

Dual Technology Motion Sensor K-Band Technology



DUAL TEC[®]

Designed for high security installations where masking is a concern, the DT-7550C motion sensor combines DualCore signal processing with MaskAlert anti-mask technology to achieve reliable commercial performance.

Features

■ Superior Anti-Mask Protection

The DUAL TEC DT-7550C provides superior protection for high security installations and other applications where masking is a concern. MaskAlert™ technology detects intentional as well as accidental masks or blocks. Through a combination of PIR and microwave signal processing, MaskAlert quickly detects the presence of a wide variety of masking materials. The sensor sends a trouble signal whenever it encounters mask conditions. Power-up Anti-mask detects mask conditions at start-up to reduce sensor security breaches during installation, servicing, and power outages.

■ Advanced DualCore™ Signal Processing

DualCore signal processing analyzes PIR and microwave signals through the DT-7550C's microcontroller. DualCore processing supports a multitude of advanced functions, including Concurrent Diagnostics, Digital Fluorescent Light Interference Filter, Digital Adaptive Microwave Threshold, adaptive baselines, and Bi-Directional Temperature Compensation.

■ Superb Detection Through K-band Technology

K-band microwave technology delivers sharp detection without holes or weak spots. The custom-made source offers Pattern Shaping to fill the protected area with a broad, balloon-shaped pattern which matches the PIR pattern. It also offers Pattern Containment to reduce the penetration of microwave energy through walls.

■ Enhanced False Alarm Prevention Features

The DT-7550C offers more than the standard features that protect against false alarms due to RF signals, electrostatic discharge, and electrical overstress. The patented black bug guard improves white light immunity and digital adaptive microwave thresholds automatically adjust for room disturbances.

■ Self-Testing for Consistently Reliable Operation

Concurrent Diagnostics assure optimum performance and reliability. Self-testing is performed upon power up and at least once every hour on the PIR, microwave, PCB circuitry and temperature compensation circuitry.

■ Sturdy, Attractive Housing

The sleek, sturdy housing fits into a variety of building styles and blend with any room decor. ABS plastic is used for shock and impact protection. The housing offers a convenient wiring channel, knockouts for mounting and wiring, and easy access to wiring terminals.

IntelliSense[®]

Specifications

Range:

50' x 60' (15 m x 18 m)

Alarm Relay:

Energized Form C

125 mA, 25 VDC, 20 Ohm series resistor

Trouble Relay:

De-energized Form B

(NC) 125 mA, 25 VDC

Tamper:

(NC) 50 mA, 24 VDC

Power Requirements:

7.5 - 16 VDC (8.0 - 16 VDC for UL installations)

30 mA typ., 40 mA max. at 12 VDC

AC Ripple: 3 V peak-to-peak at 12 VDC nominal

Frequencies:

24.125 GHz (K-band)

PIR White Light Immunity:

6,500 Lux typical

Fluorescent Light Filter:

50 Hz or 60 Hz, selectable

RFI Immunity:

30 V/m, 10 MHz - 1000 MHz

Operating Temperature:

14° to 131° F (-10° to 55° C)

5% - 95% relative humidity (non-condensing)

Self-Test Intervals:

Microwave Supervision Continuous

PIR self-test Once every hour

Temp. Comp. Every 30 seconds

PIR Fields of View:

22 long range edges

12 intermediate edges

6 lower edges

4 look-down edges

Dimensions:

4.685" x 2.795" x 1.654"

(11.9 cm x 7.1 cm x 4.2 cm)

Sensitivity:

Standard: 3 - 4 steps

Intermediate: 2 - 3 steps

Accessories:

SMB-10 Swivel Mount Bracket

SMB-10T Swivel Mount Bracket w/Tamper

Features

MaskAlert™ Anti-mask Technology

MaskAlert identifies a sequence of events with specific timing relationships to detect the act of masking. When a masked condition has been detected, indication is provided through a separate Trouble Output relay. In the event that the detector was masked while the unit was unpowered, MaskAlert also includes an anti-mask check at power-up.

DualCore™ Signal Processing

PIR and microwave signals are analyzed in the microcontroller in multiple domains, including amplitude, time, frequency and duration to provide superior false alarm immunity without compromising detection. DualCore processing not only supports alarm functions, but also advanced temperature compensation, diagnostics, and false alarm features.

K-band Microwave Technology

K-band technology delivers sharp detection and superior false alarm immunity through pattern shaping and pattern containment. Pattern shaping fills the protected area with a broad, balloon-shaped pattern which matches the PIR pattern. Because K-band is a higher frequency, the amount of microwave energy that penetrates walls is reduced, containing the pattern within the coverage area and reducing false alarms.

Uniform Sensitivity Optics

The custom-designed Fresnel lens provides the same sensitivity for human targets at the edge of the pattern as exists directly in front of the sensor, giving the DT-7550C consistent coverage throughout the protected area.

Digital Adaptive Microwave Thresholds

The DT-7550C digitally adjusts its thresholds to account for room disturbances such as ceiling fans and other repetitive moving objects which are not an intrusion event. The result - excellent false alarm immunity even in "active" rooms.

Digital Fluorescent Light Interference Filter

Potential false alarms due to fluorescent lights are eliminated with a digital filter with infinite rejection. Frequency of the filter is selectable between 60 Hz or 50 Hz via DIP switch.

White Light Immunity

A patented black bug guard reduces false alarms by providing 6,500 lux of white light immunity. This helps reduce false alarm problems caused by lights, flashlights or reflective objects.

Concurrent Diagnostics

Optimum performance and reliability are assured through comprehensive diagnostics that do not compromise detection during testing. In addition to performing a full self-test upon power-up, microwave supervision is performed continuously; PIR supervision is performed once every hour. Temperature compensation is monitored and updated every 30 seconds.

Bi-Directional Temperature Compensation

The DT-7550C operates effectively in harsh environments (14° to 131°F/-10° to 55°C). Bi-Directional temperature compensation adjusts above and below body temperature for improved detection and false alarm immunity.

Detection Pattern

