] connector | Diagram 1 |

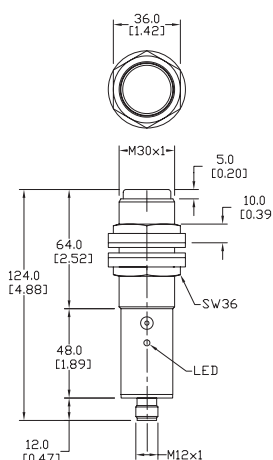
TU Series Ultrasonic Analog Output Sensor Selection Chart

| Part Number | Price | Sensing Range | Output | Connection | Wiring |
|-------------|----------|---------------------------------|-------------|-----------------------|-----------|
| TU1-C1-0E | \$371.00 | 300 to 2500 mm [11.81-98.43 in] | 0 to 10 VDC | M12 [12 mm] connector | Diagram 2 |

Dimensions

mm [inches]

| Specifications | | |
|-------------------------------------|--|---------------------------------|
| Mounting Type | TU1-C0-0E | TU1-C1-0E |
| Nominal Sensing Distance | 300 to 2500 mm [11.81-98.43 in] | 300 to 2500 mm [11.81-98.43 in] |
| Operating Distance | NA | NA |
| Output Type | PNP / N.O. | 0 to 10 VDC |
| Operating Voltage | 19 to 30 VDC | |
| No-load Supply Current | ≤ 35 mA | |
| Operating (Load) Current | ≤ 500 mA | ≤ 5 mA |
| Off-state (Leakage) Current | ≤ 10 μA | |
| Voltage Drop | ≤ 2.5 volts | NA |
| Switching Frequency | 1Hz | NA |
| Differential Travel | ±2.0% | NA |
| Repeat Accuracy | 0.2% | ±2 mm |
| Linearity Error | - | ≤ 0.3% |
| Ultrasonic Frequency | 130kHz | |
| Ultrasonic Beam Angle | 8° | |
| Max. Response Time | - | 100 ms |
| Time Delay Before Availability (tv) | ≤ 200 ms | ≤ 1 s |
| Control Input | Hold / Sync | |
| Sensitivity Adjustment | Yes | - |
| Reverse Polarity Protection | Yes | |
| Short-Circuit Protection | Yes (switch auto-resets after overload is removed) | |
| Operating Temperature | -25 to +70°C [-13 to 158°F] | |
| Temperature Compensation | Yes | |
| Protection Degree | IEC IP67 | |
| Indication/Switch Status | Yellow (output energized) | NA |
| Housing Material | Polybutylene Terephthalate [PBT] | |
| Tightening Torque | 3 Nm [2.21 lb-ft] | |
| Weight (connector) | 124g [4.37 oz] | |
| Connection | M12 [12mm] connector | |
| Agency Approvals | CE, UL listed file E187310 | |



Wiring Diagrams

Diagram 1*

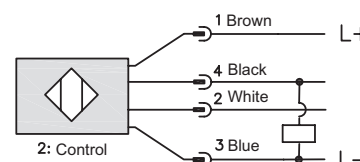
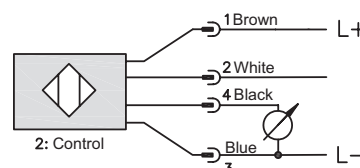


Diagram 2*



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

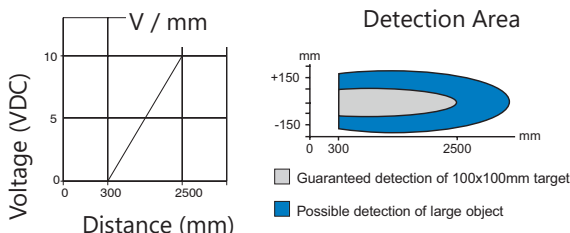
Connector

M12 connector



Must be used with 2M or 7M cable

Characteristic Curves (analog)



Accessories for 30mm Sensors

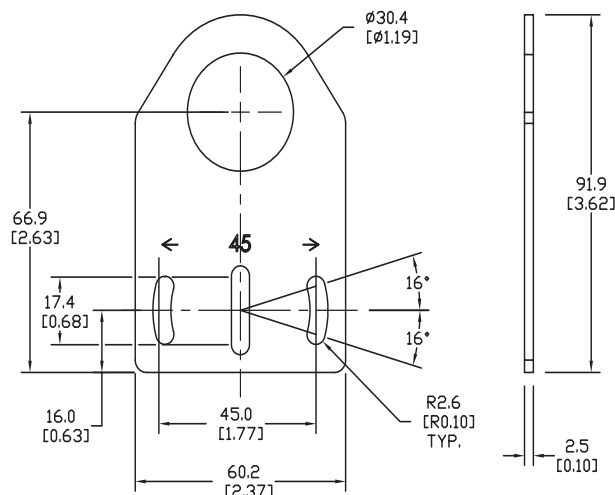
Axial Mounting Bracket

Mounting bracket, axial, zinc-plated steel. For use with 30mm sensors. Has two mounting holes (use 5mm screws) and allows the rotation of an optical axis for right-beam-angle-adaptor sensors. Hexagonal nuts not included.

| Accessories for 30mm Sensors | | | |
|------------------------------|--------|--|---------------|
| Part Number | Price | Description | Weight lb [g] |
| ST30A | \$2.25 | Micro Detectors mounting bracket, axial, zinc plated steel. For use with 30mm sensors. | 0.18 [81.7] |

Dimensions

mm [inches]



ST30A

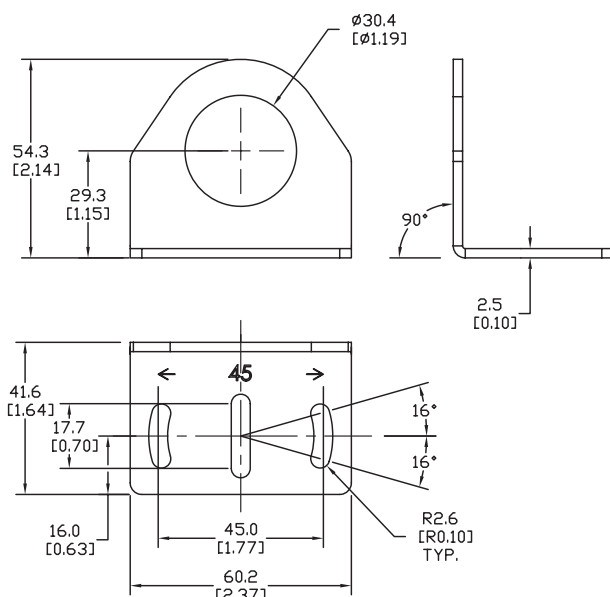
Right-angle Mounting Bracket

Mounting bracket, right-angle, zinc-plated steel. For use with 30mm sensors. Has two mounting holes (use 5mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.

| Accessories for 30mm Sensors | | | |
|------------------------------|--------|--|---------------|
| Part Number | Price | Description | Weight lb [g] |
| ST30C | \$2.25 | Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 30mm sensors. | 0.18 [81.7] |

Dimensions

mm [inches]



ST30C

Mounting Rods and Brackets

Mounting Rods

304 Stainless steel rods for mounting swivel brackets [OPT2112](#) - [OPT2127](#). 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) |
| OPT2109 | \$13.00 | Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel. | PDF | 0.41 [185.97] |
| OPT2110 | \$16.00 | Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel. | PDF | 0.60 [272.16] |
| OPT2111 | \$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 lb [g] |
| OPT2108 | \$16.00 | Wenglor mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111. | PDF | 0.07 [31.8] |

