Motion and Presence Sensor 3H-IR14 ⬡ 3H CE

User Manual

We would like to extend our thanks to you for purchasing this product.
Before using this product, please read the following instructions carefully.
Please retain this manual for reference in case it needs to be referred to during the lifetime of this product.
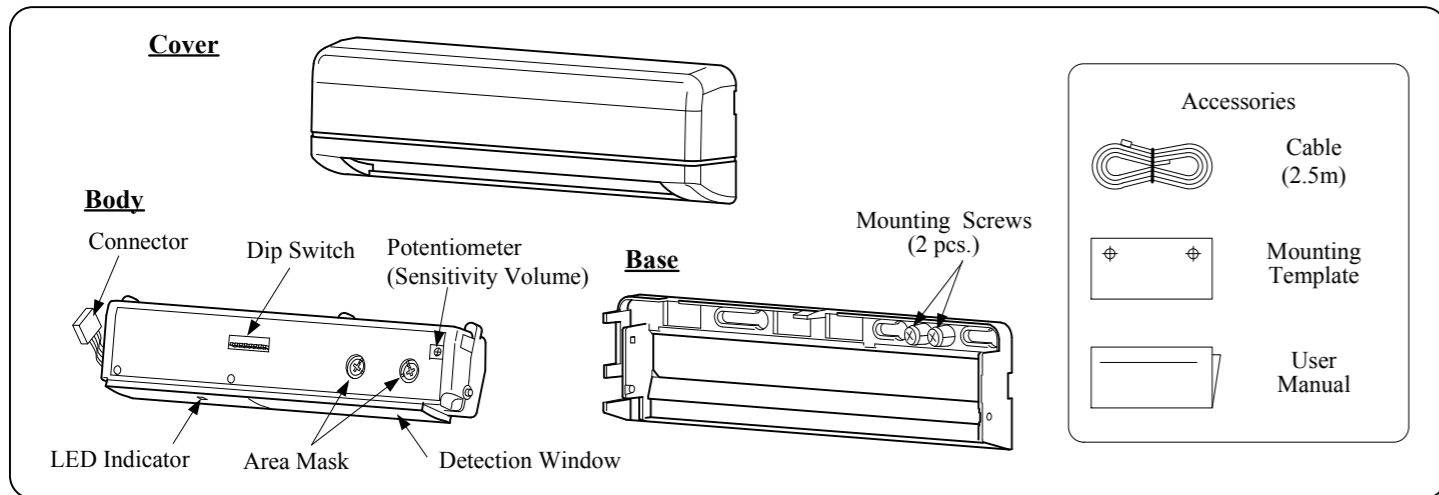
■ The symbols below indicate an extremely dangerous situation.

⚠ WARNING Disregarding this symbol may result in serious injury or death	⚠ CAUTION Disregarding this symbol may result in injury or damage to equipment

■ The symbols below indicate what should be obeyed.

⚠ This symbol refers to a Caution	⊘ This symbol refers to an instructions which is prohibited	❗ This symbol refer to an Instruction which must be followed

1. DESCRIPTION

Cover

Body
Connector, Dip Switch, Potentiometer (Sensitivity Volume)

LED Indicator, Area Mask, Detection Window

Base

Accessories
- Cable (2.5m)
- Mounting Screws (2 pcs.)
- Mounting Template
- User Manual

2. MOUNTING PRECAUTIONS

⚠ CAUTION To prevent leakage, malfunction or damage, please follow instructions below.

1. Mount lower than 3m (9.8ft)	2. Ensure no moving objects in the detection area	3. Ensure the minimum of reflected sunlight from the floor
3.0m	⊘	⊘

4. Mount where rain or snow will not fall directly on unit.	5. Please install in a place where no vibration
⊘ If the sensor is exposed to excessive rain or snow install with a Hotron weather cover	❗

⚠ In the following cases, the sensor may detect without the presence of a person

1. Accumulation of snow or water on the floor.	2. Environment is humid or steamy.	3. Objects placed in the detection area.
		4. Pets / Animals enter the detection area.

3. MOUNTING & WIRING INFORMATION

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

1. Determine the mounting position of the device and attach Mounting Template. Drill mounting and wiring holes.	2. Remove Cover	3. Remove Mounting Screws and Body from Base .
4. Install Base with Mounting Screws.	5. Attach Body to Base.	6. Wiring to the door controller. Connector ⇐ Cable Green: N.C. Yellow: N.O. White: COM Red／Black: Power (Non Pole)

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. ⚠ Do not move Body when attaching Cover.

4. DIP SWITCH SETTINGS

⚠ CAUTION Please set in a manner suitable for operation.

Default Setting: ☆

① Quantity of Detection Rows	② Presence Timer	③ Frequency	④ Monitor Mode	⑤ Self-Monitoring
☆ R4	☆ 2s	☆ A	☆ Normal	OFF
R3	30s	B	Snow	☆ ON
R2	60s	C		
R1	∞	D		
1 2	3 4	5 6	7	8

⚠ If you change the setting of the Dip switch when the power is on, the sensor will be reset in approx 6 s.

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, 2,1 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 ∞, the period is ∞ in case of the 1st and 2nd row, 2 s in case of the 3rd and 4th row.

③ Frequency
When more than two sensors are used in close proximity to each other, select different frequency setting for each sensors to prevent interference. (A + B + C + D = Maximum 4 sensors)

④ Monitor Mode
Set to "Snow" in instances where false door activations can result from blowing snow, leaves or rubbish close to the door detection area. It should be noted that sensitivity to detecting pedestrians may also be reduced.

⑤ Self-Monitoring
When the sensor has malfunctioned, the Green/Red LED blinks alternately and the relay output is relayed to the sensor.

5. APPLYING POWER

⚠ CAUTION Before turning on the power, please wire the door controller to the sensor.

⚠ 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.

Power-on/ Reset → 2 s → Motion Detection → No moving object 7 s → Presence detection
Motion Detection → Moving object → Motion detection → Remove moving object, No moving object 7 s → Presence detection

❗ If you carry out the followings, please turn off the power.
If you carry out the followings when the power is turned on, the sensor will detect for the presence timer setting that you have set

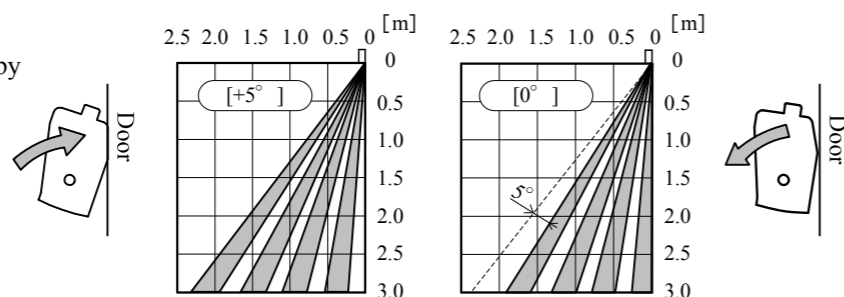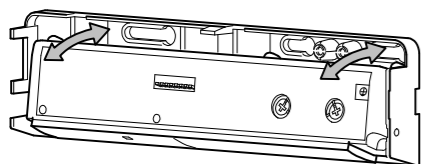| Place or remove the mat on the detection area.	Adjust the angle of Body.	Adjust the width of the detection area.	Adjust the sensitivity.

6. ADJUSTING DETECTION PATTERN

⚠ CAUTION Ensure that the inner row of detection does not detect door movement
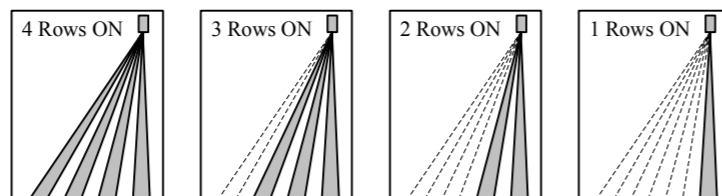
1. Angle adjustment

Adjust the detection pattern either 0° or +5° by moving the angle of Body.
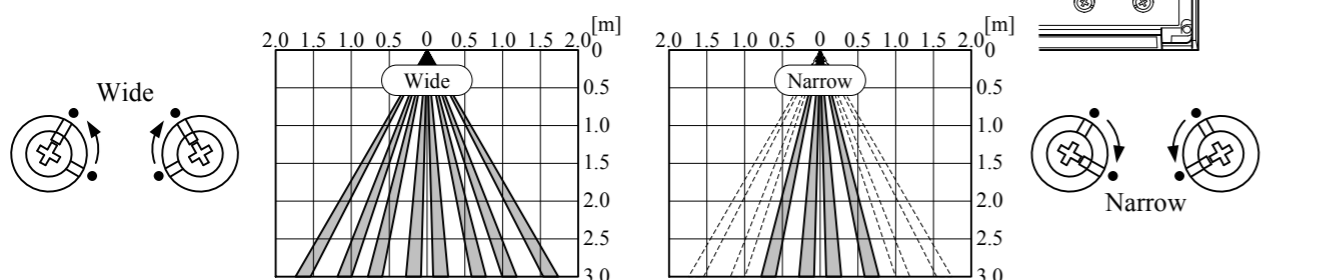
2. Depth adjustment

4. DIP SWITCH SETTINGS

Delete or add rows of detection

4 Rows ON   3 Rows ON   2 Rows ON   1 Rows ON

3. Width adjustment

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

Area mask

Wide   Narrow

⚠ The detection range will vary depending on installation environment, object detected and settings etc (clothes and floor material and sensitivity adjustment)

7. ADJUSTING SENSITIVITY

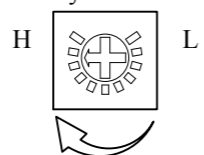⚠ CAUTION Please adjust the sensitivity that is appropriate to the operation.

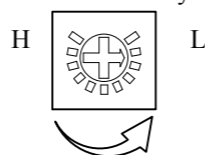1. Please set the sensitivity suitable for the mounting height.

The table below is an estimation.

Sensitivity

Height [m]	Estimated sensitivity
2.0 ～ 2.5	L ～ M
2.5 ～ 3.0	M ～ H

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

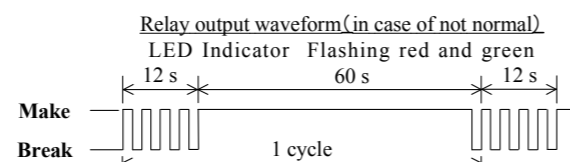3. If the sensor detects even though no one is in the detection area, please decrease the sensitivity.

8. VERIFICATION OF OPERATION

After installation and adjusting various settings, please check whether the detection range and sensitivity is suitable for operation. If it is difficult to detect or false activations occur, please re-adjust the detection range and sensitivity settings.

9. SELF-MONITORINNG

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

Relay output waveform(in case of not normal)
LED Indicator Flashing red and green
12 s   60 s   12 s

Make
Break   1 cycle

10. TROUBLESHOOTING

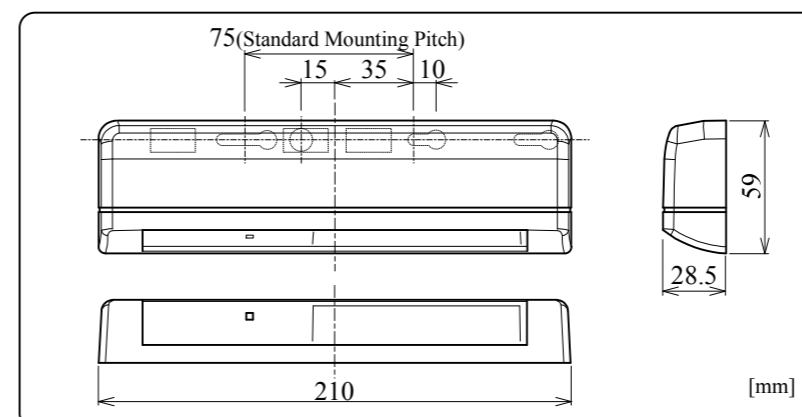| Problem	Possible Cause	Solution
Door does not operate	Connector not connected correctly	Tighten or reconnect the connector.
	Incorrect power supply voltage	Apply proper voltage to the sensor. (AC/DC 12-24V)
Door operates intermittently	Dust, frost or water droplet on the sensor lens	Wipe Detection Window clean and install a weather cover if necessary (Chemicals such as thinner, alcohol use is prohibited to use.)
	Sensitivity too low	Turn up sensitivity
	Inappropriate detection area	Adjust the detection pattern.
Door opens and closes for no apparent reason (Ghosting)	The sensor detects door movement	Adjust detection depth away from the door.
	Mounting portion is distorted	Adjust the monitoring mode
Door operate by itself	There is a moving object in the detection range.	Adjust the detection pattern. Remove moving object.
	Detection pattern too far from the door, detecting people passing by.	Adjust the detection pattern.
	Sensitivity too high	Turn down the sensitivity.
	Another sensor is too close by.	Change the frequency to each sensor.
	The condition of detection area is varing. ・Dust / Dirty ・Spread out / Remove a mat ・Snow	Change the presence timer settings to shorter
		Adjust the monitoring mode(footprints being left in fresh snow)

After rechecking, if there is still a problem, please contact us or your dealer.

11. TECHNICAL SPECIFICATIONS

Model Name	3H-IR14	Detection Method	Active Infrared Reflection
Installation Height	3.0m	Supply Voltage	AC/DC12～24V±10% 50/60Hz
Sensitivity adjustment	Available	Power Consumption	AC12V: 1.3VAMax AC24V: 1.5VAMax DC12V: 65mAMax DC24V: 35mAMax
Depth adjustment	Angle | 0° / +5°		
	Row | R4～R1		
Width adjustment	Wide / Narrow	Output	Relay Contact1c DC50V 0.1A(Resistance load) Fail safe
Presence Timer	2s / 30s / 60s / ∞		
Frequency	4 Frequencies		
Monitor mode	Normal / Snow	Output Holding Time	Approx 0.5s
Self-Monitoring	OFF / ON	Operating Temperature	-20℃ ～ +60℃
LED Indicator	Standby (Green) Detecting (Red) Door movement is detected (Orange) Waiting for reset (Fast flashing Orange) Reflection Diagnostics (Flashing Red and Green)	Weight	Approx 180g
		Color	S : Silver , BL : Black

Please note that specifications are changed without notice.

12. EXTERNAL DIMENSIONS

75(Standard Mounting Pitch)
15 35 10
59
28.5
210
[mm]

< Disclaimer >
The manufacturer cannot be held responsible for below.
1. Misinterpretation of the installation instructions, miss connection, negligence, sensor modification and inappropriate installation.
2. Damage caused by inappropriate transportation.
3. Accidents or damages caused by fire, pollution, abnormal voltage, earthquake, thunderstorm, wind, floods and other acts of providence.
4. Losses of business profits, business interruptions, business information losses and other financial losses caused by using the sensor or malfunction of the sensor.
5. Amount of compensation beyond selling price in all cases.

3H

MP-10137   '13. 05