DT-400T Series MOTION DETECTORS

INSTALLATION INSTRUCTIONS

DT-400T series motion sensors combine two technologies into one small, attractive package. Within a defined area, the microwave detector senses motion, and the passive infrared (PIR) detector responds to radiant body heat (infrared energy emitted by an intruder).

DT-400T sensors also feature a new TURBO circuit which provides more protection against false alarms than ever before. The TURBO circuit allows the microwave to "idle" until the PIR detects a change in infrared energy.

When the PIR detects a change in infrared energy, the microwave instantly becomes "alert." If it detects motion within a specific time period, the sensor will alarm. Because both technologies must verify intrusion at or about the same time, false alarms are virtually eliminated.

In addition, DT-400T sensors are equipped with a supervision circuit that constantly monitors the microwave technology. If a problem is detected, the sensors will electronically signal an alarm to the control panel.

DT-400T sensors are also among the first to have both a Fresnel lens and multi-segmented PIR mirror. This unique optical system provides dense PIR coverage from directly beneath the unit (look-down zones) to maximum range.

FEATURES
- Microwave/PIR technology
- New TURBO circuit
- Dual element PIR
- Microwave supervision
- Unique PIR optics
- Single edge PIR triggering
- Low 35 mA current draw at 12 VDC
- 9 - 14 VDC operation
- Exposed LEDs
- All models are UL listed

MOUNTING LOCATION
Select the best location in the room for both technologies. Aim the sensor toward the interior of the room, away from windows, moving machinery, and heating/cooling sources.

Maximum range is obtained at a mounting height of 7'6" (2.3 m). Make sure the sensor has a clear line of sight to all areas you wish to protect. Infrared radiation cannot penetrate solid objects. If the PIR is blocked, the unit will not alarm.

MOUNTING PROCEDURE
To remove the sensor's front cover, use a small screwdriver to push down on the latch at the top of the unit, while separating the housing parts.

To remove the printed circuit board (PCB), lift up on the latch at the top of the unit, while using the microwave antenna to gently pull the PCB forward.

SYSTEM TESTING
All the walk-test LEDs are located at the bottom, left side of the unit. DT-400T sensors are equipped with two diagnostic LEDs: green for PIR and yellow for microwave. The red LED is used to indicate an alarm condition. Apply power to the sensor and let it warm up for at least three minutes. Begin walk-testing after all three LEDs have gone out.

RANGE ADJUSTMENT
A range thumbwheel for the microwave is located at the upper left edge of the PCB (R53). When the PCB is oriented in the correct mounting position, and you are facing it, turning the thumbwheel toward the bottom of the PCB will INCREASE the range of the microwave. Refer also to the label pasted on the microwave antenna.

Before walk-testing the sensor, set the microwave range thumbwheel at MINIMUM by turning it toward the bottom of the PCB as far as it will go. Then, as you perform the walk-test, gradually increase the sensitivity of the microwave until the desired range is obtained.

PIR range is determined by the mounting height and angle, or by masking specific PIR zones.
WALK-TEST
Walk across the protected area at the ranges to be covered. Two to four normal steps should make the diagnostic LEDs light, and the red LED should indicate an alarm condition. When there is no motion in the protected area, all three LEDs should be off.

MICROWAVE SUPERVISION
If the microwave technology stops sending or receiving signals, the sensor will lock into an alarm condition and signal alarm to the control panel. The LEDs at the sensor, however, will not light.

If the microwave regains its signal, the sensor (and LEDs) will return to normal operation.

LEDS DISABLE
To disable the diagnostic LEDs and alarm LED, remove the jumper from position W1 on the PCB.

PRODUCT SPECIFICATIONS

- **Range:**
  - DT-420T: 20’ x 20’ (6 m x 6 m)
  - DT-435T: 35’ x 30’ (11 m x 9 m)
  - DT-435TC*: 35’ x 30’ (11 m x 9 m)
  - DT-450T: 50’ x 40’ (15 m x 12 m)
  - DT-450TC*: 50’ x 40’ (15 m x 12 m)

- **Alarm relay:**
  - DT-420T, DT-435T, DT-450T
  - Energized Form A (NC)
  - 100 mA, 30 VDC
  - DT-435TC, DT-450TC
  - 500 mA, 30 VDC

- **Tamper switch:**
  - (NC)
  - 25 mA, 30 VDC

- **Power requirements:**
  - 9 - 14 VDC
  - 35 mA, 12 VDC

- **Frequencies:**
  - Center band 10.525 GHz

- **White light immunity:**
  - 60,000 candle power at 10˚ (3 m)

- **PIR fields of view:**
  - Standard lens:
    - 22 long range
    - 6 intermediate
    - 3 lower
    - 6 down

- **Dimensions:**
  - 5” H x 2-7/8” W x 2-5/16” D
  - (13 cm x 7 cm x 6 cm)

- **Weight:**
  - 12 oz (340.2 g)

- **Operating temperature:**
  - 32˚ to 120˚F (0˚ to 49˚ C)

- **Sensitivity:**
  - 2 - 4 steps within field of view

- **Approvals:**
  - FCC certified
  - UL listed

NOTE: The Pet Alley Lens is not to be used in a ULC Certified installation.

FCC NOTICE
This equipment has been tested and found to comply with the limits for a field disturbance sensor, pursuant to Part 15 of the FCC Rules. The user is cautioned that changes or modifications not expressly approved by C&K Systems could void the user's authority to operate this equipment.

MICROVIEWS
Diagram showing protection patterns for DT-450T and DT-450TC.