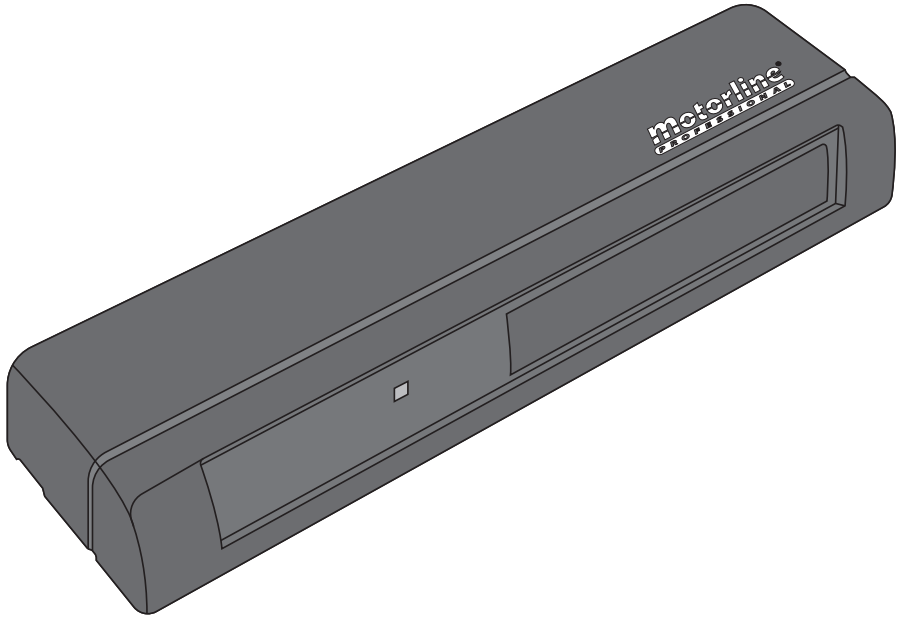
PORTUGAL

EN

MR30

USER'S AND INSTALLER'S MANUAL



Motorline® PROFESSIONAL

v2.5
REV. 04/2024

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01. SAFETY INSTRUCTIONS

CE	This product is certified in accordance with European Community (EC) safety standards.
RoHS	This product complies with Directive 2011/65/EU of the European Parliament and of the Council, of 8 June 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment and with Delegated Directive (EU) 2015/863 from Commission.
	(Applicable in countries with recycling systems). This marking on the product or literature indicates that the product and electronic accessories (eg. Charger, USB cable, electronic material, controls, etc.) should not be disposed of as other household waste at the end of its useful life. To avoid possible harm to the environment or human health resulting from the uncontrolled disposal of waste, separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources. Home users should contact the dealer where they purchased this product or the National Environment Agency for details on where and how they can take these items for environmentally safe recycling. Business users should contact their vendor and check the terms and conditions of the purchase agreement. This product and its electronic accessories should not be mixed with other commercial waste.
	This marking indicates that batteries should not be discarded like other household waste at the end of their useful life. Batteries must be delivered to selective collection points for recycling.
	The different types of packaging (cardboard, plastic, etc.) must be subject to selective collection for recycling. Separate packaging and recycle it responsibly.
	This marking indicates that the product and electronic accessories (eg. charger, USB cable, electronic material, controls, etc.) are susceptible to electric shock by direct or indirect contact with electricity. Be cautious when handling the product and observe all safety procedures in this manual.

01. SAFETY INSTRUCTIONS

GENERAL WARNINGS

- This manual contains very important safety and usage information. Read all instructions carefully before beginning the installation/ usage procedures and keep this manual in a safe place that it can be consulted whenever necessary.
- This product is intended for use only as described in this manual. Any other enforcement or operation that is not mentioned is expressly prohibited, as it may damage the product and put people at risk causing serious injuries.
- This manual is intended firstly for specialized technicians, and does not invalidate the user's responsibility to read the "User Norms" section in order to ensure the correct functioning of the product.
- The installation and repair of this product may be done by qualified and specialized technicians, to assure every procedure are carried out in accordance with applicable rules and norms. Nonprofessional and inexperienced users are expressly prohibited of taking any action, unless explicitly requested by specialized technicians to do so.
- Installations must be frequently inspected for unbalance and the wear signals of the cables, springs, hinges, wheels, supports and other mechanical assembly parts.
- Do not use the product if it is necessary repair or adjustment is required.
- When performing maintenance, cleaning and replacement of parts, the product must be disconnected from power supply. Also including any operation that requires opening the product cover.
- The use, cleaning and maintenance of this product may be carried out by any persons aged eight years old and over and persons whose physical, sensorial or mental capacities are lower, or by persons without any knowledge of the product, provided that these are supervision and instructions given by persons with experienced in terms of usage of the product in a safe manner and who understands the risks and dangers involved.
- Children shouldn't play with the product or opening devices to avoid the motorized door or gate from being triggered involuntarily.
- If the power cable is damaged, it must be replaced by the manufacturer, after-sales service or similarly qualified personnel to avoid danger.
- The device must be disconnected from the electrical network when removing the battery.
- Ensure that blocking is avoided between the actuated part and its fixed parts due to the opening movement of the actuated part.

WARNINGS FOR TECHNICIANS

- Before beginning the installation procedures, make sure that you have all the devices and materials necessary to complete the installation of the product.
- You should note your Protection Index (IP) and operating temperature to ensure that is suitable for the installation site.
- Provide the manual of the product to the user and let them know how to handle it in an emergency.
- If the automatism is installed on a gate with a pedestrian door, a door locking mechanism must be installed while the gate is in motion.
- Do not install the product "upside down" or supported by elements do not support its weight. If necessary, add brackets at strategic points to ensure the safety of the automatism.
- Do not install the product in explosive site.
- Safety devices must protect the possible crushing, cutting, transport and danger areas of the motorized door or gate.
- Verify that the elements to be automated (gates, door, windows, blinds, etc.) are in perfect function, aligned and level. Also verify if the necessary mechanical stops are in the appropriate places.
- The control board must be installed on a safe place of any fluid (rain, moisture, etc.), dust and pests.
- You must route the various electrical cables through protective tubes, to protect them against mechanical exertions, essentially on

01. SAFETY INSTRUCTIONS

the power supply cable. Please note that all the cables must enter the control board from the bottom.
- If the automatism is to be installed at a height of more than 2,5m from the ground or other level of access, the minimum safety and health requirements for the use of work equipment workers at the work of Directive 2009/104/CE of European Parliament and of the Council of 16 September 2009.
- Attach the permanent label for the manual release as close as possible to the release mechanism.
- Disconnect means, such as a switch or circuit breaker on the electrical panel, must be provided on the product's fixed power supply leads in accordance with the installation rules.
- If the product to be installed requires power supply of 230Vac or 110Vac, ensure that connection is to an electrical panel with ground connection.
- The product is only powered by low voltage satefy with control board (only at 24V motors).
- Parts/products weighing more than 20 kg must be handled with special care due to the risk of injury. It is recommended to use suitable auxiliary systems for moving or lifting heavy objects.
- Pay special attention to the danger of falling objects or uncontrolled movement of doors/gates during the installation or operation of this product.

WARNINGS FOR USERS

- Keep this manual in a safe place to be consulted whenever necessary.
- If the product has contact with fluids without being prepared, it must immediately disconnect from the power supply to avoid short circuits, and consult a specialized technician.
- Ensure that technician has provided you the product manual and informed you how to handle the product in an emergency.
- If the system requires any repair or modification, unlock the automatism, turn off the power and do not use it until all safety conditions have been met.
- In the event of tripping of circuits breakers of fuse failure, locate the malfunction and solve it before resetting the circuit breaker or replacing the fuse. If the malfunction is not repairable by consult this manual, contact a technician.
- Keep the operation area of the motorized gate free while the gate in in motion, and do not create strength to the gate movement.
- Do not perform any operation on mechanical elements or hinges if the product is in motion.

RESPONSABILITY

- Supplier disclaims any liability if:
  - Product failure or deformation result from improper installation use or maintenance!
  - Safety norms are not followed in the installation, use and maintenance of the product.
  - Instructions in this manual are not followed.
  - Damaged is caused by unauthorized modifications
  - In these cases, the warranty is voided.

MOTORLINE ELECTROCELOS SA.
Travessa do Sobreiro, nº29
4755-474 Rio Côvo (Santa Eugénia)
Barcelos, Portugal

SYMBOLS LEGEND:


- Important safety notices


- Potentiometer information


- Useful information


- Connectors information


- Programming information


- Buttons information

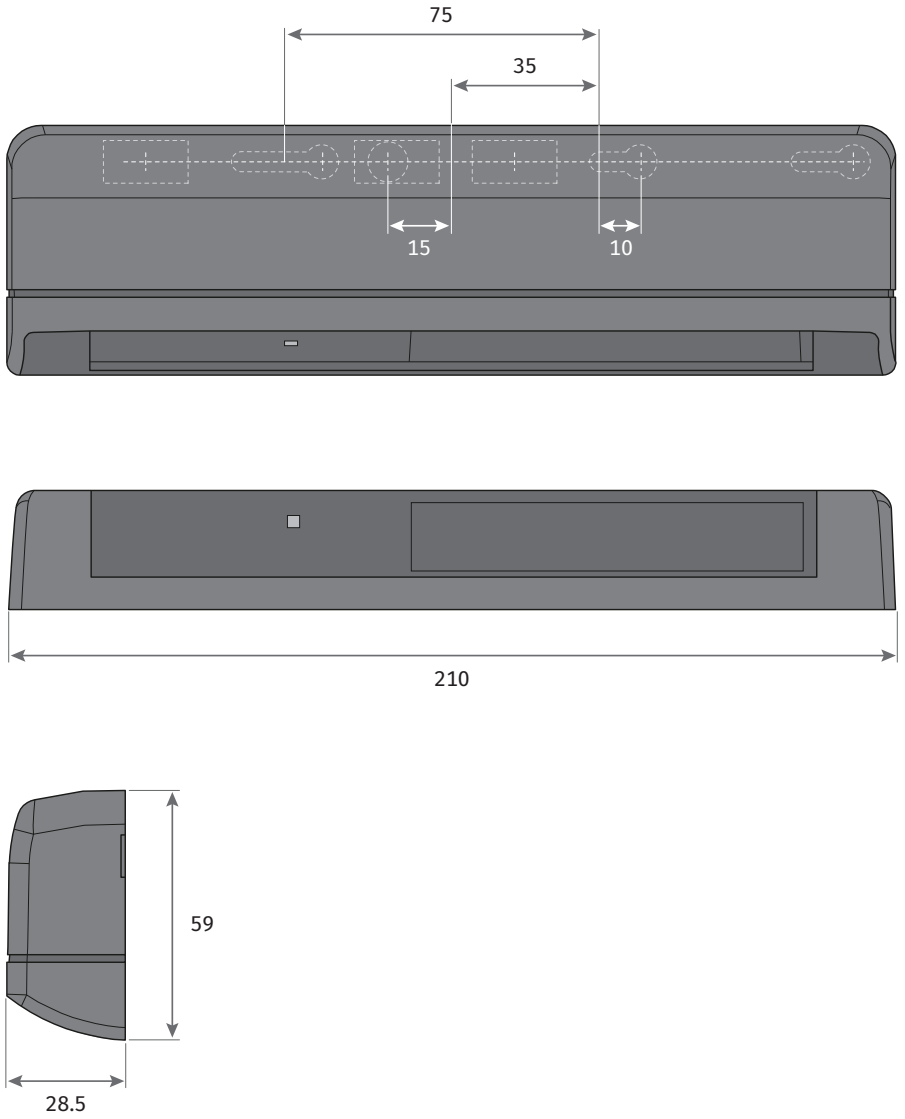
MR30

The **MR30** is an infrared radar with pedestrian safety and a detection area that is easily adjustable with precision to prevent false door openings.

TECHNICAL CHARACTERISTICS

• Power supply	12-24 Vac/dc 50/60Hz	
• Detection method	Active infrared detection	
• Maximum installation height	3 meters	
• Consumption	12Vac: 1.3VA max. 24Vac: 1.5VA max.	12Vdc: 65mA max. 24Vdc: 35mA max.
• Output	Relay contact 50Vdc 0.1A (resistance load) failsafe system	
• Output waiting time	Approximately 0.5 seconds	
• Depth adjustment	Angle: 0° / +5°	
	Line: R1 - R4	
• Width adjustment	Wide / narrow	
• Presence timer	2s / 30s / 60s / ∞	
• Frequency	2 frequencies	
• Monitor Mode	Normal / Snow	
• Self-monitoring	ON/OFF	
• LED indicator	Standby: green LED	
	R4 detection line to detect: blue LED	
	R3 detection line to detect: red LED	
	Detection line R2 to detect: red LED flashing slowly	
	Detection line R1 to detect: red LED flashing fast	
	Door movement detected: orange LED	
	Change in Dipswitches: orange LED flashing fast	
	Internal Sensor error: green and red LED flashing fast	
	Infrared signal reflected from the ground very low: green and red LED	
• Operating temperature	-20°C to +60°C	
• Weight	Approximately 180g	
• Protection level	IP54	

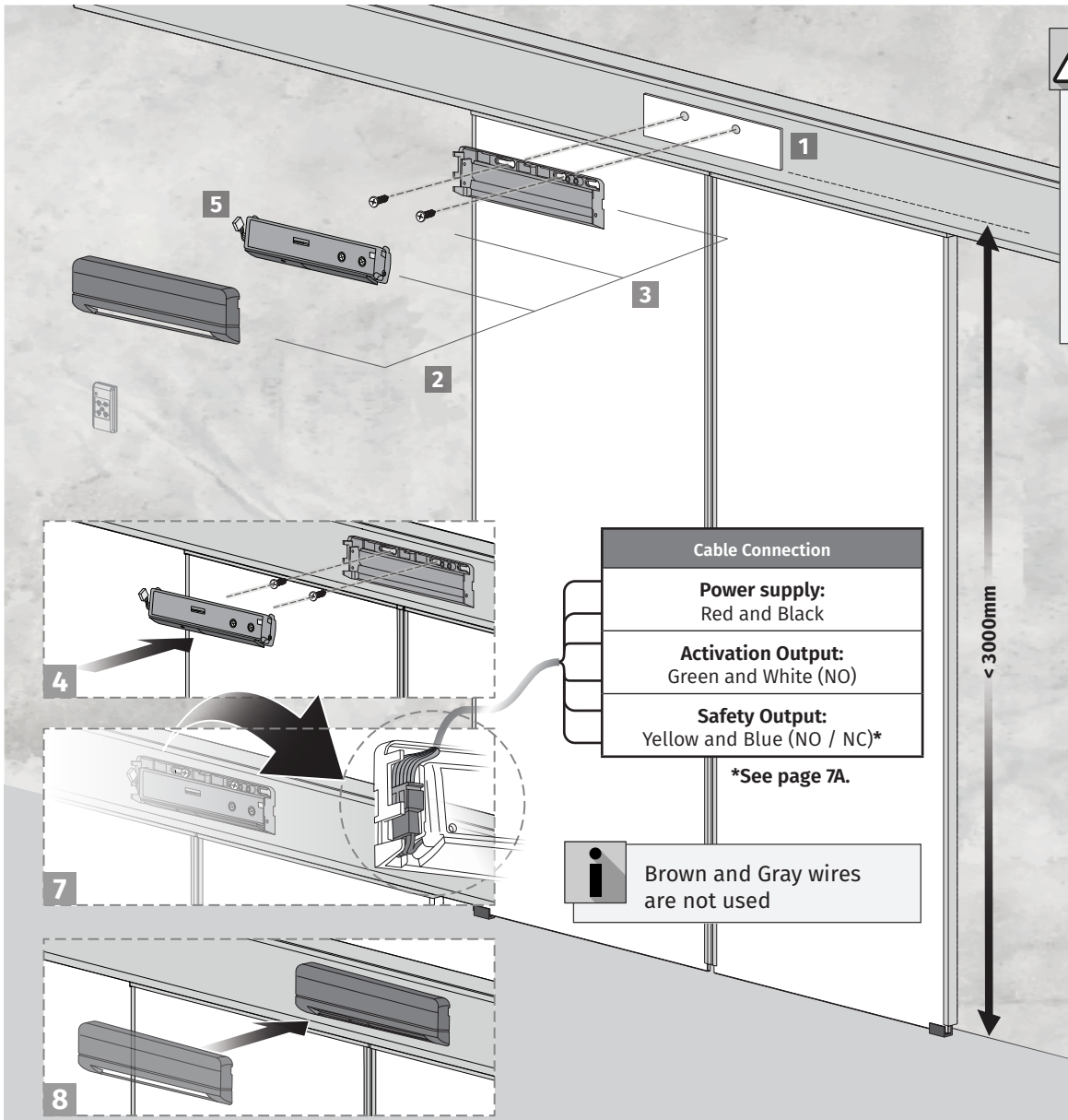
DIMENSIONS



Dimensions in mm

03. INSTALLATION

INSTALLATION AND CONNECTIONS



Cable Connection	
Power supply:	Red and Black
Activation Output:	Green and White (NO)
Safety Output:	Yellow and Blue (NO / NC)*

*See page 7A.

Brown and Gray wires are not used

To ensure that the MR30 works correctly, please observe the following instructions:

- Prevent the installation area from accumulating snow or water on the ground;
- Install in a protected area where rain or snow does not fall directly on the device. If the sensor has to be exposed, install it with a protection;
- Install at a maximum height of three meters;
- Install in a place where there is no vibration;
- At the time of installation, check that there are no moving objects in the detection area;
- Ensure the minimum of sunlight reflected from the floor.

• DRILLING

1 Determine the location for mounting the device and position the mounting template. Drill holes for fixing the device and passing cables.

2 Remove the device cover.

3 Remove the screws and the mounting body from the base.

• FIXING THE RADAR

4 Install the base with the mounting screws and mount the radar body on the base.

• CONECTIONS

5 Connect the cables (see table)

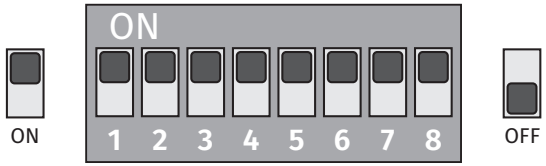
6 Set the following parameters:
•• Set the DIPPER'S in the detection area (page 6A);
•• Set the radar detection pattern (page 7B);
•• Turn on and test the radar (page 7B);
(If necessary, increase the sensitivity on the radar)

7 Fit the connector inside the device.

8 Place the cover on the radar and clean.

04. CONFIGURATION

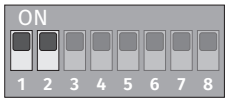
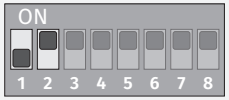
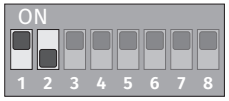
DIP SWITCH SETTINGS



If you change the setting of the dip switch when the power is on, the sensor will be reset in approximately 6 seconds.

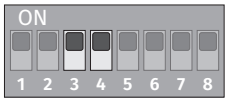
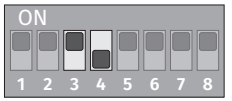
QUANTITY OF DETECTION LINES

The number of detection lines is made using the dip switch [1] and [2].
The number of detection lines can be set to 4, 3, 2, 1, depending on the requirements of the detection area.

Detection lines	Dip switch [1]	Dip switch [2]	Dip switch
1	ON	ON	
2	OFF	ON	
3	ON	OFF	
4 (factory value)	OFF	OFF	

PRESENCE TIMER

The sensor will detect a static object only for the time defined by the Presence Timer.

Time	Dip switch [3]	Dip switch [4]	Dip switch
∞	ON	ON	
60 seconds	OFF	ON	
30 seconds	ON	OFF	
2 seconds (factory value)	OFF	OFF	

FREQUENCY

When more than two sensors are used in close proximity to each other, select a different frequency setting for each sensor to avoid interference.
(Configuration A or B = maximum of 2 radars).

Sensors	Dip switch [5]	Dip switch
A (factory value)	OFF	
B	ON	

04. CONFIGURATION

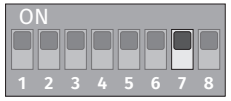
SAFETY OUTPUT

It is possible to define what type of contact the safety output will have.

Safety output	Dip switch [6]	Dip switch
NC contact (factory value)	ON	
NO contact	OFF	

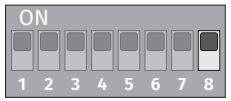
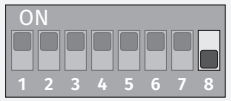
OPERATING MODE

Set to "snow" if there is the possibility of activating the door opening due to the presence of wind with snow, leaves or garbage, close to the door detection area. Note that sensitivity of pedestrian detection can also be reduced.

Mode	Dip switch [7]	Dip switch
Snow	ON	
Normal (factory value)	OFF	

INPUT TEST

In automation with radar test you can use this function to check if the radar is turned on. It is performed automatically whenever the radar is started.

Teste "Input"	Dip switch [8]	Dip switch
On	ON	
Off (factory value)	OFF	

05. PROGRAMMING

TURN ON RADAR

Before turning on the power, connect the door controller to the sensor. If there is a moving object in the detection area after initialization/reset, the sensor will be in motion detection mode. If there is no moving object in the detection area after initialization/reset, the sensor will be in presence detection mode.

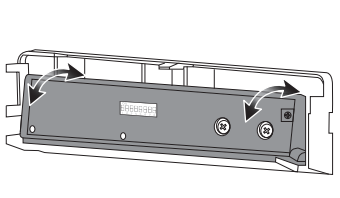
01 • Connect the DOOR CONTROLLER to the sensor. After 2 sec. will activate motion detection.
02 • After 7 seconds, sesnor will detect "moving object" or "no object". If there is no object, the sensor will enter presence mode automatically.
03 • If there is an "object in motion" remove it so that the sensor after 7 seconds enters presence mode and exits motion detection mode.
04 • Place or remove a mat in the detection area.
05 • You can now adjust the body angle, the width of the detection area, and the sensitivity.

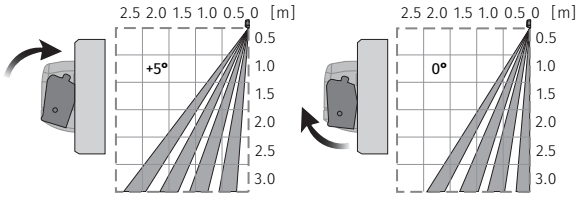
DETECTION AREA ADJUSTMENT

Check that the internal detection line does not detect movement of the door.

1 ANGLE ADJUSTMENT

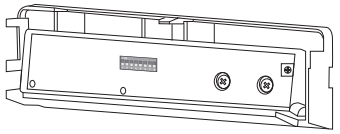
Adjust the detection pattern 0˚ or 5˚ by moving the body angle.

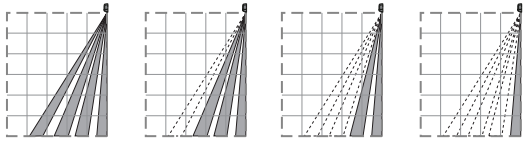




2 DEPTH ADJUSTMENT

By **setting the dip switch** to exclude or add detection lines.



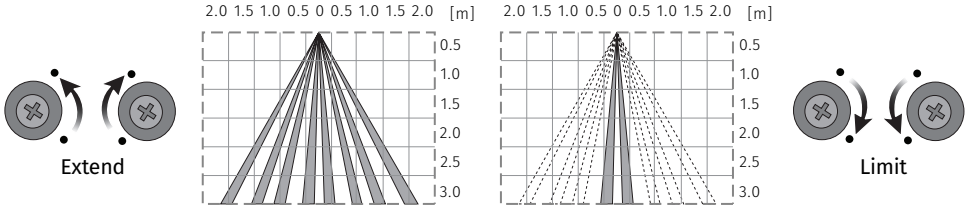


05. PROGRAMMING

DETECTION AREA ADJUSTMENT

3 WIDTH ADJUSTMENT

Adjust the detection width by turning the area tuner with a screwdriver.



The detection range varies according to the installation environment, the detected object and the settings, etc. (clothes and floor materials and sensitivity adjustment).

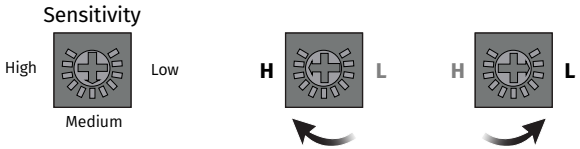
SENSITIVITY ADJUSTMENT

Adjust the appropriate sensitivity for the operation.

01 • Please adjust the sensitivity to your height.
02 • If the sensors do not detect the presence of a person entering the detection area, increase the sensitivity.
03 • If this sensor detects something, even if no one is in the detection area, decrease the sensitivity.

The table below is an estimate.

Height (m)	Estimated sensitivity
2.0 - 2.5	L - M
2.5 - 3.0	M - H



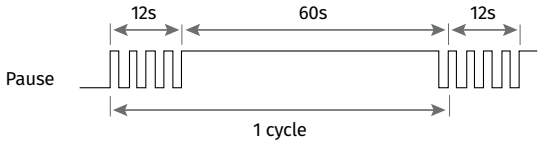
After installation and the various configurations, check that the detection range and sensitivity are suitable for the operation. If it is difficult to detect or false activations occur, readjust the detection range and sensitivity settings.

05. PROGRAMMING

SELF-MONITORING

If self-monitoring determines that the sensor is not functioning properly, the relay output will cause the door to open and the green/red LED to flash. In that case, replace the sensor immediately.

Output wave form (abnormal case)
LED indicator flashes red and green.



06. TROUBLESHOOTING

INSTRUCTIONS FOR FINAL CONSUMERS / SPECIALIZED TECHNICIANS

Anomaly	Cause	Procedure
The door does not work	• The connector is not connected correctly.	• Tighten or reconnect the connector.
	• Incorrect supply voltage.	• Apply the appropriate voltage to the sensor (12-24Vac / dc).
The door operates intermittently	• Dust, frost or water droplets on the sensor lens.	• Clean the detection window and install a weather cover if necessary (chemicals such as thinner or alcohol use are forbidden).
	• Very low sensitivity.	• Increase sensitivity.
	• Inadequate detection area.	• Adjust the detection area.
The door opens and closes for no apparent reason	• The sensor detects the movement of the door.	• Adjust the detection depth away from the door.
	• The assembly is distorted.	• Adjust the sensor assembly.
The door operates alone	• There is a moving object in the detection range.	• Adjust the detection area. Remove the moving object.
	• Detection area too far from the door, detecting people passing away.	• Adjust the detection area.
	• Very high sensitivity.	• Decrease sensitivity.
	• Another sensor is too close.	• Change the frequency for each sensor.
	• The condition of the detection area varies due to dust, dirt, snow or the presence of other elements.	• Change the presence timer settings (decrease value).
		• Adjust the operating mode.
After the solutions presented, if the problem persists, contact us or your reseller.		