

DT-557a DUAL TEC® Motion Sensor Product Information

Product Overview

The DT-557a sensor includes the following main features:

- **Antimask:** senses when an intruder attempts to mask the unit.
- **Detection of Mask upon Power-Up:** ensures an intruder can't mask the sensor when power is off.
- **Mechanical Tamper Switch:** A tamper output is activated if an intruder removes the sensor's front cover.
- **Self-Test Modes:** continually performs internal diagnostics to detect malfunctions.
- **Zone-Finder Walk-Test Mode:** allows for ten minutes of advanced walk-testing by suppressing the red LED.
- **Single-Tech Performance:** allows the unit to become a single technology alarm sensor in the event of a microwave or PIR failure.
- **Alarm and Trouble Output Options:** provides selection to send trouble conditions to the alarm output in addition to the trouble output.
- **Installation Benefits:** wiring channel, knockouts, and optional corner and swivel mounting.

Note: the DT-557a sensor should be tested at least once each year to ensure proper operation.

Installation Troubleshooting

Use the following list for quick solutions to possible problems.

Problem

During the walk-test, a mask condition is present.

Possible Causes

- Sensor detected a mask detection during installation or adjustment.
- Sensor has not cleared a previously detected mask condition.

Solution

Step away from the sensor and walk several steps through the detection pattern.

Problem

Sensor detects an invalid mask condition.

Possible Cause

- A large or reflective object moving near the sensor may cause a mask condition.

Solution

Remove any objects that may interfere with normal operation of the sensor, or change the sensor location.

Note: A rapidly blinking red LED indicates a self-test failure.

LED Indicators

The following table displays the LED indicators.

	Normal Operation Mode	Zone Finder Mode
Red	Alarm Condition (PIR and Microwave)	Disabled
Yellow	Microwave	Microwave
Green	PIR	PIR

Dip Switch and Jumper Settings

The following tables display the dip switch and jumper settings.

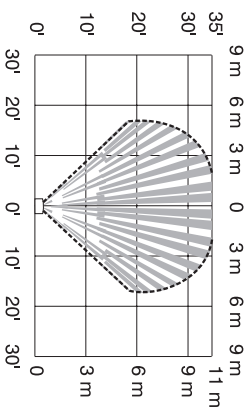
	Off	On
1	Low sensitivity	Normal sensitivity
2	LED disabled	LED enabled

	Cut	Uncut
Jumper	Alarm only on alarm output	Alarm, mask, and trouble on alarm output

Detection Patterns

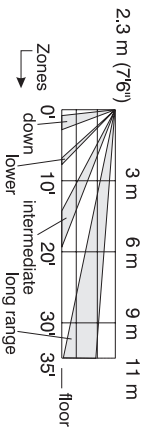
DT-557a Top View

Wall Mounted Wide Angle Lens with Typical Microwave Pattern



DT-557a Side View

Wide Angle Lens



Product Specifications

Range:
11 m x 11 m (35' x 35')

Alarm relay:
Energized Form C
500 mA, 30 VDC

Trouble relay:
De-energized Form B (NC)
500mA, 30VDC

Tamper switch:
(NC) 50 mA, 24 VDC

Power requirements:
7.5 - 16 VDC

25 mA typical, 40mA maximum, 12 VDC
AC Ripple: 3V peak-to-peak at nominal 12VDC

Microwave Frequencies:
24.125 - 24.20 GHz

PIR white light immunity:
8,000 Lux typical

RFI immunity:
30 V/m, 10 MHz - 1000 MHz

Operating temperature:
-25° to +65° C (-13° to +149° F)
5 - 95% relative humidity (non-condensing)

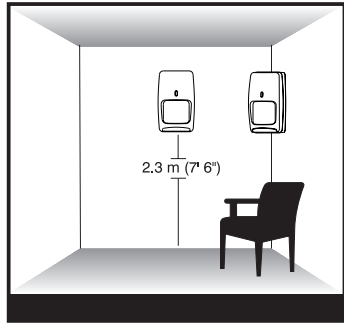
PIR fields of view:
Standard Wide Angle Lens
22 long range edges
12 intermediate edges
6 lower edges
4 Look-down edges

Dimensions:
11.9 cm H x 7.1 cm W x 4.2 cm D
(4.685" H x 2.795" W x 1.654" D)

Sensitivity:
Normal 2 - 3 steps
Low 3 - 4 steps

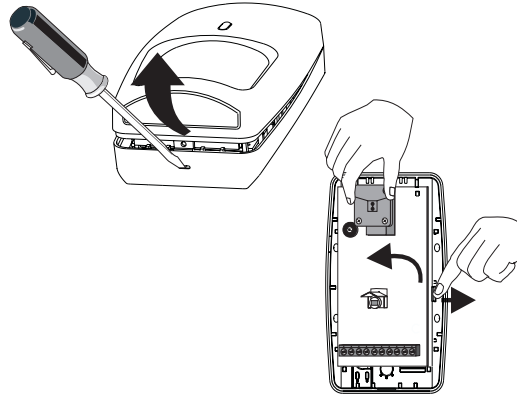
Accessories:
Swivel Mount Bracket SMB-10
Swivel Mount Bracket SMB-10T

1 Select the mounting location.



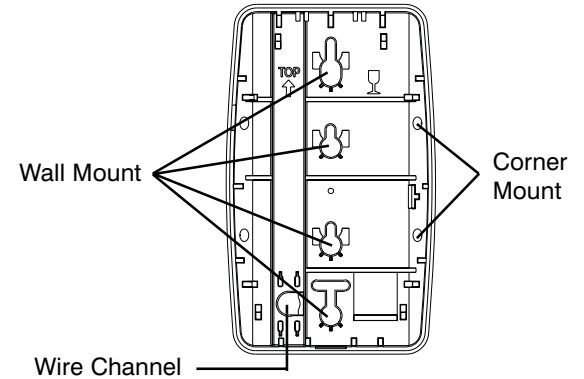
- The sensor should meet the following objectives:
 - Reach a mounting height of 2.3 m (7'6").
 - Not directly face windows.
 - Avoid close proximity to moving machinery and heating/cooling sources.
 - Not be mounted directly above a doorway.
- (See "Installation Troubleshooting" for more information.)

2 Separate the sensor housings and remove the Printed Circuit Board (PCB).



- Use a small screwdriver to unfasten the housing latch.
- Gently pull apart the housings.
- Push outward on the PCB latch and lift the PCB out of the housing.

3 Mount the unit.



- Mount the back housing flat against a wall or in a corner. (For optional swivel mounting, use the C & K SMB-10 or SMB-10T.)
- Replace the PCB.

4 Wire the unit.

Red	V+
Black	V-
Orange	NC
Yellow	C
Brown	NO
White	T
White	T
Terminal	TBL
Terminal	TBL

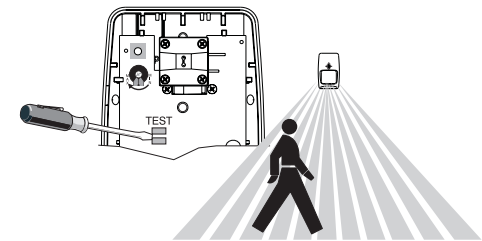
- Connect the panel wires to the sensor wires according to the table.
- Note:** Use 1.02 mm - 0.64 mm (18 to 22 gauge) wire.

5a Walk-test the sensor.



- Apply power to the unit.
- Initialization and mask detection are complete when the LED stops flashing.
- Adjust the microwave range to minimum setting by turning the range adjustment counterclockwise using a small screwdriver.
- Replace the front housing.
- Begin walking through the detection area.
 - The LED will turn red, indicating an alarm detection.
- Increase the microwave range as necessary.
- Repeat the items in step 5a until proper detection range is obtained.

5b Walk-test the sensor using Zone Finder (Optional).



- After following the first three items in Step 5a, use a screw driver to short the test pads.
- Replace the front housing and begin walking through the detection area after the red LED stops blinking.
 - When the LED turns green, indicating a PIR detection, stop walking.
 - When the LED turns yellow, a microwave event has been detected.
- Increase the microwave range as necessary.
- Repeat the items in step 5b until proper detection range is obtained.