

# DH94

## Sliding Pedestrian Door Presence Sensor

## INSTALLATION INSTRUCTIONS

**NOTE:** Set up for this sensor should be performed by an AAADM-certified installer.

### Section 1

#### General Description

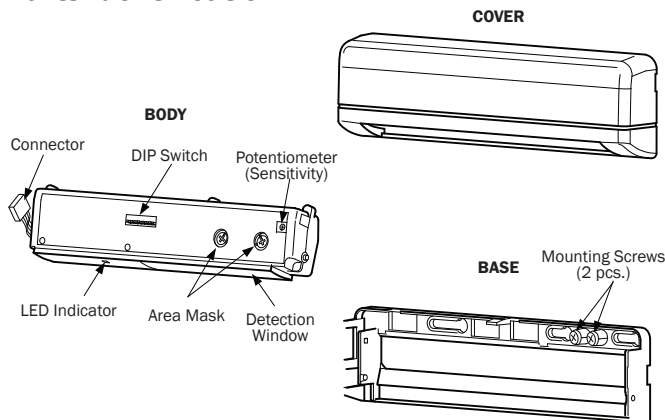
The DH94 is a floor reflection method (FRM) active infrared presence sensor designed to provide medium range safety detection for automatic sliding doors. The DH94 is the ideal solution for entrances with a shallow approach or for adding threshold protection to any sliding door.

- Pattern depth adjustable from curtain-like 1 row up to 4 rows via dip switches.
- Pattern angle adjustable 0-5 degrees via mechanical rotation of the sensor housing.
- Pattern width adjustable via mechanical knobs.
- 4 frequency settings to avoid interference from other sensors in close proximity.
- Self-monitoring microprocessor controlled diagnostics includes automatic countermeasures against adverse conditions such as falling snow, rain, flying insects, strong sunlight and electrical noises.
- 4 presence timer settings: 2, 30, 60 and  $\infty$  seconds.

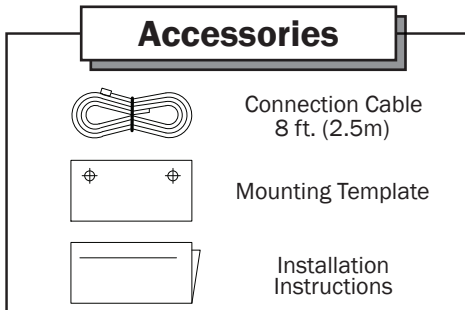


### Section 2

#### Parts Identification



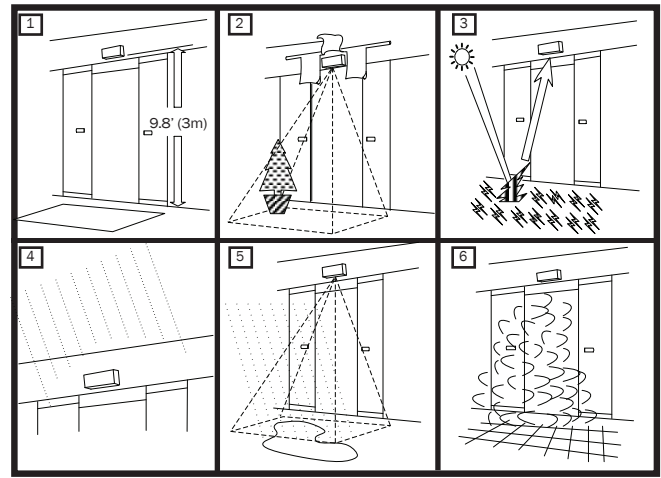
#### Accessories



### Section 3

#### Mounting Information

1. Do not mount higher than 9.8 ft. (3m).
2. Do not leave any objects which may move in the detection pattern.
3. Ensure a minimum of reflected sunlight from floor.
4. Ensure rain or snow will not fall directly on unit. (Use rain cover if sensor is exposed)
5. Ensure snow or water can not accumulate on floor.
6. Avoid steamy environments.



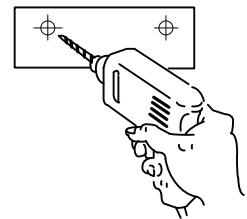
### Section 4

#### Mounting and Wiring

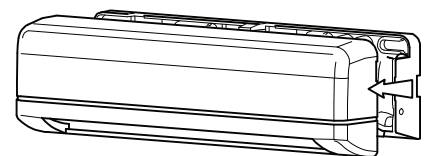
1. Using the mounting template provided, drill mounting and wire holes.



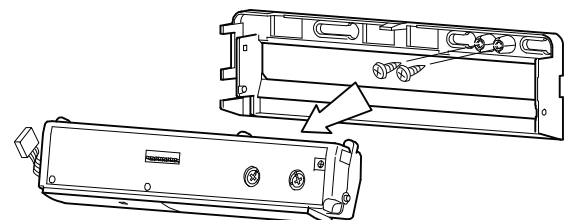
**WARNING:** Drilling may cause electric shock. Be careful of hidden wires inside door engine cover.



2. Remove cover.



3. Remove mounting screws and body from base.

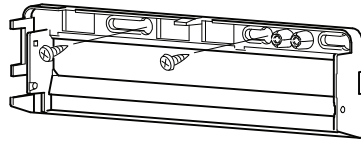


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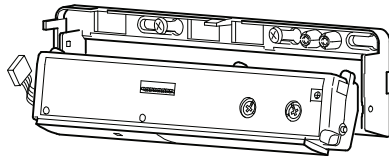
## Sliding Pedestrian Door Presence Sensor

## INSTALLATION INSTRUCTIONS

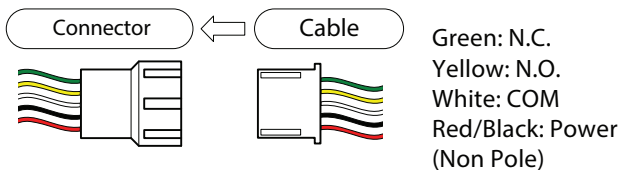
4. Install base with mounting screws.



5. Attach body to base.



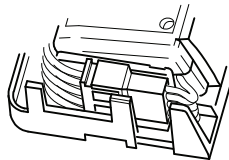
6. Connect wiring to the door controller.  
Push amp connectors tightly together.



7. Set the following parameters.

- ⇒ 4. DIP Switch Settings
- ⇒ 6. Adjusting Detection Pattern
- ⇒ 7. Adjusting Sensitivity
- ⇒ 8. Verification of Operation

8. House connectors in the space provided.



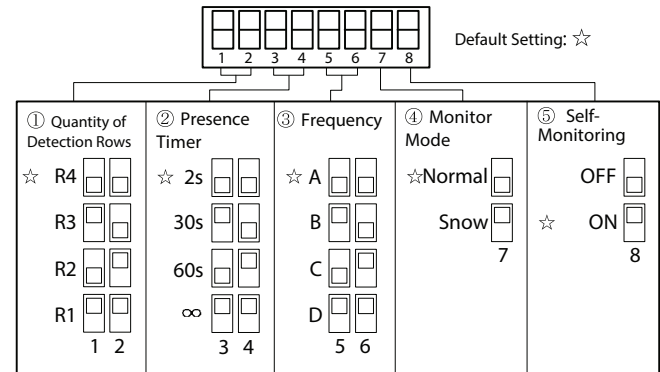
9. Place cover on sensor and clean the sensor.



**NOTE:** Do not move body when attaching cover.

### Section 5

#### Dip Switch Settings



**NOTE:** If you change the setting of the Dip switch when the power is on, the sensor will be reset in approx. 6 seconds.

The reset is the same as the Power-On.

- ① **Quantity of Detection Rows:** The number of rows of detection can be set to 4, 3, 2, or 1 depending on detection area requirements.
- ② **Presence Timer:** The sensor will detect a stationary object only for the time set by the Presence Timer. When it is set to  $\infty$ , the period is  $\infty$  in the 1st and 2nd row, 2 seconds for the 3rd and 4th row.
- ③ **Frequency:** When more than two sensors are used in close proximity to each other, to prevent interference use alternate frequency settings. (A + B + C + D = Maximum 4 sensors).
- ④ **Monitor Mode:** A snow mode is available using switch 7. Snow Mode should only be used in environments with heavy snowfall or other extreme conditions.
- ⑤ **Self-Monitoring:** DH94 employs a Self-Monitoring Mode in which the sensor checks itself for abnormalities. If the unit should stop seeing reflected light for some reason, the relay will be active and the Green/Red LED will flash on and off indicating failure.

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## Sliding Pedestrian Door Presence Sensor

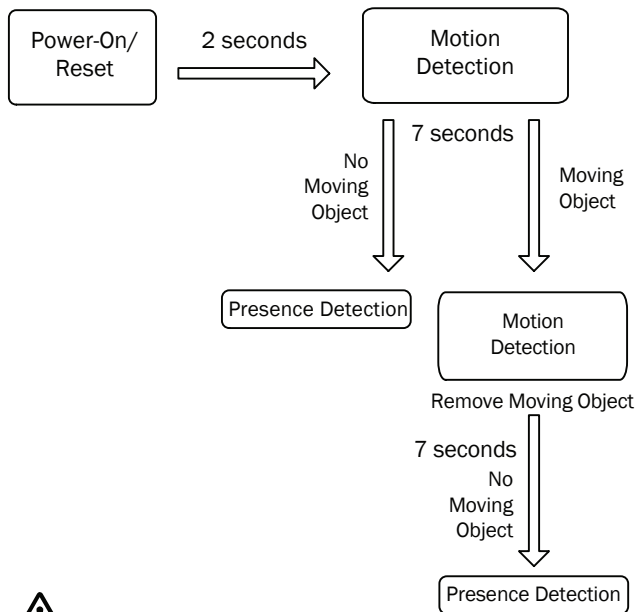
## INSTALLATION INSTRUCTIONS

### Section 6

#### Power

**CAUTION: BEFORE APPLYING POWER, READ AND FOLLOW THESE INSTRUCTIONS:**

- If there is a moving object in detection area after power-up / reset, the sensor will be in motion detection mode.
- If there is no moving object in detection area after power-up / reset, the sensor will be in presence detection mode.



- If you carry out the following, please turn off the power.
- If you carry out the following with power on, the sensor will detect for the presence timer setting that you have set.

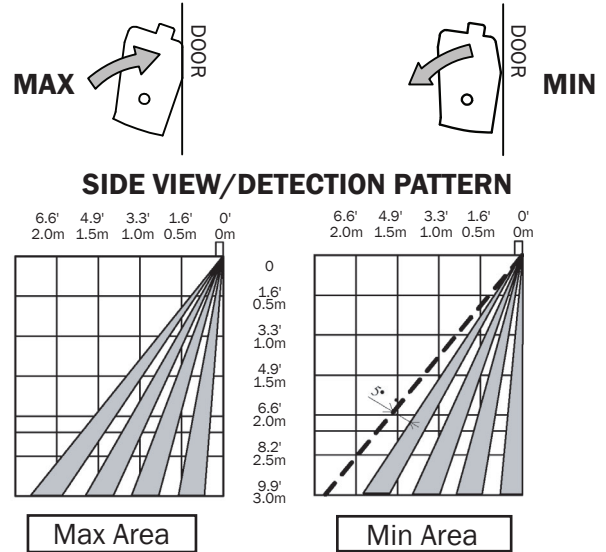
<p>① Place or remove the mat on the detection area</p>	<p>② Adjust the angle of Body</p>
<p>③ Adjust the width of the detection area.</p>	<p>④ Adjust the sensitivity</p>

### Section 7

#### Adjusting Detection Pattern

Adjust the detection pattern according to the following diagrams:

1. Pattern Angle Adjustment.

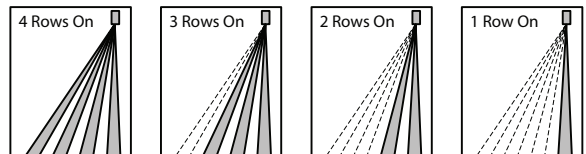


- The body of the sensor can be rotated from 0° to 5° to adjust pattern angle.

2. Pattern Depth Adjustment.

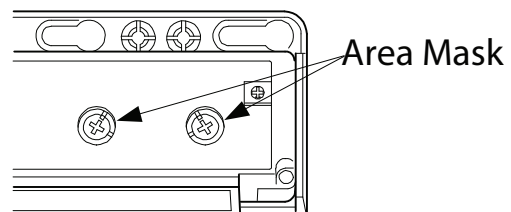
⇒ **4. DIP Switch Settings**

Delete or add rows of detection.

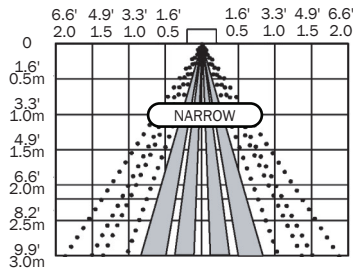


3. Pattern Width Adjustment.

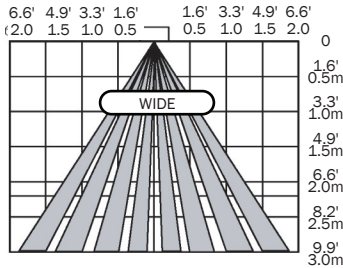
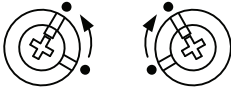
You can adjust the detection width by turning the Area Mask with a screwdriver.



### NARROW



### WIDE



Detection pattern will vary according to objects, material, color and speed.

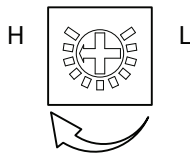
### Section 8

#### Adjusting Sensitivity

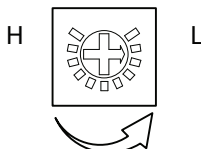
1. Set sensitivity appropriately for mounting height of sensor.

Sensitivity	Height [ft(m)]	Estimated Sensitivity
H	6.6' (2m) ~ 8.2' (2.5m)	L ~ M
M	8.2' (2.5m) ~ 9.9' (3.0m)	M ~ H

2. If the sensor does not detect even if a person enters the detection area, please increase the sensitivity.



3. If the sensor detects even though no one is in the detection area, please decrease the sensitivity.



### Section 9

#### Verification of Operation

1. After mounting, setting parameters and applying power, walk test unit to verify detection pattern.
2. If the door does not operate properly, recheck the dip switch settings and pattern adjustments.
3. After rechecking, if there is still a problem, adjust the sensitivity.

#### \*\*\*\*\*EXTREMELY IMPORTANT\*\*\*\*\*

After final set-up, test unit(s) completely to ensure that proper coverage has been achieved (width, depth and location of the pattern must be tested).

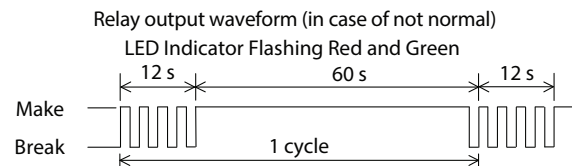
After the installation and operational check of the system:

1. Place the proper labels on the door per ANSI/BHMA A156.10 or any other applicable standard.
2. Instruct the owner of the door system operation and how to test it. This should be checked on a daily basis.
3. Instruct the owner on what to do if the door or any of its components become damaged.
4. Strongly recommend to the owner that the complete entry be inspected twice a year as part of the service agreement.

### Section 10

#### Self-Monitoring

If Self-Monitoring determines that the sensor has malfunctioned, the relay output will cause the door to open, and the Green/Red LED to blink. In this case, please replace the sensor immediately. OFF/ON of Self-Monitoring can be set with DIP switch.



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## INSTALLATION INSTRUCTIONS

### Section 11

#### Self-Monitoring

PROBLEM 1: Door does not operate.

- CAUSE 1: Connector not connected correctly
- SOLUTION 1: Tighten or reconnect the connector
  
- CAUSE 2: Incorrect power supply voltage
- SOLUTION 2: Apply proper voltage to the sensor (AC/DC 12-24V)

PROBLEM 2: Door operates intermittently.

- CAUSE 1: Dust, frost or water droplet on the sensor lens
- SOLUTION 1: Wipe detection window clean and install a weather cover if necessary (chemicals such as thinner, alcohol use is prohibited to use)
  
- CAUSE 2: Sensitivity too low
- SOLUTION 2: Turn up sensitivity
  
- CAUSE 3: Detection pattern in the wrong position
- SOLUTION 3: Alter the detection pattern by changing sensor angle, dip switch settings and/or pattern width adjustments

PROBLEM 3: Door opens and closes for no apparent reason (Ghosting)

- CAUSE 1: The sensor detects door movement high
- SOLUTION 1: Adjust detection depth away from door
  
- CAUSE 2: Mounting portion is distorted
- SOLUTION 2: Adjust the monitoring mode

PROBLEM 4: Door operates by itself

- CAUSE 1: Sensitivity too high
- SOLUTION 1: Turn down sensitivity
  
- CAUSE 2: Another sensor is too close by
- SOLUTION 2: Change the frequency to each sensor
  
- CAUSE 3: There is a moving object in the detection range
- SOLUTION 3: Adjust the detection pattern. Remove moving object.
  
- CAUSE 4: There is a cloth mat in the detection pattern
- SOLUTION 4: Turn the sensor power off and then on again, and allow it 10 seconds
  
- CAUSE 5: Detection pattern too far in front of the door, detecting people passing by

SOLUTION 5: Adjust the detection pattern - move it closer to the door

CAUSE 6: The condition of the monitored area is varying (i.e., dusty, dirty, snow)

SOLUTION 6: Change the presence timer settings to shorter and/or adjust the monitoring mode (footprints being left in fresh snow)

### Section 12

#### Technical Data

Model.....	DH94 Presence Detector
Detection Method.....	Floor Reflection Method (FRM) Active Infrared
Max. Installed Height.....	9.8 ft. (3m)
Pattern Adjustments.....	Pattern Width (wide or narrow) Pattern Depth (1 to 4 rows) Angle Adjustment 0° to 5° Sensitivity
Power Supply.....	12 to 24 V AC or DC ± 10% 50/60 Hz
Power Consumption.....	AC12V: 1.35VA Max AC24V: 1.5VA Max DC12V: 65mA DC24V: 35mA
Output Contact.....	Form C Relay: DC50V 0.1A (Resistor Load) Failsafe
Output Holding Time.....	Approx. 0.5 seconds
Presence Timer.....	Limits of 2, 30, 60 and ∞ seconds
LED Indication.....	RED = Detecting GREEN = Standby ORANGE = Door movement is detected Fast Flashing ORANGE = Waiting for reset Flashing RED/GREEN = Reflection Diagnostics
Temperature Range.....	-4 °F to 140 °F (-20 °C to 60 °C)
Weight.....	0.40 lbs. (0.180kg)
Color.....	Black
Accessories.....	Cable: 8 ft. (2.5m) Mounting Template Installation Instructions



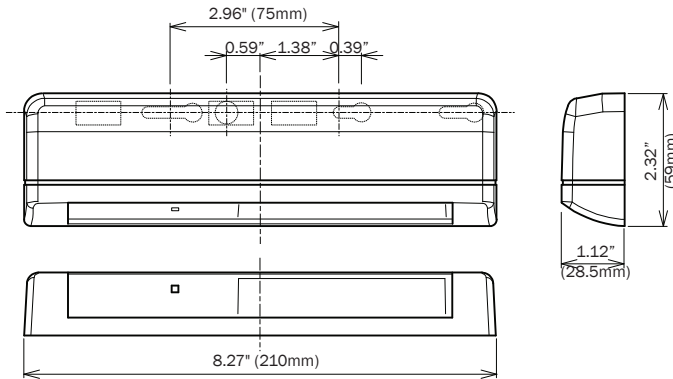
# DH94

## Sliding Pedestrian Door Presence Sensor

## INSTALLATION INSTRUCTIONS

### Section 13

#### External Dimensions



### Section 14

#### Warranty

MS SEDCO guarantees this product to be free from manufacturing defects for 3 years from date of installation. Unless MS SEDCO is notified of the date of installation, the warranty will be in effect for 3 years from the date of shipment from our factory. If, during the first 3 years, this device fails to operate and has not been tampered with or abused, the unit can be returned prepaid to factory and it will be repaired free of charge. After 3 years, the unit will be repaired for a nominal service charge. **This limited warranty is in lieu of all other warranties expressed or implied, including any implied warranty of merchantability, and no representative or person is authorized to assume for MS SEDCO any other liability in connection with the sale of our products. All warranties are limited to the duration of this written warranty. In no event shall MS SEDCO be liable for any special, incidental, consequential or other damages arising from any claimed breach of warranty as to its products or services.**