



5910364 Nov. 2010

## MANUFACTURER'S STATEMENT

For ease of installation and proper operation read thru this manual (especially **WARNING**, **CAUTION**, **NOTE**) prior to installing and adjusting the sensor system. Failure to read and follow the instructions in this manual may cause improper sensor operation resulting in serious injury or death. This product is a non-contact activating switch intended for mounting on the header of an automatic door. Do not use it for any other applications; otherwise proper operation and safety cannot be guaranteed.

|                |   |
|----------------|---|
| <b>WARNING</b> | Disregard of warning may cause the improper use causing death or serious injury of person.    |
| <b>CAUTION</b> | Disregard of warning may cause the improper use causing injury of person or damage to object. |
| <b>NOTE</b>    | Special attention for the setting and adjustment of section of this symbol is required.       |

- Set door speeds and verify proper operation of door manufacturer's equipment prior to applying power to the sensor system.
- Do not install the sensor where it might be directly sprayed with rainwater.
- Verify proper wiring prior to applying power to the sensor system to prevent damage to equipment.
- When setting the sensor's area pattern, make sure there is no traffic around the installation site.
- Do not attempt to rebuild or repair sensor heads or control unit. Contact an address in this manual for replacement products.
- Only use the sensor as specified in the supplied instructions.
- Walk test the installation to verify operation is in compliance with all local laws, codes and standards of your country.
- Upon completion of installation and adjustments, instruct the owner/operator on proper operation of the door and sensor system. Identify any switches/breakers that will place the door out of service when unsafe or improper operation is identified.

## SPECIFICATIONS

|                             |  |                       |   |
|-----------------------------|--|-----------------------|---|
| Model                       | : i-one  | Current Draw          | : 180mA Max. (AC12V)  |
| Mounting Height             | : 2.1m (6'11") to 3.0m (9'10")   | Output Contact        | : "Form C" relay 50V 0.3A Max. (Resistance Load)  |
| Detection Area              | : See the chart in "ADJUSTMENT".   | Relay Hold Time       | : 0.5 to 2 sec.   |
| Detection Method            | : Active Infrared Reflection (Presence DetectionType)  | Response Time         | : <0.3 sec.   |
| Detection Angle Adjustments | : Approach Area ±15° (Inside & Outside) Presence/Motion Area -8° to +5° (Inside & Outside)   | Operating Temperature | : -26°C to +55°C (-15°F to +131°F)  |
| Operation Indicator         | : Green : Stand-by Blinking Red : 1 <sup>st</sup> Row Detection Active Red : 2 <sup>nd</sup> Row Detection Active Orange : Motion Detection Active Blinking Orange : Approach Detection Active | Weight                | : 400g (14oz.)  |
| Power Input                 | : 12 to 24V AC 12 to 30V DC  | Accessories           | : 1 Cable 3m(9'10")<br>2 Mounting Screws<br>3 Adjusting Hole Cap<br>1 Operation Manual<br>1 Mounting Template |

The specifications herein are subject to change without prior notice due to improvements.

## EXTERNAL DIMENSIONS

**Name of Parts**

- Mounting Holes
- Connector
- Approach Detection Unit
- Dipswitches (Area Adjustment, Presence Timer, Frequency, Rain Mode, Snow Mode, Detection Mode)
- Operation Indicator
- Presence/Motion Detection Unit
- Sensitivity Potentiometers (Approach)
- Sensitivity Potentiometers (Presence/Motion)

## INSTALLATION

**1** Be sure to install the sensor where it will not be directly sprayed with rainwater.

- Affix the Mounting Template to the mounting surface.
- Drill two mounting holes (ø 1/8" or 3.2mm).
- To carry through the cable to the header, drill (A) (ø 1/4" or 6mm).
- After drilling the holes, remove the Mounting Template.

**2** Remove the cover and pass the cable through (B), then put the cable into (A).

**NOTE** When you face difficulty in threading the cable through (B), break off the cable knockout (as shown in the picture).

**WIRING**

Grey → Power Supply 12 to 24V AC  
Grey → 12 to 30V DC  
White → COM.  
Yellow → N.O.  
Green → N.C.

**3** Attach the sensor with screws.

**4** Plug the connector for the sensor to that for the cable.

**5** Apply power to the sensor. Then, adjust each detection area (See ADJUSTMENT).  
**CAUTION** Make sure you connect the cable correctly to the Door Controller before turning the power on.

**6** 1. Slide the cover from right to left onto the sensor.  
2. Press the cover firmly to the sensor to attach.  
3. Lock the cover with the Adjustment Hole Cap, after installation and adjustment completely.

## ADJUSTMENT

Be sure to walk-test all of the detection areas. When the Approach Angle and the Presence/Motion Angle are set to 0°, each detection area will be placed as shown on the right.

**Detection Areas**

|   | [mm (feet)]  |              |               |
|---|--------------|--------------|---------------|
| A | 2200 (7'3")  | 2500 (8'2")  | 3000 (9'10")  |
| B | 100 (4")     | 110 (4 1/2") | 140 (5 3/8")  |
| C | 250 (10")    | 280 (11")    | 340 (11")     |
| D | 600 (2')     | 680 (2'3")   | 820 (2'8")    |
| E | 1000 (3'3")  | 1130 (3'9")  | 1360 (4'6")   |
| F | 1450 (4'9")  | 1650 (5'5")  | 1980 (6'6")   |
| G | 1500 (4'11") | 1710 (5'7")  | 2050 (6'9")   |
| H | 2600 (8'6")  | 2960 (9'9")  | 3550 (11'8")  |
| I | 4500 (14'9") | 5110 (16'9") | 6140 (20'2")  |
| J | 4900 (16'1") | 5570 (18'3") | 6680 (21'11") |

**Approach Detection Area**  
\*Mounting Height = 2.2m (7'3")

|   | -15°         | 0°           | +15°          |
|---|--------------|--------------|---------------|
| G | 790 (2'7")   | 1500 (4'11") | 2420 (7'11")  |
| H | 1520 (5')    | 2600 (8'6")  | 4270 (14')    |
| I | 3870 (12'8") | 4500 (14'9") | 5180 (17')    |
| K | 2920 (9'7")  | 3400 (11'2") | 3910 (12'10") |
| L | 1900 (6'3")  | 2200 (7'3")  | 2530 (8'4")   |

**1 Adjusting the Approach Detection Area**

**1-1 Adjusting the Area Depth**

Adjust the depth of the Approach Detection Area according to the traffic flow of the installed door.

**1-2 Approach Detection Area Width Adjustment**

The width of the Approach Detection Area can be adjusted by changing the Dipswitches as shown on the right.

**2 Adjusting the Presence/Motion Detection Area**

Measure (B) is the distance from the Sensor mounting surface to the edge of the Infra-red spot. Distance to edge of Infra-red spot and actual point of detection may vary.

\*Mounting Height = 2.2m (7'3")

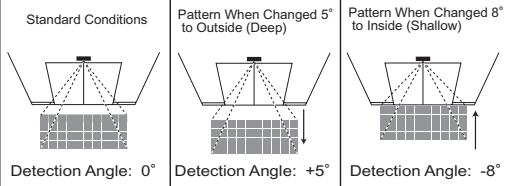
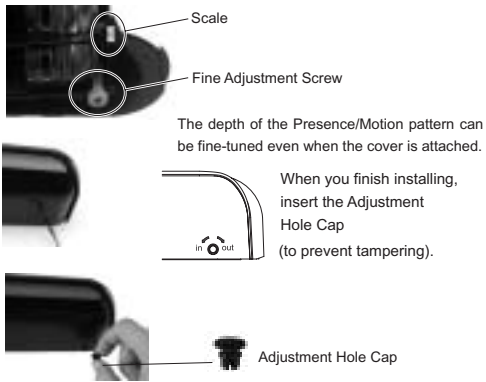
|   | -8°         | 0°          | +5°          |
|---|-------------|-------------|--------------|
| B | -200 (-8")  | 100 (4")    | 300 (12")    |
| F | 1380 (4'6") | 1450 (4'9") | 1500 (4'11") |

### 2-1 Adjusting the Pattern Depth

Adjust the depth of the Presence/Motion Detection Area by turning the Fine Adjustment Screw with a screwdriver.

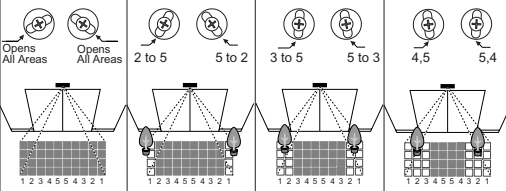
The detection area of Presence/Motion Detection Unit can be shifted closer to the door.

**CAUTION**  
Make sure the detection area **do not** overlap with the door, otherwise ghosting may occur.



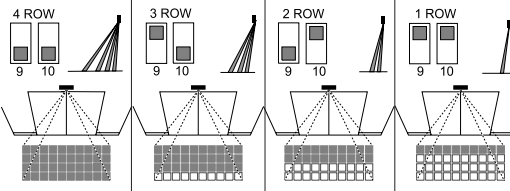
### 2-2 Adjusting the Pattern Width

Each side can be adjusted independently, allowing for asymmetrical settings. Refer to the sticker between Width Adjustment Shutters.



### 2-3 Adjusting the Rows

Rows can be eliminated to adjust pattern depth.



### NOTE FOR BETTER PRESENCE DETECTION AREA

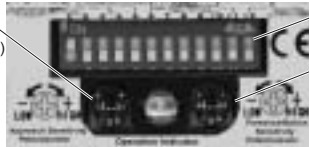
- After installing the sensor, put the cover on the sensor and turn the "Fine Adjustment Screw" Counterclockwise a minimum of 4 full turns(-8degrees). This will adjust the detection area to the maximum negative angle.
- In the case where this adjustment causes the door to cycle (Ghosting), turn the "Fine Adjustment Screw" Clockwise 1/4 turn and move out of the detection area to test. Continue this process of 1/4 turn and test until cycling stops.

#### CAUTION

During this process, set the presence timer to 2 second re-learn time. Once detection area is properly adjusted, reset the presence timer to allow for ANSI approved presence time.

### 3 Dipswitch Settings

Approach Sensitivity Potentiometer (Factory setting : Midpoint)



Dipswitches

Presence/Motion Sensitivity Potentiometer (Factory setting : Midpoint)

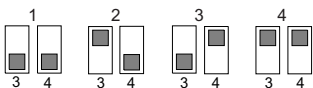
- 1,2: Presence Timer
- 3,4: Frequency
- 5: Rain Mode
- 6: Snow Mode
- 7,8: Approach Detection Area Adjustment
- 9,10: Presence/Motion Detection Area Adjustment
- 11: Detection Mode
- 12: Not Used (Future Development)

### 3-1 Setting the Sensitivity

Both the Approach Sensitivity Potentiometer and the Presence/Motion Sensitivity Potentiometer are factory-set at the midpoint. Turning them clockwise increases the sensitivity and turning counterclockwise lowers the sensitivity.

### 3-3 Setting the Frequency Function (Interference Prevention)

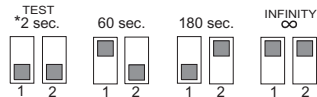
Four different frequencies can be set by adjusting Dipswitches 3 and 4. When two or more sensors are mounted close to each other, they may interfere. When that happens, change Frequency.



### 3-2 Setting the Presence Timer

The sensor automatically adapts to environmental changes in the pattern, if no movement is detected for the duration of the selected timer cycle. First two rows from the door provide the presence detection.

- (1) Select the presence detection time.
- (2) Turn the power on.
- (3) Do not enter the detection area for 10 seconds.



#### CAUTION

Use "2 sec." only for testing. Normal Presence Timer is 60 sec. or longer.

### 3-4

#### Setting the Rain Mode

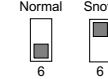
Set this switch to Rain if the sensor is used in a region with a lot of rain.



### 3-5

#### Setting the Snow Mode

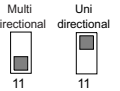
Set this switch to Snow if the sensor is used in a region with snow or a lot of insects.



### 3-6

#### Setting the Directional Mode

Setting to Unidirectional allows the door to close more quickly for departing traffic.



## 4 Checking

Check the entry motion according to the following chart.

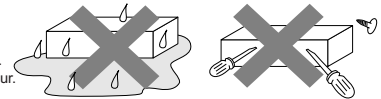
| Entry motion (Image) | Outside the Detection Area | Entry into the Approach Detection Area | Entry into the Motion Detection Area | Entry into the 2nd row of Presence Detection Area | Entry into the 1st row of Presence Detection Area | Outside the Detection Area | Power off                |
|----------------------|----------------------------|--|--------------------------------------|---|---|----------------------------|--------------------------|
|                      |                            |  |                                      |   |   |                            |                          |
| Sensor Status        | Stand-by                   | Approach Detection Active              | Motion Detection Active              | Presence Detection Active                         | Presence Detection Active                         | Stand-by                   | —                        |
| Operation Indicator  | Green                      | Blinking Orange                        | Orange                               | Red   | Blinking Red                                      | Green                      | —                        |
| Output contact       | Yellow<br>Green<br>White   | Yellow<br>Green<br>White               | Yellow<br>Green<br>White             | Yellow<br>Green<br>White                          | Yellow<br>Green<br>White                          | Yellow<br>Green<br>White   | Yellow<br>Green<br>White |

#### CAUTION

The response time may differ according to the color of the objects and the color/material of the floor.

### Recommendations to building owner / operator

- Do not change the settings on the sensor, as this may cause it to operate incorrectly.
- Contact your local distributor if you want to change the settings.
- Do not wash the sensor with water.
- Always keep the detection window clean. If dirty, wipe the window lightly with a damp cloth.
- Do not disassemble, rebuild or repair the sensor yourself; otherwise electric shock may occur.
- If a Warning Indicator appears (LED warning), contact your local distributor.
- When turning the power on, always walk-test the sensor pattern to ensure proper operation.



## TROUBLESHOOTING

| Problem                        | Possible Cause   | Sensor Status |           |   |  |
|--------------------------------|--|---------------|-----------|---|--|
|                                |  | Stand-by      | Detection | Stand-by while Warning Indication is On | Detecting while Warning Indication is On |
| Hold the door open.            | Connection failure   |               |           |   |  |
|                                | Floor condition was changed.   |               |           |   |  |
| Do not operate.                | Power Input is not adequate.   |               |           |   |  |
|                                | Connection failure   |               |           |   |  |
| Do not operate consistently.   | Dirty detection window   |               |           |   |  |
|                                | There is a moving object in the detection area. (ex. Plant, Poster etc.) |               |           |   |  |
| Operates by itself (Ghosting). | There was an abrupt condition change in the detection area.              |               |           |   |  |
|                                | Another sensor's detection area is overlapping.                          |               |           |   |  |
|                                | Waterdrops on detection window   |               |           |   |  |
|                                | Vibration of the header  |               |           |   |  |
|                                | The Presence/Motion Detection Area overlaps with the door.               |               |           |   |  |

| Warning Indication   | Sensor Status |                       |   |  |
|--|---------------|-----------------------|---|--|
|  | Stand-by      | Detection             | Stand-by while Warning Indication is On | Detecting while Warning Indication is On |
| Mode   |               |                       |   |  |
| Signal Saturation<br>Either the mounting position is too low or the detection area includes the wall or another. | Green         | Orange/Red (Blinking) | Slow Green Blinking                     | Orange/Red (Blinking)                    |

If the trouble still persists after checking and remedying as described above, contact your installer or the sales engineer.

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