

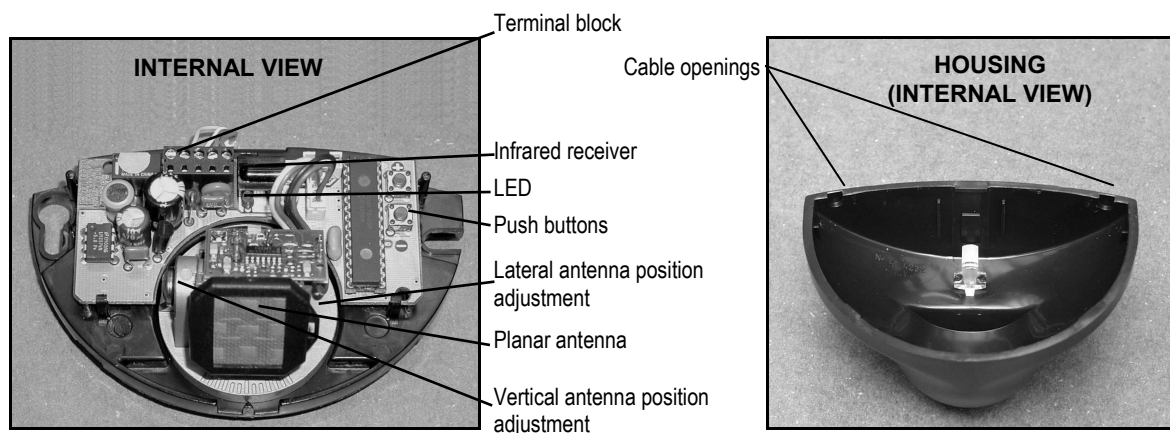
INDOOR UNIDIRECTIONAL MOTION SENSOR FOR QUASI-PRESENCE DETECTION OF PERSONS

TECHNICAL SPECIFICATION

Technology	: microwave and microprocessor	Hold time	: 0.5 s to 9 s (adjustable)
Transmitter frequency	: 24.175 GHz	Temperature range	: -20°C to +55°C
Transmitter radiated power	: < 20 dBm EIRP	Application	: indoor use only
Transmitter power density	: < 5 mW/cm ²	Degree of protection	: IP54
Mounting height		Norms and conformity	: EMC 2004/108/EC
• Standard	: from 1.8 m to 3 m	Dimensions	: 120 mm (W) x 80 mm (H) x 50 mm (D)
• High	: from 3 m to 4 m *	Weight	: 0.215 kg
Tilt angles	: 0° to 90° vertical -30° to + 30° lateral	Material	: ABS
Detection area (mounting height = 2.2m)	: 1.5m (W) x 2m (D)	Color of housing	: anthracite gray, aluminum finish or white
Detection mode	: motion, quasi-presence detection of persons	Length of cable	: 2.5 m
Minimum speed	: 2 cm/s (measured in the sensor axis)	Manual adjustment	
Supply voltage	: 12V to 24V AC ±10% 12V to 24V DC +30% / -10%	• Sensitivity (by push buttons)	
Mains frequency	: 50 to 60 Hz	• Orientation of sensing field (mechanically)	
Power consumption	: < 2W (VA)	Remote control adjustments	
Output relay (free of potential change-over contact)		• Sensitivity	: 10 levels
• Max. contact voltage	: 42V AC - 60V DC	• Hold time	: from 0.5s to 9s in 10 levels
• Max. contact current	: 1A (resistive)	• X-MTF Sensitivity	: 9 levels
• Max. switching power	: 30W (DC) / 60VA (AC)	• Detection mode	: uni-/bidirectional, MTF, reverse mode
		• Immunity	: low immunity, normal, increased immunity
		• Mounting height	: standard, high
		• Output configuration	: active/passive
		• Door control	: automatic, permanently open/closed
		• Security	: 1-4 digit access code

* only in appropriate areas

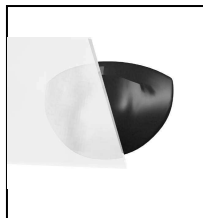
DESCRIPTION OF THE SENSOR



INSTALLATION TIPS



The sensor must be firmly fastened to prevent from vibrating.



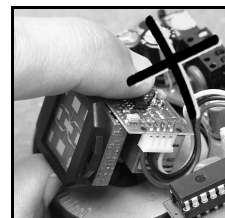
The sensor must not be placed directly behind a panel or any kind of material.



The sensor must not have any object likely to move or vibrate in its sensing field.

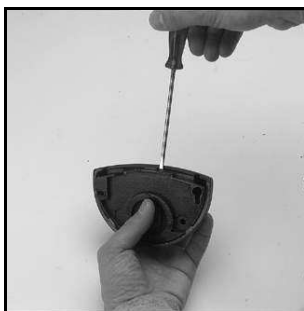


The sensor must not have any fluorescent lighting in its sensing field.



To avoid damage by electrostatic discharges, do not touch any electronic part of the sensor.

OPENING THE SENSOR

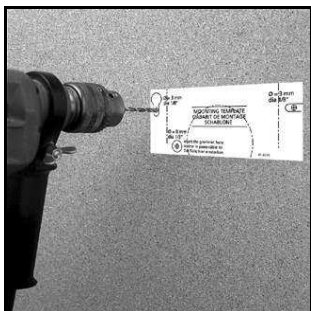


From behind, before installation

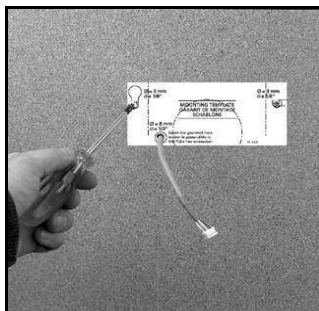


From the front, after installation

PREPARATION FOR MOUNTING THE SENSOR



- Paste the template.
- Drill as instructed.

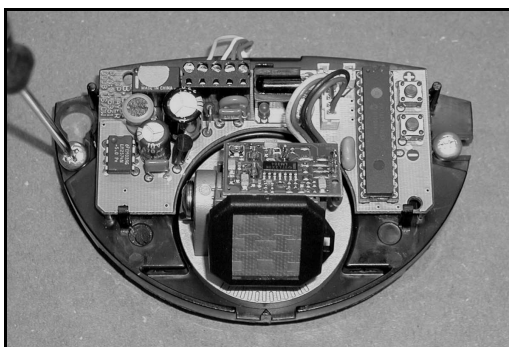


- Insert screws, but do not screw them fully home.
- Run the cable through the hole.

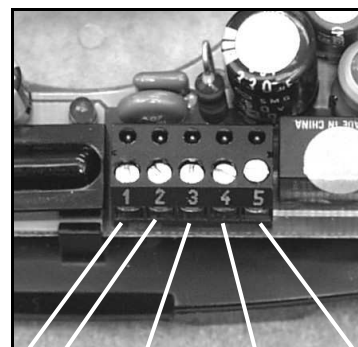


- Cut one of the cable openings for the wire.

WIRING AND MOUNTING THE SENSOR

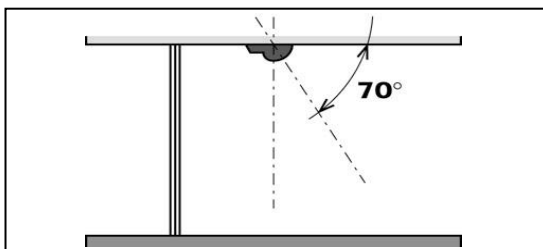


Position the sensor and tighten the two screws. Leave wires long enough to reach the terminal block.

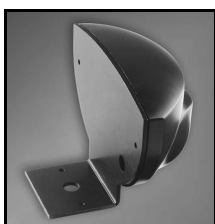


12-24V AC/DC COM NO NC

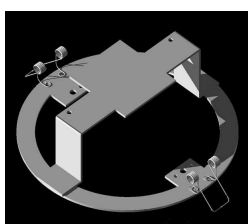
OTHER MOUNTING OPTIONS



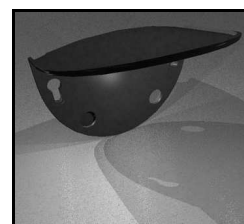
This device may be fixed on the ceiling, as long as the spherical part of the sensor is facing in the direction opposite the door, and as long as an angular position of around 70° is chosen for the antenna.



For the mounting on the upper part of the door operator profile, use the **EBA** support.



For a mounting into the ceiling, use the **ECA** embedding support.



For a better water tightness, use the **ERA** protection cap.

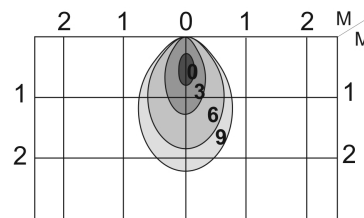
Note: All the sensing fields correspond to the following adjustments:

- Bidirectional mode (detection mode: 1)
- X-MTF deactivated
- Hold time: 0.5 s

A. DIMENSIONS OF THE SENSING FIELD (WIDTH, DEPTH, UNCOVERED ZONE) ARE DETERMINED BY THE SENSITIVITY SETTING (0 to 9)

The sensing fields correspond to the following adjustments:

- Vertical angle of antenna: 30°
- Mounting height: 2.2 m

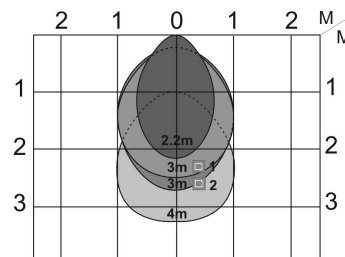


B. DIMENSIONS OF THE SENSING FIELD (WIDTH, DEPTH, UNCOVERED ZONE) ARE DETERMINED BY THE MOUNTING HEIGHT

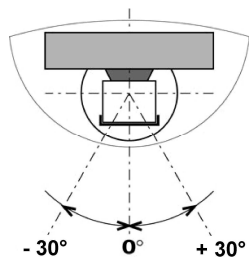
The sensing fields correspond to the following adjustments:

- Vertical angle of antenna: 30°
- Sensitivity: 9

For a mounting height from 3 m, set the sensor in "high mounting" mode (only in appropriate areas).

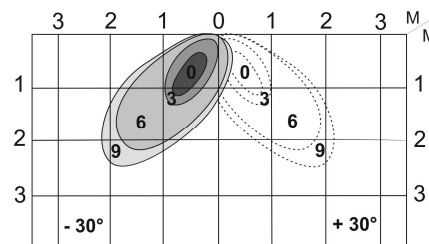


C. POSITION OF THE SENSING FIELD IS DETERMINED BY THE LATERAL ANGLE OF THE PLANAR ANTENNA



The sensing fields correspond to the following adjustments:

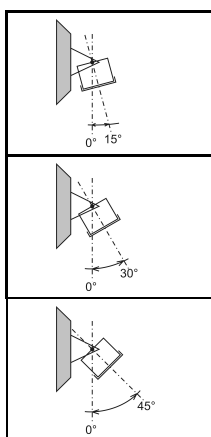
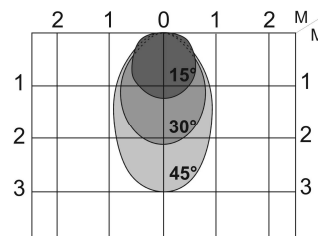
- Lateral angle of antenna: 30°, -30°
- Mounting height: 2.2 m



D. POSITION OF THE SENSING FIELD IS DETERMINED BY THE VERTICAL ANGLE OF THE ANTENNA

The sensing fields correspond to the following adjustments:

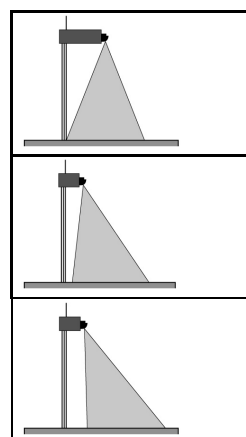
- Mounting height: 2.2 m
- Sensitivity: 9



To obtain a sensing field as close to the door as possible, set the antenna at its minimum tilt angle (0° to 15°).

To obtain a sensing field close to the door, set the antenna at a tilt angle of 30°.

To obtain a sensing field distant from the door, set the antenna at a tilt angle of 45°.



Example of deep-field operator application.

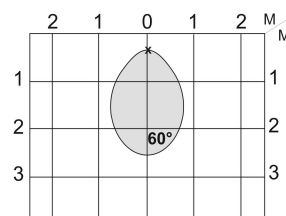
Example of standard operator application.

Example of standard operator application (with uncovered zone).

FOR A CEILING MOUNTING:

The sensing fields correspond to the following adjustments:

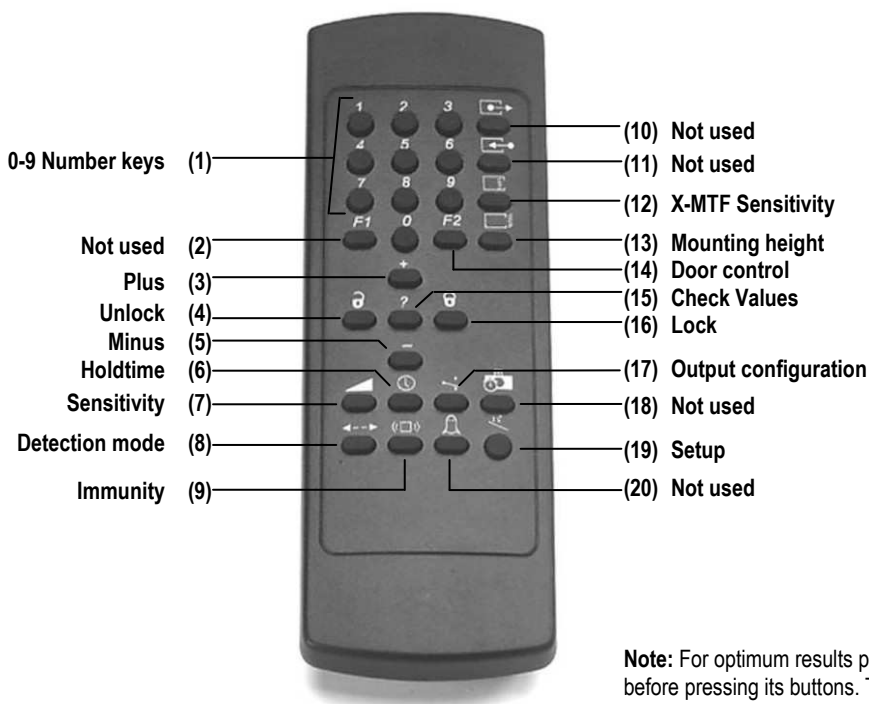
- Mounting height: 2.2 m
- Sensitivity: 9



1. INSERTION OF BATTERIES



- Open the battery compartment at the back of the remote control;
- Insert two AAA batteries supplied with the remote control as shown on the left;
- Close the battery compartment.



Note: For optimum results point the remote control to the sensor before pressing its buttons. The sensor can be adjusted with or without its cover from a distance up to 5m.

2. CONFIGURATION OF THE SENSOR

Every adjustment session using the infrared remote control must start with unlocking and end with a double locking.

The table below lists the parameters able to be adjusted by remote control and the operations required in order to adjust these parameters.

PARAMETERS	OPERATIONS	LED SIGNAL
UNLOCK 	Press the UNLOCK key (4). Enter your access code using 0-9 NUMBER keys (1). The access code can be composed of 1 to 4 digits (factory values or no access code: 0 or 0000). During the first sensor adjustment or if the access code is reset to the "0000" value (factory setting) or during the first minute after the power-on, press only the UNLOCK key (4) (no access code required). <i>UNLOCK with access code of 4 digits</i>  <i>UNLOCK with access code of less than 4 digits</i>  <i>UNLOCK without access code</i> 	The red LED flashes quickly waiting for the access code. After entering the correct access code or if no access code is required, the red LED flashes slowly to indicate that the unlock was successful and the adjustment session has begun. Note.:  = Adjustment session ON
LOCK 	When all the parameters have been set, press the LOCK key (16). If you wish to enter a new access code, use 0-9 NUMBER keys (1) to enter the new 4-digit access code within 1 minute. If no access code is entered or if you want to keep the current access code, press the LOCK key (16) once more. If no remote control key is pressed within 1 minute, the adjustment session is automatically locked. <i>LOCK with access code change</i>  <i>LOCK without access code or access code change</i> 	The red LED stops flashing and returns to its normal function.

Note:  All parameters or functions listed in the following tables are only accessible if the sensor is in adjustment session. The red LED flashes slowly.

During an adjustment session each parameter may be checked or changed at any time in the following way :

PARAMETERS	OPERATIONS
CHECK VALUES 	Press the key corresponding to the parameter to be checked and then press the CHECK VALUES key (15). The number of times the LED flashes corresponds to the value of the checked parameter. No LED flash corresponds to the value 0. Repeat this operation to check the value of the other parameters if required. Example: SENSITIVITY key (7) – 7 flashes of the LED: the radar sensitivity is set at the value 7. CHECK VALUES :   
PLUS 	Press the key corresponding to the sensitivity (7) or holdtime (6) parameter to be modified and then press the PLUS key (3) to increase the value by 1 unit. PLUS :   
MINUS 	Press the key corresponding to the sensitivity (7) or holdtime (6) parameter to be modified and then press the MINUS key (5) to reduce the value by 1 unit. MINUS :   

Note about LED signal: The red LED flashes quickly waiting for the value. Once this has been entered, it flashes slowly again.

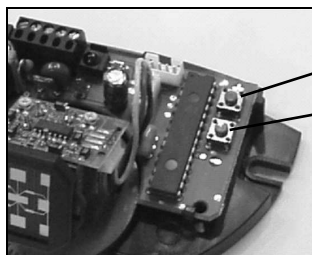
PARAMETERS	OPERATIONS	DEFINITIONS - ADVICES									
SENSITIVITY 	Press the SENSITIVITY key (7). Use the NUMBER keys 0-9 (1) to enter the required sensitivity (or adjust this parameter using the PLUS (3) or MINUS (5) keys as explained above) SENSITIVITY :   	To increase the sensitivity means to increase the sensor capabilities to detect small useful signals. Practically, to increase the sensitivity leads to increase the dimensions of the sensing field.									
HOLD TIME 	Press the HOLD TIME key (6). Use the NUMBER keys 0-9 (1) to enter the required hold time (0.5 s to 9 s) (or adjust this parameter using the PLUS (3) or MINUS (5) keys as explained above). HOLD TIME :   	The hold time allows extended output activation time after a motion detection has stopped. It is recommended to use this parameter instead of the operator's one with the same function (interferences with the sensor). In X-MTF mode, the hold time defines the minimum required time during which no motion has to be "seen" by the sensor to release the detection.									
X-MTF SENSITIVITY 	Press the X-MTF SENSITIVITY key (12). Use the NUMBER keys 0-9 (1) to enter the required sensitivity. 0 = X-MTF OFF X-MTF SENSITIVITY :   	The sensor switches to X-MTF mode after a motion detection occurs (if X-MTF-Sensitivity is set to a value higher than 0). The sensor remains in X-MTF mode as long as a motion (even very small movements) is 'seen' by the sensor in any direction. Increasing this parameter increases the ability of the sensor to detect very small useful signals. Note: a higher X-MTF sensitivity increases the detection zone!									
DETECTION MODE 	Press the DETECTION MODE key (8). Use the NUMBER keys 1-5 (1) to select the required mode : Key 1 : Bidirectional mode Key 2 : Unidirectional mode Key 3 : Unidirectional mode with MTF-function Key 4 : Unidirectional mode reverse Key 5 : Unidirectional mode reverse with MTF- function DETECTION MODE :   	With the bidirectional mode , the approaching and departing target is detected. With the unidirectional mode , only the approaching target is detected. With the unidirectional mode reverse , only the departing target is detected. Using the MTF (Motion Tracking Feature) enables the sensor to automatically switch from the unidirectional mode to bidirectional mode as soon as a target is detected. This function is recommended for applications with elderly people or anyone approaching the door hesitantly.									
IMMUNITY 	Press the IMMUNITY key (9). Use the NUMBER keys 1-9 (1) to select the required mode: Key 1 : Low immunity Key 2 : Normal Key 3 : Increased immunity IMMUNITY :   	To increase the immunity means to strengthen the resistance to external disturbances such as rain, vibrations , etc.									
MOUNTING HEIGHT 	Press the MOUNTING HEIGHT key (13), Use the NUMBER keys 1-2 (1) to select the required mounting height : Key 1 : Standard mounting height Key 2 : High mounting height MOUNTING HEIGHT:   	The sensor presents an increased sensitivity scale in high mounting mode . This setting is recommended when the detection on the field limits is erratic. Attention: the high mounting mode can only be used in appropriate areas.									
OUTPUT CONFIGURATION 	Press the OUTPUT CONFIGURATION key (17). Use the NUMBER keys 1-2 (1) to select the required output configuration : Key 1 : Active mode Key 2 : Passive mode OUTPUT CONFIGURATION:   	<table border="1"> <thead> <tr> <th></th><th>Active</th><th>Passive</th></tr> </thead> <tbody> <tr> <td>Detection</td><td>COM (3)  NO (4) NC (5)</td><td>COM (3)  NO (4) NC (5)</td></tr> <tr> <td>No Detection</td><td>COM (3)  NO (4) NC (5)</td><td>COM (3)  NO (4) NC (5)</td></tr> </tbody> </table>		Active	Passive	Detection	COM (3)  NO (4) NC (5)	COM (3)  NO (4) NC (5)	No Detection	COM (3)  NO (4) NC (5)	COM (3)  NO (4) NC (5)
	Active	Passive									
Detection	COM (3)  NO (4) NC (5)	COM (3)  NO (4) NC (5)									
No Detection	COM (3)  NO (4) NC (5)	COM (3)  NO (4) NC (5)									
DOOR CONTROL 	Press the DOOR CONTROL key (14), Use the NUMBER keys 1-3 (1) to select the required door control: Key 1 : Automatic mode Key 2 : Door permanently open Key 3 : Door permanently closed DOOR CONTROL:   	In "door permanently open" mode, the sensor is continuously detecting. The red LED is continuously ON. In "door permanently closed" mode, the sensor is in standby. It detects nothing anymore and the LED is continuously OFF.									

During an adjustment session all parameters may be reset to their factory values in the following way :

PARAMETERS	OPERATIONS																														
FACTORY VALUES 	Press the SETUP key (19), then press the NUMBER key 9. All the parameters (except the access code) are reset to the factory values. FACTORY VALUES :  <table><tr><th colspan="3">Factory Values Table</th></tr><tr><th>Parameter</th><th>Values</th><th>Factory setting</th></tr><tr><td>Sensitivity</td><td>0 - 9</td><td>7</td></tr><tr><td>Hold time</td><td>0 - 9</td><td>0</td></tr><tr><td>X-MTF Sensitivity</td><td>0 - 9</td><td>0</td></tr><tr><td>Detection mode</td><td>1 - 5</td><td>2</td></tr><tr><td>Immunity</td><td>1 - 3</td><td>2</td></tr><tr><td>Mounting height</td><td>1 - 2</td><td>1</td></tr><tr><td>Output configuration</td><td>1 - 2</td><td>1</td></tr><tr><td>Door control</td><td>1 - 3</td><td>1</td></tr></table>	Factory Values Table			Parameter	Values	Factory setting	Sensitivity	0 - 9	7	Hold time	0 - 9	0	X-MTF Sensitivity	0 - 9	0	Detection mode	1 - 5	2	Immunity	1 - 3	2	Mounting height	1 - 2	1	Output configuration	1 - 2	1	Door control	1 - 3	1
Factory Values Table																															
Parameter	Values	Factory setting																													
Sensitivity	0 - 9	7																													
Hold time	0 - 9	0																													
X-MTF Sensitivity	0 - 9	0																													
Detection mode	1 - 5	2																													
Immunity	1 - 3	2																													
Mounting height	1 - 2	1																													
Output configuration	1 - 2	1																													
Door control	1 - 3	1																													

SENSITIVITY CONFIGURATION WITH PUSH BUTTONS

If you do not have a remote control, you can only adjust the sensitivity parameter, by means of the push buttons + and - .



+ : press to increase the sensitivity by one unit

- : press to decrease the sensitivity by one unit

The factory default values (except the factory value of the access code) may be restored by pressing the two push buttons together for at least two seconds.

LED SIGNAL



The LED flashes for a few seconds after the power-on, and flashes during the configuration with the remote control.

The LED lights up when the sensor detects motion.

TROUBLE-SHOOTING

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
The door will not open and no red LED lights up.	The sensor power is off.	Check the wiring and the power supply.
	The door control is set to level 3.	Set door control to automatic mode (level 1).
The door opens and closes constantly.	The sensor "sees" the door moving. When closing the door creates vibrations picked up by the sensor.	Increase the tilt angle and/or reduce the sensitivity and/or increase the immunity. Ensure that the sensor is correctly fixed. Switch to unidirectional mode. Increase the immunity. Reduce the sensitivity.
The door will not close. Red LED OFF	On-Off switch at door control in wrong position or is faulty Improper output configuration on the sensor.	Check to insure On-Off switch for door is in the ON or AUTOMATIC position. Check the output configuration setting on each sensor connected to the door operator.
The X-MTF mode is not functioning correctly.		Cut and restore power supply. Step out of the detection field and wait for about ten seconds. The sensor has to take a new reference.
The sensor stays in detection permanently when X-MTF is activated.	The sensor detects motion in the detection zone. Note: When X-MTF mode is activated the detection zone is slightly bigger.	Check whether there are moving objects in the detection zone or decrease the X-MTF sensitivity and increase the hold time.

**TROUBLE-
SHOOTING**

The sensor will not unlock when access code is entered.

Improper access code being entered.

Cut and restore power supply. No access code is required to unlock during the first minute after powering. Press on "unlock", then on "lock" and introduce a new access code.

The sensor does not respond to the remote control.

Batteries in the remote control are weak or installed improperly.

Check the batteries insertion.
Change the batteries.

Remote control badly pointed.

Point the remote control towards the sensor.



The declaration of conformity and other technical documentation are available on our website or can be requested by phone or mail.