

US4

Ultrasonic Sensor

**Montalvo US4 Ultrasonic Sensor**

The US4 is an easy to use ultrasonic sensor that works in conjunction with Montalvo's U4, Z4 and 3400 (X, D and DTi) Series of Tension Controllers. The sensor's extended range, built in temperature compensation and simple push button configuration provides flexibility for a variety of applications requiring an accurate non-contact diameter sensor.

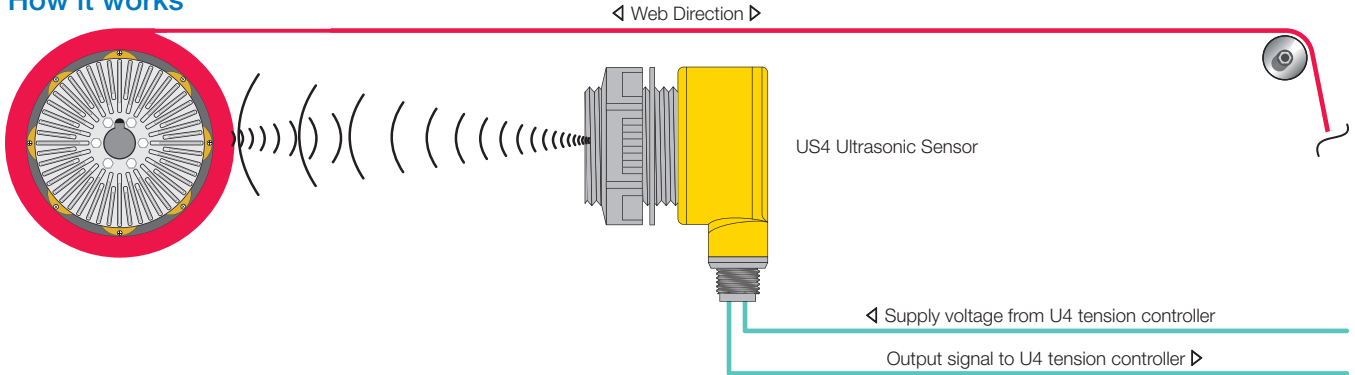
Features

- ▶ Sensing range available in 1, 2 or 3 meter models
- ▶ Output available in 10 VDC or 4-20 mA models
- ▶ Short dead zone (10% of max. range)
- ▶ Built in temperature compensation
- ▶ Fast and easy to use TEACH mode: no potentiometer adjustments
- ▶ Positive or negative analog slope
- ▶ Remote TEACH for security and convenience
- ▶ Wide operating range -40 to + 70°C (-40 to + 158°F)
- ▶ Compact, self-contained, with fully encapsulated electronics
- ▶ Optional mounting kits and cables available

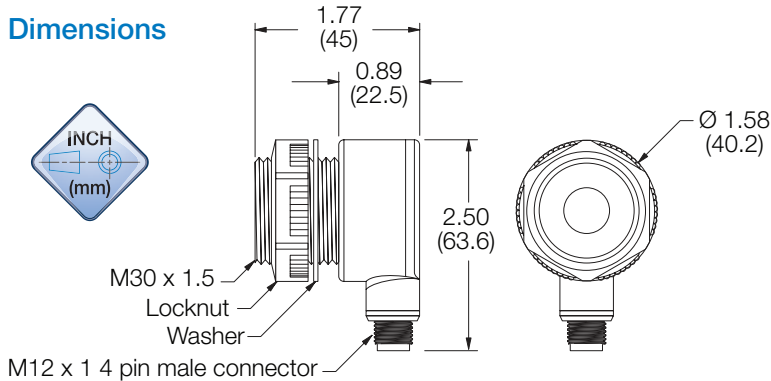


US4 mounted using optional Montalvo mounting bracket.

How it works

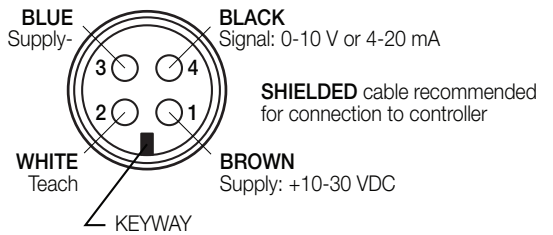


Dimensions



Wiring

View of US4 connector



Specifications

| Sensing Range | 100mm to 1m (3.9" to 39") | | 200mm to 2m (7.8" to 78") | | 300mm to 3m (11.8" to 118") | |
|--|---|-----------|--------------------------------|-----------|--------------------------------|-----------|
| Output | 0-10 VDC 4-20 mA* | | 0-10 VDC 4-20 mA* | | 0-10 VDC 4-20 mA* | |
| Part Number | 11000655 | 11001389* | 11000682 | 11001386* | 11000683 | 11001390* |
| Ultrasonic Frequency | 224 kHz | | 174 kHz | | 114 kHz | |
| Output Response ms Fast / Slow | 45 / 105 | | 92 / 222 | | 135 / 318 | |
| Resolution | 0.1% of distance (0.5 mm min.) | | 0.1% of distance (1.0 mm min.) | | 0.1% of distance (1.5 mm min.) | |
| Output Rating (voltage) (with 10VDC Output) | 2.5 kΩ min. load resistance; min. supply for full 10 V output is 12 VDC | | | | | |
| Output Rating (current) (with 10VDC Output) | 1 kΩ max. at 24V input; max. load resistance = (Vcc-4)/0.02Ω | | | | | |
| Output Rating (current) (with 4-20mA Output) | Ideal results when total load resistance R = [(Vin - 4)/0.020]Ω | | | | | |
| Supply Voltage | 10 to 30 VDC (10% max. ripple) at 40 mA, exclusive of load | | | | | |
| Supply Protection Cicutry | against reverse polarity and transient voltages | | | | | |
| Output Protection Cicutry | protected against short circuit conditions | | | | | |
| Delay at Power-up | 500 ms | | | | | |
| Temperature Effect | 0.02% of distance / °C | | | | | |
| Linearity | 0.25% of distance | | | | | |
| Minimum Window Size | 10 mm (0.4") | | | | | |
| Loss of Signal Indication | (0-10VDC) analog output goes to 0V / (4-20 mA) analog output goes to 3.6 mA | | | | | |
| Housing | PBT polyester | | | | | |
| Switch Face | polyester | | | | | |
| Transducer | epoxy/ceramic composite | | | | | |
| Environmental Rating | IP67 | | | | | |
| Operating Temperature | -40° to +70° C (-40° to +158° F) | | | | | |
| Operating Relative Humidity (max.) | 95% at 50° C non-condensing | | | | | |
| Vibration/Mechanical Shock | Mil. Std. 202F requirements method 201A | | | | | |
| Temperature warmup drift upon power-up | <1% of the sensing distance | | | | | |
| Certifications | CE | | | | | |

* Only compatible with Montalvo Automation Control Systems