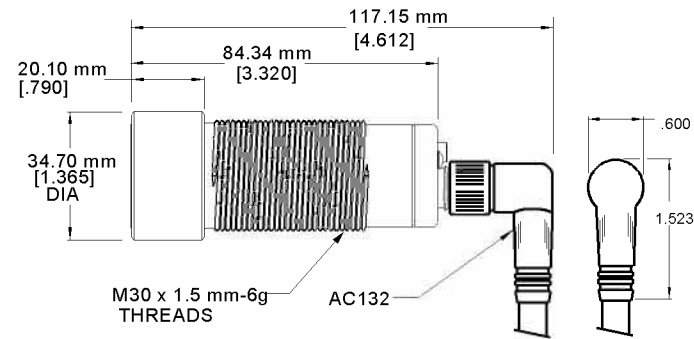


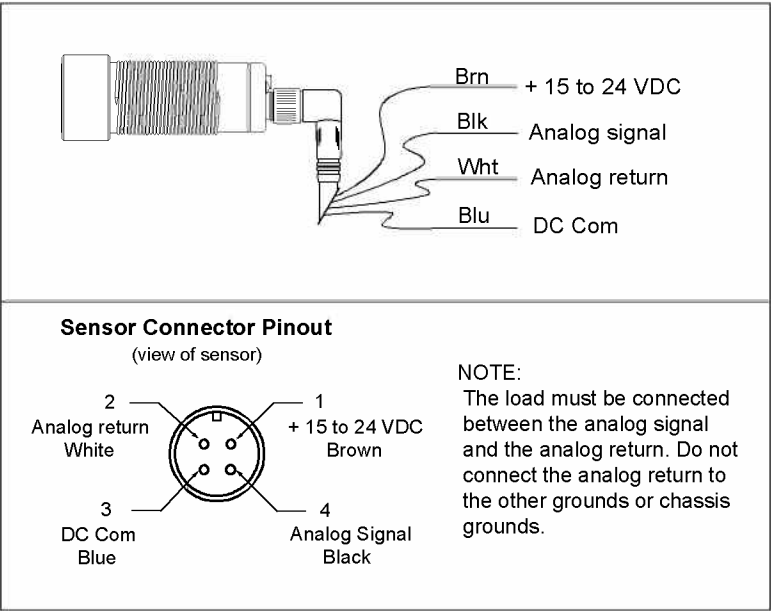
Mounting and Wiring

Mount the sensor firmly so that the object to be detected is never within 51 mm (2.0 inches) of the face of the sensor. For best results the sensor face should be parallel to the object surface. Also the sensor should be away from air currents.

Dimensions



Wiring Connections



Operation

The analog output varies directly proportional with the object position relative to the analog span limits. When the object is at or closer than the near analog span limit and farther than the deadband, the analog output is at 20 mA and the amber LED is at full brightness. When the object is at or farther than the far analog span limit and within the sensing range, the analog output is at 4 mA and the amber LED is off.

Multicolor LED States

The multicolor LED indicates the position of the object

Multicolor Led	Object Position
Red	At or closer than near span limit
Green	Between near and far span limits
Amber	At or farther than far span limit
Off	Object not being detected

Amber LED

The amber LED intensity varies directly with the magnitude of the analog output, with off indicating the analog output is at 4 mA and full brightness indicating the analog output is at 20 mA.

Loss of Echo Operation

On loss-of-echo, the multicolor LED is off and the output holds for the last known distance.

Setting the Analog Span Limits

Depress the **SETUP** pushbutton (the multicolor LED rapidly flashes amber to indicate the pushbutton is pressed) until the multicolor LED flashes green (about 3 seconds), and then release the **SETUP** pushbutton. The multicolor LED continues flashing green indicating the sensor is waiting for the first limit. Align a flat object parallel to the sensor face at the desired distance position for either window limit, and press the **SETUP** pushbutton once. Upon release of the **SETUP** pushbutton, the multicolor LED flashes amber indicating the first limit is set and the sensor is waiting for the second limit. Align a flat object parallel to the sensor face at the desired position for the second window limit and press the **SETUP** pushbutton once. Upon release of the **SETUP** pushbutton, the multicolor LED turns to the color that indicates where the object is located. The sensor has no timeout for setting limits.

While the **SETUP** pushbutton is depressed, the multicolor LED turns amber to indicate the sensor detects the object. If the sensor does not detect the object, the multicolor LED is red while the **SETUP** pushbutton is depressed, and when the **SETUP** pushbutton is released after not detecting an object, the multicolor LED flashes red 2 seconds, and then requests that limit again by flashing green for the first limit or flashing amber for the second limit.

The limits are saved in nonvolatile memory and thus retained when power is removed from the sensor.

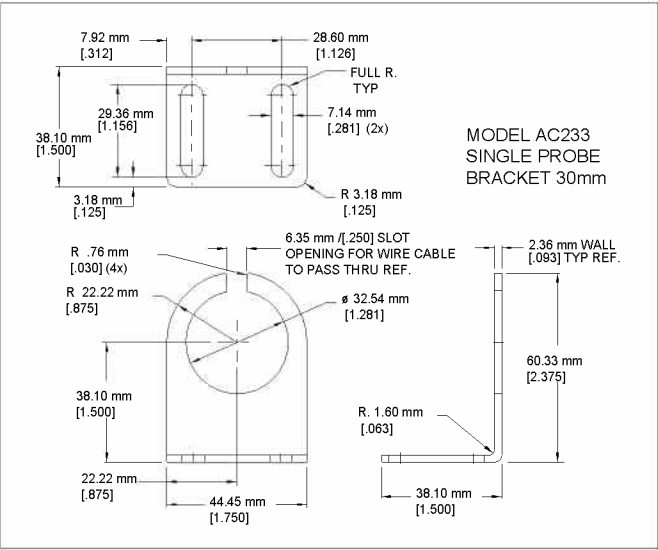
Accessories

Quick Connect Cables

- Model: AC130 Straight, 4-conductor, Shielded, 5 meters (16 feet)
- Model: AC132 Right-angle, 4-conductor, Shielded, 5 meters (16 feet)

Mounting Brackets

MODEL AC233



General Specifications

- Power Supply:** +15 to 24 VDC @ 80 mA, excluding load
- Analog Output:** 4-20 mA
- Response Time:** 2.5 seconds
- Loss-Echo Time:** Holds last known state on echo loss
- Power Up Output State:** 4 mA
- Operating Temperature:** 0°C to 50°C (32°F to 122°F) @ 100% relative humidity

- Sensing:**
 - Range: 51.0 to 991.0 mm (2.00 to 39.00 inches)
 - Limit Adjustment Resolution: 0.08 mm (0.003 inch)
 - Sensor Angle with respect to smooth flat surface: 90° ± 10°
 - Repeatability: ± 0.86 mm (0.034 inch) from smooth flat surface at constant air temperature

- Quick Disconnect Cables (Optional):**
 - AC130: Straight, 4-conductor, 5 meters (16 feet)
 - AC132: Right-angle, 4-conductor, 5 meters (16 feet)

- Sensor Housing Material:**
 - Case: PEI
 - Face: FDA approved silicone rubber

- Sensor Ratings and Approvals**
 - NEMA 4X (Indoor Use Only) 5, 12, 12K, 13, and IP67
 - This Product is UL Listed if powered by a Class II Power Supply and protected by a 2.0A Max UL Listed Fuse

Installation/Overvoltage Category: I

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SUPERPROX[®]

SM956A-132600

Ultrasonic Analog Output Sensor

30 mm, Direct 4-20 mA Analog Output

Hold output on loss-of-echo, 4 mA at power up

OPERATOR INSTRUCTIONS

This self-contained, ultrasonic analog output sensor provides an analog output signal that is directly proportional to the object position relative to the analog span limits. The analog output is at 4 mA when an object is at or farther than the far analog span limit. The analog output is at 20 mA when an object is at or closer than the near analog span limit. Objects as small as 10.0 mm (0.38 inch), transparent, opaque, plastic, glass, metal, liquid, or solid can be detected within the sensing range. A multicolor LED indicates the zone of the object and an amber LED indicates the magnitude of the 4-20 mA analog output.

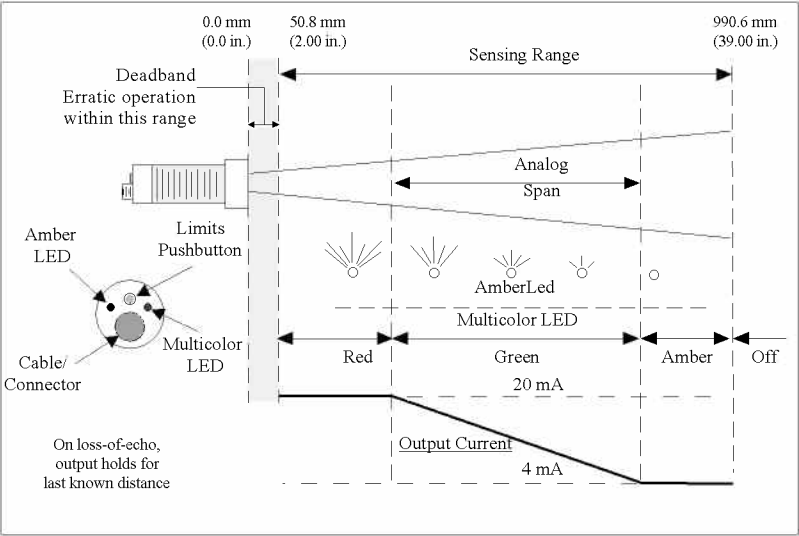


Figure 1

Literature and application engineering assistance are provided by Hyde Park and its authorized distributors to aid the customer in selecting the product for an application. The customer, however, is responsible for determining the suitability of the product in the application.

⚠ WARNING

UNINTENDED OPERATION
Do not use this product to detect objects within the deadband.

Failure to follow this instruction can result in death, serious injury or equipment damage.