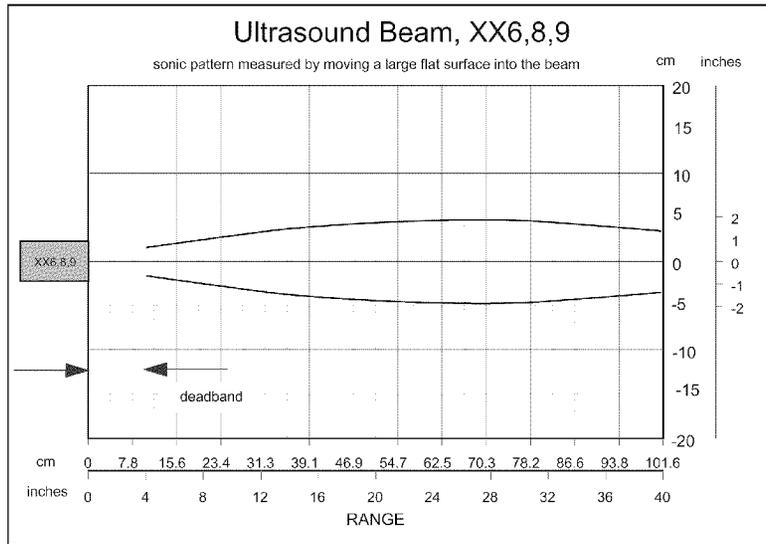


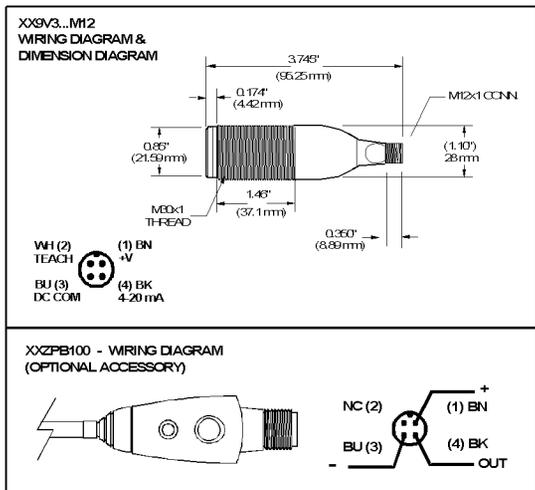
Beam Plot



Mounting / Alignment

Mount the sensor such that the surface of the object to be detected is approximately centered within the sensor's sensing field. Mount the sensor firmly to avoid vibration. The sensor face should be parallel to the liquid or material surface and free of air currents.

Wiring Connections and Dimensions, Connector Model



Accessories

Model	XXZPB100	Inline Pushbutton Switch (for teaching window)
Model	XXAC130	Straight, 4-Conductor Cable, Shielded, 5 meters (16 ft.)
Model	XXAC132	Right-Angle, 4-conductor cable, 5 meters (16 ft.)
Model	XXZAC233	Right-Angle Bracket

Sensing State Indicator LED's (Operation Mode)

Off:	Sensor is not powered
Green Only:	Object is not within span limits or no target is detected
Amber Only:	Object is within span limits

Output Indicator LED

Orange:	Intensity varies directly with output magnitude
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Teach Sensing Span

Before operating the sensor, you should teach the sensor the sensing window which is the distance between the near and far limits. The following procedure describes teaching the limits with a remote pushbutton. To teach the limits, press and hold the pushbutton. The LED fast flashes amber and then after 3 seconds, the LED slowly flashes green indicating the sensor is in teach mode. Release the pushbutton, and the LED continues slowly flashing green indicating the sensor is waiting for the first limit. Place a target at the near or far limit where analog minimum is to occur, then press and release the pushbutton. While the pushbutton is pressed with a target present, the LED turns amber indicating a valid echo is being detected. After the first limit is successfully taught, the LED slowly flashes amber indicating the sensor is waiting for the second limit. Place a target at the second limit where analog maximum is to occur, then press and release the pushbutton. While the pushbutton is pressed with a target present, the LED turns amber indicating a valid echo is being detected. After the second limit is taught, the two limits are saved in non-volatile memory and then the LED fast flashes green for 3 seconds to indicate the limits were successfully saved. The limits can be set in either order.

If not using an optional pushbutton, the process is similar. The White teach wire (Pin 2) can be grounded to the Blue DC return wire (Pin 3) to simulate the pushing of the button. All LED indications and the teach sequence are identical to the above detailed process.

While setting either limit, if no echo is detected, the LED fast flashes green and amber indicating no object is detected. There is no timeout for entry of the limit setpoints.

General Specifications

Power Supply:

Supply: +15 to 24 VDC ($\pm 10\%$) @ 100 mA max (including output load)
 Protection: ESD and reverse-polarity

Analog Output:

Current: 4 - 20 mA
 Minimum Load Resistance: 10 - 350 ohms
 Protection: ESD and short circuit, 24 v transorb
 Resolution: 12-bit DAC

Pushbutton Input:

Active voltage level: < 1.0 volt
 Inactive voltage level: > 2.5 volts
 Activation On/Off time: > 25 ms (3 seconds to arm for limit setup)

Response Time:

180 ms to 95% of full value

Loss-of-Echo Time:

1 Sec

Loss-of-Echo State:

4 mA

Operating Temperature:

0°C to 70°C (32°F to 158°F)

Sensing: $T_A=20^\circ\text{C}$ (68°F) -Large Flat Target

Range: 100.0 mm (3.94 in.) to 1000.0 mm (39.37 in.)
 Maximum plane-reflector angle: $\pm 5^\circ$
 Sonic Cone Angle: $\pm 7^\circ$
 Window-edge accuracy: ± 1.27 mm (0.050 in.) @ constant temperature
 Minimum object size Rod: 50.4 mm (2.00 in.) at 900.0 mm (35.43") range, 0° tilt
 Factory Set sensing window: 100.0 mm (3.94 in.) to 1000.0 mm (39.37 in.)
 Temperature Compensation: Temperature Compensation Enabled

Sensor Dimensions:

See Sensor Dimension section

Sensor Connector Cable:

Model XXZAC130 or XXZAC132 (see accessories section)

Sensor Materials:

Housing: PBT
 Transducer face: Epoxy
 Cable: Non-toxic PVC jacket
 LED: Nylon

Sensor Ratings and Approvals:

NEMA 4X (Indoor Use Only) 5, 12, 12K, 13, and IP67

Installation/ Over voltage Category: II

CE Mark Compliant: Declaration of conformity pending

This Product is UL Listed if powered by a Class II Power Supply and protected by a 2.0A Max UL Listed Fuse

LIMITATIONS AND EXCLUSION OF WARRANTIES

All goods purchased shall be free from defects in materials, design and workmanship under normal conditions of use for one year from the date of shipment. THIS WARRANTY IS THE SOLE WARRANTY AND IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE. THE LIABILITY OF HYDE PARK TO ANY PURCHASER SHALL BE LIMITED EXCLUSIVELY TO THE COST OF REPLACEMENT OR REPAIR OF DEFECTIVE PARTS, AND SHALL NOT INCLUDE LIABILITY FOR ANY DIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES WHATSOEVER, WHETHER FORESEEN OR UNFORESEEN, INCLUDING BUT NOT LIMITED TO LOST PROFITS, LOST SALES, OR INJURY TO PERSONS OR PROPERTY.

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VIRTU™ XX9V3A1C2M12



Ultrasonic Sensor with Analog Output Autoslope, Teachable limits, 4 mA on loss-of-echo



OPERATOR INSTRUCTIONS

This self-contained, ultrasonic proximity sensor provides an analog output signal that is proportional to the object position relative to the teachable analog span limits within a 100.0 mm (3.94 in.) to 1000.0 mm (39.37 in.) sensing field (Fig.1). The Autoslope feature allows a reversible analog slope. Inverse mode is selected by teaching the near limit first and the Direct mode is selected by teaching the far limit first (see diagram). Objects that are transparent, opaque, plastic, glass, metal, liquid or solid can be detected if located within the sensing field. An amber LED indicates the zone of the object, and an orange LED indicates the magnitude of the 4 to 20 mA output.

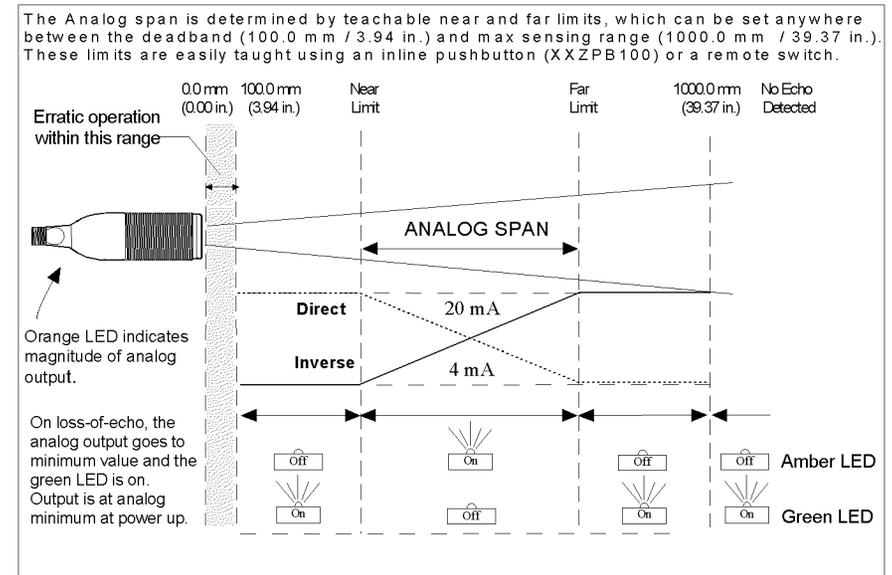


Figure 1

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.