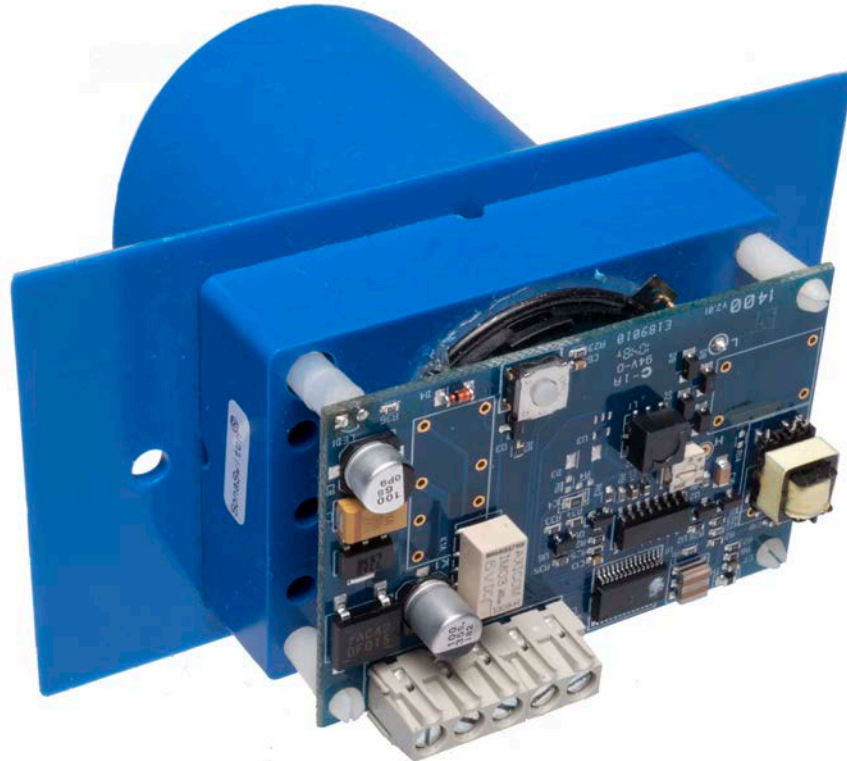


# SonaSwitch™ 1400

v2.03



## Operation and Installation Manual



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## **Warning!**

Do not use any SonaSwitch™ Ultrasonic Sensor in any application to protect human life, health or safety or in any application where failure of a SonaSwitch™ Ultrasonic Sensor may result in human injury or death. This sensor must not be used in any environment where risk of an explosion is possible.

## **General**

This operations and installation manual will provide general guidelines and suggestions in using the SonaSwitch™ 1400 series sonar detection module in many detection applications.

## **System Wiring J1**

Terminals 1 and 2	Power supply; requires 10-30 VDC or 8-24 VAC with 1-amp minimum current capacity.
Terminals 3 and 4	Dry relay contacts; N/O relay closes during detection; 0.5 amps, 28 VDC, non-inductive load.
Terminal 5	System Ground (common).

## **General Installation Procedures**

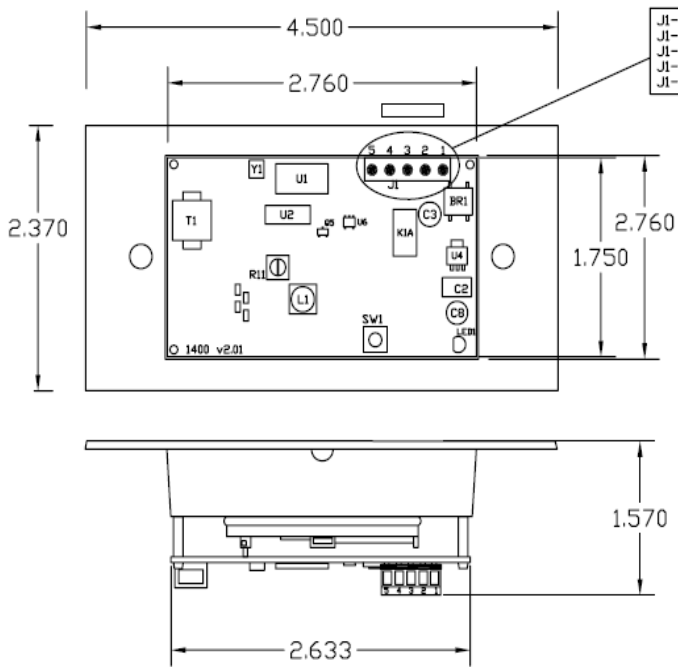
1. Always mount SonaSwitch™ 1400 in a suitable, dry location. The SonaSwitch™ 1400 has been designed to fit most standard single-gang electrical enclosures. For outdoor applications, use a sealed type enclosure. Excessive moisture in the circuit board/transducer area will result in possible damage and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

## **Calibration Procedures**

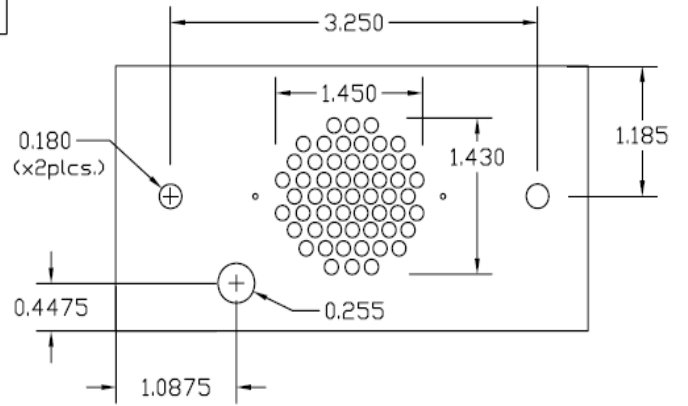
1. Apply power to terminals 1 and 2.
2. Allow several minutes to warm-up before calibration.
3. Place target at maximum desired detection distance.
4. Turn the GAIN potentiometer fully CW and then CCW, noting the stop points of the pot, adjust the pot to 1/3 turn CW from the fully CCW position.
5. Push down and hold SW1 switch for about three seconds until a beep sound is heard, then release the switch button.
6. Test maximum distance setting by slowly moving target away from and towards sonar unit noting that the relay switches ON and OFF when the target is detected. Re-set the desired distance if necessary.  
Note: Range setting is dependent on the air temperature.
7. To calibrate gain, place a target at maximum desired detection distance. Rotate gain control fully counterclockwise. Slowly rotate gain control clockwise until detection occurs. Rotate an additional 1/16 turn.

**Note:** Always calibrate gain control for minimum gain required for reliable detection. Excessive gain will result in false detection.

\*If your unit is equipped with an LED, this LED turns ON when the relay switch is active (target detected).



J1-1	+DC, (AC)
J1-2	-DC, (AC)
J1-3	CDM Relay
J1-4	N.D. Relay
J1-5	GND



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