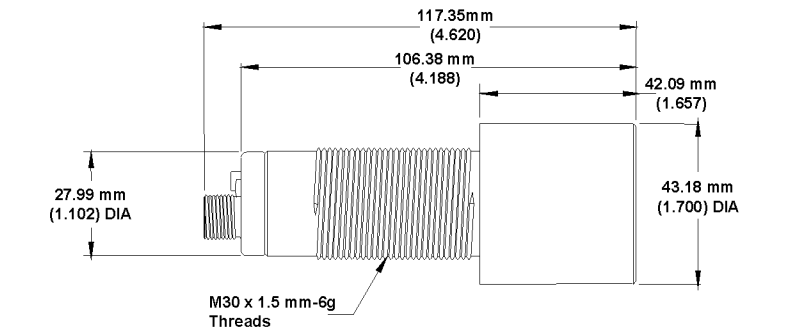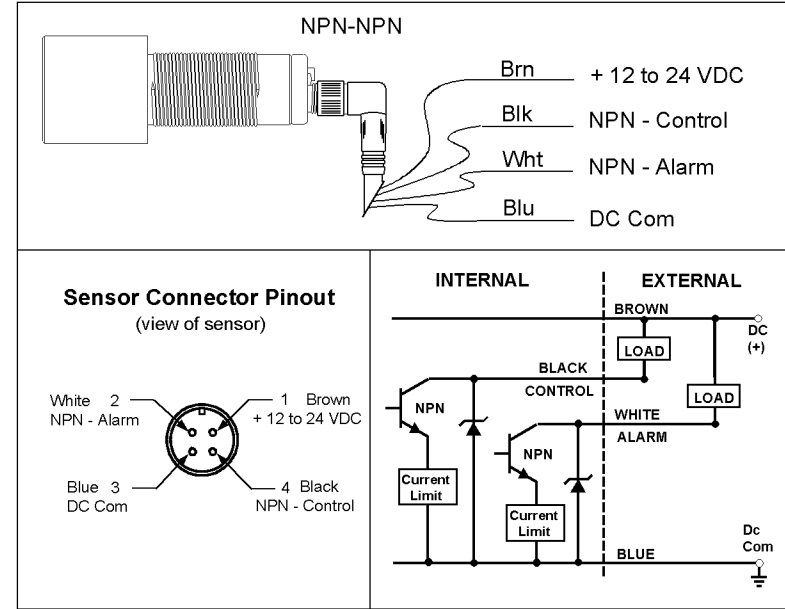# Mounting and Wiring

Mount the sensor firmly so that the object to be detected is never within 203 mm (8.0 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

117.35mm
(4.620)
106.38 mm
(4.188)
42.09 mm
(1.657)
27.99 mm
(1.102) DIA
43.18 mm
(1.700) DIA
M30 x 1.5 mm-6g
Threads

Wiring Connections

NPN-NPN

Brn — + 12 to 24 VDC
Blk — NPN - Control
Wht — NPN - Alarm
Blu — DC Com

Sensor Connector Pinout
(view of sensor)

White 2 — NPN - Alarm
1 Brown + 12 to 24 VDC
Blue 3 DC Com
4 Black NPN - Control

INTERNAL — EXTERNAL
BROWN
LOAD
DC (+)
BLACK
CONTROL
LOAD
NPN
WHITE
ALARM
NPN
Current Limit
Current Limit
BLUE
Dc Com

Operation

NPN Control Output

When an object is detected closer than the near control limit, the black-wire NPN CONTROL output goes to the sinking state. The control outputs remain in this state until an object is detected farther than the far control limit. When an object is detected farther than the far control limit, the black-wire NPN CONTROL output goes to the non-sinking state. The control outputs remain in this state until an object is detected closer than the near control limit.

NPN Normal Open Alarm Output (Sinking when not in alarm)

Near Alarm (Alarm limit closer than midpoint between near and far limit): When an object is detected closer than alarm limit, the white-wire NPN ALARM output goes to the non-sinking state. When an object is detected farther than the alarm limit, the white-wire NPN ALARM output goes to the sinking state.

Far Alarm (Alarm limit farther than midpoint between near and far limit): When an object is detected farther than the alarm limit, the white-wire NPN ALARM output goes to the non-sinking state. When an object is detected closer than alarm limit, the white-wire NPN ALARM output goes to the sinking state.

Amber LED

The amber LED shows the state of the black-wire NPN control output. When the black-wire NPN CONTROL output is sinking, the amber LED is on. When the black-wire NPN CONTROL output is not sinking, the amber LED is off.

Loss of Echo

If no object is detected for 1 second, the multicolor LED turns off, the outputs turn off, and the amber LED turns off.

Setting the Control and Alarm Limits

To change either the control or alarm limits, all three limits must be set. 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 control limit. Align a flat object parallel to the sensor face at the desired distance position for either control limit, and press the SETUP pushbutton once. Upon release of the SETUP pushbutton, the multicolor LED flashes amber indicating the first control limit is set and the sensor is waiting for the second control limit. Align a flat object parallel to the sensor face at the desired position for the second control limit and press the SETUP pushbutton once. Upon release of the SETUP pushbutton, the multicolor LED flashes amber/green indicating the second control limit is set and the sensor is waiting for the alarm limit. Align a flat object parallel to the sensor face at the desired position for the alarm 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 control limit, flashing amber for the second control limit, or flashing amber/green for the alarm limit.
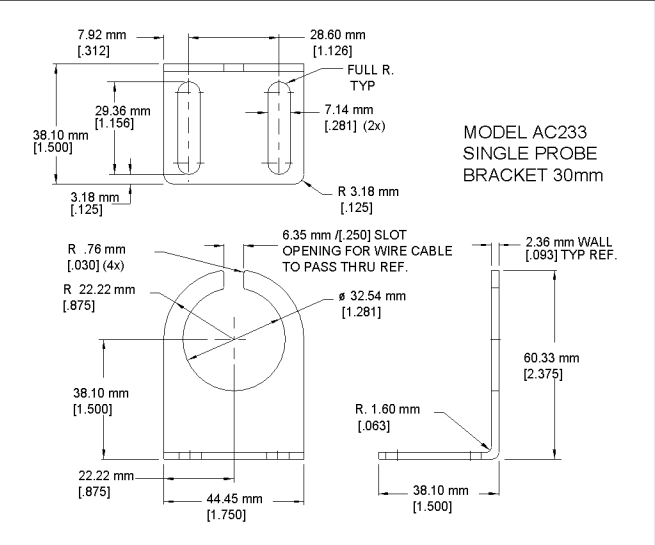
The limits are saved in nonvolatile memory and thus retained when power is removed from the sensor.

Note: After setting an under alarm, power the unit off and back on for proper operation, or do not set the under alarm while an over alarm is active.

Accessories

Mounting Brackets

MODEL AC233

MODEL AC233
SINGLE PROBE
BRACKET 30mm

General Specifications

Power Supply: +12 to 24 VDC @ 80 mA, excluding load

Sinking Outputs:
 Maximum on-state voltage @ 100 mA: 0.37 volts
 Maximum load current: 100 mA
 Maximum applied voltage: 35 VDC
 Protection: ESD and over-current

Loss-Echo Time: 1 second

Response Time: 1 second

Operating Temperature:
-20°C to 60°C (-4°F to 140°F) @ 100% relative humidity

Sensing:
 Span: 20.03 to 8,000.0 mm (8.00 to 315.00 inches)
 Limit Adjustment Resolution: 0.254 mm (0.010 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: Epoxy - White

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: II

⚠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.

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SUPERPROX®

HydePark
Sensors for the Real World

SM952A-854000

Ultrasonic Dual-Level Sensor
Pump-Out with N.O. Alarm
NPN Outputs, Off on loss-of-echo

UL LISTED
IND. CONT. EQ.
3KYC
SUPPLY CLASS 2
FUSE 2A UL LISTED

OPERATOR INSTRUCTIONS

This self-contained, ultrasonic dual-level sensor provides an NPN (sinking) pump-out control output and an NPN (sinking) Alarm output. Objects that are 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 is on when the control output is active.
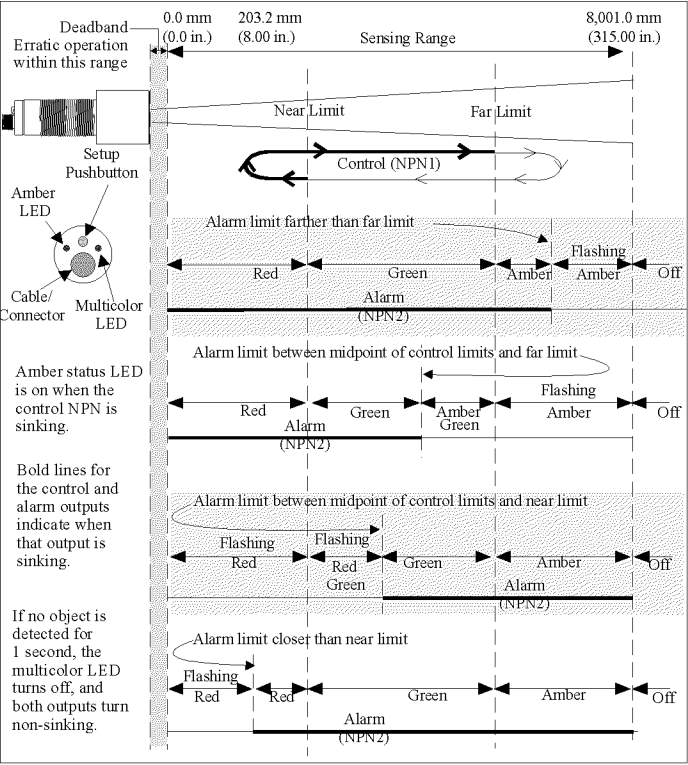

Figure 1

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 is responsible for determining the suitability of the product in the application.