**PRODUCT FAMILY**

**IXIO-DT1**: activation and safety for pedestrian doors

**IXIO-DT1 INDUSTRIAL**: activation and safety for industrial doors

**IXIO-ST**: safety for pedestrian doors

**IXIO-ST INDUSTRIAL**: safety for industrial doors

**IXIO-DT1 V**: IXIO-DT1 + camera cover accessory

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1. radar antenna (wide field)
2. radar antenna (narrow field)
3. LCD
4. AIR curtain width adjustment
5. AIR lenses
6. main connector
7. main adjustment knob
8. AIR curtain angle adjustment knob
9. IXIO-DT1 / IXIO ST cover
10. IXIO-DT1 V cover
11. LED
12. camera

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**ACCESSORIES**

- **All IXIOs**
  - 10IMB: Bracket accessory

- **All IXIOs (except DT1 V)**
  - 10ICA: Ceiling accessory
  - 10IRA: Rain accessory
  - 35.1286: black cover
  - 35.1302: white cover
  - 35.1303: silver cover

- **All IXIOs (except DT1 V)**
  - 10CDA: Curved door accessory
  - 10IXIOSPACER: Spacer
  - 10.1279: Camera cover accessory

Visit website for available languages of this document.
LED SIGNALS

COLORS
- (green) Motion detection (DT1 sensors)
- (red) Presence detection

BEHAVIORS
- LED flashes
- LED flashes quickly
- LED flashes x times
- LED flashes red-green
- LED is off

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.

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.

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.

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.
READ BEFORE BEGINNING INSTALLATION/PROGRAMMING/SET-UP

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

- AIR: Immunity
  - normal
  - displayed value = factory value
  - enhanced
  - displayed value = saved value

NAVIGATING IN MENUS

1) Push to enter the LCD menu. 2) Enter password, if necessary. 3) Select language before entering the first LCD menu.

- 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

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. Do not unlock first.
1 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 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 if using the DT1 V) 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

The sensor LED will briefly flash RED during monitoring communication with door control. This indicates 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

Voltage Regulator

RCA VIDEO OUT (female)

POWER
6 – 28 VAC ±10%
6.6 – 36 VDC ±10%
The size of the detection field varies according to the mounting height of the sensor.
The following graphics are representations – not default settings.

**ANGLE**

- **Field size:** 9
- **Immunity:** 2

- **Field size:** 9
- **Immunity:** 2

**Width**

- **Field size:** 9
- **Immunity:** 2

- **Field size:** 9
- **Immunity:** 2

1 x 1 grid is approximately 3.28 ft x 3.28 ft.
3 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

If necessary, adjust the AIR curtain angle (from -7° to 4°, default 0°).

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!

<table>
<thead>
<tr>
<th>SETUP 1 (QUICK)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>either hold the knob for 2 seconds, or use the remote control buttons as specified</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>2 s</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SETUP 2 (ASSISTED)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>test of full door cycle + reference picture</td>
<td>+</td>
</tr>
<tr>
<td>either hold the knob for 4 seconds, or use the remote control buttons as specified</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>4 s</td>
</tr>
</tbody>
</table>

⚠️ TEST THE PROPER OPERATION OF THE INSTALLATION BEFORE LEAVING THE PREMISES!
### OVERVIEW OF SETTINGS

**BASIC**

<table>
<thead>
<tr>
<th>RAD: FIELDSIZE</th>
<th>small</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>large</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR: WIDTH</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIR: OUTPUT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEST</td>
<td>off</td>
<td>on</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

**ADVANCED**

<table>
<thead>
<tr>
<th>RAD: FIELDSIZE</th>
<th>small</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>large</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR: IMMUNITY</td>
<td>low</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>high</td>
</tr>
<tr>
<td>AIR: DIRECTION</td>
<td>off</td>
<td>bi</td>
<td>uni</td>
<td>uni</td>
<td>MTF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAD: HOLDTIME</td>
<td>0.5 s</td>
<td>1 s</td>
<td>2 s</td>
<td>3 s</td>
<td>4 s</td>
<td>5 s</td>
<td>6 s</td>
<td>7 s</td>
<td>8 s</td>
</tr>
<tr>
<td>RAD: REENTRY</td>
<td>small</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>large</td>
</tr>
<tr>
<td>RAD: OUTPUT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIR: IMMUNITY</td>
<td>normal</td>
<td>enhanced</td>
<td>mode 8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIR: WIDTH</td>
<td></td>
<td>+</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIR: NUMBER</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIR: PRESENCE TIME</td>
<td>30 s</td>
<td>1 min</td>
<td>2 min</td>
<td>5 min</td>
<td>10 min</td>
<td>20 min</td>
<td>60 min</td>
<td>infinite</td>
<td></td>
</tr>
<tr>
<td>AIR: FREQ</td>
<td>A</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIR: OUTPUT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEST</td>
<td>off</td>
<td>on</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REDIRECTION</td>
<td>motion</td>
<td>presence</td>
<td>motion or presence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REDIRECTION</td>
<td>presence</td>
<td>aux presence</td>
<td>presence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FACTORY RESET**

| Back | More |

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**ZIP CODE**

- **all parameter settings in zipped format (see application note on ZIP CODE – 76.0024)**
- **unique ID-number**
- **last 10 errors + day indication**
- **view of spot(s) that trigger detection**
- **signal amplitude received on curtain**
- **signal amplitude received on curtain 2**
- **powersupply**
- **operatingtime**
- **reset log**
- **password**
- **admin**

**RC BUTTONS**

- **factory value**
- **highlighted red = ST sensors only**
- **highlighted blue = DT sensors only**

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Download the BEA DECODER app for a quick overview of settings.

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-powered voltage at power connector
-power duration since first startup
-delete all saved errors
-LCD and remote control password (0000= no password)
-enter code to access admin mode

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75.5960.03 IXIO FAMILY 20190916
### NOTES

<table>
<thead>
<tr>
<th>Note 1</th>
<th>Always use a screwdriver when making further AIR adjustments to the arrow position on the sensor.</th>
</tr>
</thead>
</table>
| Note 2 | DeEner = de-energized relay  NO = normally open  
Energ = energized relay  NC = normally closed |
| Note 3 | The sensor LED will briefly flash RED during monitoring communication with door control. This indicates that external monitoring is functional.  
Monitoring functionality must be active on the sensor and door control, and monitoring wires must be properly connected to the door control. |
| Note 4 | MTF = motion tracking feature |
| Note 5 | active opening output:  
0  motion detection  
1  motion or presence detection |
| Note 6 | 0  presence detection on safety input  
1  presence detection on safety + auxiliary inputs |
| Note 7 | partial: outputs are not reset |
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 diagnostics menu (menu 3) of the LCD. |
| E4 | ORANGE LED flashes 4x | The sensor does not receive enough AIR energy. | Decrease the angle of the AIR curtains. |
| E5 | ORANGE LED flashes 5x | The sensor receives too much AIR energy. | Slightly increase the angle of the AIR curtains. |
| E5 | ORANGE LED flashes 5x | 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. |
| E8 | ORANGE LED is on | The sensor encounters a memory problem. | Cut and restore power supply. |
| | RED LED flashes quickly after an assisted setup | The sensor sees the door during assisted setup. | Move the AIR curtains away from the door. |
| | RED LED illuminates sporadically | The sensor vibrates. | Check if the sensor is secure. |
| | RED LED illuminates sporadically | The sensor sees the door. | Adjust the AIR angle and launch an assisted setup. |
| | RED LED illuminates sporadically | 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. |
| | GREEN LED illuminates sporadically | Ghosting created by door movement. | Change radar field angle. |
| | GREEN LED illuminates sporadically | The sensor vibrates. | Check if the sensor and door cover is secure. |
| | GREEN LED illuminates sporadically | The sensor sees the door or other moving objects. | Remove the objects if possible. |

troubleshooting continues on the next page
## TROUBLESHOOTING (cont.)

<table>
<thead>
<tr>
<th>The LED and the LCD displays are off</th>
<th>No power to sensor.</th>
<th>Check wiring.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The reaction of the door does not correspond with the LED signal</td>
<td>Incorrect output configuration / wiring.</td>
<td>Check output configuration setting.</td>
</tr>
<tr>
<td>The LCD or remote control does not react</td>
<td>The sensor is protected by a password.</td>
<td>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.</td>
</tr>
<tr>
<td>RED Visible External Monitoring (Test Indication LED) does not flash</td>
<td>Monitoring installation/ setup error.</td>
<td>Verify door control is capable of monitoring and the sensor monitoring wires are properly connected to the door control.</td>
</tr>
<tr>
<td>RED Visible External Monitoring (Test Indication LED) flashes continuously</td>
<td>Sensor malfunction.</td>
<td>Replace the sensor.</td>
</tr>
<tr>
<td>Door cycles open and remains open</td>
<td>Wiring issue.</td>
<td>Verify wiring.</td>
</tr>
<tr>
<td></td>
<td>Door control not set correctly.</td>
<td>Verify door control monitoring set to Active Low.</td>
</tr>
<tr>
<td></td>
<td>Door control monitoring set to Active High.</td>
<td>Set door control monitoring to Active Low.</td>
</tr>
<tr>
<td></td>
<td>Safety output is set incorrectly.</td>
<td>Set the safety output required for the door control.</td>
</tr>
</tbody>
</table>

Can’t find your answer? Visit [www.beainc.com](http://www.beainc.com) or scan QR code for Frequently Asked Questions!

## TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage: 12 – 24 VAC ±10% 12 – 30 VDC ±10% to be operated from SELV-compatible power supplies only</td>
</tr>
<tr>
<td>Power consumption: &lt; 2.5 W</td>
</tr>
<tr>
<td>Mounting height: 6'6” – 11’6” local regulations may impact acceptable mounting height (pedestrian applications only)</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>Degree of protection: IP54</td>
</tr>
<tr>
<td>Noise: &lt; 70 dB</td>
</tr>
<tr>
<td>Applicable directives: R&amp;TTE 1999/5/EC LVD 2006/95/EC MD 2006/42/EC ROHS 2 2011/65/EU</td>
</tr>
</tbody>
</table>

*Specifications are subject to change without prior notice. All values measured in specific conditions.*
### DETECTION MODE

**DT1 SENSORS:**  
- MOTION  
- Minimum detection speed: 2 in/s

**DT1 & ST SENSORS:**  
- PRESENCE  
- Typical response time: < 200 ms (max: 500 ms)

### TECHNOLOGY

**DT1 SENSORS:**  
- Microwave doppler radar  
- Transmitter frequency: 24.150 GHz  
- Transmitter radiated power: < 20 dBm EIRP  
- Transmitter power density: < 5 mW/cm²

**DT1 & ST SENSORS:**  
- Active infrared with background analysis  
- Spot: 2" × 2" (typ)  
- Number of spots: max. 24 per curtain  
- Number of curtains: 2

### OUTPUT

**DT1 & ST SENSORS:**  
- Electromechanical relay  
  (potential and polarity free)  
  - Max. contact current: 1 A  
  - Max. contact voltage: 30 VDC  
  - Adjustable Hold time: 0.5 – 9 s

**DT1 & ST SENSORS:**  
- Solid-state relay  
  (potential and polarity free)  
  - Max. contact current: 400 mA  
  - Max. contact voltage: 42 VAC / VDC  
  - Hold time: 0.3 – 1 s

### TEST/MONITORING INPUT

**DT1 & ST SENSORS:**  
- Sensitivity:  
  - Low: < 1 V  
  - High: > 10 V (max. 30 V)  
- Response time on test request: typical < 5 ms

### NORM CONFORMITY

**DT1 & ST SENSORS:**  
- ISO 13849-1:2008 PL «c» CAT. 2  
  (under the condition that the door control system monitors the sensor at least once per door cycle)  
- IEC 61496-1:2012 ESPE Type 2

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**CAMERA**

- Voltage regulator: 6.6 – 36 VDC (±10%)  
  (built into wire harness): 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

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**BEA, INC. INSTALLATION/SERVICE COMPLIANCE EXPECTATIONS**

BEA, Inc., the sensor manufacturer, cannot be held responsible for incorrect installations or inappropriate adjustments of the sensor/device; therefore, BEA, Inc. does not guarantee any use of the sensor outside of its intended purpose.

BEA, Inc. strongly recommends that installation and service technicians be AAADM-certified for pedestrian doors, IDA-certified 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 system installation 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 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).

Verify that all appropriate industry signage and warning labels are in place.