ShockTec™
Digital Shock Detectors

ShockTec 600S

Installation Instructions

RISCO GROUP
Creating Security Solutions With Care

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Introduction

ShockTec 600S is a digital shock detector provides reliable 24-hour perimeter protection. A break-in is detected as soon as the intruder attempts to force, smash, drill or even saw through the protected window, door, wall or roof. ShockTec employs an advanced digital microprocessor to analyze the vibration signal received from the piezo electric sensor. A unique feature of ShockTec 600S is digital sampling of the signal simultaneously in two separate channels, each channel amplified at a different gain. This provides an extremely wide dynamic range of the sampled signal, enabling precise measurement and analysis of the shock signal.

Main Features

- Digital Microprocessor with Intelligent Digital Signal Processing
- Tri-color LED enables accurate and reliable calibration, with "over - sensitive" and "under-sensitive" indications
- Gross attack detection
- Encapsulated bi-morph piezo electric sensor
- Dual stage adjustment potentiometer
- Cover anti-tamper protection
- Compatibility with most control panels

Terminal Wiring (See Figure 1)

-12V+	12V power connection, reverse polarity protected
ALARM	NC Alarm output contact
LED	Connection for +12V remote latch control signal
TAMPER	NC Anti-Tamper and Anti-Magnet contact

Modes of LED Indication

The LED of the ShockTec 600S has three operational modes. The NC alarm contacts are non-latching in all modes of operation. On alarm activation, the alarm contacts open the circuit for 2.5 seconds.

1. Normal Operational Mode

No voltage is applied to the LED Terminal. The LED illuminates while the ALARM contact is open in response to an input signal.

- GREEN: Indicates an alarm condition.
- RED: Under -Sensitive indication.
- ORANGE: Over-Sensitive indication.

2. Any to Latch Mode

12V is applied to the LED terminal causing it to be inhibited. Upon removal of the 12V, the detector switches to a Normal Operation Mode and a continuously flashing ORANGE LED indicates if an alarm is detected (Alarm memory). Reapplication of 12V resets the latch (Alarm memory) and extinguishes the LED.

3. First to Latch Mode

12V is applied to the LED terminal via a 47k resistor (see Figure 2) causing it to be inhibited. Operation is the same as in Any to Latch Mode with the exception that only the first detector to detect an alarm is indicated by a continuous flashing Orange LED, whereas any subsequent detector is indicated by a steady Orange LED.

Installation Procedure

1 Select the intended position for installation, ensuring the surface is clean and clear of any irregularities. Refer to Table 1 for details about detection ranges for the different surface types.
2 Remove the cover of the detector by unscrewing the lens using the special key supplied and then unscrewing the single captive screw, until the cover is easily removed from the base.
3 Carefully lift the printed circuit board from the base by releasing the restraining catch.
4 Place the base on the mounting position and mark the desired fixing holes.
5 If rear cable entry is required, thread the cables through the rear of the base by removing the appropriate knockout.
6 Fix the base in position.
7 Carefully clip the printed circuit onto the base.
8 If side cable entry is required, draw the cable through the rubber grommet and complete the electrical connection.
9 Set the detector's sensitivity as follows:
NOTE: The LED terminal should not be connected to 12V **supply during the sensitivity test.**
i With the unit set for normal operation, use a suitable instrument to bang or tap the protected area.
ii If the sensitivity needs adjustment, use a screwdriver to adjust the trimmer (turn the trimmer control clockwise to increase sensitivity or counter-clockwise to reduce sensitivity).
iii Repeat steps i and ii until the desired sensitivity level is achieved. If required, you can turn off the DIP1 to reduce sensitivity range (High sensitivity - DIP1 ON, Low sensitivity - DIP1 OFF).
* DIP2 not used.
10 Replace the cover of the sensor (including the rubber grommet) and tighten the captive screw.
11 Recheck the detector's response to the desired impact.
12 Insert and screw the lens into the cover using the special key supplied for this purpose.

Multiple Unit Connection Procedure - see figure 2.

Table 1: Typical Detection Range

Surface	Concrete	Brick Wall	Steel	Glass	Wood	Plywood
Radius	1.5m	2.5m	3m	3.5m	3.5m	4m

The above values are typical and are subject to practical testing, which must be performed for each installation. In some environments, these values may differ from the values listed above.

Dipswitches

Dipswitch	Dipswitch Position	Sensitivity
1	ON (Default)	High
	OFF	Low
	NOTE: For fine tuning use sensitivity trimmer.	
2	Not used.	

Technical Data

ShockTec 600S	
Supply voltage	9V - 16V DC
Current drain	8.5 mA Typical (17 mA Max)
Operational temperature	-20°C to +55°C (-4°F to 131°F)
Storage temperature	-20°C to +60°C (-4°F to 140°F)
Maximum humidity	95% non-condensing
Sensitivity settings	Dual stage potentiometer
Tri-colour LED indicator	Orange: Over-sensitive Green: Alarm & correct calibration Red: Under-sensitive
Relay contact ratings: Alarm relay Tamper Relay	 100mA at 24VDC, NC, Opto relay 500mA at 24VDC, NC
Time relay open in alarm	2.5 seconds
Latching modes	Any 1st to latch operation modes
Max. no. of units on Any Latch loop	80
Max. no. of units on 1st to Latch loop	10
False alarm protection	Digital microprocessor signal processing and noise reduction circuits with maximum ground plane
Electrostatic discharge	No false alarms up to 8kV
RF immunity	According to EN 50130-4
Enclosure material	Flame retardant ABS
Enclosure dimensions	25x28x95mm - detector

Figure 1: Terminal Connections Diagram

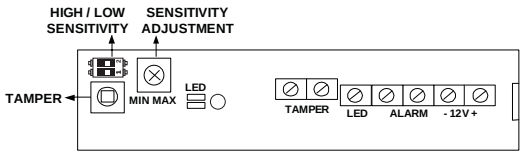

Figure 2: Multiple Unit Connection Procedure