

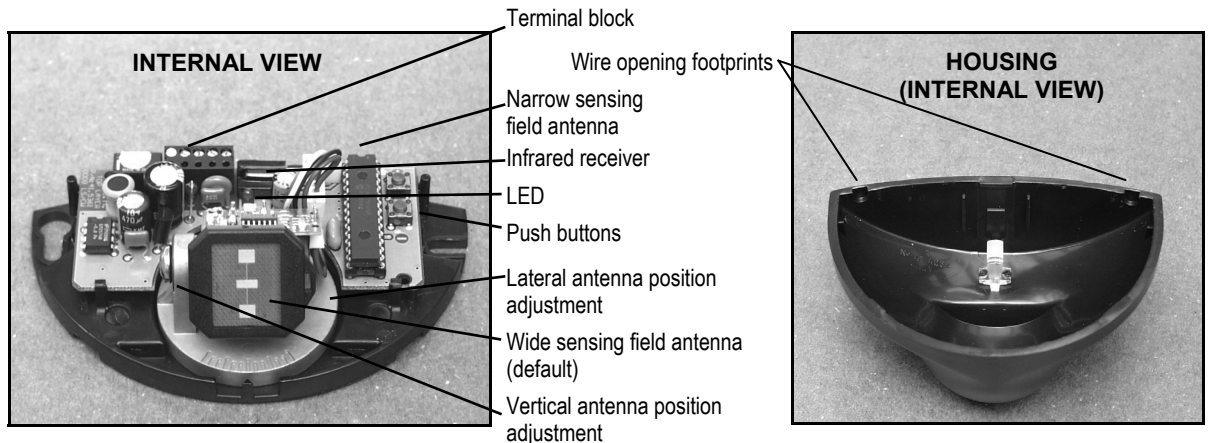
**UNIVERSAL MOTION SENSORS FOR AUTOMATIC DOORS**

**EAGLE ONE** : unidirectional sensor • **EAGLE TWO** : bidirectional sensor

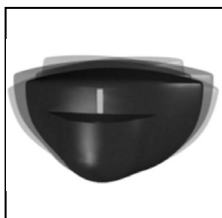
**TECHNICAL SPECIFICATION**

<p><b>Technology</b> : microwave and microprocessor</p> <p><b>Transmitter frequency</b> : 24.175 GHz</p> <p><b>Transmitter radiated power</b> : &lt;20 dBm EIRP</p> <p><b>Transmitter power density</b> : &lt; 5 mW/cm<sup>2</sup></p> <p><b>Mounting height</b></p> <ul style="list-style-type: none"> <li>• Standard : from 1.8 m to 3 m</li> <li>• High : from 3 m to 4 m</li> </ul> <p><b>Tilt angles</b> : 0° to 90° vertical -30° to + 30° lateral</p> <p><b>Detection area</b> (mounting height = 2.2 m)</p> <ul style="list-style-type: none"> <li>• Wide sensing field : 4m (W) x 2m (D)</li> <li>• Narrow sensing field : 2m (W) x 2.5m (D)</li> </ul> <p><b>Detection mode</b> : motion</p> <p><b>Minimum speed</b> : 5 cm/s (measured in the sensor axis)</p> <p><b>Supply voltage</b> : 12V to 24V AC ±10% 12V to 24V DC +30% / -10%</p> <p><b>Mains frequency</b> : 50 to 60 Hz</p> <p><b>Power consumption</b> : &lt; 2W (VA)</p> <p><b>Output relay</b> (free of potential change-over contact)</p> <ul style="list-style-type: none"> <li>• Max. contact voltage : 42V AC - 60V DC</li> <li>• Max. contact current : 1A (resistive)</li> <li>• Max. switching power : 30W (DC) / 60VA (AC)</li> </ul>	<p><b>Hold time</b> : 0.5s to 9s (adjustable)</p> <p><b>Temperature range</b> : -20°C to +55°C</p> <p><b>Degree of protection</b> : IP54</p> <p><b>Norm conformity</b> : R&amp;TTE 1999/5/EC; EMC 89/336/EEC</p> <p><b>Dimensions</b> : 120 mm (W) x 80 mm (H) x 50 mm (D)</p> <p><b>Weight</b> : 0.215 kg</p> <p><b>Material</b> : ABS</p> <p><b>Color of housing</b> : anthracite gray, aluminum finish or white</p> <p><b>Length of cable</b> : 2.5m</p> <p><b>Manual adjustment</b></p> <ul style="list-style-type: none"> <li>• Sensitivity (by push buttons)</li> <li>• Orientation of sensing field (mechanically)</li> <li>• Shape of the sensing field (by choice of antenna)</li> </ul> <p><b>Remote control adjustments</b></p> <ul style="list-style-type: none"> <li>• Sensitivity : 10 levels</li> <li>• Hold time : from 0.5s to 9s in 10 levels</li> <li>• Detection mode : uni-/bidirectional, MTF, reverse mode (Eagle ONE only)</li> <li>• Immunity : quasi-presence, normal, increased immunity, additional increased immunities</li> <li>• Mounting height : standard, high</li> <li>• Output configuration : active/passive</li> <li>• Door control : automatic, permanently open/closed</li> <li>• Security : 1-4 digit access code</li> </ul>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

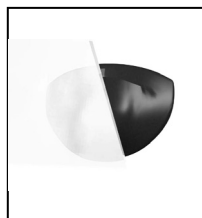
**DESCRIPTION OF THE SENSOR**



**INSTALLATION TIPS**



The sensor must be firmly fastened to prevent from vibrating.



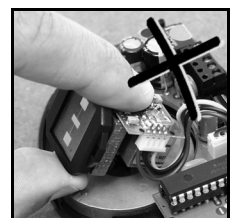
The sensor must not be placed directly behind a panel or any kind of material.



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

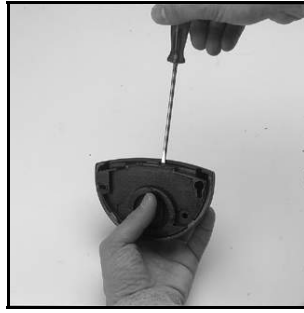


The sensor must not have any fluorescent lighting in its sensing field.

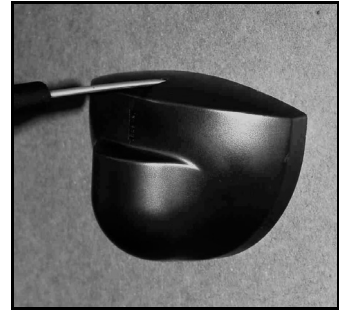


To avoid damage by electrostatic discharges, do not touch any electronic part of the sensor.

## OPENING THE SENSOR

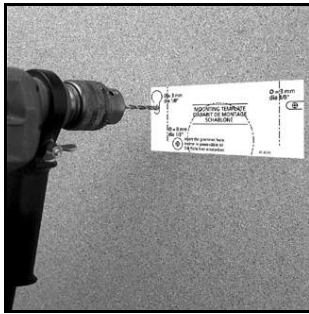


From behind, before installation

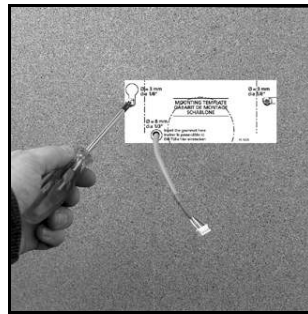


From the front, after installation

## PREPARATION FOR MOUNTING THE SENSOR



- Paste the template
- Drill as instructed

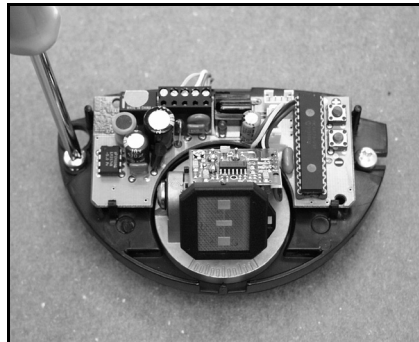


- Insert screws but do not screw them fully home.
- Pass the cable where it is supposed to go through.

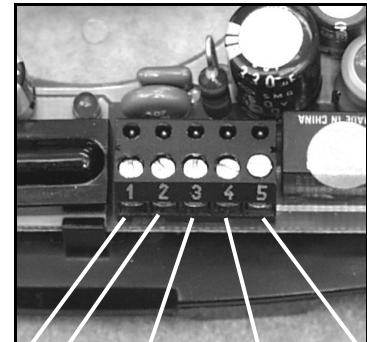


- Cut one of the footprint for the wire.

## WIRING AND MOUNTING THE SENSOR



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



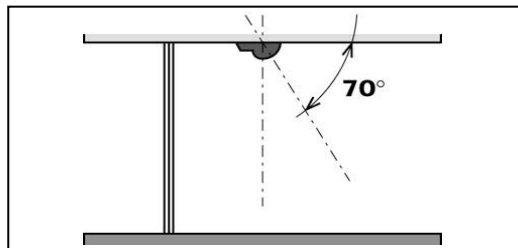
12-24V  
AC/DC

COM

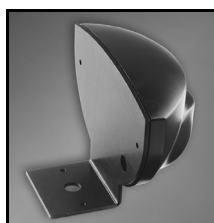
NO

NC

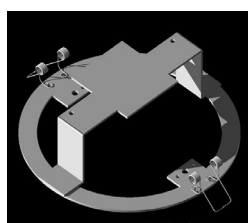
## OTHER MOUNTING OPTIONS



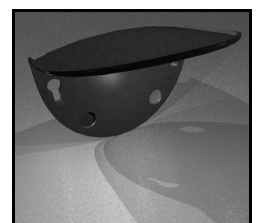
This device may be fixed on the ceiling, as long as the spherical part of the sensor is facing in the direction opposite the door, and as long as an angular position of around 70° is chosen for the antenna.



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

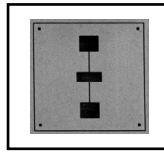


For a mounting into the ceiling, use the **ECA** embedding support.

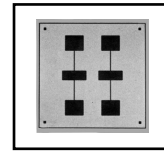


For a better water tightness, use the **ERA** protection cap.

**A. WIDTH OF THE SENSING FIELD DEPENDS ON THE CHOICE OF THE PLANAR ANTENNA**



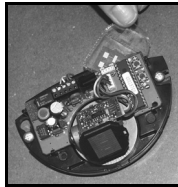
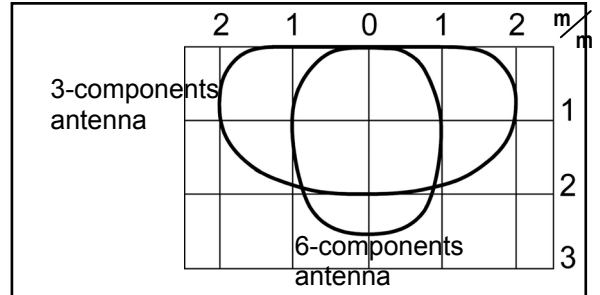
To obtain a wide sensing field, use the 3-components antenna



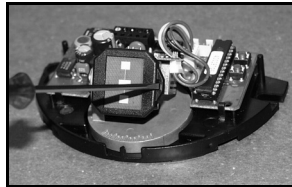
To obtain a narrow sensing field, use the 6-components antenna

The sensing fields (in meter) here on the right correspond to the following adjustments:

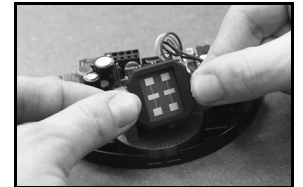
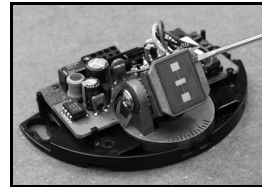
- Vertical angle of antenna : 30° ;
- Sensitivity : 9 ;
- Bidirectional mode ;
- Mounting height : 2.2m.



Remove the narrow sensing field antenna from its location.



Carefully remove the clamp of the antenna and the wide sensing field antenna.

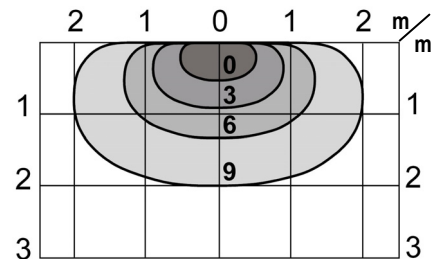


Put the new antenna on its header and fix it with the clamp.

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

The sensing fields here on the right correspond to the following adjustments :

- Wide sensing field antenna ;
- Vertical angle of antenna : 30° ;
- Bidirectional mode ;
- Mounting height : 2.2m.

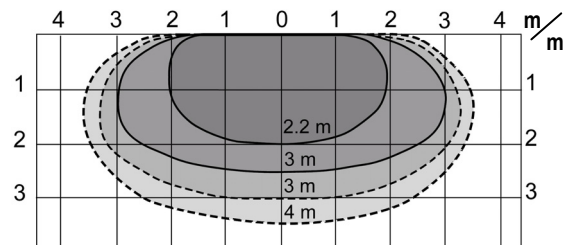


**C. DIMENSIONS OF THE SENSING FIELD (WIDTH, DEPTH, DEAD ZONE) ARE DETERMINED BY THE MOUNTING HEIGHT**

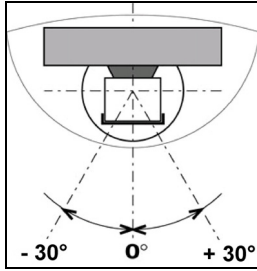
The sensing fields here on the right correspond to the following adjustments :

- Wide sensing field antenna ;
- Vertical angle of antenna : 30° ;
- Bidirectional mode ;
- Sensitivity : 9

Note : For a mounting height from 3m, it is recommended to set the sensor in the "high mounting" mode.

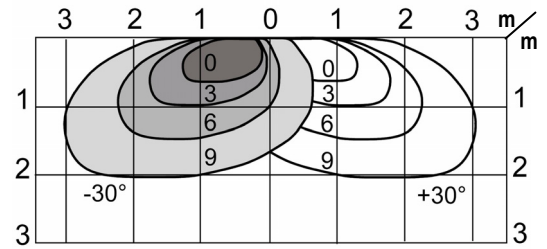


**D. POSITION OF THE SENSING FIELD IS DETERMINED BY THE LATERAL ANGLE OF THE PLANAR ANTENNA**



The sensing fields here on the right correspond to the following adjustments :

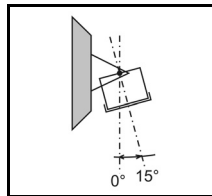
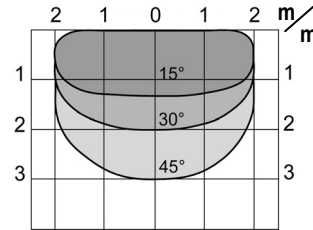
- Wide sensing field antenna;
- Bidirectional mode ;
- Lateral angle of the antenna :  $30^\circ, -30^\circ$
- Mounting height : 2.2m.



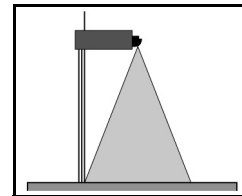
**E. POSITION OF THE SENSING FIELD IS DETERMINED BY THE VERTICAL ANGLE OF THE ANTENNA**

The sensing fields here on the right correspond to the following adjustments :

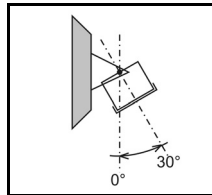
- Wide sensing field antenna;
- Sensitivity : 9 ;
- Bidirectional mode ;
- Mounting height : 2.2m.



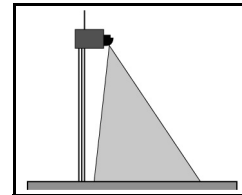
To obtain a sensing field as close to the door as possible, set the antenna at its minimum tilt angle ( $0^\circ$  to  $15^\circ$ ).



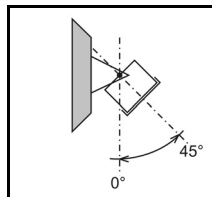
Example of deep-field operator application.



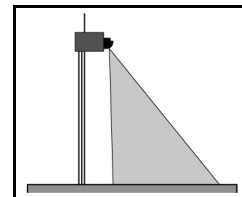
To obtain a sensing field close to the door, set the antenna at a tilt angle of  $30^\circ$ .



Example of standard operator application.



To obtain a sensing field distant from the door, set the antenna at a tilt angle of  $45^\circ$ .

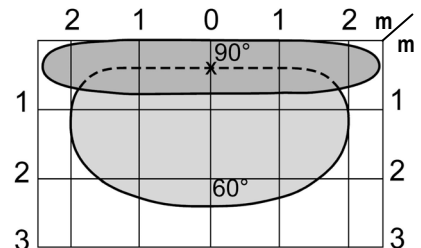


Example of standard operator application (with dead zone)

**FOR A CEILING MOUNTING :**

The sensing fields here on the right correspond to the following adjustments :

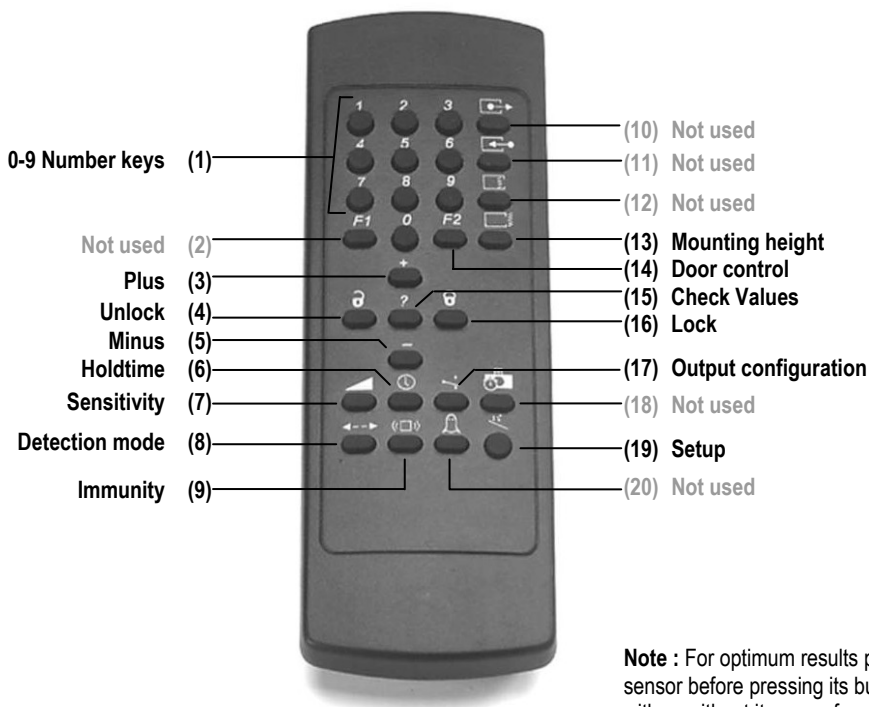
- Wide sensing field antenna ;
- Sensitivity : 9 ;
- Bidirectional mode ;
- Mounting height : 2.2m.



**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 beside ;
- 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.

























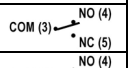
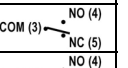
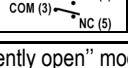
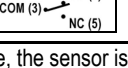
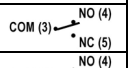
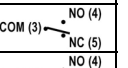
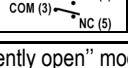
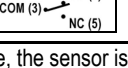
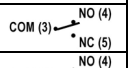
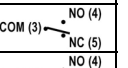
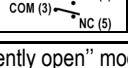
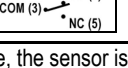




PARAMETERS	OPERATIONS	LED SIGNAL
<b>UNLOCK</b> 	<p>Press the <b>UNLOCK</b> key (4).                      Enter your access code using <b>0-9 NUMBER</b> keys (1). The access code can be composed of 1 to 4 digits (factory values or no access code: 0 or 0000).</p> <p>During the first sensor adjustment or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

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

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

PARAMETERS	OPERATIONS
<b>CHECK VALUES</b> 	Press the key corresponding to the parameter to be checked and then press the <b>CHECK VALUES</b> key (15). Count the number of times the LED flashes, which 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: <b>SENSITIVITY</b> key (7) – 7 flashes of the LED: the radar sensitivity is set at the value 7.  <i>CHECK VALUES :</i>   
<b>PLUS</b> 	Press the key corresponding to the sensitivity (7) or holdtime (6) parameter to be modified and then press the <b>PLUS</b> key (3) to increase the value by 1 unit.  <i>PLUS :</i>   
<b>MINUS</b> 	Press the key corresponding to the sensitivity (7) or holdtime (6) parameter to be modified and then press the <b>MINUS</b> key (5) to reduce the value by 1 unit.  <i>MINUS :</i>   

**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									
<b>SENSITIVITY</b> 	Press the <b>SENSITIVITY</b> key (7). Use the <b>NUMBER</b> keys <b>0-9</b> (1) to enter the sensitivity required (or adjust this parameter using the <b>PLUS</b> (3) or <b>MINUS</b> (5) keys as explained above)  <i>SENSITIVITY :</i>   	To increase the <b>sensitivity</b> 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.									
<b>HOLD TIME</b> 	Press the <b>HOLD TIME</b> key (6). Use the <b>NUMBER</b> keys <b>0-9</b> (1) to enter the required hold time (0.5 s to 9 s) (or adjust this parameter using the <b>PLUS</b> (3) or <b>MINUS</b> (5) keys as explained above).  <i>HOLD TIME :</i>   	The <b>hold time</b> 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)									
<b>DETECTION MODE</b>  <b>EAGLE ONE only!</b>	Press the <b>DETECTION MODE</b> key (8). Use the <b>NUMBER</b> keys <b>1-5</b> (1) to select the required mode : <b>Key 1 :</b> Bidirectional mode <b>Key 2 :</b> Unidirectional mode <b>Key 3 :</b> Unidirectional mode with MTF-function <b>Key 4 :</b> Unidirectional mode reverse <b>Key 5 :</b> Unidirectional mode reverse with MTF- function  <i>DETECTION MODE :</i>   	With the <b>bidirectional mode</b> , the approaching and departing target is detected. With the <b>unidirectional mode</b> , only the <b>approaching</b> target is detected. With the <b>unidirectional mode reverse</b> , only the <b>departing</b> target is detected.  Using the <b>MTF (Motion Tracking Feature)</b> 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.									
<b>IMMUNITY</b> 	Press the <b>IMMUNITY</b> key (9). Use the <b>NUMBER</b> keys <b>1-9</b> (1) to select the required mode: <b>Key 1 :</b> Detection of quasi-presence <b>Key 2 :</b> Normal <b>Key 3 :</b> Increased immunity <b>Key 4-9 :</b> Additional increased immunities 4: lowest level 9: highest level  <i>IMMUNITY :</i>   	To <b>increase the immunity</b> means to strengthen the resistance to external disturbances such as <b>rain, vibrations, etc.</b>  The <b>additional increased immunity</b> modes (4-9) reduce disturbances in highly reflective environments ( <b>airlocks, curved and round sliding doors, metallic environments etc.</b> ).									
<b>MOUNTING HEIGHT</b> 	Press the <b>MOUNTING HEIGHT</b> key (13). Use the <b>NUMBER</b> keys <b>1-2</b> (1) to select the required mounting height : <b>Key 1 :</b> Standard mounting height (1.8m to 3m) <b>Key 2 :</b> High mounting height (3 to 4m)  <i>MOUNTING HEIGHT:</i>   	The sensor presents an increased sensitivity scale in high mounting mode. This setting should be used for <b>mounting heights between 3m and 4m</b> or is recommended when the detection on the field limits is erratic.									
<b>OUTPUT CONFIGURATION</b> 	Press the <b>OUTPUT CONFIGURATION</b> key (17). Use the <b>NUMBER</b> keys <b>1-2</b> (1) to select the required output configuration : <b>Key 1 :</b> Active mode <b>Key 2 :</b> Passive mode  <i>OUTPUT CONFIGURATION:</i>   	<table border="1"> <thead> <tr> <th></th> <th>Active</th> <th>Passive</th> </tr> </thead> <tbody> <tr> <td><b>Detection</b></td> <td>  </td> <td>  </td> </tr> <tr> <td><b>No Detection</b></td> <td>  </td> <td>  </td> </tr> </tbody> </table>		Active	Passive	<b>Detection</b>			<b>No Detection</b>		
	Active	Passive									
<b>Detection</b>											
<b>No Detection</b>											
<b>DOOR CONTROL</b> 	Press the <b>DOOR CONTROL</b> key (14). Use the <b>NUMBER</b> keys <b>1-3</b> (1) to select the required door control: <b>Key 1 :</b> Automatic mode <b>Key 2 :</b> Door permanently open <b>Key 3 :</b> Door permanently closed  <i>DOOR CONTROL:</i>   	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.



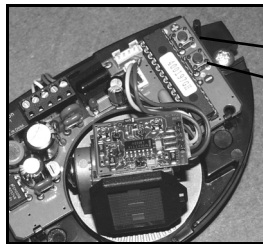
FACTORY VALUES :



Factory Values Table		
Parameter	Values	Factory setting
Sensitivity	0 - 9	7
Hold time	0 - 9	0
Detection mode	1 - 5	2 (EAGLE ONE) - 1 (EAGLE TWO)
Immunity	1 - 9	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.	Increase the tilt angle and/or reduce the sensitivity and/or increase the immunity.
	When closing the door creates vibrations picked up by the sensor.	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.
It rains and the sensor detects for no apparent reason.	The sensor detects the motion of the rain drops.	Use the ERA accessory. Switch to unidirectional mode (without MTF) and increase the immunity.
In airlock vestibules, the sensor sees the opposite door.		Increase immunity.
In airlock vestibules, the sensor sees the movement of the door leaves, despite of an increased immunity.		Make sure that the antenna for the narrow sensing field is used.
In metallic environments, the sensor detects objects outside its detection field.		Increase immunity.



**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.  Remote control badly pointed.	Check the batteries insertion. Change the batteries.  Point the remote control towards the sensor.