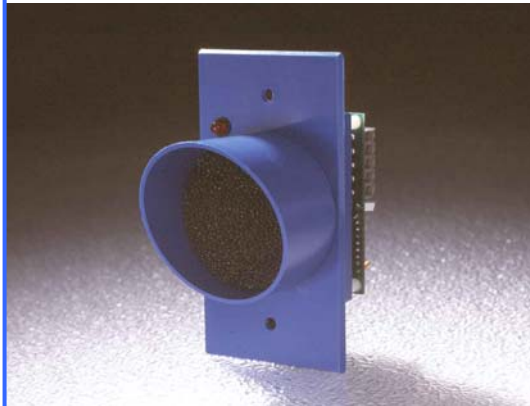




SonaSwitch® 1400

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

Specifications



Features

- 50 KHz Electrostatic Ultrasonic Transducer
- Integrated Electronic Circuitry
- Weather Shield Provided
- Normally Open Relay Output
- LED Power Indicator
- Ranges from 1.5' to 35'

Part No.

FGI14000011 SonaSwitch® 1400 Sensor

Benefits

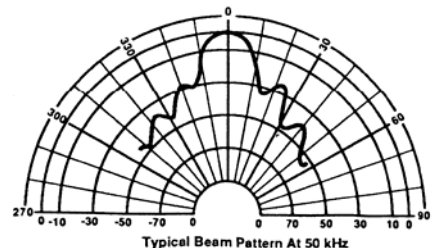
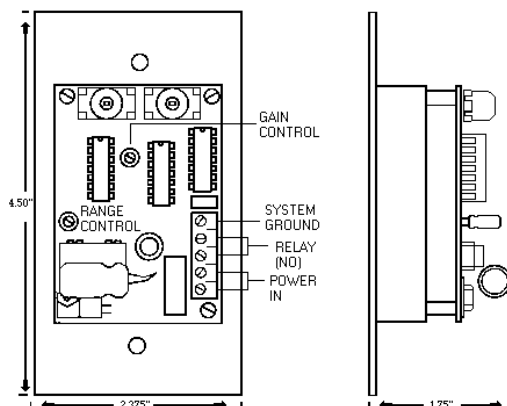
- Able to Range from 1.5' to 35'
- Excellent Receive Sensitivity
- Quick and Easy Set-up with Adjustable Range Control

Description

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

Applications

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



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

Beam Pattern

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

Outputs One (1) Normally Open 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 inch

Width 2.375 inch

Depth (without weather shield) 1.750 inch

Dimensions – Weather Shield:

Diameter 2.220 inch

Length 1.800 inch

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.
4. Adjust the gain to the Minimum setting necessary to insure reliable target detection (excessive gain can result in false detections).
5. Mount the SonaSwitch® 1400 in a location where environmental interference sources are Minimized (examples are EMI sources, air nozzles, excessive air turbulence, 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. Rotate the “Range Control” potentiometer fully counter clockwise (CCW).
4. Slowly rotate the “Range Control” potentiometer clockwise (CW) until detection occurs (detection occurs when LED and/or relay activates).
5. Test maximum distance setting by slowly moving target away from and towards the sonar unit.
Note: Range setting is dependent on air temperature.
6. **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*

System Wiring Information

Terminals 1 and 2 Power Supply Input – Requires 10 to 30 VDC or 8-24 VAC power source with 0.125 A current.

Terminals 3 and 4 Relay contacts – N/O (normally open) dry contact. Contact closes during detection.

Terminal 5 System Ground (common)

