TOD 24

Features

- **Second-to-none occupancy detection**
- **Fail Safe protection ensures HVAC operation even system failure**
- **Dual element infrared sensor**
- **Changeover relay signal output**
- **Unique dual delay controls**
- **Selectable ON & OFF delays to eliminate unnecessary HVAC operation**
- **Disabled Wak Test LED**
- **Superior RFI/EMI immunity**
- **High density detection zones**
- **Automatic temperature compensation**
- **Corner/wall mount available**
- **Multi-directional adjustment**

Design Features

The TOD 24 employs a high sensitivity pyroelectric infrared sensor and a specially designed fresnel lens to provide second-to-none occupancy detection.

Even every slight movement will be detected by the TOD occupancy detector.

The system features a programmable ON delay which can verify the nature of occupancy before activating the HVAC.

This feature elimininates the unnecessary HVAC operation caused by short-time occupancy, accidental entrance or passing movements.

The TOD is designed with fail-safe protection.

Even with unlikely system failure, the HVAC operation is still operable.

The TOD features automatic temperature compensation.

This helps to maintain superior detection performance under high temperature.

Technical data

Infrared sensor	Dual element
Power supply:	24 ± 2Vac/dc
Sensor output	NO/NC 30Vac/dc, 0.2A max
ON delay	0 - 10" -30" - 1' - 5' - 10' selectable
OFF delay	10" - 1' - 5' - 10' 20' 30' selectable
Detection range	15 x 15m at 25°C
Current drain	
Stand by	5 mA
Operating	18 mA
Mounting hight:	1.8 - 3.6m
Mounting bracket	MB-99
Detectable speed	0.1 - 3.0m/sec
RFI immunity	Av. 20V/m (10 - 1,000 MHz)
Temperature	-20°C - 60°C
Humidity	95% RH max.
Measurement	112x66x45mm
Colour	White
Protection Class	IP31
EMC	EN 55014-1 Emmission
	EN 55014-2 Immunitet
	IEC 61000-4-2
	IEC 61000-4-3

GENERAL

The TOD 24 is an occupancy detectorde signed for automatic ventilation control of HVAC system.

This detector provides a changeover NO/NC relay signal output for VAV/Fan coil controller to activate/deactivate the operation of VAV/Fan coil automatically.

This detector can be wall or corner mounted with 110°, 15m detection range.

An innovative dual delay processor makes this detector smart enough to verify the nature of occupancies.

This could eliminate unnecessary actuations of HVAC device due to unintentional passages or shorttime occupancies..
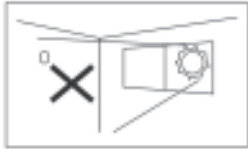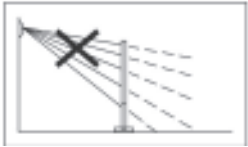
ORDERING CODE

TOD 24   True Occupancy Detector 24Vac/dc
incl. bracket for wall/ceiling
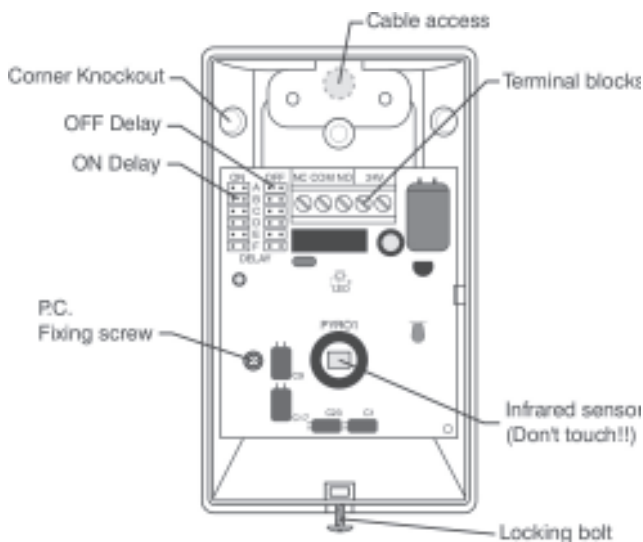
Installation Hints

Do not install where the detector is exposed to direct sunlight or directly above strong sources of heat.

Make sure the detection area does not have any obstruction (plants, large pieces of furniture, curtains etc.) which may block the detection.

Description

Installation Walk Test

Installation

1. Mount the base of mounting bracket on the selected position.
   Lead the cable through the access tunnel of mounting bracket.

2. Open the front cover by loosening the locking screw at the bottom.
   Lead the cable into the unit and assemble the mounting bracket with the unit.

3. Connect the cable to the corresponding terminals according to the following instructions.

Installation Instructions

Wiring Diagram
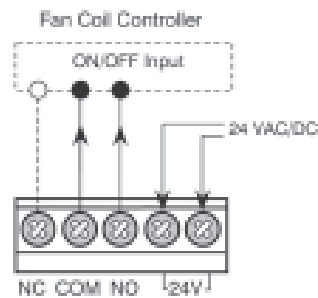
♦ **NC-COM-NO**: Output for ON-OFF control of VAV/Fan coil operation. Dry contact signal.

♦ **24V**: Power supply (non-polarity)

4. Replace the front cover and then walk test can be proceeded.

Walk Test

Apply the power supply to the sensor and wait for about 45 seconds to warm up. The LED will blink (long-short) during warm up period. Ensure the jumper head connectors of ON and OFF delays are placed on "A" position (shortest delay). Walk across the detection zones (invisible) at normal speed. The LED will lit whenever the sensor detects the motion.

 Note: If any jumper head is not properly placed, the LED will blink.
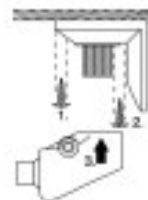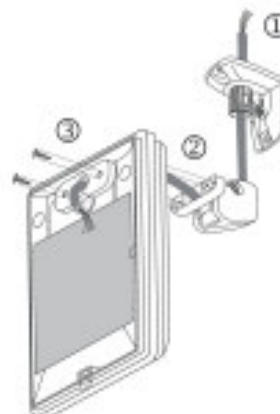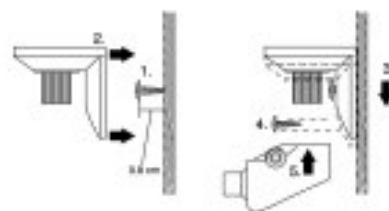
Operation

Operation Diagram

A. Standby

After warm up time expires, the detector enters into standby mode.
The detector will check if delay jumpers are properly placed.
If not, the LED will flash.

B. Relay ON Delay

Relay ON delay is the time given to the detector to verify true occupancy before activating the relay output.
Any further detection during ON delay will NOT reset the timer.

C. 1-minute Waiting

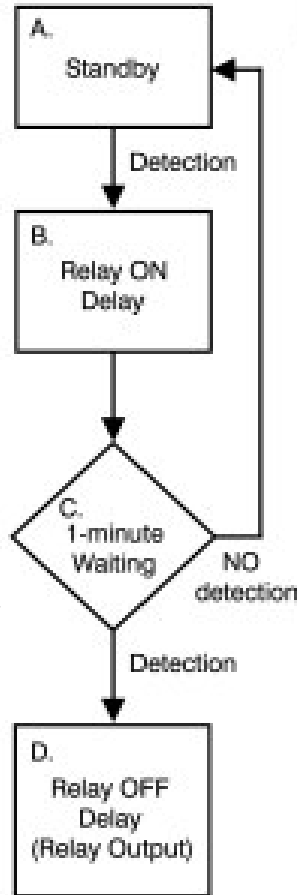When Relay ON delay expires, the detector enters into an 1-minute waiting time.

If no detection within 1 minute, the sensor will return to standby mode.
If any detection occurs, then relay output will be activated and relay OFF delay will be started.
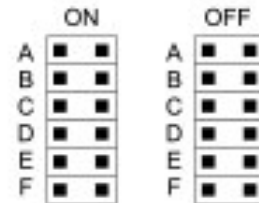
D. Relay OFF Delay

Relay OFF delay is the time of relay activating.

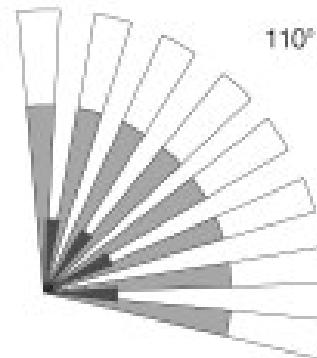Every detection during this period will reset the timer.

Range Adjustment

In order to suit different room or area, the detection range of TOD 24 can be adjusted by changing the direction of detector.

To change the sensor direction, release the screw on the mounting bracket and then carefully move the detectorto the direction desired.

ON/ OFF Delay

The ON and OFF delays are designed to provide smarter energy management of HVAC system.

ON delay is the time given to the sensor to certify the occupancy, before it activates the VAV/Fan controller.

OFF delay is the time that relay is activating.

Both ON an OFF delays can be easily set by placing the jumper head on the corresponding pins as following.

	A	B	C	D	E	F
ON	0 sec.	10 sec.	30 sec.	1 min.	5 min.	10 min.
OFF	10 sec.	1 min.	5 min.	10 min.	20 min.	30 min.

Detection Pattern

Top View

Side View