

HEM-2 Master Sensor

HEM-550E

GENERAL

The HEM-550E is the master sensor for HEM-2 Guestroom HVAC Energy Management System. This sensor provides a changeover relay contact output for PP-116 to control the operation of HVAC device according to the occupancy status of the guestroom. Its high/low temperature limit setbacks help to prevent the room getting too hot or cold during unoccupied period. An optional door or window switch can be connected to shut off the HVAC operation, should any door/window is left open longer than 5 minutes. This sensor can be mounted on wall or ceiling with the provided mounting bracket.

OPERATION DESCRIPTIONS

High/Low Temperature Limit Settings

This sensor allows user to set the high/low temperature limits. When room temperature is higher than the high-temp limit or lower than low-temp limit, the relay will be activated automatically.

A. Standby mode

After warm-up period expires, the sensor will enter into standby mode. The LED will flash if any delay jumper is not placed on pin.

B. ON-delay mode

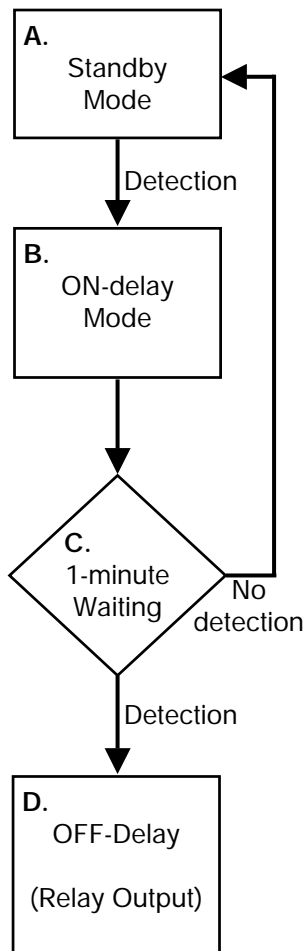
Once sensor detects the motion, it enters into ON-delay mode. This delay allows sensor to verify true occupancy before activating the relay contact. Any further detection during ON-delay mode will NOT reset the timer.

C. 1-minute Waiting

When Relay ON delay expires, the sensor enters into an 1-minute waiting time. If no detection within 1 minute, then sensor will return to standby mode. If detection occurs, then relay output will be activated and OFF-delay will be initiated.

D. OFF-Delay Mode

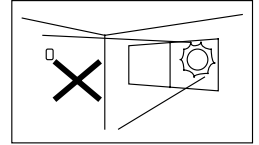
OFF-delay is the time that relay remains activated. Every detection during this period will reset the delay timer.



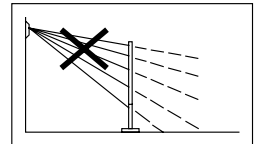
Installation Instructions

INSTALLATION HINTS

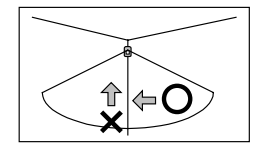
Do not install where the sensor will face to direct sunlight or strong air flow.



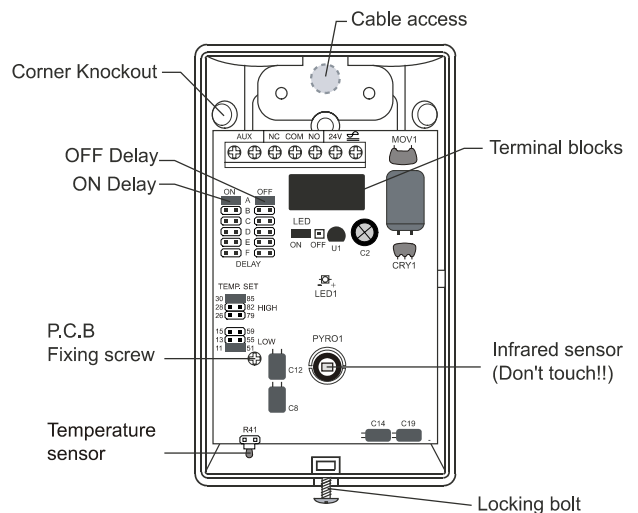
Ensure the detection area does not have any solid obstruction (plants, large pieces of furniture, curtains etc.) which may block the detection.



PIR detector is more sensitive to the motion "across" the detection zones than "toward" the sensor.

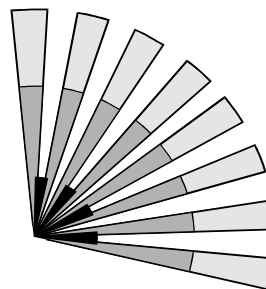


UNIT DESCRIPTION

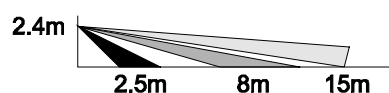


DETECTION PATTERN

Top View



Side View



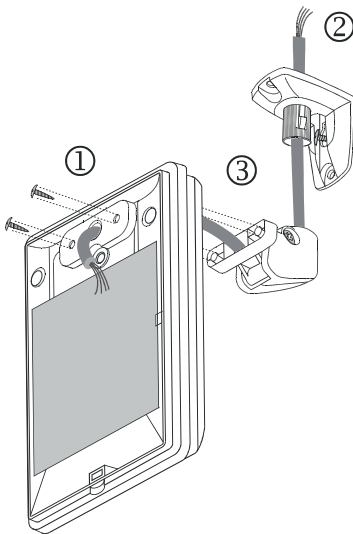
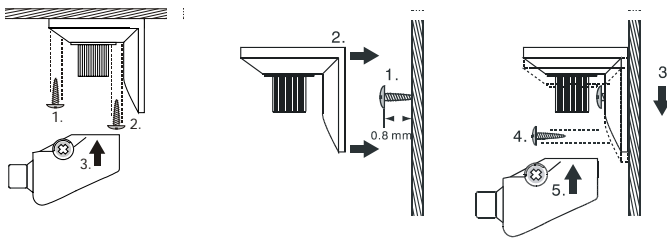
INSTALLATION & TEST

Installation

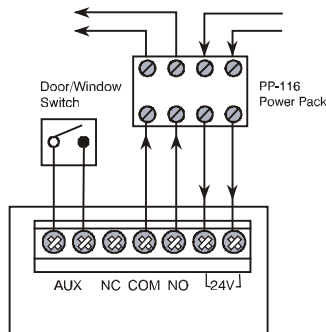
1. Mount the base of mounting bracket on the selected position.
2. Lead the cable through the central hole of mounting bracket.
3. Open the front cover by loosening the locking bolt. Lead the cable into the unit and fix the mounting bracket with the screws.
4. Connect the cable to the corresponding terminals according to the wiring diagram.

Ceiling Mount

Wall Mount



Wiring Diagram



- ◆ **NC-COM-NO:** Connect to the on-off control input of fan coil controller or PP-116 Power Pack.
- ◆ **24 V:** For 24 V power supply input.
- ◆ **AUX:** For connection with auxiliary door/window switch (N.O. type). If multiple-switch connection is required, please connect all switches in serial.

Note: If any door/window switch is connected, the HEM-550E will shut off the HVAC when the associated door/window is open longer than 5 minutes.

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

Walk Test

Apply the power supply to the sensor and wait about 1.5 minutes for sensor 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 walking speed. The LED will lit whenever the sensor detects the motion.

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

ON-DELAY & 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 verify true occupancy. This can avoid unnecessary activations of HVAC to the short-time stay or passage. OFF delay is the time that relay is activating. Both ON and OFF delays can be easily set by placing the jumper head on the corresponding pins as following table shown.

Delay	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.

Note: When room temperature goes above or below the High/Low temperature limits, relay will be activated automatically.

SPECIFICATIONS

Infrared sensor.....Dual element
 Power supply24 ± 2 V AC/DC
 Detection range15 x 15 m at 25°C
 Relay output.....Form C, 5A/NO, 3A/NC resistive
 Current drain.....7 mA @24 VDC
 Door switch.....N.O. open when door is opened.
 Temperature limit....H: 26°/28°/30°F, L:11°/13°/15°C
 Mounting height.....1.8 ~ 3.6 m
 Mounting bracket....MB-99
 Detectable speed....0.1~3 m/sec.
 RFI immunity.....Av. 20 V/m (10~1,000 MHz)
 Temperature-20°C~50°C (-4°F ~ 122°F)
 Humidity.....95% RH max.
 Dimensions.....112 x 66 x 45 mm

2003.05 HEM-550E 1.0

