

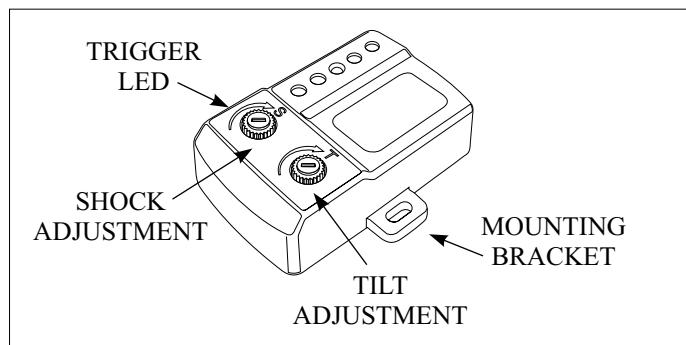
SEN-009 TILT / SHOCK COMBINATION SENSOR USER GUIDE

INTRODUCTION

The SEN-009 Shock / Tilt sensor has been developed to detect a change in angle of the vehicle and the vibration impacting upon the vehicle. The sensor has an advantage over conventional shock sensors in that all movement is detected in a change with respect to the earth. Many conventional sensors use a magnet and coil combination which can be prone to false alarms by fluorescent light switching on.

For best results, the SEN-009 should be connected to an alarm system that disables the power or ground signals to the sensor when disarmed. Each time the sensor is powered-up, it will instantly reset the reference angle. By applying a constant power and ground, the SEN-009 will only do this after 15 seconds.

EQUIPMENT DESCRIPTION



Adjustment dials

At one end of the case are two adjustment dials. The dial marked "T" adjusts the tilt sensitivity, the dial marked "S" adjusts the shock sensitivity. Turning either dial clockwise will independently increase the sensitivity of each detector. Each dial can only 270 degrees, do not attempt to turn the dial past its minimum or maximum angle.

Status LED

Near the middle of one edge is a status LED, this LED lights up red when either detectors is triggered. It is not possible to determine which detector is active, unless one detector is turned down to absolute minimum.

OPERATION

Once power is applied (usually when the alarm is armed by remote control), the SEN-009 will remain idle for 15 seconds. If vibration or change of angle is detected the countdown will reset.

When the 15 second period expires, the SEN-009 will set its current angle as its reference angle.

- Any change in angle greater than 2 degrees will trigger the sensor. After each trigger the SEN-009 will restart a new idle cycle.
- Any vibration above the set threshold will also trigger the sensor, as with the tilt function, the sensor will enter a 15 second idle cycle.

Both the detectors output the triggered signal via the same

wire. Therefore a shock will not trigger the sensor within 15 seconds of a tilt trigger (and vice versa).

SENSOR SETUP

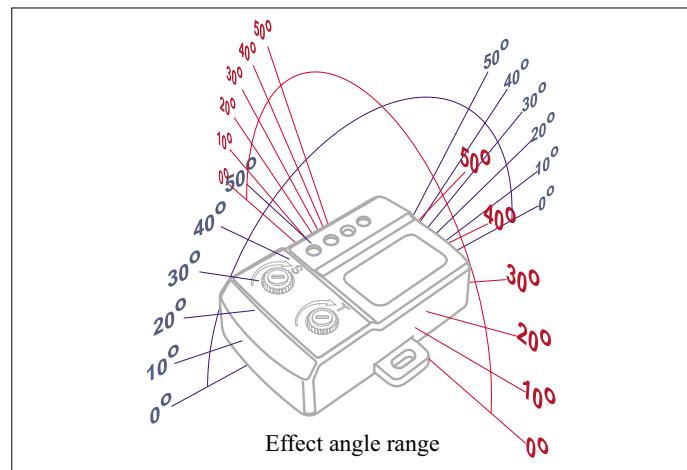
If either tilt or shock detector is not required, simply turn sensitivity to minimum (anti-clockwise). This will not disable each detector, but simply reduce the likelihood of the detector to achieve a trigger.

To setup the SEN-009 for use with both shock and tilt see the procedure below:

- Set both detectors to minimum (anti-clockwise).
- Set the "T" dial to 25%
- Arm the alarm
- Wait 15 seconds
- Jack up the car in increments.
- Watch sensor status LED for trigger state.
- If sensor fails to detect new angle, disarm alarm and increase and repeat previous four steps until sensor trigger satisfactorily.

Once the tilt detector has been set do not move the "T" dial. Now set the shock sensor sensitivity.

- Set the "S" dial to 25%
- Arm the alarm
- Wait 15 seconds
- Kick the driver's tyre
- If the sensor fails to detect the bump, disarm alarm, increase shock sensitivity and repeat the previous three steps.



SPECIFICATIONS

Operating voltage	10 - 15 volts DC
Operating current	
Idle	3mA
Triggered	6mA
Trigger Output	
Polarity	Negative
Max current max	300mA
Back EMF	Protected
Trigger Pulse	1 second
Power-up Idle	15 seconds
Physical Size	
Height	15mm
Width	45mm
Length	51mm