

# SUPERSCAN-T

## Door-Mounted, Presence Sensor for Automatic, Pedestrian Doors

SuperScan-T sensors are intended to be used with pedestrian, swing door systems.



Visit website for available languages of this document.

### DESCRIPTION



1. Lens
2. Master circuit board
3. Slave circuit board (optional)
4. Endcaps
5. Housing



### TECHNICAL SPECIFICATIONS

|                               |   |   |
|-------------------------------|---|---|
| Power supply:                 | 12 – 24 VAC/VDC ±10%  |   |
| Current consumption:          | Master:<br>on = 60 mA max.<br>off = 30 mA max.  | Slave:<br>on = 40 mA max.<br>off = 30 mA max. |
| Inhibit input:                | 12 – 24 VAC/VDC ±10% (inhibited when voltage is applied)                                  |   |
| Monitoring request input:     | 12 – 35 VDC required (polarity-sensitive)<br>min. pulse width duration = 50 ms            |   |
| Output interface; relay:      | relay – max. contact rating: 1A @ 30v (resistive)   |   |
| Detection range:              | 0 – 8'  |   |
| Distance adjustment:          | 2 – 8' (rotating cam w/linear adjustment)   |   |
| Max. mounting height:         | 8'  |   |
| Detection time:               | < 50 ms   |   |
| Detection signal duration:    | Infinite Presence Detection   |   |
| Output hold time:             | Potentiometer range: 0.1 – 4.5 seconds  |   |
| Operating temperature range:  | -30 – 140 °F  |   |
| PCB dimensions:               | Master:<br>10.91" x 1.5"  | Slave:<br>8.75" x 1.5"                        |
| Connector to door controller: | 8-position screw terminal on Master PCB   |   |
| Master-to-slave connection:   | flat-ribbon cable w/connectors and key lock   |   |
| Max. number of slaves:        | 8   |   |
| Functions selection:          | Detection mode: NO or NC<br>Normal mode or Background Analysis mode                       |   |
| Norm conformity:              | UL 10B/C (90 minutes)<br>UL 10B file number: GVUX.R39071; UL10C file number: GVUX7.R39071 |   |

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

#### NOTES:

1. UL10 fire rating applies only to SuperScan-T sensors with housings less than or equal to 46 1/2". Housings greater than 46 1/2" are not UL10 fire-rated.

# READ BEFORE BEGINNING INSTALLATION/PROGRAMMING/SET-UP

## INSTALLATION



The sensor should be mounted securely to avoid extreme vibrations.



Choose a location that does not interfere with door hardware (e.g. finger guards, lock rods, etc.).



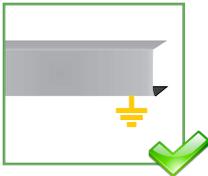
Do not cover the sensor.



Avoid moving objects in the detection field.

- All wiring harnesses used must a) be routed separate from any mains or non-class 2 voltage cables, or b) be rated for the mains voltage and suitable protection.
- Routing means must be used in accordance with national and local codes.

## SAFETY



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



Only trained and qualified personnel are recommended for installation and set-up of the sensor.

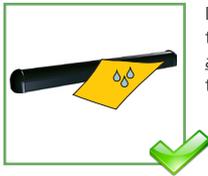


Following installation, always test for proper operation (according to ANSI 156.10) before leaving the premises.



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

## 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.

## LED STATUS (default settings)

### MASTER

 (red)  
Presence detection

 (green)  
Sensor powered, non-detection

### SLAVE

 (red)  
Presence detection

For other LED indications based on relay configuration, see page 5 - **J2: Relay Mode**.

# 1 MECHANICAL INSTALLATION

## HOUSING PREPARATION



Remove the screw that secures the end cap to the sensor extrusion.



Pull out the lens from the top of the sensor extrusion. **Do not use a screwdriver to pry the lens.**



Remove the Master and all Slave circuit boards from the extrusion by pulling the tab of the angle adjustment clip away and downward from the extrusion, and rotating the circuit board out from the extrusion.

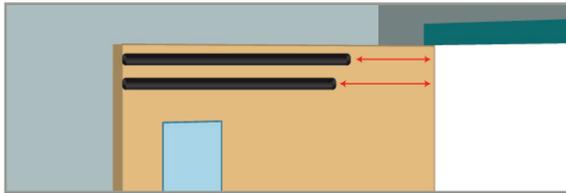
## HOUSING PLACEMENT

### CENTER-HUNG DOORS:

The extrusion end near the pivot edge should be far enough away from the door edge to prevent sensor/finger-guard rubbing. *Pay particular attention to the safety side of the door.*

### HINGE-HUNG DOORS:

Do not require as much clearance between sensor and hinge-side jamb.



Housing edge (including end cap) should be as close as possible to leading edge of door without creating mechanical interference with door jamb or an adjacent door.

## HOUSING INSTALLATION



Determine the desired mounting location.



Align the housing with the top of the door at the chosen location (ensuring proper orientation) and then mark the mounting holes at both ends. *Avoid mounting holes near door seams.* Also mark the appropriate end for a wire-passage function hole (if required). This hole may be no more than 1" in diameter.



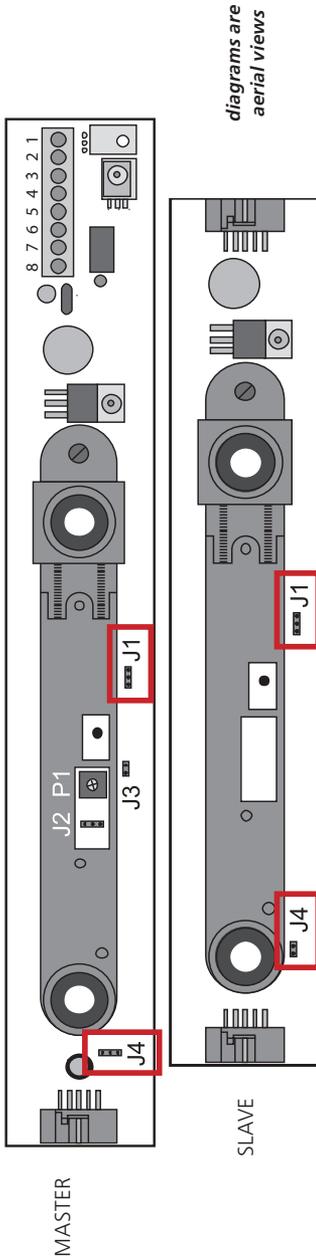
Drill the marked holes (ensuring proper hole size).



Align the housing with the pilot holes and secure to the door with the 2 provided screws.

## 2 JUMPER SETTINGS

Set all jumper settings for the installation. **J1 and J4 must be set on both Master and Slave boards.**



### J1: BACKGROUND ANALYSIS

Fail-safe function which forces the sensor to remain «in detection» when faulty environmental situations arise (e.g. sensor aimed too high, transmitter/receiver is blocked, insufficient reflectivity of floor surface).

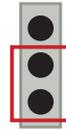
#### NOTES:

1. Floor must have at least 5% reflectivity to allow Background Analysis to function properly.
2. If an extremely IR-absorbent floor is present, set J1 to Background Analysis mode.
3. The J1 function must be set on each module.

BACKGROUND ANALYSIS  
**ON**



BACKGROUND ANALYSIS  
**OFF**

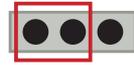


### J4: MASTER & SLAVE MONITORING CONFIGURATION

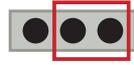
**Configuration of the J4 jumper on both Master and Slave is only necessary when monitoring is utilized.**

Master sensors are considered the main hub of the unit and can be used alone. Additional slave modules may be added to increase detection field. Slave Jumper 4 serves to indicate the end of the line of modules during monitoring.

MASTER ONLY



MASTER AND SLAVE(S)



top and middle pins  
(from aerial view)

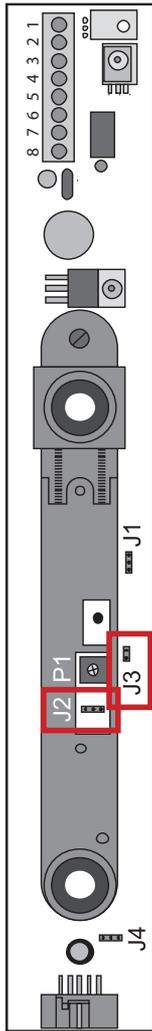
MIDDLE AND BOTTOM PINS  
(from aerial view)

SLAVE J4  
both pins  
(from aerial view)

## 2 JUMPER SETTINGS

The following diagram is an aerial view of the Master board.

Set all jumper settings for the installation. **J2** and **J3** need to be set on **ONLY** the Master board.



### J3: MONITORING MODE

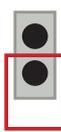
factory default: **monitoring OFF**

Allows toggling on and off of monitoring.

MONITORING  
**OFF**



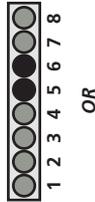
MONITORING  
**ON**



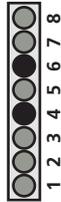
or no jumper

**J2: RELAY MODE, NO/NC** – Allows selection of active or passive relay.

**PASSIVE (default)** – relay energized when detector at rest

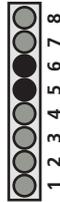


OR



middle and bottom pins  
(from aerial view)

**ACTIVE** – relay de-energized when detector at rest



OR



top and middle pins  
(from aerial view)

### TERMINALS 5 and 6:

ACTIVE RELAY + NC/COM TERMINAL CONNECTION = CLOSED CONTACT DURING DETECTION

LED indication during detection: green OFF / red ON

power loss → contact closed

### TERMINALS 4 and 6:

ACTIVE RELAY + NO/COM TERMINAL CONNECTION = OPEN CONTACT DURING DETECTION

LED indication during detection: green OFF / red ON

power loss → contact open

### TERMINALS 5 and 6:

PASSIVE RELAY + NC/COM TERMINAL CONNECTION = OPEN CONTACT DURING DETECTION

LED indication during detection: green ON / red ON

power loss → contact closed

### TERMINALS 4 and 6:

PASSIVE RELAY + NO/COM TERMINAL CONNECTION = CLOSED CONTACT DURING DETECTION

LED indication during detection: green ON / red ON

power loss → contact open

## 2 JUMPER SETTINGS (cont.)

### HOLD-TIME POTENTIOMETER

Located beside Jumper 2 on the Master board is the hold-time potentiometer.

Adjustability ranges from 0.1 – 4.5 seconds.

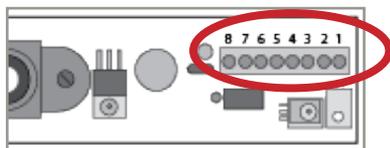
Clockwise rotation increases time delay.



## 3 WIRING

Wire to the terminal connector (shown below). Wiring will vary according to the application.

*Sensor power must be supplied from a Class 2 supply source limited to 15 W. Wiring shall be installed as required by local codes.*



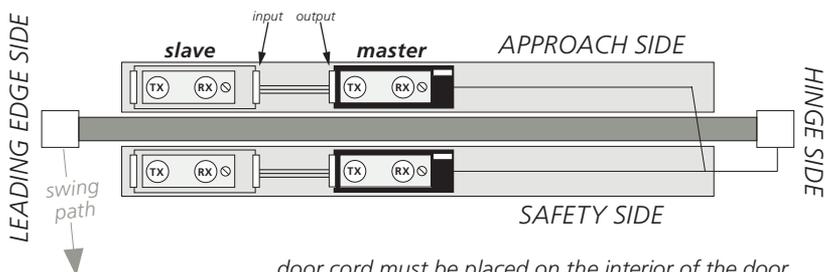
| Terminal | Explanation of wiring connection  |
|----------|---|
| 1        | <b>Test input</b> (when used as a monitored sensor)<br><b>(+) positive when utilizing monitoring</b>  |
| 2        | <b>Ground</b> (negative terminal if Input inhibition is used)<br><b>(-) negative when utilizing monitoring</b>  |
| 3        | <b>Input inhibition:</b> All detection is ignored. Infrared emission is stopped. Inhibition occurs when 12 – 24 VAC/VDC $\pm 10\%$ is applied between terminal 3 and terminal 2.                  |
| 4        | <b>Normally Open:</b> JP2 factory default will close the relay contact on terminal 4 when the SuperScan-T is energized and <b>not</b> in detection. Loss of power results in a N.O. contact       |
| 5        | <b>Normally Closed:</b> JP2 factory default will open the relay contact on terminal 5 when the SuperScan-T is energized and <b>not</b> in detection. Loss of power will result in a N.C. contact. |
| 6        | <b>Common</b> contact for relay   |
| 7        | <b>Power Input (-):</b> 12 – 24 VAC/VDC $\pm 10\%$ must be supplied   |
| 8        | <b>Power Input (+):</b> 12 – 24 VAC/VDC $\pm 10\%$ must be supplied   |

## 4 MODULE POSITION & ANGLE ADJUSTMENTS

### MODULE POSITIONS

Positioning of modules within the extrusion on both sides is critical. **The transmitter ("TX" below) must be at the leading edge of the door.**

Below is an aerial view of module placements on the door. Left-handed and right-handed doors require module placements to be flipped.



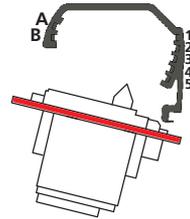
## 4 MODULE POSITION & ANGLE ADJUSTMENTS (cont.)

### ANGLE ADJUSTMENTS

Each module's angle may be set independently. Use the diagrams and chart below to adjust the module to obtain the correct angle.

*Angles may need to also be adjusted after power-up and walk-testing.*

1. Use the orientation shown to the right to insert the module into the clip.
2. Use the chart below to determine the clip setting for the desired angle.  
*The red line indicates the part of the module that will be set into the clip.*



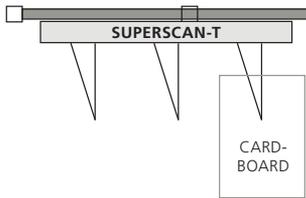
#### CLIP SETTINGS:

- 0° = B1
- 5° = B2
- 10° = A2
- 15° = A3
- 20° = A4
- 25° = A5

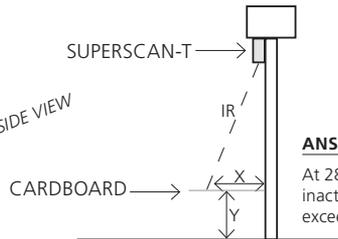
| INACTIVE ZONE (Y, below)<br>DISTANCE FROM FLOOR | SUPERSCAN-T ANGLE |        |         |         |         |         |
|---|-------------------|--------|---------|---------|---------|---------|
|   | 0°                | 5°     | 10°     | 15°     | 20°     | 25°     |
| 8"  | 0                 | 6"     | 12 1/2" | 19 1/4" | 26"     | 33 1/4" |
| 12"   | 0                 | 6"     | 12"     | 18"     | 24 1/2" | 31 1/2" |
| 16"   | 0                 | 5 1/2" | 11 1/4" | 16 3/4" | 23 1/4" | 29 1/2" |
| 20"   | 0                 | 5 1/4" | 10 1/2" | 16"     | 21 1/2" | 27 1/2" |
| 24"   | 0                 | 5"     | 9 3/4"  | 14 3/4" | 20"     | 25 1/2" |
| 28"   | 0                 | 4 1/2" | 9"      | 13 1/2" | 18 1/2" | 23 3/4" |

*Measurements are based on a 79" mounting height.*

AERIAL VIEW



SIDE VIEW



#### ANSI 156.10 compliance:

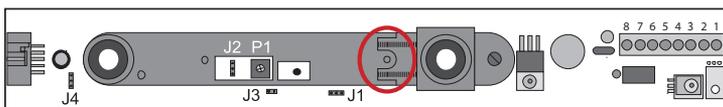
At 28" from the floor, the inactive zone shall not exceed 5"

## 5 DETECTION ZONE ADJUSTMENTS

Each module's detection zone may be set independently upon power-on.

**Jumpers 1 must be set to Normal Mode (see page 4) to make adjustments.**

1. Power sensors with 12 – 24 VAC/VDC  $\pm 10\%$ . LED should reflect Jumper 2 configuration (see page 5).
2. Use a white, gray, or black piece of cardboard (roughly 8" x 11") and hold it as shown in the diagram above.
3. Lift cardboard from the floor until it is detected. This determines the height of the inactive area (labeled "Y" in the diagram). *If this height is not between 12" – 16" above the floor OR does not meet your requirements, an adjustment must be made to the detection distance.*



- if zone Y is too high, turn the adjustment knob clockwise to increase the detection distance and decrease zone Y
- if zone Y is too low, turn the adjustment knob counterclockwise to decrease the detection distance and increase zone Y

## 6 FINISHING TOUCHES

1. Replace the endcaps and lens.
  - a. At the SuperScan-T end of the cable, ensure enough slack to allow a relaxed connection at the terminal block.
  - b. Locate the hinge-side end cap. Remove the tab at the bottom of the cap to allow insertion of the plastic sheath.
  - c. Insert the plastic sheath and install the end cap.
  - d. Complete any mechanical adjustments.
  - e. Install the lens to fit tightly against the end cap and plastic sheath to hold it in place.
  - f. Install other end cap.
2. Once all sensors have been adjusted, activate the door several times and allow it to go through a full cycle each time. Ensure that no false triggering (door re-cycling or stopping by itself at any point of travel) is occurring.

Ensure system compliance with all applicable safety standards (i.e. ANSI A156.10, 156.27).

### TROUBLESHOOTING

|  |  |   |
|--|--|---|
| Sensor does not work at all<br>No LED indications                                    | Faulty power supply  | Power supply must be 12 – 24 VAC/VDC $\pm$ 10%.   |
|  | Faulty connections   | Check for correct power at terminals 7 and 8 of the affected module.  |
| Sensor output appears to be working opposite of what is expected                     | Relay output may be configured improperly  | Observe LED indications on affected modules to help determine status.   |
|  | Safety-side sensor may be seeing an adjacent wall/rail behind the door, near the open position | Observe LED status on safety side of door.<br>Locate module which is falsely triggering.<br>Check for proper detection angle and also check the detection range adjustment.<br>Sensor may need to be inhibited at a specific point of door travel at the safety side. Refer to terminal connections (page 6). |
| Door stops by itself before reaching full-open position                              | Safety-side sensor may be seeing an adjacent wall/rail behind the door, near the open position | Observe LED status on safety side of door.<br>Locate module which is falsely triggering.<br>Check for proper detection angle and also check the detection range adjustment.   |
|  |  | Sensor may need to be inhibited at a specific point of door travel at the safety side. Refer to terminal connections (page 6).  |
| Activation or safety is held in triggered mode                                       | Detection module may be seeing the floor or unwanted object near the door                      | Reduce detection range on the affected module(s).<br>Detection should occur at 12" – 16" above the floor.<br>Refer to "Detection Zone Adjustments" (page 7).  |
|  |  | Refer to "Detection Zone Adjustments" (page 7).   |
| Erratic detection behavior occurring throughout the door's opening and closing cycle | Possible faulty wiring at door transfer location   | Check for wire continuity at transfer location using a multi-meter.<br>Move wires around during testing to help locate any breaks.<br>Replace faulty wiring as necessary.   |
|  |  | Replace faulty wiring as necessary.   |

#### 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.



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General Tech Questions: [techservices-us@beasensors.com](mailto:techservices-us@beasensors.com) | Tech Docs: [www.BEAsensors.com](http://www.BEAsensors.com)