BEA INC IXIO-DT1 V Motion and Presence Sensor with Camera Instruction Manual

Contents

BEA INC IXIO-DT1 V Motion and Presence Sensor with Camera

Product Information:

- The IXIO-DT1 V is a motion and presence sensor with a camera designed for sliding doors. It is equipped with various accessories including a cover, LED window, camera, radar antenna, AIR curtain width adjustment, LCD, AIR lenses, AIR curtain angle adjustment knob, main adjustment knob, main connector, 10IMB Bracket accessory, 10CDA Curved door accessory, 10IXIOSPACER Spacer, and 10.1279 Camera cover accessory.
- The device complies with Part 15 of the FCC Rules and operates under the following conditions: (1) it does not cause harmful interference, and (2) it accepts any interference received.
- The sensor should be securely mounted to avoid extreme vibrations. It should not be covered or exposed to moving objects and light sources. Highly reflective objects in the infrared field should also be avoided. It is recommended to clean the optical parts at least once a year using non-aggressive cleaning products.
- The door control unit and the header cover profile must be correctly grounded. Only trained and qualified personnel should handle the installation and setup of the sensor. Proper operation testing should be conducted before leaving the premises. Unauthorized repairs or attempts by unauthorized personnel will void the warranty.

The technical specifications of the IXIO-DT1 V include:

- Detection mode: Motion and presence
- Motion minimum detection speed: 2 in/s
- Presence typical response time: < 200 ms (max: 500 ms)
- Technology: Microwave doppler radar
- Transmitter frequency: 24.150 GHz
- Transmitter radiated power: < 20 dBm EIRP
- Transmitter power density: < 5 mW/cm2
- Mounting height: Dependent on local regulations
- Output: Relay 1, Relay 2 (Solid-state relay)
- Max. contact current: 100 mA
- Max. contact voltage: 42 VDC / 30 VAC
- Test/Monitoring input sensitivity: Low: < 1 V, High: > 10 V (max. 30 V)
- Response time on test request: typical < 5 ms
- Supply voltage: SELV-compatible power supplies only
- Power consumption: < 2.5 W
- Noise: < 70 dB
- Camera specifications: Horizontal resolution: 480 TVL, Sync system: Inter-Sync, Minimum illumination: 0.01 LUX, Gain control: auto, S/N ratio: > 50 dB
- Degree of protection: IP54

Product Usage Instructions

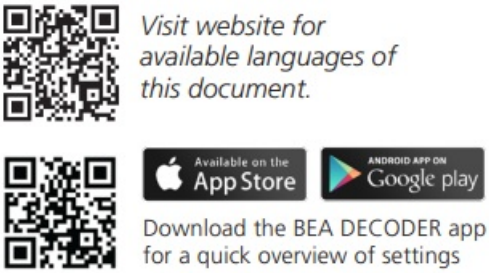
1. Ensure the sensor is securely mounted to avoid extreme vibrations.
2. Do not cover the sensor or expose it to moving objects and light sources.
3. Avoid placing highly reflective objects in the infrared field.
4. Clean the optical parts of the sensor at least once a year using non-aggressive cleaning products.

5. Ensure proper grounding of the door control unit and the header cover profile.
6. Only trained and qualified personnel should handle the installation and setup of the sensor.
7. Test the sensor for proper operation before leaving the premises.
8. Do not attempt unauthorized repairs as it will void the warranty.
9. Follow local regulations for acceptable mounting height.
10. Connect the sensor to SELV-compatible power supplies only.
11. Use the LCD display for normal function activation impulse.

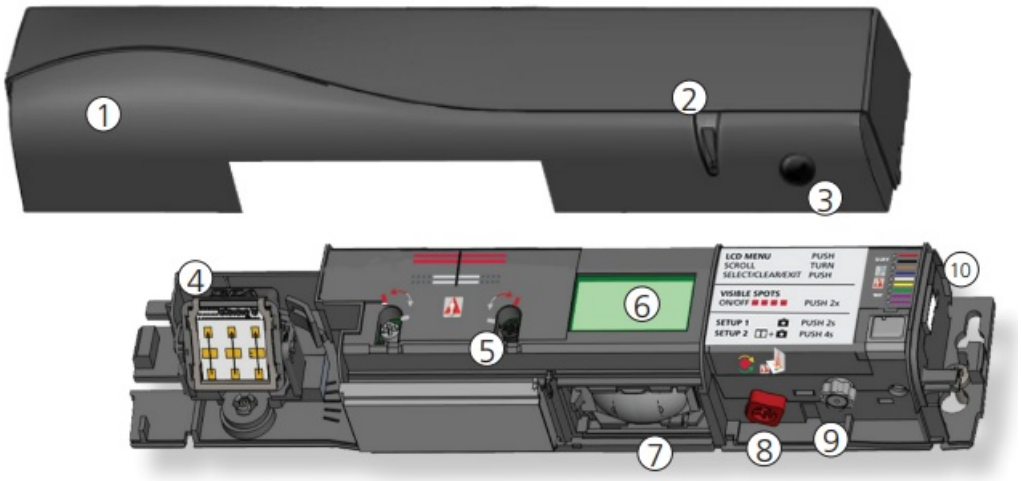
For more detailed information and available languages, please visit the product's official website. To quickly understand the settings, download the BEA DECODER app.

Visit website for available languages of this document.

Download the BEA DECODER app for a quick overview of settings



DESCRIPTION



20.5349

1. cover
2. LED window
3. camera
4. radar antenna
5. AIR curtain width adjustment
6. LCD
7. AIR lenses
8. AIR curtain angle adjustment knob
9. main adjustment knob
10. main connector

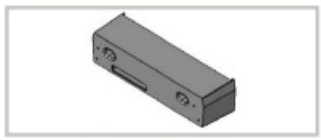
1. cover
2. LED window
3. camera
4. radar antenna
5. AIR curtain width adjustment
6. LCD

7. AIR lenses
8. AIR curtain angle adjustment knob
9. main adjustment knob
10. main connector

ACCESSORIES

10IMB
Bracket accessory

10CDA
Curved door accessory



10IXIOSPACER
Spacer

10.1279
Camera cover accessory

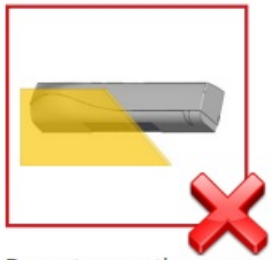
This device can be expected to comply with Part 15 of the FCC Rules, provided it is assembled in exact accordance with the instructions provided with this kit. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

READ BEFORE BEGINNING INSTALLATION/PROGRAMMING/SETUP

INSTALLATION

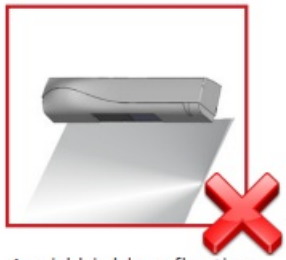
- The sensor should be mounted securely to avoid extreme vibrations.
- Do not cover the sensor.
- Avoid moving objects and light sources in the detection field.
- Avoid highly reflective objects in the infrared field.

The sensor should be mounted securely to avoid extreme vibrations.



Do not cover the sensor.

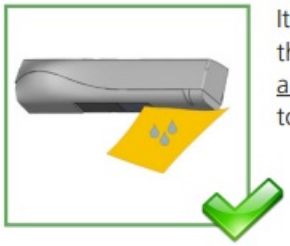
Avoid moving objects and light sources in the detection field.



Avoid highly reflective objects in the infrared field.

MAINTENANCE

- It is recommended to clean the optical parts at least once a year or more if required due to environmental conditions.
- Do not use aggressive products to clean the optical parts.

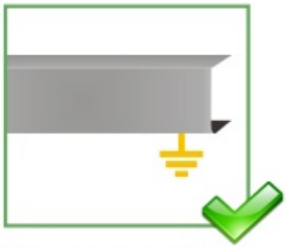


It is recommended to clean the optical parts at least once a year or more if required due to environmental conditions.

Do not use aggressive products to clean the optical parts.

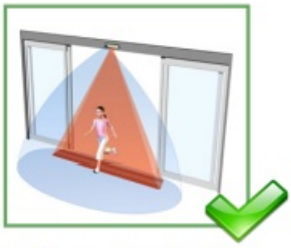
SAFETY

- The door control unit and the header cover profile must be correctly grounded.
- Only trained and qualified personnel are recommended for installation and setup of the sensor.
- Following installation, always test for proper operation (according to ANSI 156.10) before leaving the premises.
- The warranty is invalid if unauthorized repairs are made or attempted by unauthorized personnel.

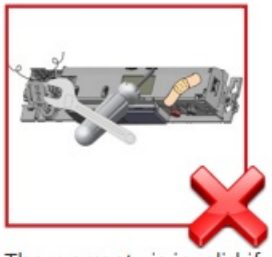


The door control unit and the header cover profile must be correctly grounded.

Only trained and qualified personnel are recommended for installation and setup of the sensor.



Following installation, always test for proper operation (according to ANSI 156.10) before leaving the premises.



The warranty is invalid if unauthorized repairs are made or attempted by unauthorized personnel.

BEA, INC. INSTALLATION/SERVICE COMPLIANCE EXPECTATIONS

- BEA, Inc., the sensor manufacturer, cannot be held responsible for incorrect installations or incorrect adjustments of the sensor/device; therefore, BEA, Inc. does not guarantee any use of the sensor/device outside of its intended purpose.
- BEA, Inc. strongly recommends that installation and service technicians be AAADM-certifi ed for pedestrian doors, IDA-certifi ed for doors/gates, and factory-trained for the type of door/gate system.
- Installers and service personnel are responsible for executing a risk assessment following each installation/service performed, ensuring that the sensor/device system performance is compliant with local, national, and international regulations, codes, and standards.
- Once installation or service work is complete, a safety inspection of the door/gate shall be performed per the door/gate manufacturer's recommendations and/or per AAADM/ANSI/DASMA guidelines (where applicable) for best industry practices. Safety inspections must be performed during each service call – examples of these safety inspections can be found on an AAADM safety information label (e.g. ANSI/DASMA 102, ANSI/DASMA 107, UL294, UL325, and International Building Code).
- Verify that all appropriate industry signage, warning labels, and placards are in place.

TECHNICAL SPECIFICATIONS

TECHNOLOGY / PERFORMANCE

Detection mode:	Motion minimum detection speed: 2 in/s	Presence typical response time: < 200 ms (max: 500 ms)
Technology:	Microwave doppler radar Transmitter frequency: 24.150 GHz Transmitter radiated power: < 20 dBm EIRP Transmitter power density: < 5 mW/cm²	Active infrared with background analysis Spot: 2" × 2" (typ) Number of spots: max. 24 per curtain Number of curtains: 2
Mounting height:	6'6" – 11'6" local regulations may impact acceptable mounting height (pedestrian applications only)	
Sensor temperature range:	-13 – 131 °F * 0 – 95% relative humidity, non-condensing LCD screen is operational from 14 – 131 °F. The sensor may still be programmed in colder temperatures, but with the remote control.	

ELECTRICAL

Output:	
Relay 1 	Electromechanical relay (potential and polarity free) Max. contact current: 1 A Max. contact voltage: 30 VAC Adjustable hold time: 0.5 – 9 s
Relay 2 	Solid-state relay (potential and polarity free) Max. contact current: 100 mA Max. contact voltage: 42 VDC / 30 VAC
Test/Monitoring input:	Sensitivity: Low: < 1 V High: > 10 V (max. 30 V) Response time on test request: typical < 5 ms
Supply voltage:	12 – 24 VAC ±10% 12 – 30 VDC ±10% to be operated from SELV-compatible power supplies only
Power consumption:	< 2.5 W
Noise:	< 70 dB

CAMERA

Voltage regulator (built into wire harness): 6.6 – 36 VDC (±10%), 6 – 28 VAC (±10%)	
Operating temperature: -22 – 140 °F (max. RH: 95%)	Video output: 1.0 (Vp-p) / 75Ω
Image Sensor: CMOS	Horizontal resolution: 480 TVL
NTSC output: 720 (H) × 480 (V)	Sync system: Inter-Sync
Frame rate: 30 fps	Minimum illumination: 0.01 LUX
AE control: auto	Gain control: auto
Electronic shutter: 1 s ~ 1/10,000s	S/N ratio: > 50 dB
AWB: Auto	

PHYSICAL

Degree of protection:	IP54

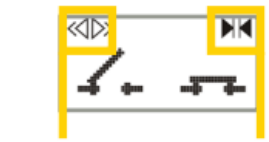
COMPLIANCE

FCC certification:	FCC: G9B-100606 IC: 4680A-100606
Compliance:	ISO 13849 PL «c» CAT. 2 (under the condition that the door control system monitors the sensor at least once per door cycle)

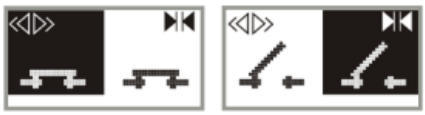
Specifications are subject to change without prior notice. All values measured in specific conditions.

HOW TO USE THE LCD

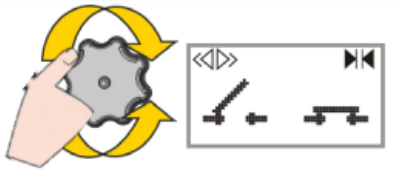
DISPLAY DURING NORMAL FUNCTION



Activation impulse — Safety



Negative display = active output



To adjust contrast, push and turn the grey button simultaneously.

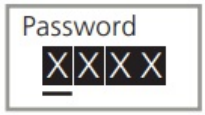
During normal function only.

FACTORY VALUE VS. SAVED VALUE

displayed value = factory value

displayed value = saved value

NAVIGATING IN MENUS



Not during the first minute after power-on of the sensor.

During the first 30 seconds after power-on of the sensor or later in the diagnostics menu.

= scroll

= select

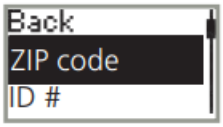
Select **Back** to return to previous menu or display.

Select **More** to go to next level:
- basic settings (MENU 1)
- advanced settings (MENU 2)
- diagnostics (MENU 3)

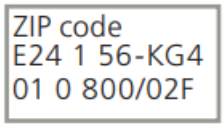
CHANGING A ZIP CODE

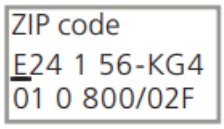
1) Navigate to menu 3 (Diagnostics).

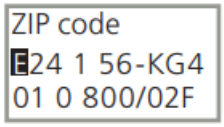
2) Select "ZIP code".

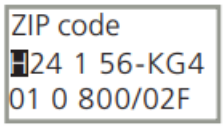


3) Change the code as desired.



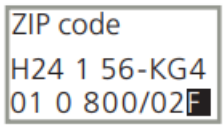


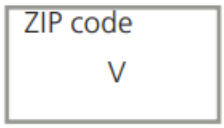




To activate the new ZIP code, you must validate the last digit (see below):

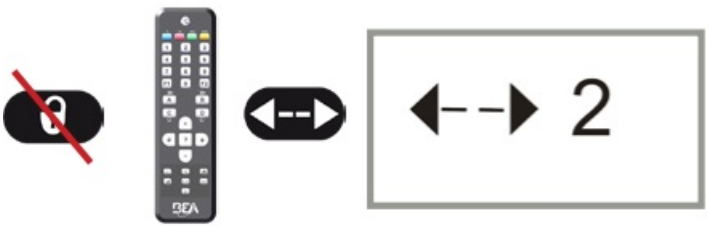
v = valid ZIP code (values will be changed accordingly)
x = invalid ZIP code (no values will be changed)
v/x = valid ZIP code, but from a different product





only available values will be changed

VALUE CHECK WITH REMOTE CONTROL



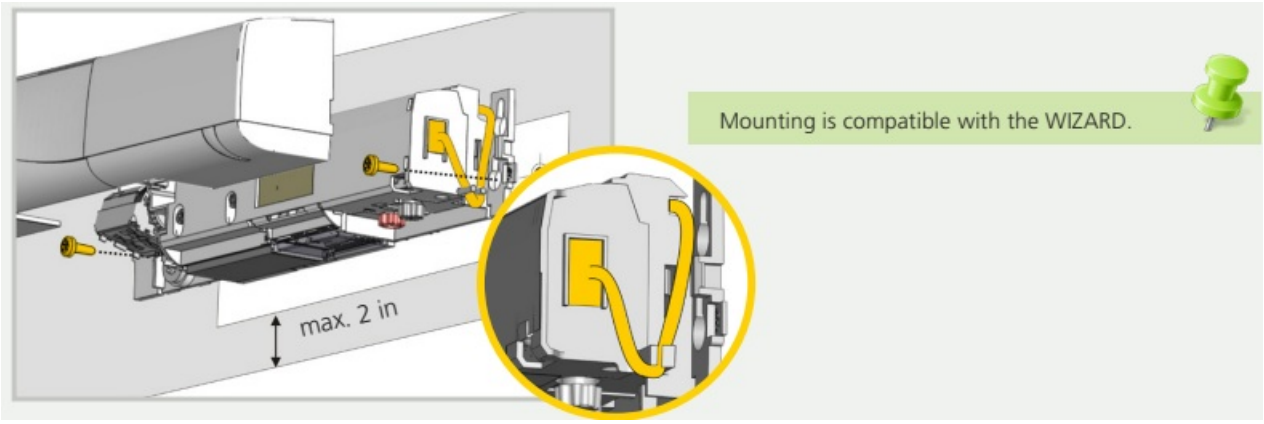
Pressing a parameter symbol on your remote control displays the saved value directly on the LCD screen. Additionally, the green LED will blink the number of times that the parameter is set to. Do not unlock first.
Note: When querying FIELD SHAPE, the green LED will blink the number of times that it is set to, and then the green LED will blink either 1 time (narrow shape) or 2 times (wide shape).

MOUNTING & WIRING

MOUNTING

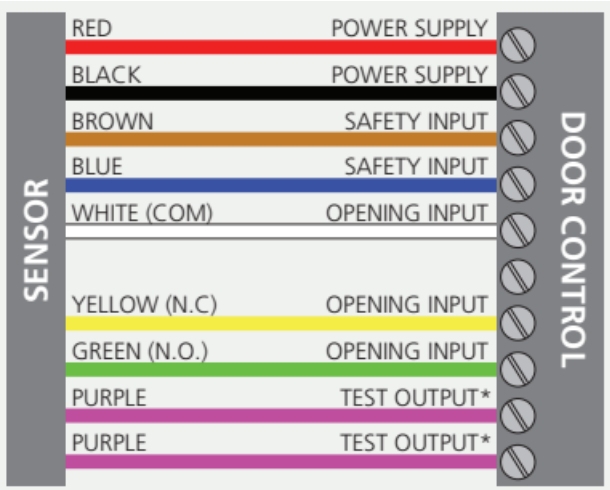
- Using the provided mounting template, mount the sensor, ensuring that the bottom of the sensor is within 2 inches of the bottom of the door header.

- Refer to Application Note 76.0035 if an IXIO Spacer is required for the given application.
- Route the harness (20.5349) using the harness clip as shown in the exploded view of the mounting illustration.



- Sensor connectivity (power and relays) must utilize only the supplied harness.
- Sensor power and camera power must be supplied from a Class 2 supply source limited to 15 W.
- Sensor is intended to be monitored for proper operation by the door operator or system.
- Harness shall be routed separated from any Mains or non-Class 2 voltage cable for correct operation or shall be rated for the Mains voltage, and suitable protection and routing means shall be used according to National and
- Local Codes to prevent damage to the harness and/or IXIO sensor.

WIRING

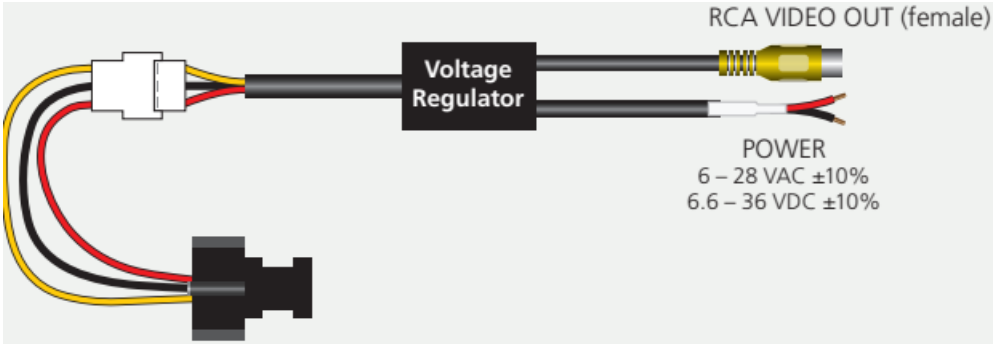


VOLTAGE

- **Power:** 12 – 24 VAC, 50/60 Hz 12 – 30 VDC 2.5 W (max)
- **Test: low:** < 1 V high: > 10 V (30 V max.) response time: typ. < 5 ms

  * The sensor LED will briefly flash RED during monitoring communication with door control, indicating that external monitoring is functional. Monitoring functionality must be active on the sensor, door control, and monitoring wires must be properly connected to the door control.

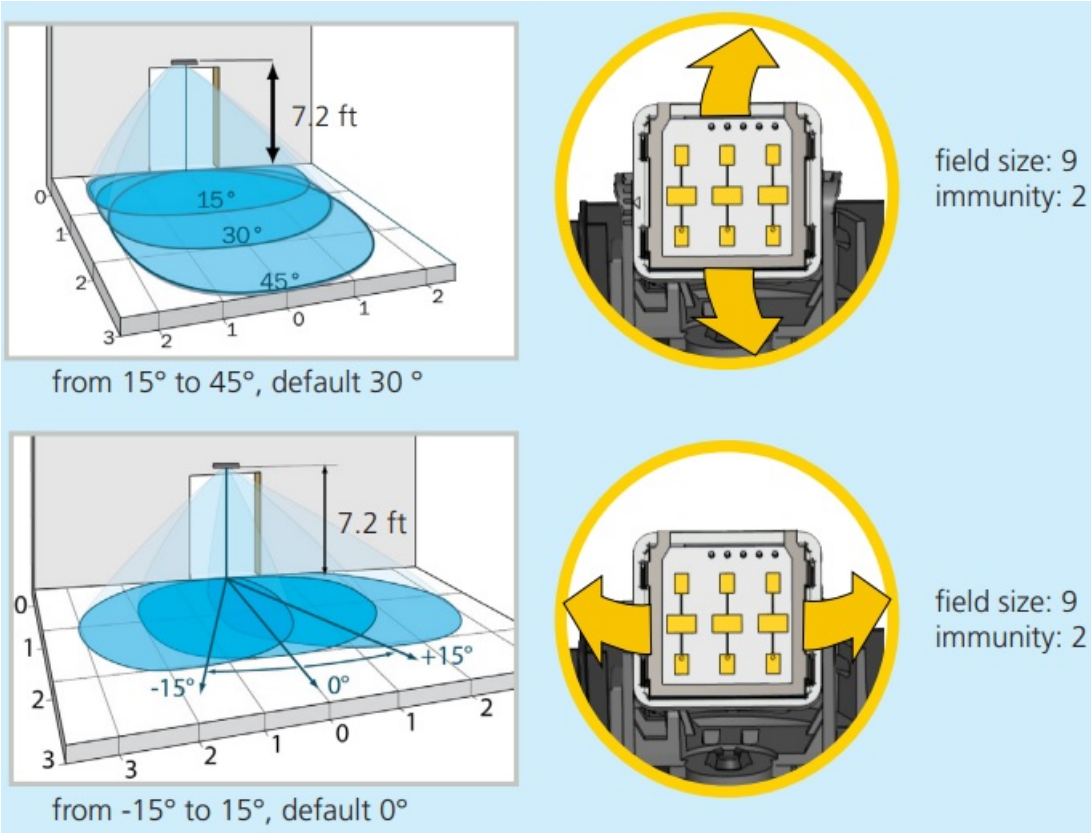
CAMERA HARNESS FOR DT1 V



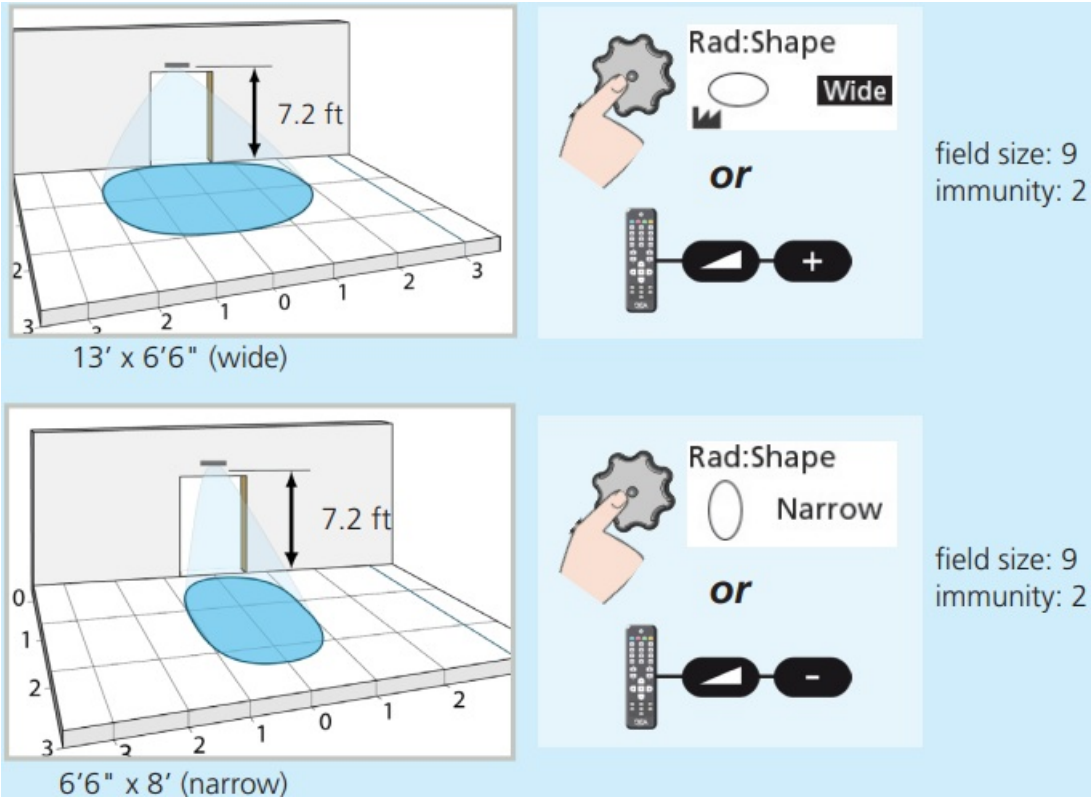
RADAR OPENING IMPULSE FIELD

The size of the detection field varies according to the mounting height of the sensor. The following graphics are representations – not default settings.

ANGLE



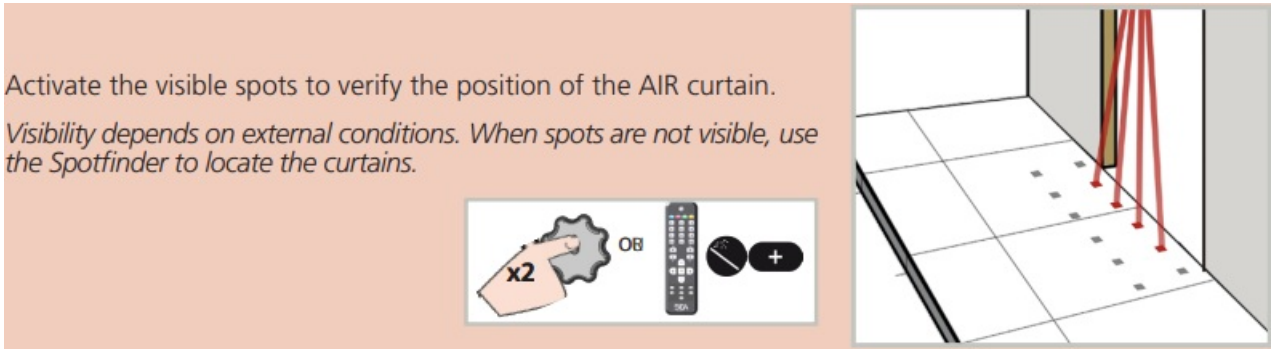
WIDTH



INFRARED SAFETY FIELD

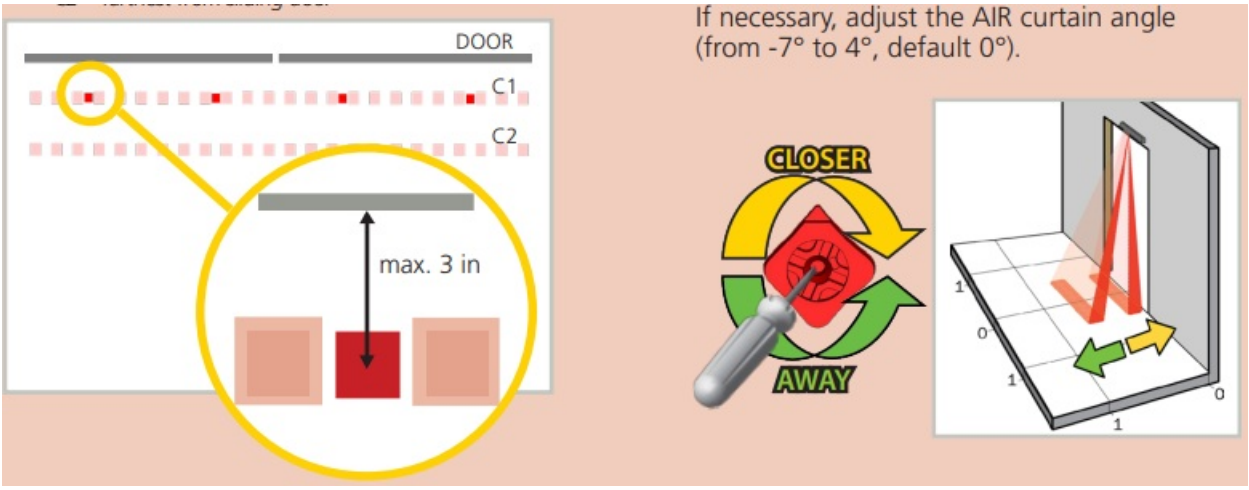
ANGLE

Activate the visible spots to verify the position of the AIR curtain.
Visibility depends on external conditions. When spots are not visible, use the Spotfinder to locate the curtains.

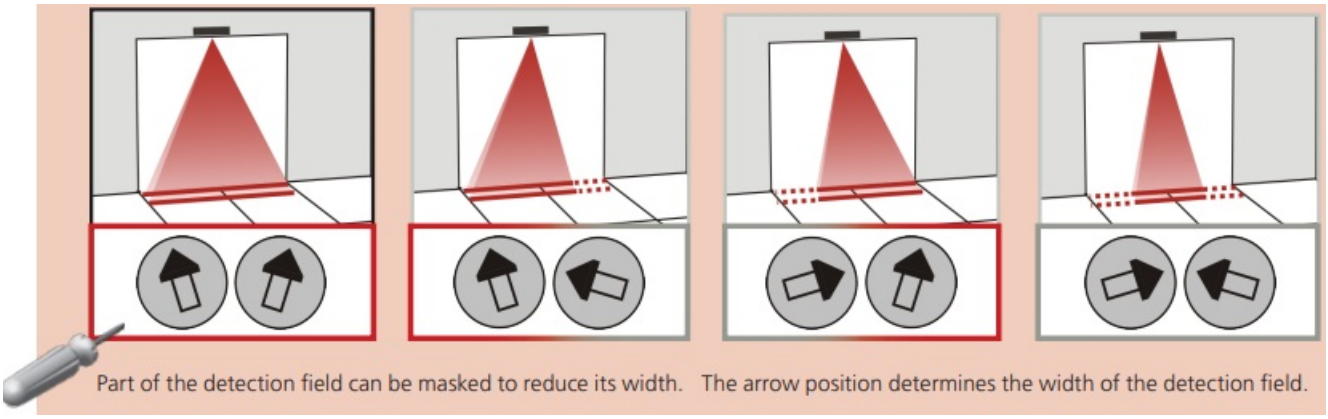


The distance between the inner curtain of the inside door sensor and the inner curtain of the outside door sensor should always be smaller than 8 in.

C1 = closest to sliding door
C2 = farthest from sliding door

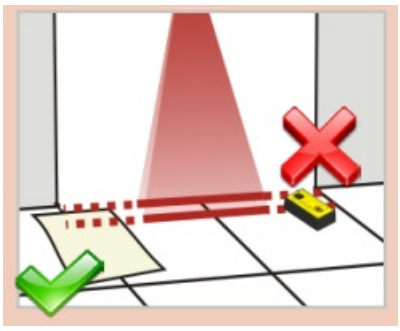


WIDTH



Part of the detection field can be masked to reduce its width. The arrow position determines the width of the detection field.
The size of the detection field varies according to the mounting height and the settings of the sensor.
Wide setting has 1:1 ratio. For example, a 6-foot mounting height will project a 6-foot detection width at floor.

Always verify the actual detection field width by walk-testing according to ANSI 156.10.



Additional adjustments are possible by LCD or remote control (see OVERVIEW OF SETTINGS).

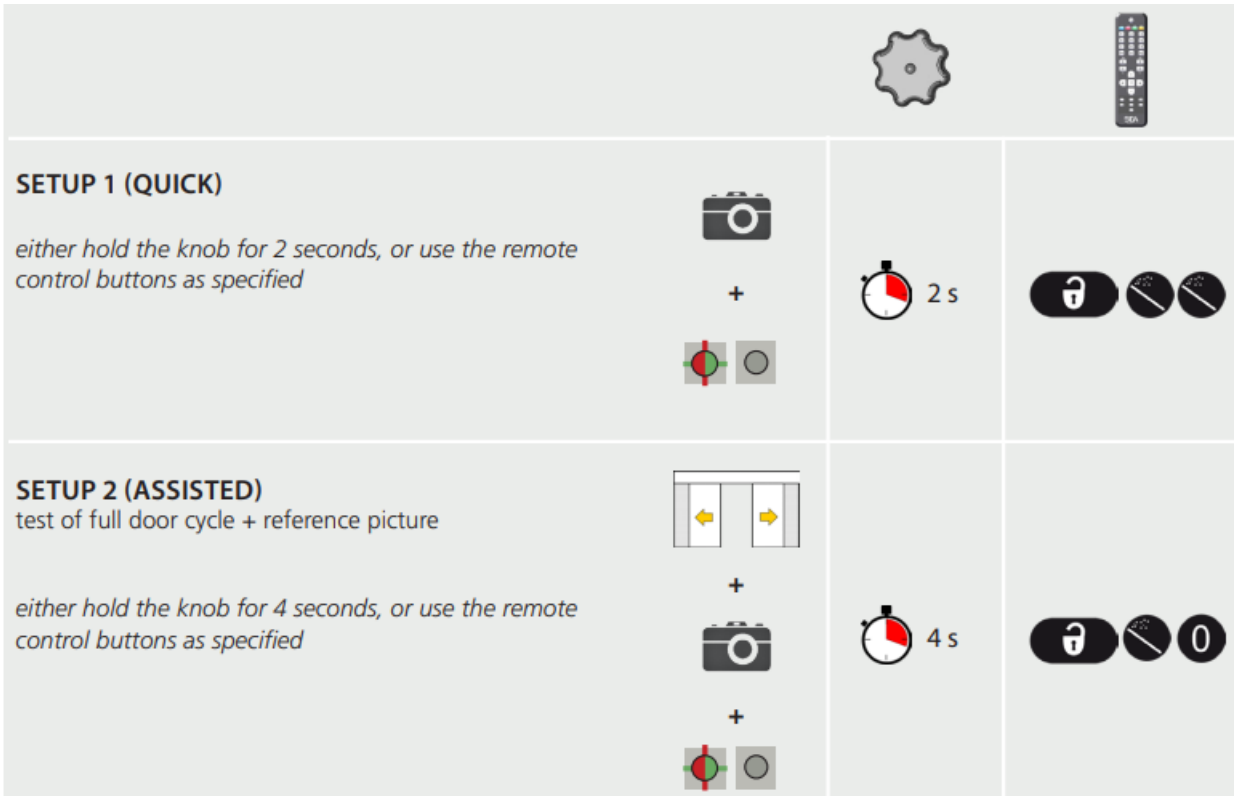
SETUP

Set up the sensor using either push-buttons or the remote control.

STEP OUT OF THE INFRARED FIELD!

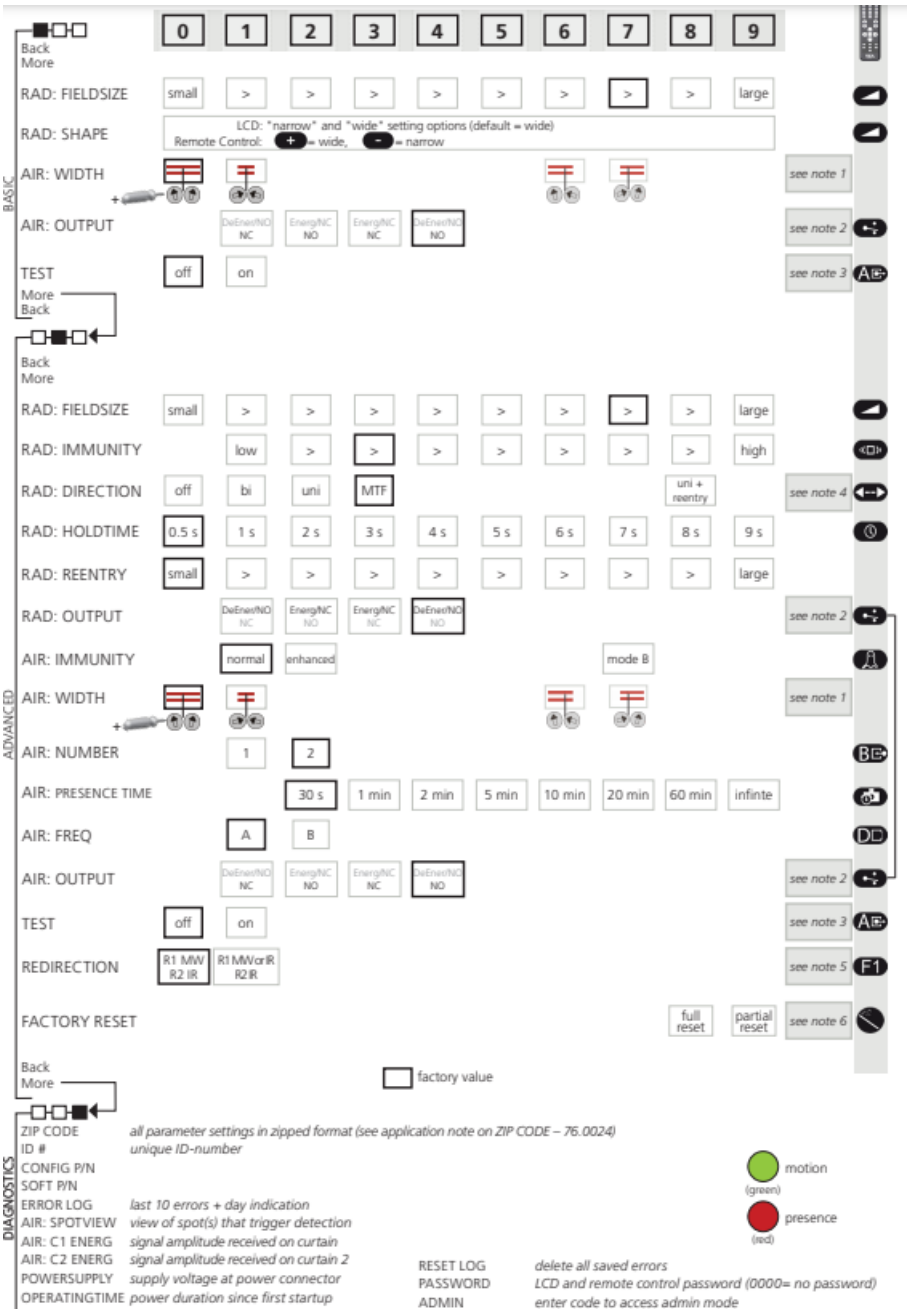
SETUP 1 (QUICK)
either hold the knob for 2 seconds, or use the remote control buttons as specified

SETUP 2 (ASSISTED)
test of full door cycle + reference picture
either hold the knob for 4 seconds, or use the remote control buttons as specified



TEST THE PROPER OPERATION OF THE INSTALLATION BEFORE LEAVING THE PREMISES!

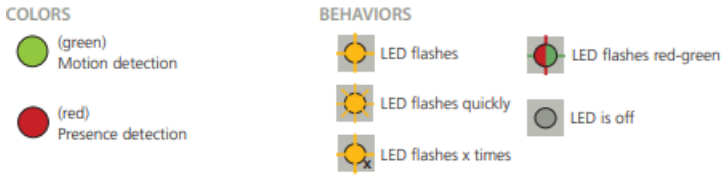
OVERVIEW OF SETTINGS


0 1 2 3 4 5 6 7 8 9
Back
More
RAD: FIELDSIZE
small
large
RAD: SHAPE
LCD: "narrow" and "wide" setting options (default = wide)
Remote Control: + = wide, - = narrow
AIR: WIDTH
AIR: OUTPUT
DeEnerg/NC NC
Energ/NC NO
Energ/NC NC
DeEnerg/NC NO
see note 1
see note 2
see note 3
TEST
off
on
More
Back
BASIC
RAD: IMMUNITY
low
high
RAD: DIRECTION
off
bi
uni
MTF
uni + reentry
see note 4
RAD: HOLDTIME
0.5 s
1 s
2 s
3 s
4 s
5 s
6 s
7 s
8 s
9 s
RAD: REENTRY
RAD: OUTPUT
AIR: IMMUNITY
normal
enhanced
mode B
AIR: NUMBER
1
2
AIR: PRESENCE TIME
30 s
1 min
2 min
5 min
10 min
20 min
60 min
infinte
AIR: FREQ
A
B
REDIRECTION
R1 MW R2 IR
R1 MW or IR R2 IR
see note 5
FACTORY RESET
full reset
partial reset
see note 6
ADVANCED
factory value
DIAGNOSTICS
ZIP CODE all parameter settings in zipped format (see application note on ZIP CODE – 76.0024)
ID # unique ID-number
CONFIG P/N
SOFT P/N
ERROR LOG last 10 errors + day indication
AIR: SPOTVIEW view of spot(s) that trigger detection
AIR: C1 ENERG signal amplitude received on curtain
AIR: C2 ENERG signal amplitude received on curtain 2
POWERSUPPLY supply voltage at power connector
OPERATINGTIME power duration since first startup
motion
(green)
presence
(red)
RESET LOG delete all saved errors
PASSWORD LCD and remote control password (0000= no password)
ADMIN enter code to access admin mode

NOTES

Note 1	Always use a screwdriver when making further AIR adjustments to the arrow position on the sensor.	
Note 2	*RADAR*	*AIR*
	NO = normally open NC = normally closed DeEner = de-energized relay (active) Energ = energized relay (passive)	NO = normally open NC = normally closed
Note 3	The sensor LED will briefly flash RED during monitoring communication with door control. This i ndicates that external monitoring is functional. Monitoring functionality must be active on the sensor and door control, and monitoring wires mu st be properly connected to the door control.	
Note 4	MTF = uni-directional with motion-tracking feature	
Note 5	REDIRECTION setting (F1 on remote control): **R1-MW, R2-IR (F1=0):** R1 = MW (i.e. motion detection) R2 = IR (i.e. presence detection) **R1-MW or IR, R2-IR (F1=1):** R1 = MW or IR (i.e. motion or presence detection) R2 = IR (i.e. presence detection)	
Note 6	partial: outputs are not reset	

LED SIGNALS



TROUBLESHOOTING

	E1: ORANGE LED flashes 1x	The sensor signals an internal fault.	Replace sensor.
	E2: ORANGE LED flashes 2x	The power supply voltage is too low/high.	Check power supply voltage in diagnotistics menu (menu 3) of the LCD.
			Check wiring.
	E4: ORANGE LED flashes 4x	The sensor does not receive enough AIR energy.	Decrease the angle of the AIR curtains.
			Increase the AIR immunity filter.
			Deactivate curtain #2 (C2, outer curtain).
	E5: ORANGE LED flashes 5x	The sensor receives too much AIR energy.	Slightly increase the angle of the AIR curtains.
			Decrease the AIR immunity filter.
		The sensor is disturbed by external elements.	Eliminate the cause of disturbance (lamps, rain cover, door controller housing properly grounded).
	E8: ORANGE LED flashes 8x	AIR power emitter is faulty.	Replace sensor.
	ORANGE LED is on	The sensor encounters a memory problem.	Cut and restore power supply.
			If ORANGE LED illuminates again, replace the sensor.
	RED LED flashes quickly after an assisted setup	The sensor sees the door during assisted setup.	Move the AIR curtains away from the door.
			Install the sensor as close to the door as possible. If needed, use a bracket assembly.
			Ensure that the bottom of the sensor is mounted within 2" of the bottom of the door header.
			Launch a new assisted setup.
	RED LED illuminates sporadically	The sensor vibrates.	Check if the sensor is secure.
			Check position of cable and cover.
		The sensor sees the door.	Adjust the AIR angle and launch an assisted setup.
		The sensor is disturbed by external conditions.	Increase the AIR immunity filter.

	GREEN LED illuminates sporadically	The sensor is disturbed by rain and/or leaves.	Increase radar immunity filter.
		Ghosting created by door movement.	Change radar field angle.
		The sensor vibrates.	Check if the sensor and door cover is secure.
			Check position of cable and cover.
		The sensor sees the door or other moving objects.	Remove the objects if possible.
			Change radar field size, angle, or immunity.
	The LED and the LCD displays are off	No power to sensor.	Check wiring.
			Check for correct power supply.
	The reaction of the door does not correspond with the LED signal	Incorrect output configuration / wiring.	Check output configuration setting.
			Check wiring.
	Cannot access LCD menu or change parameters via remote control	The sensor is protected by a password.	Enter the correct password. If you forgot the code, cut and restore the power supply to access the sensor without entering a password during 1 minute.
	Sensor does not respond to remote control	Dead batteries.	Replace batteries.
	RED Visible External Monitoring (Test Indication LED) does not flash	Monitoring installation/setup error.	Verify door control is capable of monitoring and the sensor monitoring wires are properly connected to the door control.
			Verify monitoring (TEST) is ON in the sensor settings.
		Sensor malfunction.	Replace the sensor.
	RED Visible External Monitoring (Test Indication LED) flashes continuously	Wiring issue.	Verify wiring.
		Door control not set correctly.	Verify door control monitoring set to Active Low.
	Door cycles open and remains open	Door control monitoring set to Active High.	Set door control monitoring to Active Low.
		Safety and/or Motion output is set incorrectly.	Correctly set the given output required for the door control.

Can't find your answer?
Visit www.beainc.com or scan QR code for Frequently Asked Questions!

Tech Support & Customer Service: 1-800-523-2462
General Tech Questions: techservices-us@BEAsensors.com | Tech Docs: www.BEAsensors.com

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Documents / Resources

	**BEA INC IXIO-DT1 V Motion and Presence Sensor with Camera** [pdf] Instruction Manual 75.5816.11, IXIO-DT1 V Motion and Presence Sensor with Camera, Motion and Presence Sens or with Camera, Presence Sensor with Camera, Sensor with Camera, Camera

References

- **Homepage \| BEA Sensors**
- **Homepage \| BEA Sensors**