Sensor Partners

Motion and Presence Sensor 3H-IR14C

CE

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

User Manual

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

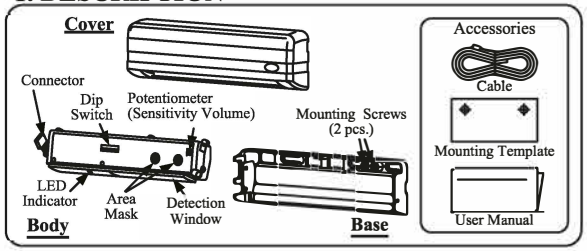
■The symbols below indicate dangers.

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

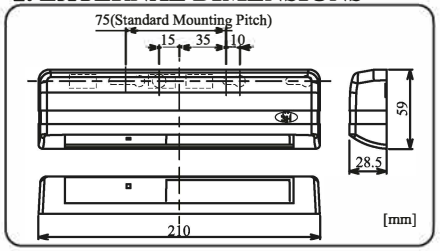
■Other symbols to be aware of.

Note Special attention is required when this symbol is shown.		EN16005 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



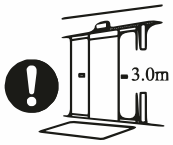
2. EXTERNAL DIMENSIONS



3. MOUNTING PRECAUTIONS

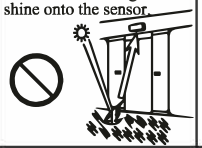
⚠CAUTION To prevent malfunction mount as indicated.

1. Mount lower than 3m.

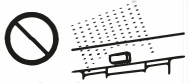


2. Ensure no moving objects are in the detection area.

3. Mount where no direct and reflected sunlight shine onto the sensor.



4. Mount where rain or snow will not fall directly on unit.



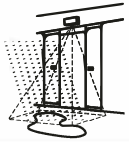
If the sensor is exposed to excessive rain or snow, protect it with a Hotron weather cover.

5. Install in vibration free environment.

❗

⚠ 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.

4. TECHNICAL SPECIFICATIONS

Model Name	3H-IR14C			
Detection Method	Active Infrared Reflection			
Installation Height	3.0 [m]			
Sensitivity adjustment	Available			
Depth adjustment	Angle	0 to 5[degrees]	Row	R4~R1
Width adjustment	Wide / Narrow			
Presence Timer	R1,R2	2,30,60,∞[s]	R3,R4	2 [s]
Frequency	2 Frequencies			
Monitor mode	Normal / Snow			
LED Indicator	Standby (Green) R3,R4 Detecting (Blue) R1,R2 Detecting (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)			

Supply Voltage	AC/DC 12~24 [V]±10% 50/60 [Hz]
Power Consumption	AC12V : 1.1[VA]Max AC24V : 1.3[VA]Max DC12V : 70 [mA]Max DC24V : 40 [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)
TEST Input	DC24V : 6 [mA] Max
Output Holding Time	Approx 0.5 [s]
Response Time	0.1 ~ 0.2 [s]
Operating Temperature	-20 ~ +60 [℃]
Operating humidity	Below 80 [%]
IP Rate	IP54 (With Base)
Weight	Approx 180 [g]
Color	S : Silver , BL : Black
Category	2 , performance level D according to EN ISO 13849-1:2008

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.

1. Determine the mounting position of the device and attach the Mounting Template. Drill the mounting and wiring holes.

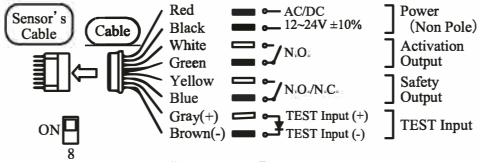
2. Remove the Cover.

3. Remove the Mounting Screws and the Body from the Base.

4. Install the Base with the Mounting Screws.

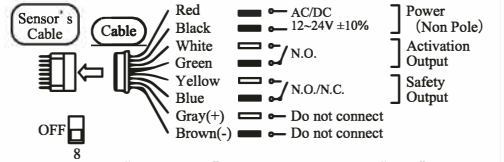
5. Attach the Body to the Base.

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



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

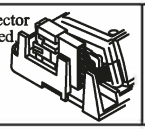
6-2. Wiring to a door controller that cannot test the sensor.



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

7. 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

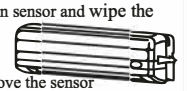
8. House the Connector in the space provided.



9. Place the Cover on sensor and wipe the sensor clean.

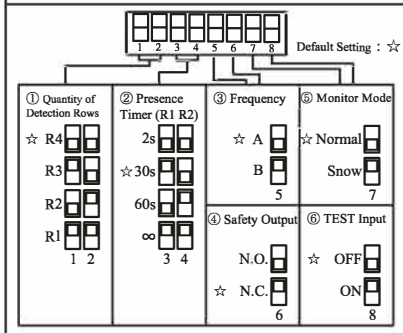
⚠

Be careful not to move the sensor Body when attaching the Cover.



6. DIP SWITCH SETTINGS

⚠CAUTION Set in a manner suitable for operation.



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

① Quantity of Detection Rows
The number of rows of detection can be set to 4, 3, 2 or 1 depending on detection area required.

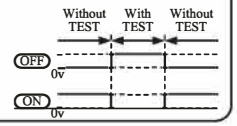
② Presence Timer (R1 R2)
The sensor will detect a stationary object for the period of the preset presence timer setting on the inner 2(R1 R2) rows.
EN16005 To comply with EN16005 set the presence timer to 30s or more.

③ Frequency
When two sensors are installed in close proximity to each other select different frequency settings for each sensor to prevent cross interference.

④ Safety Output
Refer to **section 11. TIMING CHART OF EVENTS** for full details on Safety Output.

⑤ 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.

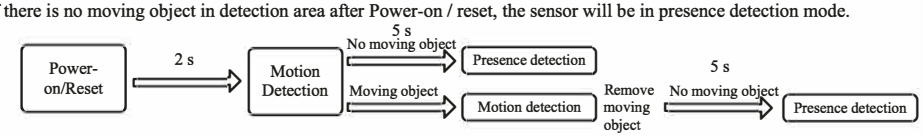
⑥ TEST Input
When connected to a door controller without a TEST Input, set to "OFF". When connected to a door controller with the TEST Input, set to "ON"
Refer to **section 11. TIMING CHART OF EVENTS.**
EN16005 To comply with EN16005 set to "ON".



7. APPLYING POWER

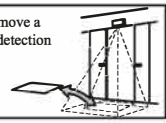
⚠CAUTION Before turning on the power, wire the door controller to the sensor.

⚠ 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.

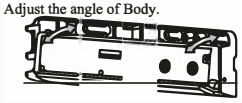


❗ If you carry out the following when the power is turned on, the sensor will detect for 30s.

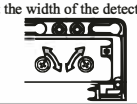
Place or remove a mat in the detection area.



Adjust the angle of Body.



Adjust the width of the detection area.



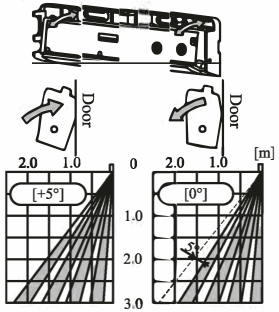
Adjust the sensitivity.

8. ADJUSTING THE DETECTION PATTERN

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

1. Depth Adjustment – Sensor Body

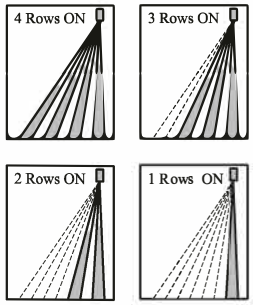
Adjust the detection pattern to either 0°or +5°by moving the sensor body as illustrated.



2. Depth adjustment – Number of Rows of Detection

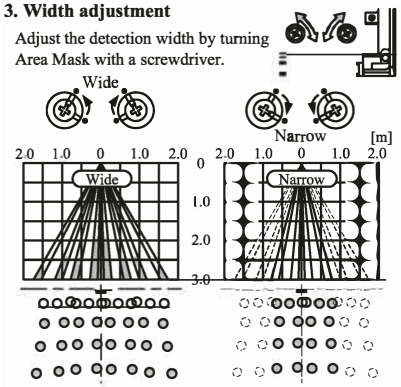
Section 6. DIP SWITCH SETTINGS

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.

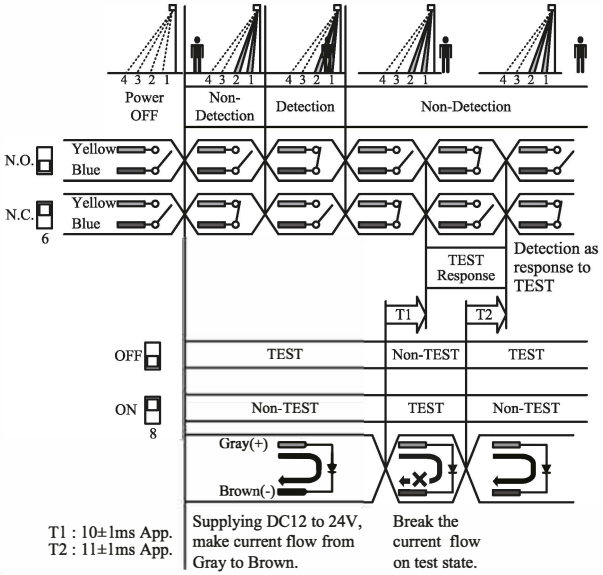
3. If the sensor detects even though no one is in the detection area, decrease the sensitivity.

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

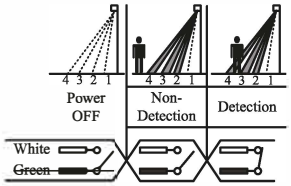


T1 : 10±1ms App.
T2 : 11±1ms App.

Supplying DC12 to 24V, make current flow from Gray to Brown.

Break the current flow on test state.

2. Activation Output Row 2, 3, 4



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.
	Inappropriate detection area.	Adjust the detection pattern.
Door opens and closes for no apparent reason (Ghosting)	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)
Hotron Ireland Ltd 26 Dublin Street, Carlow, Ireland

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 13849-1:2008

Other Technical Standards Used:
DIN 18650-1:2010
EN 16005:2012

Above EC Type Directives Certified by:	Declaration made by	Location of Declaration	Date
TUV NORD CERT GmbH 30519 Hannover, Germany Identification No: 0044	Teruya Morimoto Director Quality Assurance	Honda Electron Co. Ltd 1-23-19 Asahi-cho,Machida-City, Tokyo, Japan	08.Dec.2017

Directives Fulfilled:

DIRECTIVE 2006/42/EC	
DIN 18650-1:2010	Powered pedestrian doors Part 1: Product requirements chapter 5.7.4
EN 12978:2003 +A1:2009	Industrial, commercial and garage doors and gates - safety devices for power operated doors and gates - Requirements and test methods.
EN 62061:2005	Functional safety of electrical/electronic/programmable electronic safety-related systems.
EN ISO 13849-1:2008	Safety of machinery - Safety-related parts of control systems.
EN 16005:2012	

EC type examination No.4420513738007

< 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.