

SonaSwitch® 1400

The SonaSwitch® 1400 electrostatic ultrasonic transducer system provides a complete sensor solution to simplify your proximity detection requirements.

Features

- 50 KHz Electrostatic Ultrasonic Transducer
- Integrated Electronic Circuitry
- Weather Shield Provided
- Normally Open Relay Output
- LED Power Indicator
- Detection Range 6" – 20'

Part No.

*PID# 800010LF SonaSwitch® 1400
*RoHS Compliant

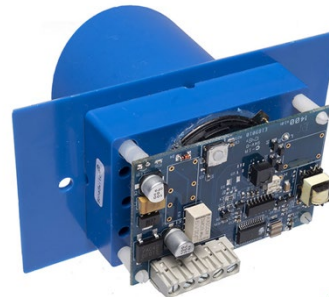
Benefits

- Long Range Capability
- Excellent Receive Sensitivity
- Quick and Easy Push Button Range Programming for Quick and Easy Set-up

Applications

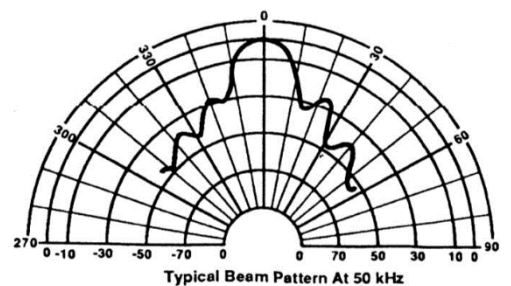
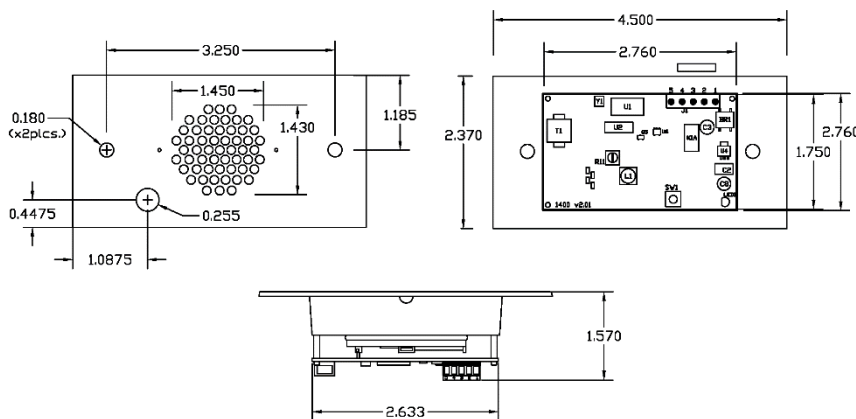
Proximity Detection, Presence Detection, Vehicle Detection at Drive-ups and Parking Structures, Robotics and Educational Products

Specifications



Description

The SonaSwitch® 1400 ultrasonic sensor provides a total system in a complete package containing an ultra-sensitive electrostatic transducer and supporting circuitry to provide one (1) Normally Open (N.O.) relay contact output. An easy pushbutton programmable range setting provides target detection between 1.5 feet and 35 feet away. The SonaSwitch® 1400 continuously senses at a 5 Hz rate. The SonaSwitch® 1400 is insensitive to temperature, humidity and pressure changes. The sensor can also withstand high audio and EMI/RFI levels.



Note: dB normalized to on-axis response.
Note: Curves are representative only. Individual responses may differ.

SonaSwitch® 1400 Specifications

Distance Ranges:0.46 – 10.7 M (1.5 - 35 feet)
Switch Point Accuracy (over entire range)± 0.1%
Beam Pattern See Graph
 Typically 15° nominal.

Repetition Rate (astable)..... 5 Hz
Output One (1) Normally Open (N.O.) Relay Output

- Relay continuously energized during the detection period.
- Relay Contacts rated at:
 -0.4 amps, 125 VAC resistive
 -1.25 amps, 24VDC resistive

Relay Response Time:
 0.75 seconds nominal from start of detection to relay closure; 1.0 second nominal shut-off time

*Specifications subject to change without notice

Power Requirements 10 to 30 VDC or 8-24 VAC
 (Maximum Current = 0.125 A; 0.05 A average)

Operating Temperature -18 to +70° C
 (0 to 158° F)

Weight (approximately) 227 grams (8.0 oz.)

Dimensions:

Height 4.500 in.

Width..... 2.375 in.

Depth (without weather shield)..... 1.750 in.

Dimensions – Weather Shield:

Diameter 2.220 in.

Length..... 1.800 in.

Mounting: Mounts directly on a single gang electrical enclosure

Case Material High Temperature ABS Plastic

Case Color Medium Blue

General Installation Procedures

1. Always mount the SonaSwitch® 1400 in a suitable dry location. The SonaSwitch® 1400 has been designed to fit in most standard single-gang electrical enclosures. For outdoor applications use a sealed type enclosure. Excessive moisture in the circuit board and transducer areas will result in possible damage and improper operation, and will void all warranties.
2. Always line the back of the mounting enclosure with a sound deadening foam material (such as 2# ester closed-cell foam); otherwise the enclosure resonance may result in false detections by the sonar unit.
3. Mount the SonaSwitch® 1400 as far off the ground as practical (minimum of 24 inches).
4. Mount the SonaSwitch® 1400 in a location where environmental interference sources are minimized (examples: EMI sources, air nozzles, excessive air turbulence, rain or snow, etc.).

Calibration Procedures

1. Apply power to terminals 1 and 2.
2. Allow several minutes warm-up time for the SonaSwitch® 1400 to reach operating temperature before calibrating the unit.
3. Place a target at the maximum desired detection distance. Push and hold the SW1 button for approximately 3 seconds until a chirp is heard, then release the push button. The range is now set.
4. Test maximum distance setting by slowly moving target away from and towards the sonar unit.
Note: Range setting is dependent on air temperature.
5. **Gain Control:** The SonaSwitch® 1400 gain was pre-set at the factory for optimum performance. To re-calibrate the "GAIN Control" potentiometer; place the target at the maximum desired detection distance. Rotate the GAIN potentiometer fully counter-clockwise (CCW). Slowly rotate the GAIN control clockwise (CW) until detection occurs. Rotate the Gain control CW an additional 1/16 turn. *Note: Always calibrate the GAIN control for minimum gain required for reliable detection. Excessive gain may result in false detections.*

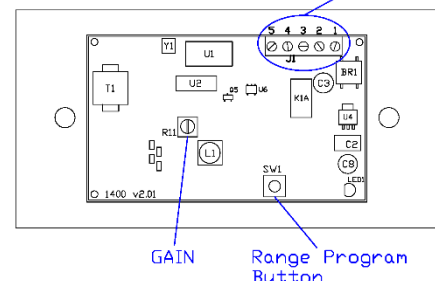
System Electrical Connections

Terminals 1 and 2.....Power Supply Input – Requires 10 – 30 VDC
 or 8 – 24 VAC; 0.125A

Terminals 3 and 4....Relay Contacts – N.O. (normally open)
 Contact closes during detection.

Terminal 5.....System Ground (common).

J1-1	+DC; <AC>
J1-2	-DC; <AC>
J1-3	COM Relay
J1-4	N.O. Relay
J1-5	GND



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