



# WIZARD SLIDING DOOR SENSING SYSTEM INSTRUCTION MANUAL

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
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# TABLE OF CONTENTS


<b>QUICK SET-UP GUIDE</b> .....	<b>3</b>
<b>INTRODUCTION</b> .....	<b>4</b>
DESCRIPTION OF THE WIZARD.....	4
WIZARD TECHNICAL SPECIFICATIONS.....	4
<b>INSTALLATION</b> .....	<b>5</b>
REMOVING THE COVER FROM THE UNIT .....	5
MOUNTING THE UNIT.....	5
WIRING THE WIZARD .....	7
<b>SET-UP</b> .....	<b>7</b>
UNIVERSAL REMOTE CONTROL .....	7
CHANGING THE ACCESS CODE FOR THE WIZARD.....	7
UNIVERSAL REMOTE CONTROL PROGRAMMING GUIDE .....	8
MANUAL PROGRAMMING GUIDE.....	9
SET-UP OF THE MOTION SENSOR.....	10
SET-UP OF THE PRESENCE SENSOR .....	11
<b>TROUBLESHOOTING</b> .....	<b>12</b>

# QUICK SET-UP GUIDE

This set-up guide is designed to give the installer a brief overview of the installation procedures for the sensor. Only installers that are familiar with the sensor should use it. Any installer that is unfamiliar with the sensor should read the entire manual before attempting to install the unit.

- 1) When mounting the Wizard, use the template included in the package. Then position the sensor at the bottom edge of the header in the center of the door opening.
- 2) Wire the Wizard using the wiring harness as shown on page 7.
- 3) Connect the harness to the unit to apply power. Make sure the door is in automatic mode.  
**NOTE:** if more than one Wizard is used on an application, set-up and perform adjustments to one sensor at a time.
- 4) Once power is applied, the sensor's LED will flash green/red. The door will cycle open and closed typically one time.
- 5) The LED will continue to flash once the door is closed.
- 6) The LED will stop flashing and the door will **operate properly if the Presence or Motion patterns do not detect the door**. If the door cycles more than once in step 4, it means that **either the Presence or Motion patterns detect the door**.
- 7) Perform a set-up launch using the remote by pressing Magic Wand  0. (see page 8)
- 8) The sensor will start flashing green/red. The door will again cycle open and close typically one time.
- 9) Watch the LED very closely this time when the sensor completes the set-up. It will do one of the following:

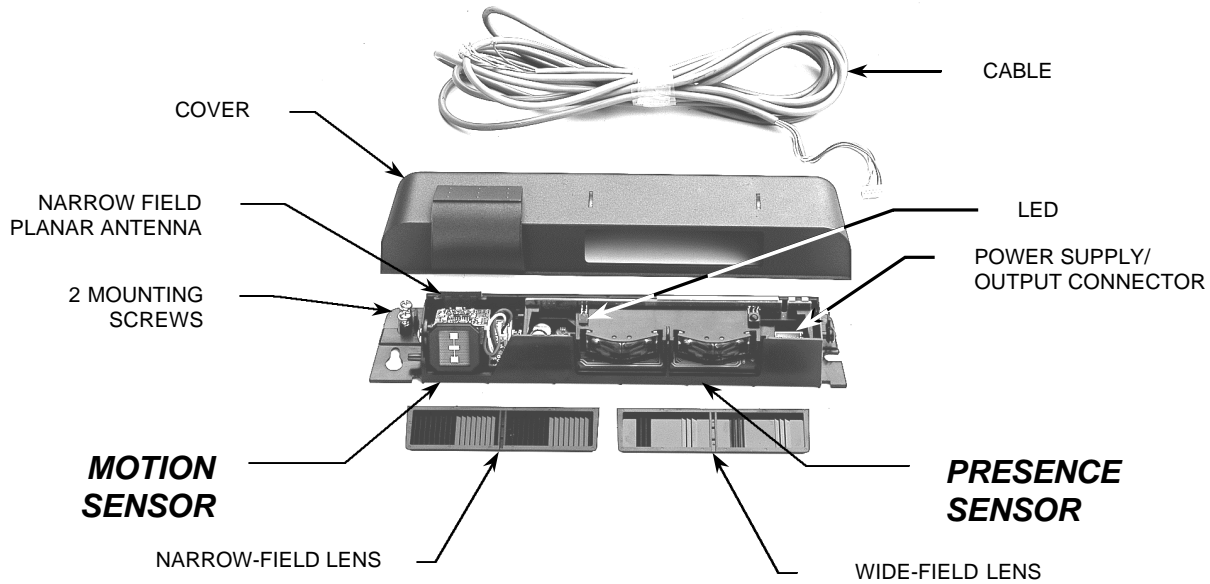
	LED Response	Condition
1	No LED	Successful set-up
2	Red LED continuous for approx. 2 seconds	Successful set-up
3	Red LED flashing for approx. 3 seconds	Successful set-up (Infrared curtain has learned the signature of the door influence)
4	Red LED flashing for approx. 10 seconds	Unsuccessful set-up, <b>IR sees door</b>
5	Green LED flashing for approx. 10 seconds	Unsuccessful set-up, <b>Motion sees door</b>

- 10) If there is an **unsuccessful set-up**, adjust the corresponding (IR or Motion) pattern away from the door as follows:
  - a) **Motion sees door**—tilt radar antenna up 1-2 clicks.
  - b) **Infrared sees door**—Locate IR pattern using the Spotfinder. (Green indication on the Spotfinder indicates no IR detection. Orange indicates minimal IR detection. Red indicates strong IR detection.)
    - i) Place the Spotfinder on the ground near the center of the door opening. Locate the IR pattern by moving the Spotfinder back and forth towards the face of the door to ensure the closest IR spot is located. The sensitivity on the Spotfinder may need to be adjusted to better define the pattern.
    - ii) Once the IR pattern is located, move the Spotfinder IR receiver to within approximately 2 inches from the door. Adjust the screw on the optical block of the infrared sensor (see page 11) counterclockwise while watching the indicator on the Spotfinder. The indicator should change from solid red to orange. Stop adjusting once the indicator turns orange.
- 11) Launch another set-up with the remote control by pressing Magic Wand  0.
- 12) The LED will flash green/red. The door will cycle open and close.
- 13) Watch the LED at the end of the set-up and check for the above LED response. Make adjustments as needed.
- 14) Once there is a successful set-up, check the sensor patterns, ranges, etc. per ANSI standards. To check the IR pattern, refer to step 10b.
- 15) If there is more than one Wizard, remove the power connector from the first sensor and proceed to the sensor on the opposite side of the door.

## INTRODUCTION

The Wizard sensor combines K-band microwave and focused active infrared technology to provide superior activation and safety for your sliding door. For activation, the unit provides digital processing and sophisticated motion tracking technology for unidirectional sensing when energy conservation is critical. For safety, the unit emits 2 rows of 24 beams of focused presence technology that provides extraordinary safety which remains active even while the door is closing.

## DESCRIPTION OF THE WIZARD



## WIZARD TECHNICAL SPECIFICATIONS

GENERAL SPECIFICATIONS	
<b>Working Voltage</b>	12V-5% to 24V +10% AC/DC (for optimal performance, use an isolated 24 V AC transformer)
<b>Output</b>	Max. Voltage at contacts: 60V DC / 125V AC Max. current at contacts: 1 A (Resistor) Max. power supply: 30 W (DC), 120V (AC)
<b>Radiated Power</b>	< 16.25 ft W/cm <sup>2</sup>
<b>Power consumption</b>	< 3W
<b>Mounting Height</b>	
• <b>Regular</b>	5.9ft to 8.2ft
• <b>High</b>	8.2ft to 11.5ft
<b>Operating Temperature</b>	-30°F to +131°F
<b>Immunity</b>	Immune to electrical and radio frequency interference
<b>Cable</b>	6 ft of six-conductor Belden cable
<b>Weight</b>	.55lb (250g)
<b>Dimensions</b>	10.4"L (263 mm.) x 2.2"H (55 mm.) x 1.9"D (47 mm.)
<b>Lens Material</b>	PMMA plastic
<b>Housing Material</b>	PMMA plastic that can be painted with non-metallic paint

	MOTION SENSOR	PRESENCE SENSOR
<b>Technology</b>	K-band microwave with microprocessor	Focused active infrared with microprocessor
<b>Frequency emitted</b>	24.125 GHz	None
<b>Mounting angle</b>	15° to 48° (adjustable)	+4° to -4° (adjustable)
<b>Manual Adjustment</b>	Wide or narrow field antenna	Wide or narrow field lens
<b>Detection Area at Standard Mounting Height (7'-2")</b>	<b>Wide Field:</b> 13ft wide x 6.5ft deep <b>Narrow Field:</b> 6.5ft wide x 8.2ft deep	<b>Wide Field:</b> 6.5 ft wide x 10" deep <b>Narrow Field:</b> 3.3ft wide x 10" deep
<b>Bicolor LED</b>	Green: motion detection	Red: presence detection
<b>Relay Hold Time</b>	0.5 to 9 seconds (adjustable)	1 second (fixed)

## INSTALLATION

### REMOVING THE COVER FROM THE UNIT



**Prior to mounting**, on the back, insert screwdriver into screw hole and pry off cover.

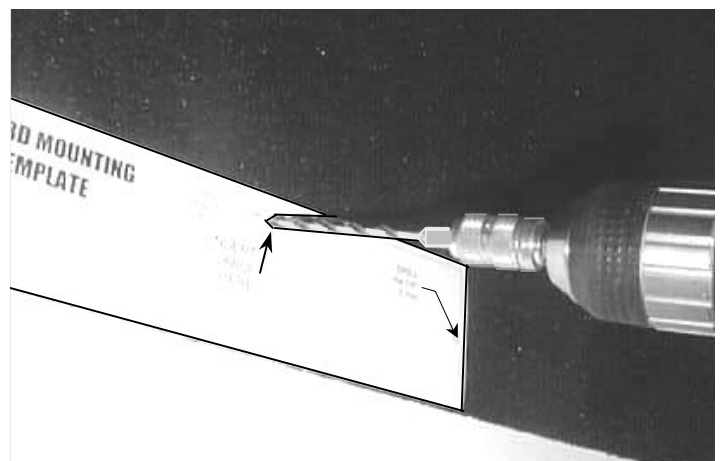
**After mounting**, insert the tip of a standard screwdriver underneath the edge of the cover and pry off carefully.

### MOUNTING THE UNIT

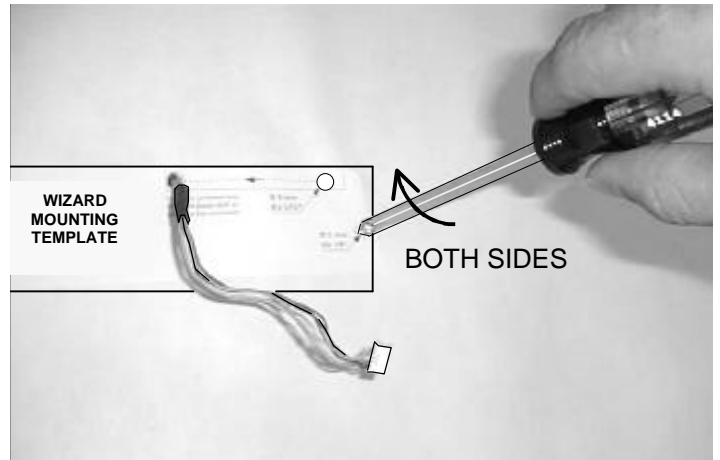
#### **Recommendations for installation:**

- The unit is to be mounted as close to the bottom of the header as possible (so that the sensor does not “see” the header.)
- Position the unit in the center of the door opening.
- The Wizard must be securely attached to the door to ensure that the unit does not vibrate.
- The Wizard must not be positioned behind a panel or any other object.
- Ensure that there are no objects placed in the sensing field that may move or vibrate.
- Make sure that there is no source of fluorescent lighting in the sensing field.
- Avoid placing highly reflective objects (mirrors, glass, stainless steel articles, etc.) in the sensing field.

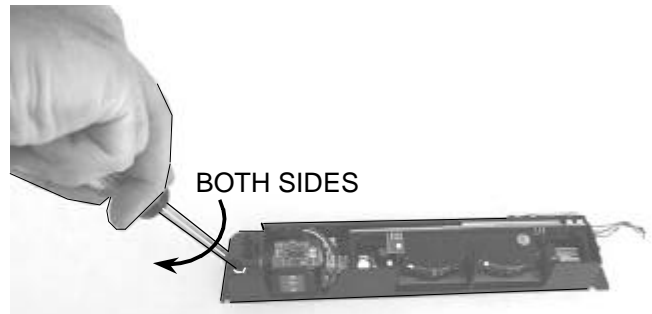
- 1. Attach the mounting template to the bottom lip of the door header and drill holes for the wire-way and 2 mounting screws as shown.**



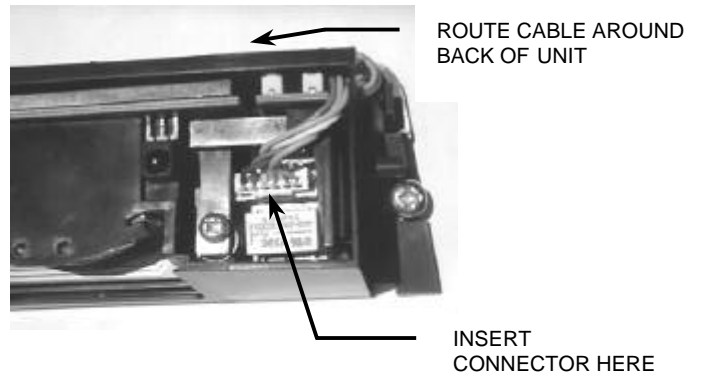
2. Insert the mounting screws half way.
3. Pass the cable through the cable port into the header.



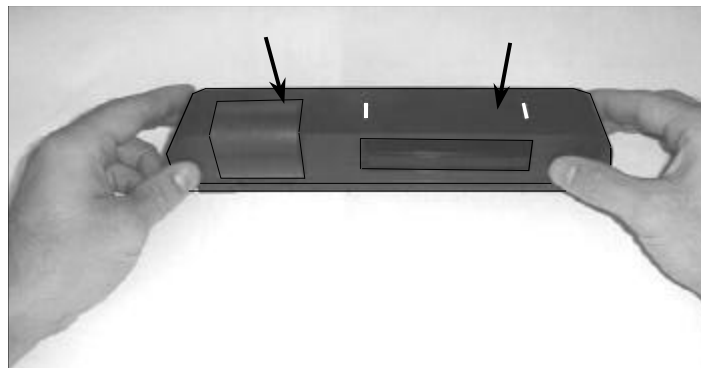
4. Position the sensor onto the screws then tighten the two mounting screws to secure the unit.



5. Route the cable around the unit and then connect the cable to the unit.



6. Attach the cover to the unit.



## WIRING THE WIZARD


Connect the cable to the door as follows:

**BLACK** – POWER AC OR DC  
**RED** – POWER AC OR DC  
**GREEN** – RELAY OUTPUT  
**WHITE** – RELAY OUTPUT  
**BROWN** – TRANSISTOR OUTPUT } NOT USED AT  
**BLUE** – TRANSISTOR OUTPUT } THIS TIME

## SET-UP

The Wizard is delivered from the factory with settings that will be acceptable for most installations. If the application requires customized settings, the Wizard's parameters may be changed using either B.E.A. Inc.'s Universal Remote Control (see below) or by making manual adjustments (see page 8).

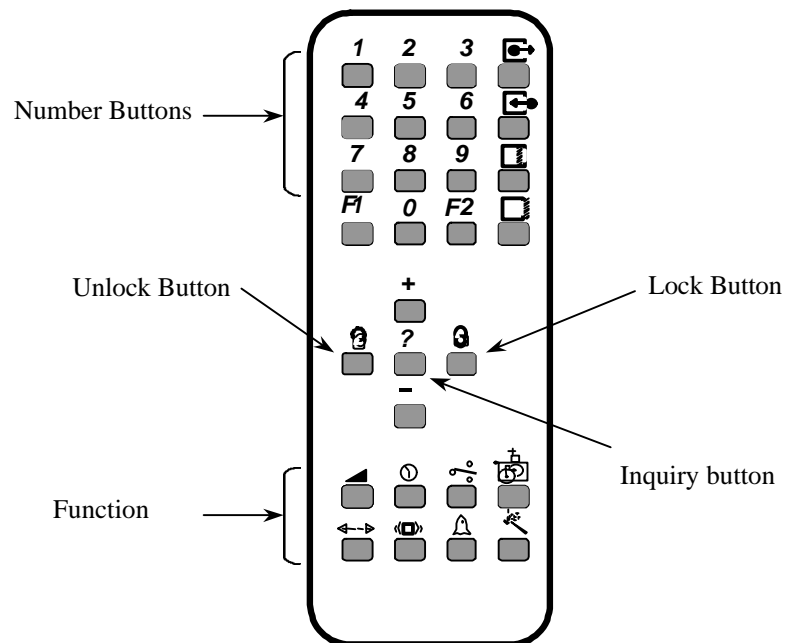
## UNIVERSAL REMOTE CONTROL

The universal remote control allows the installer to make a wide range of adjustments\* to the unit while standing comfortably outside of the unit's pattern. To use the Universal Remote Control, first unlock the unit by pressing the unlock button . Make changes by using a two-button system. First press the function button to be changed, then the numerical value desired for that function. After all changes have been made, save the new settings by pushing the lock button twice

 For a detailed description of the settings, see page 9.



**\* If the factory default settings are appropriate for the door application, no adjustments have to be made. Only change the parameters that are necessary for the particular application.**

### B.E.A.'S UNIVERSAL REMOTE CONTROL










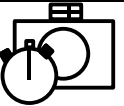

## CHANGING THE ACCESS CODE FOR THE WIZARD

To change the access code from the factory default setting of 0000, you must complete the following:

1. Choose a 4-digit code beginning with the number one (1) that will be convenient to remember.
2. After making the necessary changes to the sensor, press the  button once, then enter the 4-digit code.
3. Each time the sensor's settings are changed, press the  followed by the 4-digit code.

4. To reset the access code to the factory default setting (0000), hold down the two manual set-up buttons (see page 9) simultaneously for two seconds.

UNIVERSAL REMOTE CONTROL PROGRAMMING GUIDE

FUNCTION BUTTON	ACTION Description	RANGE OF SETTINGS		FACTORY SETTING	
?	<b>INQUIRY</b> Press this button after pressing a function button. Count the number of times the LED flashes. This indicates to the setting of the parameter in question.			No setting	
	<b>LOCK/ UNLOCK</b> Press the unlock button before and the lock button after making any changes to the set-up of the unit.			Locked	
	<b>SET-UP</b> Press this button followed by a number button (0-2) to launch the desired set-up.	0 = Infrared – Learn Background <b>1 = Microwave at Normal Mounting Height</b> 2 = Microwave at High Mounting Height		1	
	<b>SENSITIVITY (MOTION)</b> Press this key followed by a number button (0-9) for the desired motion detection sensitivity.	0 = minimum sensitivity 9 = maximum sensitivity		7	
	<b>RELAY HOLD TIME (MOTION)</b> Press this key followed by the number button (0-9) to enter a desired hold time.	0 = <b>0.5 seconds</b> 1 = 1 seconds 2 = 2 seconds 3 = 3 seconds 4 = 4 seconds	5 = 5 seconds 6 = 6 seconds 7 = 7 seconds 8 = 8 seconds 9 = 9 seconds	0	
	<b>DETECTION MODE (MOTION)</b> Press this key followed by a number button (1 – 3) to select an appropriate detection mode.	1 = Bidirectional mode 2 = Unidirectional mode <b>3 = Unidirectional mode with Motion Tracking Feature (MTF)</b>		3	
	<b>RELAY CONFIGURATION (MOTION)</b> Press this key followed by a number button (1-4) to select a relay output configuration.	<b>KEY</b> 1 2 3 4	<b>RELAY</b> Active* Passive Passive Active	<b>TRANSISTOR</b> Passive* Active Passive Active	1
	<b>IMMUNITY (MOTION)</b> Press this button followed by a number button (1–3) to set the desired immunity level.	1 = Extreme sensitivity <b>2 = Normal sensitivity</b> 3 = Decreased sensitivity		2	
	<b>AUTO LEARN TIME (SAFETY)</b> Press this key followed by a number button (1-9) to select a desired auto-learn time.	0 = <b>30 seconds</b> 1 = 1 minute 2 = 2 minute 3 = 5 minutes	4 = 10 minutes 5 = 15 minutes 6 = 20 minutes	0	
	<b>INFRARED SENSITIVITY (SAFETY)</b> Press this key followed by a number button (1–2) for the appropriate background.	1 = Low Sensitivity (High gloss background) <b>2 = Normal Sensitivity</b>		2	

\* **Passive Output:** This means that the NO-COM circuit is closed and the NC-COM circuit is open.

\*\* **Active Output:** This means that the NC-COM circuit is closed and the NO-COM circuit is open.

## MANUAL PROGRAMMING GUIDE

Without a Universal Remote Control from B.E.A., Inc., the Wizard may be set-up using manual push buttons (see diagram below) located on the right side behind the presence sensor PCB.

### MANUAL SET-UP

To begin, briefly press the right button and move away from the sensing patterns.

**WIRING CHECK** - verify the wiring and of the inoperative condition of the relay.

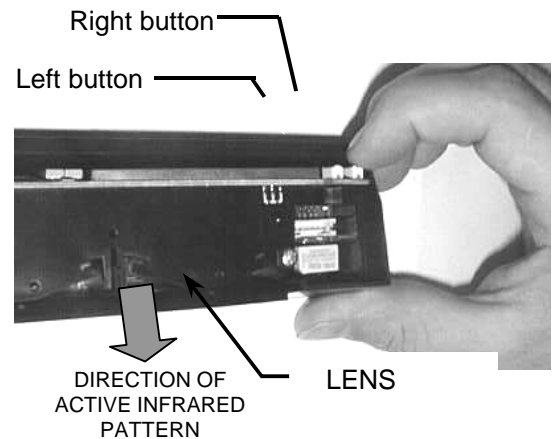
- Position yourself in the sensing field (the door opens)
- Hold the left button down (the door should close if the wiring is correct)
- Release the left button (the door should open again)

**TO RESET THE UNIT** to factory defaults including the access code.

- Press and hold both buttons simultaneously until both red and green LED lights flash alternately

**TO CUSTOMIZE SETTINGS FROM FACTORY DEFAULTS**

- To enter the customizing mode: Press the right button until the LED light flashes and then release
- To return to standard mode: Press the right button again until the LED light stops flashing and then release



### CUSTOMIZING MODE

- The red LED light indicates the number for the parameter being altered  $\Rightarrow$  1 flash = parameter #1
- The green LED light indicates the value for the parameter being altered  $\Rightarrow$  1 flash means value = 1
- The right button enables selection of the parameter number being altered  $\Rightarrow$  +1 for each press
- The left button enables alteration of the parameter  $\Rightarrow$  +1 for each press

PARAMETER NUMBER (altered by the right button and confirmed by green LED)	PARAMETER	VALUES (altered by the left button and confirmed by red LED)	DEFAULT VALUE
1	Radar Sensitivity	0-9	7
2	Relay hold time	0-9	0
3	Output configuration	1-4	4
4	Max. duration presence sensing	0-6	0
5	Radar mode	1-3	3
6	Radar immunity	1-3	2
7	Sensitivity of presence sensing	1-2	2
8	Radar mounting height	1-2	1
9	Presence sensing output	1-2	1

**EXAMPLE:** Change radar sensitivity from 7 to 9 and set hold time to 4 seconds:

1. Press the right button for 2 settings, you will enter the customizing mode
  - The green LED flashes once (parameter 1)
  - The red LED flashes 7 times (sensitivity = 7)
  - Press the left button twice to move from sensitivity = 7 to sensitivity = 9
2. Press the right button once to move to Parameter 2 (relay hold time)
  - The green LED flashes twice (parameter 2)
  - The red LED does not flash (hold time = 0 seconds)
  - Press the left button four times to move from hold time = 0 to hold time = 4 seconds

**NOTE:**

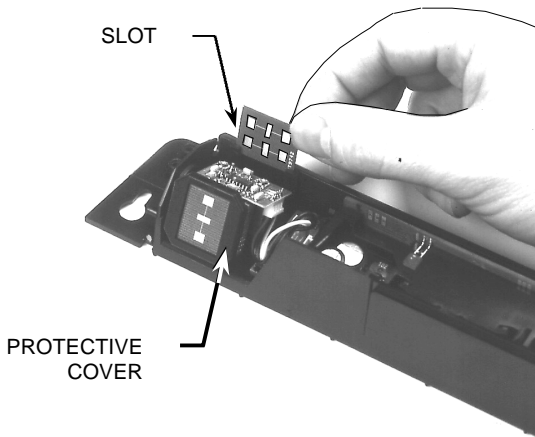
1. When the highest value for the parameter has been reached, the value will “roll over” to its lowest value (e.g. for radar mode: 1, 2, 3, then 1, 2, ...).
2. The sensor automatically returns to standard mode if neither button has been pressed for one minute.

10	Door operating mode	1-3	3
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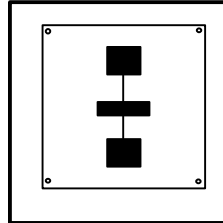
## SET-UP OF THE MOTION SENSOR

### WIDTH OF SENSING FIELD:

The pattern for the motion sensor field is adjusted by changing the planar antenna.

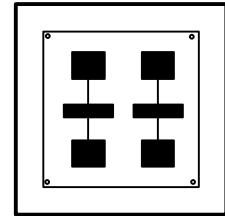


FACTORY INSTALLED ANTENNA

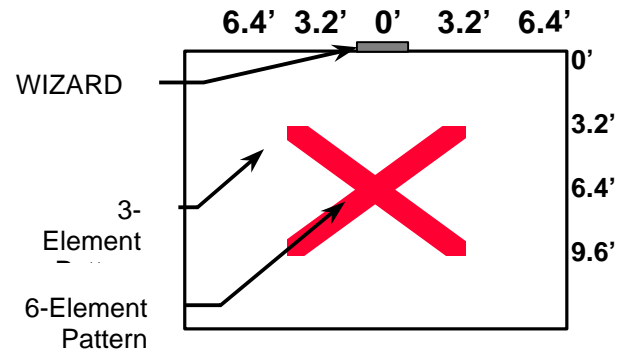


- For wide field, use the 3-Element antenna.

STORED ANTENNA



- For narrow field, use the 6-Element antenna.

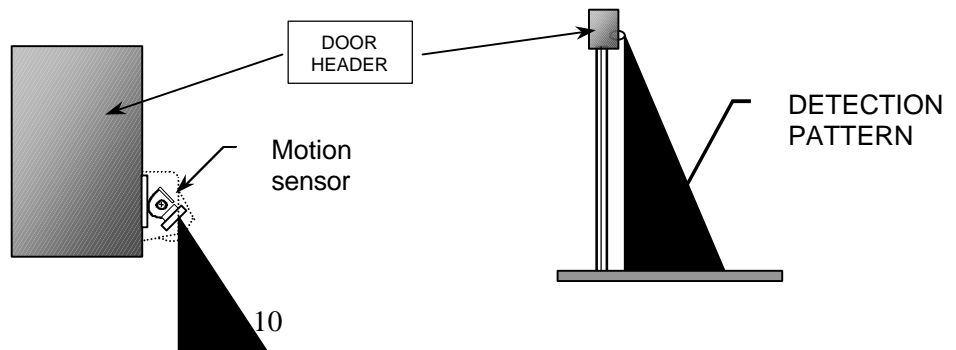
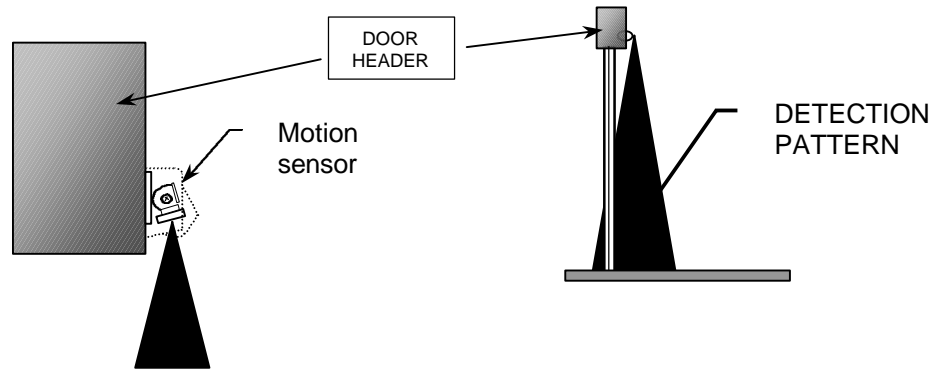


The optional narrow-field antenna is located in a slot behind the motion detector cell. To remove the antenna, carefully remove the protective cover and change antenna.

### POSITION OF SENSING FIELD:

The position of the sensing field is determined by the vertical angle of the planar antenna. The angle is changed by gently rotating the antenna and is adjusted in 3° increments. The default mounting angle is 30°.

**MINIMUM ANGLE = 15°**  
pattern will be closest to the door



**MAXIMUM ANGLE = 48°**

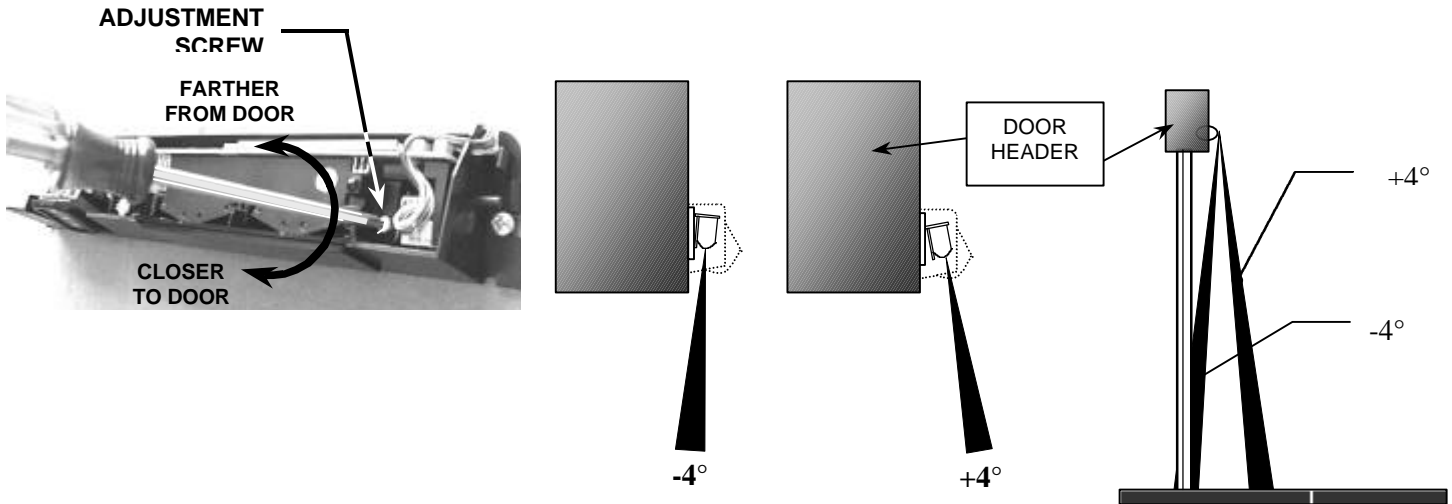
pattern will be furthest from the door

### SET-UP OF THE PRESENCE SENSOR

The presence pattern may be adjusted in two different ways. First, the pattern may be adjusted nearer or farther from the door. Second, the pattern width may be adjusted to suit the particular door application.

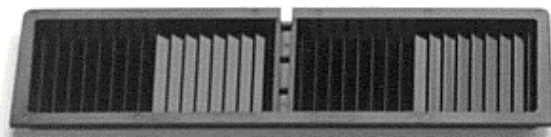
#### **DISTANCE FROM DOOR:**

The adjustment screw will bring the pattern nearer or farther from the face of the door by adjusting the tilt angle from +4° to -4°. At the standard mounting height, one complete clockwise turn of the adjustment screw will move the pattern 3 inches closer to the door. The precise location of the infrared beam may be found by using the B.E.A., Inc. Spotfinder.

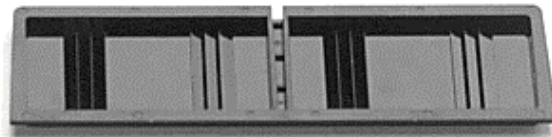


#### **PATTERN WIDTH:**

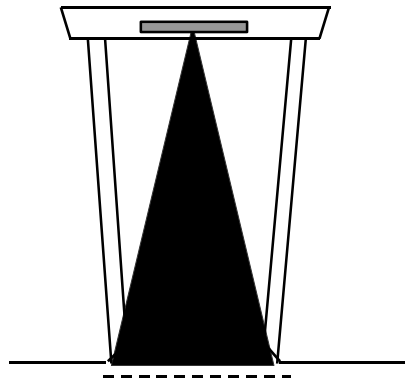
The width of the presence pattern depends on the face plate chosen for the sensor. The narrow pattern plate is the one with many scores and the wide pattern has few scores.



Narrow-field Lens

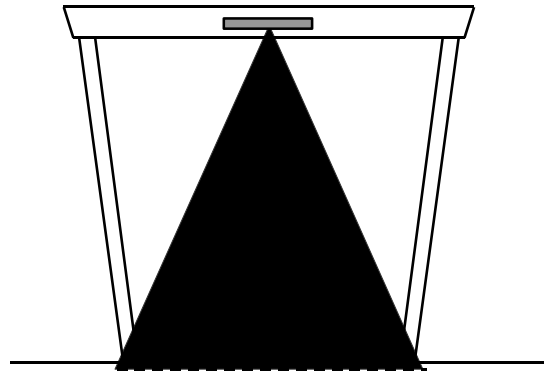


Wide-field Lens



Narrow Pattern  
3.3 ft wide x 10 in deep  
(recommended for single-door applications  
and mounting applications above 9 feet)

AT STANDARD  
MOUNTING  
HEIGHT OF 7' - 2"



Wide Pattern  
6.5 ft wide x 10 in deep  
(recommended for double-  
door applications)

## TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
<b>DOOR STAYS OPEN, LED DOES NOT LIGHT UP:</b>	<ul style="list-style-type: none"> <li>No power supply to sensor</li> <li>Sensor faulty</li> </ul>	<ol style="list-style-type: none"> <li>Check the power supply wiring</li> <li>Check the supply voltage</li> <li>Change the sensor</li> </ol>
<b>DOOR STAYS OPEN, LED FLASHES RED FOR 10 SECONDS</b>	<ul style="list-style-type: none"> <li>Sensor 'sees' the door</li> </ul>	<ol style="list-style-type: none"> <li>Adjust the infrared field away from the door (see page 11.)</li> </ol>
<b>SENSOR FAILS TO RESPOND TO THE REMOTE CONTROL:</b>	<ul style="list-style-type: none"> <li>Batteries inserted incorrectly or drained</li> </ul>	<ol style="list-style-type: none"> <li>Check that batteries have been inserted correctly or replace the batteries. (use Spotfinder to check remote)</li> </ol>
<b>SENSOR FAILS TO RESPOND TO THE CODE ENTERED BY THE REMOTE CONTROL:</b>	<ul style="list-style-type: none"> <li>Access code may have been changed</li> </ul>	<ol style="list-style-type: none"> <li>Press the 2 push buttons simultaneously (until the red and green LEDs flash) <b>THIS WILL RESET ALL PARAMETERS TO FACTORY DEFAULT VALUES</b></li> <li>Cut and restore power supply. No code is required during first minute.</li> </ol>
<b>DOOR CONTINUOUSLY OPENS AND CLOSES (LED FLASHES GREEN or RED FOR 10 SECONDS):</b>	<ul style="list-style-type: none"> <li>Sensor 'sees' the door moving</li> </ul>	<ol style="list-style-type: none"> <li>Increase the radar antenna tilt angle (if LED is GREEN)</li> <li>Move the infrared field away from the door if the LED is red</li> <li>Reduce the infrared sensitivity to low (setting #2)</li> <li>Launch a new set-up session</li> </ol>
<b>RED LED FLASHES:</b>	<ul style="list-style-type: none"> <li>Door is interfering with the infrared curtain</li> </ul>	<ol style="list-style-type: none"> <li>Move the infrared curtain away from the door</li> </ol>
<b>GREEN LED FLASHES:</b>	<ul style="list-style-type: none"> <li>Door is interfering with the motion sensor</li> </ul>	<ol style="list-style-type: none"> <li>Increase the radar antenna tilt angle away from the door</li> <li>Reduce the microwave sensitivity to low (setting #3)</li> <li>Switch the sensor to unidirectional mode</li> </ol>
<b>SENSOR PERMANENTLY IN PRESENCE SENSING MODE:</b>	<ul style="list-style-type: none"> <li>Ground is overly reflective</li> </ul>	<ol style="list-style-type: none"> <li>Use the wide field face plate</li> <li>Reduce the infrared sensitivity to low (setting #2)</li> </ol>
<b>DOOR OPENS WHEN IT SHOULD CLOSE:</b>	<ul style="list-style-type: none"> <li>Relay incorrectly configured</li> </ul>	<ol style="list-style-type: none"> <li>Adjust the relay configuration mode (see universal remote control or manual programming guide)</li> </ol>
<b>INFRARED IS SENSITIVE TO TRACES OF GROUND MOISTURE:</b>	<ul style="list-style-type: none"> <li>Infrared curtain is overly sensitive</li> </ul>	<ol style="list-style-type: none"> <li>Reduce the infrared sensitivity to low (setting #2)</li> </ol>

If after troubleshooting a problem, a satisfactory solution cannot be achieved, please call B.E.A., Inc.  
for further assistance during Eastern Standard Time at  
**1-800-523-2462 from 7am - 5pm or 1-800-407-4545 from 5pm - midnight & weekends.**

**DO NOT** leave any problem unresolved. If you must wait for the following workday to call B.E.A., leave the door inoperable until satisfactory repairs can be made. **NEVER** sacrifice the safe operation of the automatic door or gate for an incomplete solution.