

# 509U Ultrasonic Sensor

## What Is Included

- 509U ultrasonic sensor control module with mounting hardware
- Wiring interface harness
- 2 ultrasonic transducers with mounting hardware

## Product Description

The 509U Ultrasonic sensor is used to provide coverage of a vehicle's interior cabin area. The sensors detect movement inside the vehicle by sensing air disturbance. They should trigger the alarm if a thief has gained access to the interior of your vehicle.

- the 509U can interface with the 4-pin MUX port of all Directed security systems using the wiring interface harness supplied.
- For other Directed (and non-Directed) security systems that do not have sensor ports, the 509U can be hard-wired to a negative instant trigger sensor input.

## Installation Instructions

Mounting the Control Module and Transducers.

1. Choose a location under the dashboard for the control module that is close enough that the wire harness can reach the alarm control module and the transducers will reach the top of the A-pillar on both driver and passenger sides.
2. One transducer is longer than the other, so mount the transducer with the longest harness furthest from the control module. Use the screws provided or insert

the mounting tabs between the dashboard and wind-screen pillar.

3. Angle the sensors towards the top centre of the rear window. If mounted at the top of the A-pillars make sure the transducers position does not affect use of the sunvisor.
4. Route the sensor cables to the 509U control module and plug-in.

### **Adding a 509U to an alarm without a sensor port**

To add a 509U to these types of alarm systems, refer to the configuration diagram below and follow these steps:

1. Plug the transducers into the 509U.
2. Cut off and discard the 3-wire, 4-pin connector (with the red, black, and blue wires).
3. Connect the end of the cut blue wire that is still connected to the 3-wire ultrasonic sensor harness (with the blue, red, and black wires) to an instant trigger sensor input of the alarm system.
4. Insert a 1-amp diode in series with the blue wire with the band side facing towards the 509U control unit (see wiring diagram).
5. Connect the end of the cut red wire that is still connected to the 3-wire ultrasonic sensor harness to a fused constant (+)12V source.
6. Connect the end of the cut black wire that is still connected to the 3-wire ultrasonic sensor harness to chassis ground.
7. Adjust and test the ultrasonic sensor before mounting.

## Ultrasonic Sensor Adjustment and Testing

1. The sensitivity adjuster is found on the top of the 509U control module. Insert a small screwdriver into the adjustment hole and turn the screw clockwise to increase sensitivity or counterclockwise to decrease sensitivity.
2. Arm the alarm system, wait a few seconds and then move your arm through an open window on the vehicle as if attempting to remove an item from the seat.

The LED should illuminate on the control module to provide visual indication it has detected the movement and the alarm system should trigger.

If it does not, then increase the sensitivity in small increments until the optimum position is reached

and the sensors do pick up the movement. Do not over adjust the sensors as the system will false alarm. The sensitivity level should be left at the minimum setting where the sensors pick up movement in the rear seating position.

3. When satisfied with the final sensitivity setting, mount the 509U control module securely with the double-sided tape and cable tie provided.

## Wiring Description

**Red (+) 12V Constant:** Connect this wire to a fused (+) 12V constant power source.

**Black (-) Chassis Ground:** Connect this wire to chassis ground of the vehicle.

**Blue (-) Trigger Output:** Connect this wire to the instant trigger input of the vehicle security system.

