

Motion and Presence Sensor

3H-IR14C



COMPLIED STANDARDS
 DIN18650-1:2010
 EN 12978:2003 +A1:2009
 EN 16005:2012 +AC:2015
 EC type examination No. 4420513738007



Before using this sensor, read this user manual in detail.
 During the lifetime of the product, keep the manual and refer it when needed.

User Manual

■ The symbols below indicate dangers.

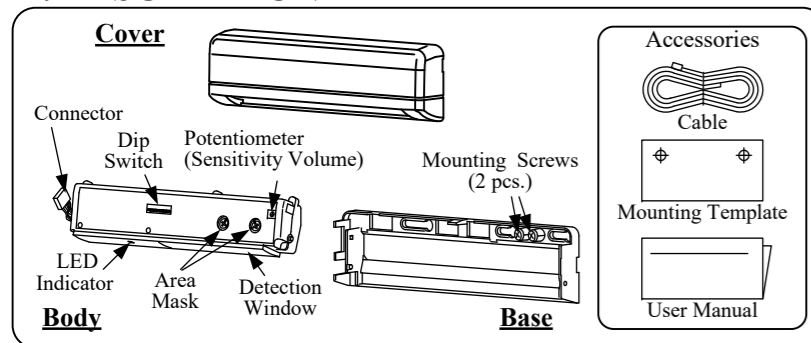
	WARNING Disregarding this symbol may result in serious injury or death.		CAUTION Disregarding this symbol may result in injury or damage to equipment.
--	--	--	--

■ Other symbols to be aware of.

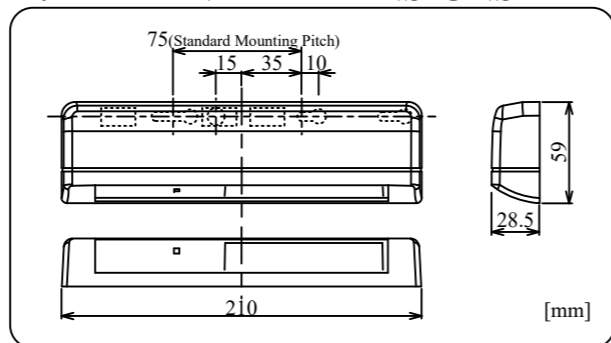
	Special attention is required when this symbol is shown.		Setting required to conform with EN16005.
--	--	--	---

	This symbol shows a situation which you should be aware of.		This symbol shows a situation which should be avoided.		This symbol shows an instruction which must be followed.
--	---	--	--	--	--

1. DESCRIPTION



2. EXTERNAL DIMENSIONS



3. MOUNTING PRECAUTIONS

CAUTION To prevent malfunction mount as indicated.

<p>1. Mount lower than 3m.</p>	<p>2. Ensure no moving objects are in the detection area.</p>	<p>3. Mount where no direct and reflected sunlight shine onto the sensor.</p>	<p>1. Accumulation of snow or water on the floor.</p>	<p>2. Environment is humid or steamy.</p>
<p>4. Mount where rain or snow will not fall directly on unit.</p> <p>If the sensor is exposed to excessive rain or snow, protect it with a Hotron weather cover.</p>	<p>5. Install in vibration free environment.</p>	<p>3. Objects placed in the detection area.</p>	<p>4. Pets / Animals enter the detection area.</p>	

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

4. TECHNICAL SPECIFICATIONS

Model Name	3H-IR14C			Supply Voltage	AC/DC 12~24 [V]±10% 50/60 [Hz]	
Detection Method	Active Infrared Reflection			TEST Input	DC24V : 6 [mA] Max	
Installation Height	3.0 [m]			Output Holding Time	Approx 0.5 [s]	
Sensitivity adjustment	Available			Response Time	0.1 ~ 0.2 [s]	
Depth adjustment	Angle	0 to 5[degrees]	Row	R4~R1	Operating Temperature	-20 ~ +60 [°C]
Width adjustment	Wide / Narrow			Operating humidity	Below 80 [%]	
Presence Timer	R1,R2	2,30,60,∞[s]	R3,R4	2 [s]	IP Rate	IP54 (With Base)
Frequency	2 Frequencies			Weight	Approx 180 [g]	
Monitor mode	Normal / Snow			Color	S : Silver , BL : Black	
Power Consumption	AC12V : 1.8[VA]Max AC24V : 1.5[VA]Max DC12V : 100 [mA]Max DC24V : 50 [mA]Max					
Output	Safety (R1,R2)		Form A Relay Contact DC50[V] 0.1[A] (Resistance load)			
	Activation (R2,R3,R4)		Form A Relay Contact DC50[V] 0.1[A] (Resistance load)			
LED Indicator	Standby (Green)					
	R4 Detecting (Blue), R3 Detecting (Red), R2 Detecting (Slow flashing Red), R1 Detecting (Fast flashing Red)					
	Door movement is detected (Orange) Indicates a change of dip switch settings (Fast flashing Orange)					
	Internal Sensor Error (Fast flashing Green/Red) Reflected infrared signal from the floor is very low (Flashing Green/Red)					
Category	2 , performance level D according to EN ISO 13849-1:2015			Specification may change without prior notice.		

5. MOUNTING & WIRING INFORMATION

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

- Determine the mounting position of the device and attach the Mounting Template. Drill the mounting and wiring holes.
- Remove the Cover.
- Remove the Mounting Screws and the Body from the Base.
- Install the Base with the Mounting Screws.
- Attach the Body to the Base.

6-1. Wiring to a door controller that can test the sensor.

Sensor's Cable	Red	AC/DC	Power (Non Pole)
	Black	12~24V ±10%	
	White	N.O.	Activation Output
	Green	N.O.	Safety Output
	Yellow	N.O./N.C.	
	Blue	N.O./N.C.	
	Gray(+)	TEST Input (+)	TEST Input
	Brown(-)	TEST Input (-)	

ON 8

Note EN16005 Set "TEST Input" dip switch setting 8 to "ON" Ref section 6. DIP SWITCH SETTINGS.

6-2. Wiring to a door controller that cannot test the sensor.

Sensor's Cable	Red	AC/DC	Power (Non Pole)
	Black	12~24V ±10%	
	White	N.O.	Activation Output
	Green	N.O.	Safety Output
	Yellow	N.O./N.C.	
	Blue	N.O./N.C.	
	Gray(+)	Do not connect	
	Brown(-)	Do not connect	

OFF 8

Note Set "TEST Input" dip switch setting 8 to "OFF" Ref section 6. DIP SWITCH SETTINGS.

- Set the following parameters
 section 6. DIP SWITCH SETTINGS
 section 8. ADJUSTING DETECTION PATTERN
 section 9. ADJUSTING SENSITIVITY
 section 10. VERIFICATION OF OPERATION
 section 11. TIMING CHART OF EVENTS
- House the Connector in the space provided.
- Place the Cover on sensor and wipe the sensor clean.
 Be careful not to move the sensor Body when attaching the Cover.

6. DIP SWITCH SETTINGS

CAUTION Set in a manner suitable for operation.

Default Setting : ☆

- Quantity of Detection Rows
 The number of rows of detection can be set to 4, 3, 2 or 1 depending on detection area required.
- Presence Timer (R1 R2)
 The sensor will detect a stationary object for the period of the preset presence timer setting on the inner 2(R1 R2) rows.
EN16005 To comply with EN16005 set the presence timer to 30s or more.
- Frequency
 When two sensors are installed in close proximity to each other select different frequency settings for each sensor to prevent cross interference.
- Safety Output
 Refer to section 11. TIMING CHART OF EVENTS for full details on Safety Output.
- Monitor Mode
 Set to "Snow" in instances where false door activations can result from blowing snow, leaves or rubbish in the detection zone. It should be noted that sensitivity to detecting pedestrians may also be reduced.
- TEST Input
 When connected to a door controller without a TEST Input, set to "OFF". When connected to a door controller with the TEST Input, set to "ON"
 Refer to section 11. TIMING CHART OF EVENTS.
EN16005 To comply with EN16005 set to "ON".

It will take approximately 6s for dip switch setting changes to take effect.

7. APPLYING POWER

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

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

Note If you carry out the following when the power is turned on, the sensor will detect for 30s.

Place or remove a mat in the detection area.	Adjust the angle of Body.	Adjust the width of the detection area.	Adjust the sensitivity.
--	---------------------------	---	-------------------------

8. ADJUSTING THE DETECTION PATTERN

CAUTION Ensure that the inner row of detection does not detect door movement.

1. Depth Adjustment – Sensor Body
Adjust the detection pattern to either 0° or +5° by moving the sensor body as illustrated.

2. Depth adjustment – Number of Rows of Detection
Section 6. DIP SWITCH SETTINGS
Delete or add rows of detection.

3. Width adjustment
Adjust the detection width by turning Area Mask with a screwdriver.

The detection range will vary depending on the installation environment, object detected and sensor settings. (clothes and floor material as well as sensor sensitivity settings will all have an effect)

9. ADJUSTING SENSITIVITY

CAUTION Adjust the sensitivity that is appropriate to the installation environment.

1. Set the appropriate sensitivity setting for the mounting height of the sensor.

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

2. If the sensor does not detect a person entering the detection area, increase the sensitivity.

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

10. VERIFICATION OF OPERATION

! After installation and sensor setting adjustment, walk test the sensor to ensure that the detection area is as required. If unreliable detection or false door activations occur then re-adjust the sensor detection range and sensitivity settings.

11. TIMING CHART OF EVENTS

1. Safety Output Row 1, 2 / TEST Input

2. Activation Output Row 2, 3, 4

TEST Response

OFF	TEST	Non-TEST	TEST
ON	Non-TEST	TEST	Non-TEST

Supplying DC12 to 24V, make current flow from Gray to Brown.
Break the current flow on test state.

T1 : 10±1ms App.
T2 : 11±1ms App.

12. SELF DIAGNOSTICS ERRORS

Technical problems with the 3H-IR14C sensor are indicated by a flashing Green/Red LED. The frequency of flashing indicates the type of problem.	Flash Frequency	LED	Cause
	Fast	Green Red	Replace the sensor.
	Slow	Green Red	The sensor sensitivity setting is too low.

13. TROUBLESHOOTING

Problem	Possible Cause	Solution
Door does not operate	Connection failure.	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 are on the sensor lens.	Wipe the Detection Window clean and install a weather cover if necessary.
	Sensitivity too low.	Increase the sensitivity.
Door opens and closes for no apparent reason (Ghosting)	Inappropriate detection area.	Adjust the detection pattern.
	The sensor detects the movement of the door.	Adjust the detection depth away from the door.
Door operate by itself	Object moving in the detection area.	Reduce the detection area. Remove the moving object.
	Detection area is too far from the door, causing detection of passing pedestrians.	Reduce the detection area.
	Sensitivity too high.	Decrease the sensitivity.
	Another sensor is installed in close proximity.	Ensure that the frequency setting of each sensor is not the same.
	Addition or removal of a mat • Falling snow or footprints in snow.	Re-power the sensor. Set Monitor Mode to "Snow".
Door opens and remains in the open position	Internal sensor error.	Replace the sensor.
	Reflection of the transmitted infrared signal from the floor is too low.	Increase the sensitivity.

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

14. EC DECLARATION OF CONFORMITY

Compiler of Technical File (EC Community) David Morgan / Hotron Ireland Ltd 26 Dublin Street, Carlow, Ireland Ph: +353-(0)59-9140345 Fax: +353-(0)59-9140543	Description of Product: 3H-IR14C Combined motion and presence detection sensor for the activation and safety of automatic doors. Technology used is Active Infrared Technology.		
	Harmonized Standards Used: EN ISO 13849-1:2015	Other Technical Standards Used: DIN 18650-1:2010 EN 16005:2012+AC:2015	
Above EC Type Directives Certified by: 0044 TÜV NORD CERT GmbH, Division TechnologyAm TÜV1 Essen 45307 Germany	Declaration made by Teruya Morimoto Director Quality Assurance	Location of Declaration Honda Electron Co. Ltd 1-23-19 Asahi-cho, Machida-City, Tokyo, Japan	Date 08.Dec.2017
Directives Fulfilled: DIRECTIVE 2006/42/EC DIN 18650-1:2010 EN 12978:2003 +A1:2009 EN ISO 13849-1:2015 EN 16005:2012+AC:2015 EC type examination			
Powered pedestrian doors Part 1: Product requirements chapter 5.7.4 Industrial, commercial and garage doors and gates - safety devices for power operated doors and gates - Requirements and test methods. Safety of machinery - Safety-related parts of control systems. Power operated pedestrian doorsets - Safety in use - Requirements and test methods No. 44 205 13738007			

< Disclaimer >

The manufacturer cannot be held responsible for below.

- Misinterpretation of the installation instructions, miss connection, negligence, sensor modification and inappropriate installation.
- Damage caused by inappropriate transportation.
- Accidents or damages caused by fire, pollution, abnormal voltage, earthquake, thunderstorm, wind, floods and other acts of providence.
- Losses of business profits, business interruptions, business information losses and other financial losses caused by using the sensor or malfunction of the sensor.
- Amount of compensation beyond selling price in all cases.



Manufacturer
 HOTRON CO.,LTD.
 1-11-26 Hyakunin-Cho, Shinjuku-Ku, Tokyo, Japan
 Phone: +81-(0)3-5330-9221
 Fax: +81-(0)3-5330-9222
 URL: <http://www.hotron.com>

SALES Europe
 Hotron Ireland Ltd.
 26 Dublin Street (2nd Floor), Carlow, Ireland
 Phone: +353-(0)59-9140345
 Fax: +353-(0)59-9140543
 URL: <http://www.hotron.com>