HOTRON **English** CE

HR94D1-C1

User Manual (Original)

COMPLIED STANDARDS
DIN18650-1:2005
EN 12978:2003
EN 16005:2012
EC type examination
44 205 12 414283-001

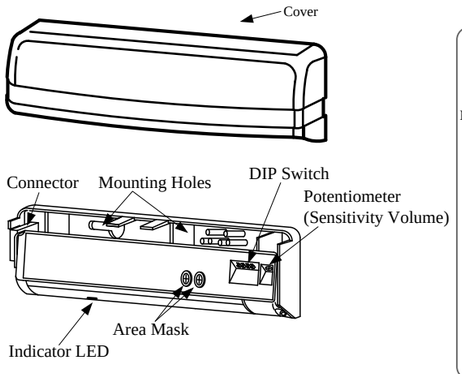
WARNING Disregarding this symbol may result in serious injury or death

CAUTION Disregarding this symbol may result in injury or damage to equipment

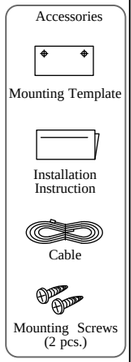
Note Special attention is required when this symbol is shown

EN16005 Setting required to conform with EN16005:2012

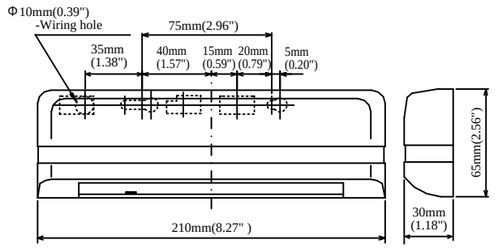
1. DESCRIPTION



Accessories



2. DIMENSIONS

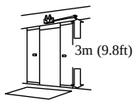


3. LED INDICATORS

Green	Standby
Red	Detecting
Orange	The detection area is too close to the door
Green/Red blinking alternately	Internal Sensor Error

4. MOUNTING PRECAUTIONS

Mounting height of 3 m (9.8ft) or lower

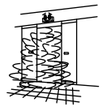


Ensure there are no moving objects in the detection zone

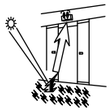
If the sensor is exposed to excessive rain install with a Hotron weather cover

If possible ensure no accumulation of snow or water on the floor.

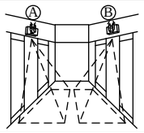
Ensure no condensation gets onto the sensor.



Ensure the minimum of reflected sunlight from the floor



Use different frequency settings for sensors in close proximity



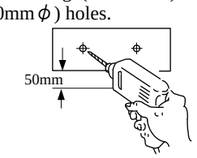
5. TECHNICAL SPECIFICATIONS

Model Name	HR94D1-C1
Detection Method	Active Infrared Detection
Installation Height	3[m] (9.8[ft]) Max
Supply Voltage	AC/DC 12 to 24 [V] ±10% Red & Black (Nonpole)
Power Consumption	AC12V-1.8 [VA] (Max) AC24V-2.8 [VA] (Max) DC12V-100 [mA] (Max) DC24V-60 [mA] (Max)
Output Holding Time	Approx 0.5s
Response Time	0.1s ～ 0.2s
Presence Timer	DIP Switch #1, #2 (2, 30, 60, ∞ seconds)
Output	Open collector 7.5[mA](Max) Resistor Load DIP SW #6 : N.C. — Normally Drive (Normally Close) Open on Detection DIP SW #6 : N.O. — Normally Open Drive on Detection (Close on Detection) Opto coupler(NPN) Voltage:55 [VDC] Max. Current:50 [mA] Max. Dark Current : 100 [nA] Max. (Resistance load)
Test Input	Non-Test : DC12 to 24 V / Test : Open — 6 [mA] Max.@ 24 [VDC]
Operating Temperature	-20 to +60 [Deg.C],(-4 to 140 Deg.F)
Operating humidity	Below 80%
IP Rate	IP54
Category	2 , performance level C for presence detection according to EN ISO 13849-1:2008
Weight	0.190kg, (0.42lbs.)
Accessories	Cable : 2.5m (8ft.) Mounting Screw (2pcs) Mounting Template User Manual
Notice: Specification may be changed without prior notice.	

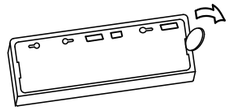
6. MOUNTING & WIRING INFORMATION

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

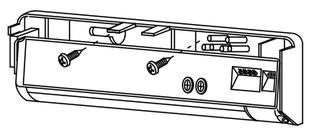
① Drill mounting (3.5mm ϕ) and wiring (10mm ϕ) holes.



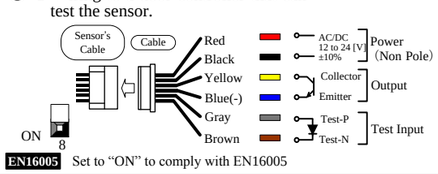
② Remove cover using a coin.



③ Fasten unit with mounting screws rovided.

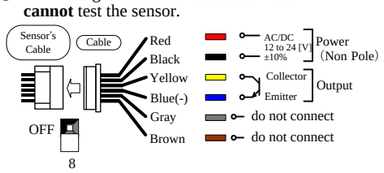


④-1 Wiring to a door controller that can test the sensor.

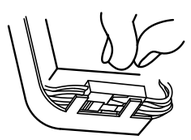


EN16005 Set to "ON" to comply with EN16005

④-2 Wiring to a door controller that **cannot** test the sensor.



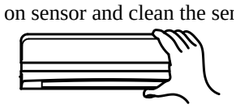
⑤House connectors in the space provided.



⑥ Set desired sensor parameters as noted in Sections 7 & 8.

⇨ **Section 7. DIP Switch Settings**
⇨ **Section**

⑦ 7. Place cover on sensor and clean the sensor.



7. DIP SWITCH SETTINGS

CAUTION

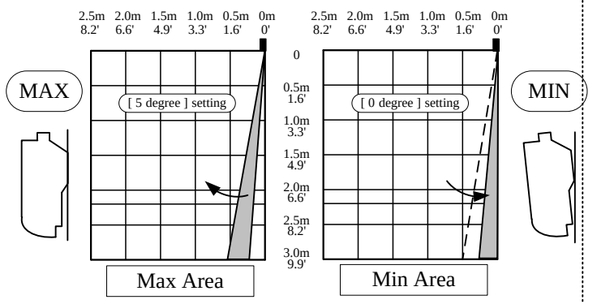
☆ = Default Setting

Function	Dip Switch Ⓧ	Description	Possible Setting Options
Presence Timer	☆30s 1 2	The HR94D1-C1 will detect a stationary object only for the time period set by the Presence Timer. The timer will reset and begin if any movement is detected. **EN16005** Set the timer to 30sec. or more to comply with EN16005	2s 1 2 ☆30s 1 2 60s 1 2 ∞ 1 2
Frequency	☆ A 3 4	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)	☆ A 3 4 B 3 4 C 3 4 D 3 4
Monitor Mode	☆ Normal 5	Set to snow in instances where false door activations can result from blowing snow, leaves or rubbish in the door close area.	☆ Normal 5 Snow 5
Output	☆N.C. 6	Output logic is defined by this switch. In the N.C. , Opto-Coupler will be driven in the state of non-detection.	☆ N.C. (Drive) N.O. 6
Reflection Diagnostics	☆ Normal 7	A low reflected infrared signal is indicated by a slow flashing Red/Green LED. To ignore this low reflection error state, set this dip switch to "Low Reflection"(ON). **EN16005** To comply with EN16005 set to "Normal"	☆ Normal 7 Transmitter Receiver IR Spot Low Ref. 7 Transmitter Receiver IR Spot LED
Test Input Setting from Door Controller	☆ OFF 8	When connected to a door controller without a TEST input, set to "OFF". When connected to a door controller with a TEST input, set to "ON" Refer to [11.Timing Chart of events]. **EN16005** Set to "ON" to comply with EN16005	☆ OFF ON 8 Without TEST With TEST Without TEST OFF 0v ON 0v

8.DETECTION AREA WIDTH AND DEPTH ADJUSTMENT

Detection Area Depth Adjustment

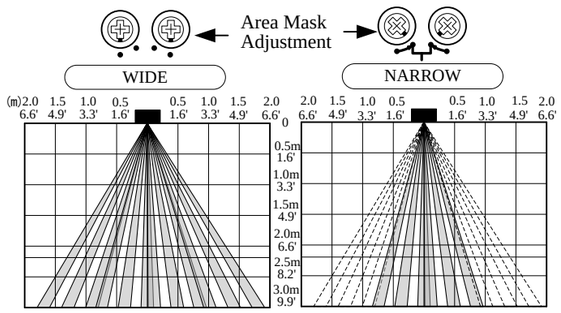
SIDE VIEW/DETECTION AREA



» The body of the sensor can be rotated from 0º~5º(3 Steps)

Detection Area Width Adjustment

FRONTAL VIEW/DETECTION AREA



CAUTION The above illustrated detection areas represent the actual position of the infrared beams. The actual detection area observed will vary depending on the sensor installation environment, object been detected and sensor settings. Please ensure that the detection area is set to conform to EN16005.

9. APPLYING POWER

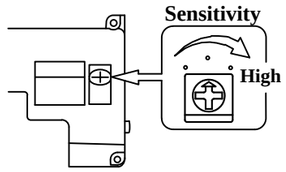
BEFORE APPLYING POWER, READ AND FOLLOW THESE INSTRUCTIONS:

When power is applied, the sensor will read and store the environmental optical parameters.
This is necessary for Presence Detection to work properly.
① CLEAR THE AREA OF ANY UNNECESSARY OBJECTS.
② APPLY POWER.
③ WALK AWAY FROM THE DETECTION AREA immediately.
④ DO NOT ENTER DETECTION AREA for 10 SECONDS while the "learning procedure" for Presence detection is carried out.
If the sensor can see moving objects during the "learning procedure", the sensor will not proceed to presence detection.

CAUTION Please DISCONNECT POWER TO THE SENSOR, when carrying out the following work.
AFTER THE TASK, APPLY POWER AGAIN.
1. When the floor condition is changed; for example with the addition of of woolen or rubber mat.
2. Adjusting pattern or sensitivity.

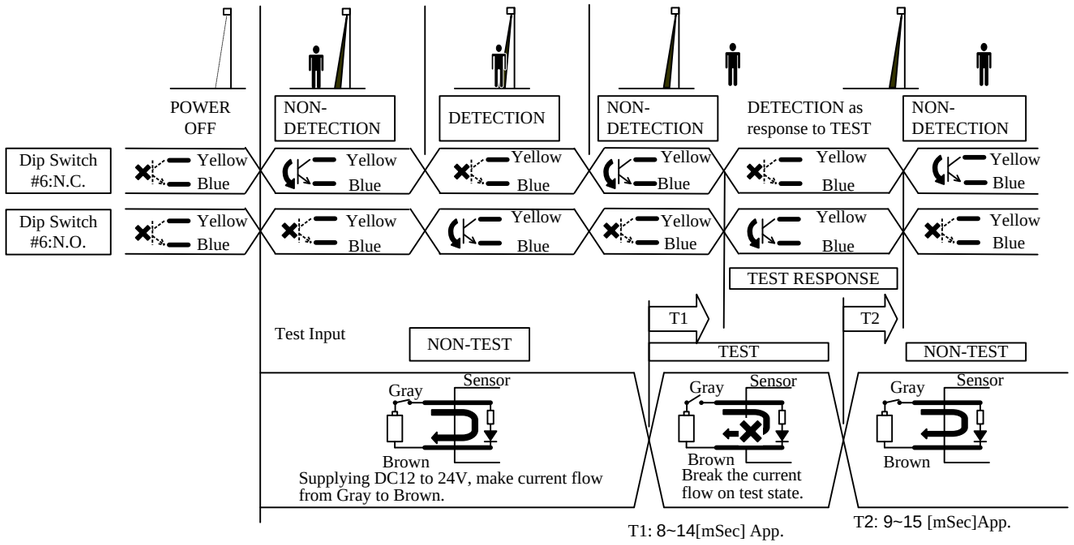
10. VERIFICATION OF OPERATION

1. After mounting, setting parameters and applying power, walk test unit to verify detection area.
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.
   » Adjust high (clockwise) to increase sensitivity.
   » Adjust low (counter-clockwise) to decrease sensitivity.



CAUTION As the detection area is variable depending on clothes, floor material and sensitivity adjustment, please confirm that the detection area demanded in EN16005 is secured after adjustment.

11. TIMING CHART OF EVENTS



12. SELF DIAGNOSTICS ERRORS

When the sensor has the self-test error, the green/red LED blinks alternately.
The blinking cycle is different, according to the kinds of the error as follows.

LED	Cause	Solution	Response to TEST
■Fast Blink (Green/Red) Green ✳ ✳ ✳ ✳ ✳ ✳ Red ✳ ✳ ✳ ✳ ✳ ✳	Internal error	Please replace the sensor.	No Response
■Slow Blink (Green/Red) Green ✳ ✳ ✳ Red ✳ ✳ ✳	Low reflection level	Set the sensitivity to maximum, and then reactivate the sensor. If the error continues, set DIP Switch #7 “ON”.	
■Slow Blink (Red/Red/Green) Green ✳ Red ✳ ✳	Test line disconnection	Please confirm the connection of the test line.	

Output on Error State	
DIP Switch #6 : N.O.	Yellow / Blue
DIP Switch #6 : N.C.	Yellow / Blue

13. TROUBLESHOOTING

Problems	Possible Cause	Solution
Sensor does not operate	Sensor Connector	Tighten connector or reconnect
	Power Supply	Check that the power supply is properly connected.
Sensor intermittently detects	Sensor is very dusty or covered in water drops, etc.	Clean the sensor (do not use thinner or alcohol to clean sensor)
	Sensitivity too low	Turn up sensitivity
	Detection pattern in the wrong position	Alter the detection pattern by changing sensor angle, and/or pattern width adjustments
Sensor detects without obvious reason	Sensitivity too high	Turn down Sensitivity.
	Another sensor is too close by	Change the frequency to each sensor.
	Sensor detects the door movement	If the indicator LED is an Orange color, adjust the pattern depth angle away from the door
	There is a cloth mat in the monitored area.	Reactivate the sensor and wait for 10 seconds.
	Detection pattern too far in front of the door, detecting people passing by	Adjust the detection pattern - move it closer to the door
	The condition of the monitored area is varying. ・Dusty / Dirty ・Snow	The condition of the monitored area can change due to heavy dust or dirty, heavy snow or footprints being left in fresh snow, this will cause the malfunction sometimes. Set the “Presence Timer” to a short times. Refer to Section 7.
The door kept open,although there is no object in the detection area.	Internal error (Green/Red LED blinks alternately)	Fast blink: Please replace the sensor (Refer to Section 12) Slow blink: Low reflection error or Test line disconnection (Refer to Section 7, Section 12)

14. HR94D1-C1 EC DECLARATION OF CONFORMITY

Compiler of Technical File (EC Community)
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Description of Product:
HR94D1-C1 is designed to monitor the side screen of the automatic door.
Technology used is Active Infrared Technology

Harmonized Standards Used:
EN ISO 13849-1:2008

Other Technical Standards Used:
DIN 18650-1:2005,
EN16005:2012

Above EC Type Directives Certified by:
TUV NORD CERT GmbH
30519 Hannover, Germany
Identification No: 0044

Declaration made by
Kaoru Musya
General Manager. Honda Electron

Location of Declaration
Honda Electron Co., LTD.
1-23-19 Asahi-Cho, Machida-City,
Tokyo, Japan

Date
9th of Nov 2012

Directives Fulfilled:
DIRECTIVE 2006/42/EC
DIN 18650-1:2005 Powered pedestrian doors Part 1: Product requirements chapter 5.7.4
EN12978:2003 Industrial, commercial and garage doors and gates - safety devices for power operated doors and gates - Requirements and test methods.
EN62061:2005 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 44 205 12 414283-001

< 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.

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