LZR-MICROSCAN T

Stand-Alone, Door-Mounted, Safety Sensor System for Automatic Swing Doors* (US version)

* LZR-microscan sensors are intended to be used with pedestrian, swing-door systems.

DESCRIPTION

1. tilt adjustment
2. sensor connection ports
3. sensor LED
4. endcaps
5. optical window
6. plug-n-play ports
7. adjustment knob
8. LCD
9. hub LEDs

INCLUDED KIT COMPONENTS

DESCRIPTION	PART NUMBER	SINGLE	PAIR/DE
Left LZR-microscan T Sensor	10LZRMICROLEFTT	1	2
Right LZR-microscan T Sensor	10LZRMICRORIGHTT	1	2
LZR-microscan T Hub	10LZRMICROSCANHUBT	1	1
Master Sensor Harness	35.1326	1	2
Slave Sensor Harness	35.1327	1	2
Door Control Harness	20.5222	1	2
System Harness	20.5304	1	1
Eagle Harness	20.5096	2	2
Power Supply Harness	20.5095	1	1
Home Switch (Surface Mount)	50.5283	1	2
Door Loop / Cap Kit	70.0202 / 50.0078	1	2
On / Off / Hold Open Switch Jumper	20.5310	1	1
Left Pass-Through Sensor Endcap	41.7922	1	2
Right Pass-Through Sensor Endcap	41.7923	1	2
Sensor Spacer	70.5554	1	2
Spacer Mount Screws (Metal)	50.0048	2	4
Spacer Mount Screws (Wood)	50.5319	2	4
Sensor Mount Screws (Metal)	50.1818	4	8
Sensor Mount Scews (Wood)	50.5282	4	8
Endcap Screws	41.8632	4	4
Velcro Tabs	50.0046	2	2
LZR-microscan T Mounting Template	75.5754	1	1
LZR-microscan T User's Guide	75.5753	1	1
LZR-microscan T Wiring Tech Bulletin	78.0053	1	1
Universal Kit (Power Supply - 30.5558, On / Off / Hold Open Switch - 10DOORSWITCH)	10MICROSCAN-UKIT	1 (Universal Kit ONLY)	1 (Universal Kit ONLY)

REQUIRED TOOLS

TOOL
Power Drill
Tape Measure
Magnetic Phillips #0
Phillips #2
1/8" Drill Bit
5/16" Drill Bit
3/8" Drill Bit
1/2" Drill Bit
Pencil
Center Punch / Hammer
Wire Nuts
Wire Snips
Wire Fish

KITS

DESCRIPTION	PART NUMBER
Single Door	10LZRMICROSCAN1T
Pair / Dual-Egress Door	10LZRMICROSCAN2T
Universal Single Door	10LZRMICROSCAN1UT
Universal Pair / Dual-Egress Door	10LZRMICROSCAN2UT
Narrow-Frame Door	10MICROSCANMOUNTT
Glass/Fire Door	10MICROSCAN-Y
Universal Kit	10MICROSCAN-UKIT

READ BEFORE BEGINNING INSTALLATION/PROGRAMMING/SET-UP

PRECAUTIONS

- Shut off all power going to header before attempting any wiring procedures.
- Maintain a clean and safe environment when working in public areas.
- Constantly be aware of pedestrian traffic around the door area.
- Always stop pedestrian traffic through the doorway when performing tests that may result in unexpected reactions by the door.
- *ESD (electrostatic discharge)*: Circuit boards are vulnerable to damage by electrostatic discharge. Before handling any board, ensure you dissipate your body's ESD charge.
- Always check placement of all wiring before powering up to ensure that moving door parts will not catch any wires and cause damage to equipment.
- Ensure compliance with all applicable safety standards (i.e. ANSI A156.10) upon completion of installation.
- DO NOT attempt any internal repair of the components. All repairs and/or component replacements must be performed by BEA, Inc. Unauthorized disassembly or repair:
  1. May jeopardize personal safety and may expose one to the risk of electrical shock.
  2. May adversely affect the safe and reliable performance of the product resulting in a voided warranty.

LASER

IR laser (Class 1)
wavelength 905 nm
max. output pulse power 35 W

CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

INSTALLATION

Avoid extreme vibrations.

Do not cover the sensor.

Avoid moving objects and light sources in detection zone.

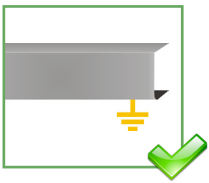
Avoid highly reflective objects in the detection zone.

MAINTENANCE

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

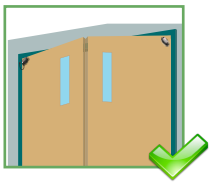
Do not use abrasive cleaning components.

SAFETY

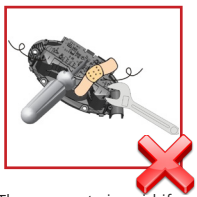


The door control unit and the door header must be correctly grounded.

Only trained and qualified personnel are recommended to install and set up the sensor.



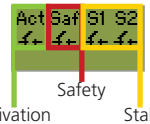
Always test the proper operation of the installation before leaving the premises.



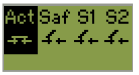
The warranty is void if unauthorized repairs are made or attempted by unauthorized personnel.

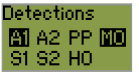
HOW TO USE THE LCD

DISPLAY DURING NORMAL OPERATION



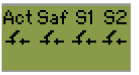
Activation — Stall (door 1 & 2)





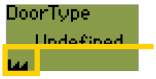
Negative display = active output

Opposite for reverse logic

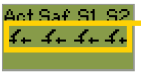


To adjust contrast, push and turn the gray button simultaneously.
During normal operation only.)

FACTORY VALUE VS. SAVED VALUE



displayed value = factory value



displayed value = saved value

NAVIGATING IN MENUS

Push to enter the LCD menu

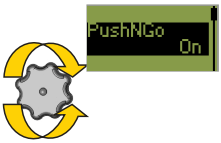
Select your language before entering the first LCD menu.
Available for the first 30 seconds after power-on of the hub.

Scroll menu items

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

Select **More** to go to the next level:
- basic
- advanced
- diagnostics

CHANGING A VALUE

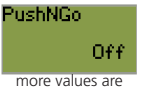


SCROLL MENU UP/DOWN

PUSH TO SELECT PARAMETER

current value is displayed

SCROLL VALUES UP/DOWN



more values are displayed

PUSH TO SAVE NEW VALUE

new value is displayed

LED STATUS

HUB LED		
COLOR	**SIGNAL**	**DESCRIPTION**
Blue	Learn	Learn in progess or Learn required
White	Tracking	Door position & detection zone tracking
Orange	Home Switch	Home Switch closed (door/doors closed)

SENSOR LED		
COLOR	**SIGNAL**	**DESCRIPTION**
Green	Operational	Sensor operational
Red	Detection	Sensor in detection / Sensor monitoring
Orange*	Error	Sensor in error...reference hub LCD

** see TROUBLESHOOTING section for descriptions of orange LED error indications*

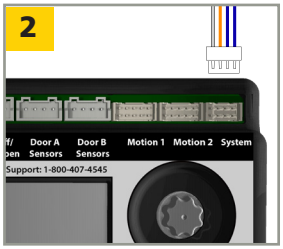
PREPARATION

IMPORTANT:

- **Verify operation/functionality of door control and operator prior to system installation.**
- **Proper functionality of LZR-microscan T system relies on proper installation and adjustment.**

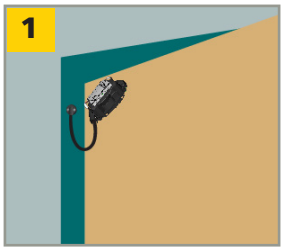
Hub

Install hub in door header, centered, and in an easily accessible location.



Plug System Harness into hub port labeled **System**. Do not plug in any other harnesses.

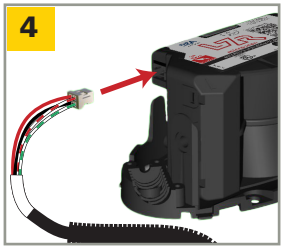
Sensors



Sensors are "handed." Determine if the sensor you are installing is right-handed or left-handed. *The image here shows a left-handed sensor.*

Determine on which side of door Door Loop will be installed. Cut to shortest length to avoid loop in detection zone.

On the sensor to be mounted on loop side, remove the Blank Endcap closest to door hinge.[1]



Route Master Sensor Harness through Door Loop and plug into sensor at closest port.

Affix Door Loop to sensor with Pass-Through Endcap and three (3) screws.[2]

NOTES:

1. For left sensor, remove left Blank Endcap **OR** for right sensor, remove right Blank Endcap.
2. Pull extra Master Sensor Harness slack through Door Loop (away from sensor) before tightening Endcap screws.

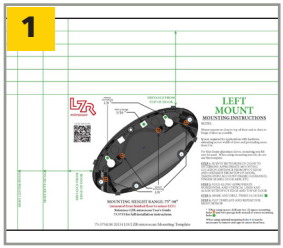
INSTALLATION

IMPORTANT:

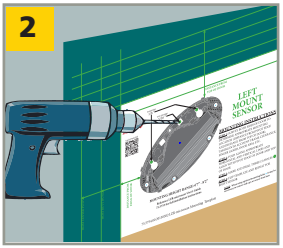
- **Refer to mounting template for full mounting instructions!**
- **Mounting height of 75” (min) to 98” (max) from finished floor to sensor LED.**
- **Function holes must not be more than Ø 1".**

Sensors

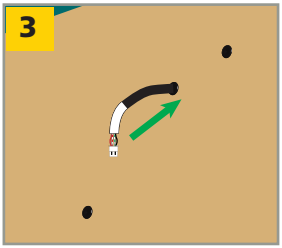
Do not apply sensor covers until system is fully operational. Do not adjust tilt angle.



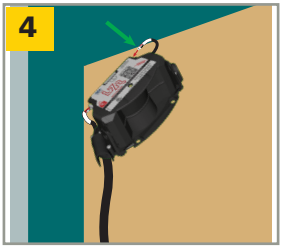
Use Mounting Template to position each sensor correctly. Check for obstructions/clearance.



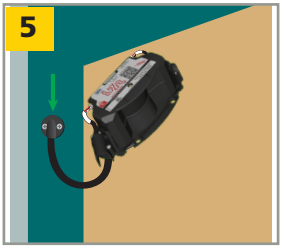
Align Mounting Template, and then mark and drill holes.[1] Repeat on both sides of door. *Be sure to drill the correct size holes.*



Run Slave Sensor Harness through door.
Nominal slave-sensor harness function hole is typically Ø ½" or less.

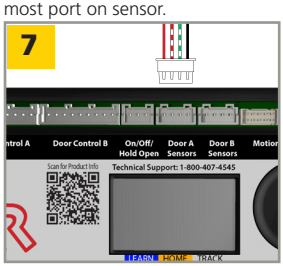


Using instructions on Mounting Template, mount **MASTER** sensors with appropriate screws. Plug in Slave Sensor Harness at the upper most port on sensor.

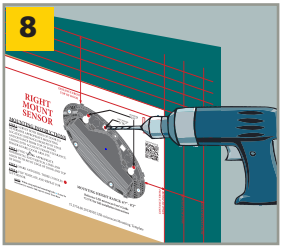


Install Door Loop: Drill ½” passage hole in header and jamb, then route Master Sensor Harness, and install the cap.

Using instructions on Mounting Template, mount **SLAVE** sensors with appropriate screws. Plug in Slave Sensor Harness at the upper most port on sensor.



Plug Master Sensor Harness into hub port labeled **Door A Sensors**



If necessary, repeat steps 1 – 7 for second door leaf using hub port **Door B Sensors**.

NOTES:

1. Spacer required for applications with door hardware extending across width of door.

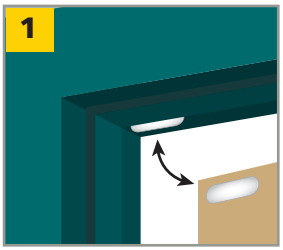
INSTALLATION (cont.)

Peripherals

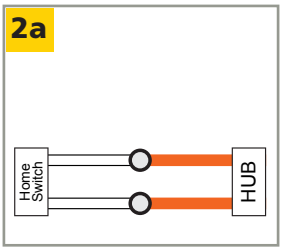
IMPORTANT:

- **All activation devices must be wired directly to hub.**
- **Logic modules must be activated by hub via Door Control Harness activation wires.**

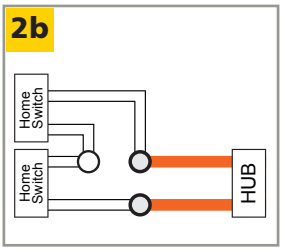
Home Switch[1]



Install Home Switch at desired location.



For single doors, wire-nut white Home Switch wires to orange wires of System Harness plugged into hub.

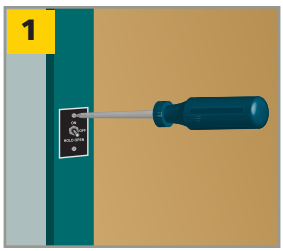


For pairs of doors, wire-nut white Home Switch wires in series to orange wires of System Harness plugged into hub.[2]

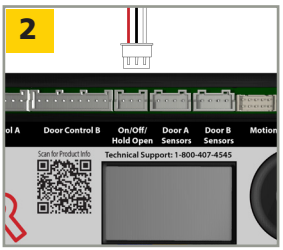
NOTES:

1. Any dry-contact Home Switch or auxiliary switch may be used and must be closed when door is closed.
2. For simultaneous pairs or dual-egress doors, two (2) Home Switches must be wired in series with orange wires of System Harness plugged into hub.

On / Off / Hold Open Switch



Determine mounting location, apply mounting template, drill holes.



Route *On / Off / Hold Open* switch harness and plug into hub port labeled ***On / Off / Hold Open***.

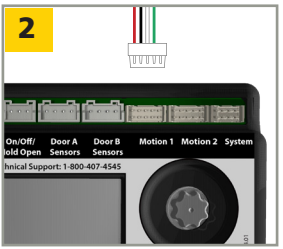
If using an existing *On / Off / Hold Open* switch, plug *On / Off / Hold Open* Switch Jumper into hub port labeled ***On / Off / Hold Open*** and wire-nut red and black wires together, or if desired, splice existing switch into jumper.

FUNCTION	JUMPER WIRES
on	red jumped to black
hold open	black jumped to white
off	none

INSTALLATION (cont.)

Eagle (optional)

Install Eagle(s). For complete installation instructions refer to BEA User's Guide 75.5601.

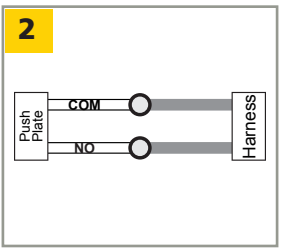


Plug Eagle Harness(es) into hub port labeled **Motion 1** and, if applicable, **Motion 2**.

Push Plates (optional)

Multiple push plates can be paralleled to gray wires of System Harness.

Install push plate(s). For complete installation instructions refer to the appropriate BEA User's Guide.

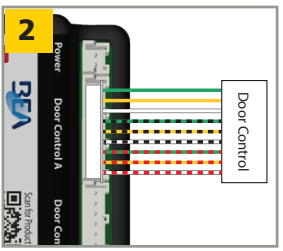


Wire-nut push plate wires or wireless receiver (COM and NO) to gray wires of System Harness plugged into hub.

Door Control Harness

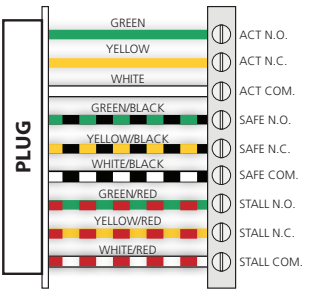
If door system utilizes independent door controls, repeat steps 1 – 2 for the second control.

Plug Door Control Harness into hub port labeled **Door Control A.**



Wire Door Control Harness to door control.

For dual-egress doors with independent stall, two (2) Door Control Harnesses must be used.



All white wires (white, white/black, white/red) are always used.

For each function (activation, safety, stall), either green or yellow are used - not both.

See Tech Bulletin #53 for more information.

WIRING

IMPORTANT:

- **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.**

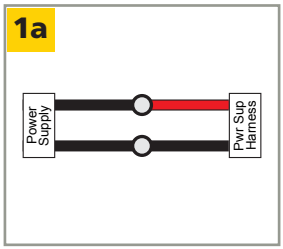
DOOR TYPE	HUB PORT
single	always use DOOR CONTROL A hub port
simultaneous pair[1]	from header cover side, left door uses DOOR CONTROL A hub port and right door uses DOOR CONTROL B hub port
dual-egress[1]	from header cover side, whichever door is pushed (right door) during Teach In process uses DOOR CONTROL B hub port

NOTES:
1. If using two door controls. When one door control is used for pairs, refer to instructions for "single" (above).

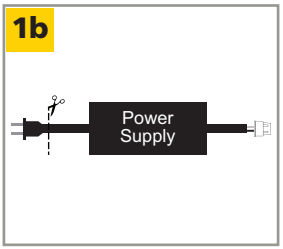
Power[1]

Most doors require the use of the LZR-microscan T Power Supply.

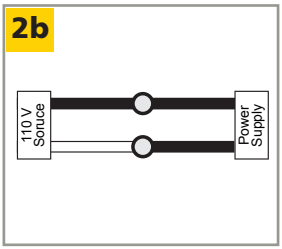
For information on powering directly from door control see Tech Bulletin #53.



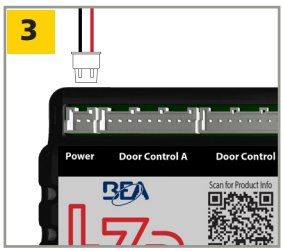
If using door control power, connect Power Supply Harness to door control.



If using BEA-provided power supply, cut plug off of harness, and strip wires.[2]



Wire-nut input of power supply to 110V power source.



Plug Power Supply or Power Supply Harness into hub port labeled **Power**.

NOTES:
1. LZR-microscan T hub/sensors must be powered by a UL Class 2 power supply limited to 15 W.
2. If a NEMA 5-15R outlet is not available in door header, cut off NEMA 5-15P plug and wire-nut to 110 VAC observing polarity and grounding.

External Monitoring

LZR-microscan T hub/sensors are intended to be monitored by the door system for proper operation (see Tech Bulletin #53).

If the door control does not utilize monitoring, do not use monitoring wires.

If utilizing the monitoring function, 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 monitoring wires must be properly connected to the door control.

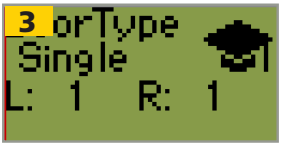
SET-UP

CAUTION: No safety present during learn cycle.

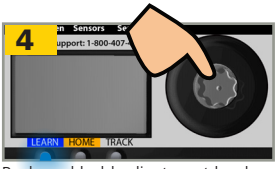
Be sure to walk-test door after set-up is complete and perform new Learn anytime door operator, control, sensor, or hub is adjusted.

Program hub according to desired settings. **Menu 1 (Basic) items MUST be programmed (pg 10).**

Network icon will appear for approximately five (5) seconds.

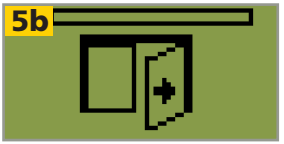


Return to Learn screen.



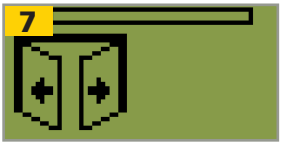
Push and hold adjustment knob for three (3) seconds, until blue LED begins to flash.

"CLEAR AREA" will display and countdown will begin. Clear area around door on both sides.



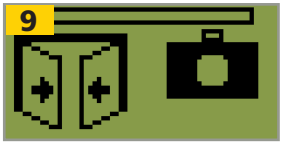
For dual-egress doors, Push Door icon will display. Push right door (Door B) open at least 10 degrees.

Automatic Teach-In will begin with "door closed" Learn.



"Door opening" Learn.
Door will open automatically.

"Door open" Learn.



"Door closing" Learn.

After Teach-In is complete, a floppy disk will be displayed.

Hour glass will be displayed for approximately thirty (30) seconds while all Learn data is saved.

Once Teach-In is complete, LCD displays home screen, Blue LED is off, and orange LED is on.[1]

TEACH-IN STAGE	HUB LED	SENSOR LED
Prior to Learn	blue flashing	red/green flashing
Network Icon	blue flashing & orange solid	red solid
Clear Area	blue flashing & orange solid	red/green flashing
Door Closed Learn	blue flashing & orange solid	green flashing
Door Opening/Open/ Closing Learn	blue flashing	green flashing
Floppy Disk	blue flashing & orange solid	green solid -> green flashing
Hour Glass	blue flashing & orange solid	green flashing > red solid > red/green flashing
Learn Complete	orange solid	green solid

NOTES:

1. Verify Home Switch is "making/breaking" by observing orange LED on hub. Home Switch should be set as sensitive as possible and break within a few degrees of door movement.

OVERVIEW OF SETTINGS

Default parameters are in BOLD. Menu 1 (Basic) items MUST be programmed.

MENU	ConfiLCD DISPLAY	PARAMETERS	DESCRIPTION
Menu 1 (BASIC)	DoorType	**Undefined** Single Pair DualEgr InDualEgr	Type of door system on which sensors are installed: Single: Single Door Pair: Pair of Doors DualEgr: Dual-egress Doors InDualEgr: Independent Dual-egress Doors
	DetectZoneA[1]	20 – **48**	Distance (in inches) from sensor LED to leading edge of Door A [round down]
	DetectZoneB[1]	20 – **48**	Distance (in inches) from sensor LED to leading edge of Door B [round down]
	Guiderail	**0** – 60	Guiderail height from floor (in inches)
Menu 2 (ADVANCED)	Monitoring[2]	**Off** Safe Stall Safe&Stall Act Act&Stall	Type of monitoring: Off: No Monitoring Safe: Monitoring of Safety Signal Stall: Monitoring of Stall Signal Safe&Stall: Monitoring of Safety & Stall Signals Act: Monitoring of Activation Signal Act&Stall: Monitoring of Activation & Stall Signals
	KnowingAct	**Off** On	Turns Knowing Act Off or On
	Act:HoldTime	1 - **5** - 30	Time activation relay will be held after loss of detection (in seconds)
	PushNGo	**Off** On	Turns Push-And-Go Off or On
	NotCloseTime	5 - **10** - 30	Time required for door to reach "Closed" from "Open" or "Manual" before switching to "NotClosed" (in seconds)
	AdvanceSafe	**Off** On	Type of safety provided while door(s) is/are currently open due to manual operation (or stack pressure): Off: Allows door(s) to activate, via motion sensor or push plate On: Prevents door(s) from activating, via motion sensor or push plate
	Act:Dist[3]	12 - **24** - 48	Door closed detection distance of Approach Sensor(s) (in inches)
	MonitorLogic[2]	**ActiveLow** ActiveHigh	ActiveLow: 0V requests monitoring ActiveHigh: > 0V requests monitoring
	Safe:Dist[3]	**Deep** Medium Limited	Door closed detection distance of Safety Sensor(s): Deep: 4 curtains Medium: 3 curtains Limited: 2 curtains
	Traffic	**Normal** High Extreme	When doors do not come closed for a certain period of time due to traffic flow Normal: ≤ 5 min High: ≤ 30 min Extreme: > 30 min

NOTES:

1. Detection zone "A" and "B" are the sensor pattern width and are determined by measuring the distance from the sensor LED to the leading edge of the door.
2. 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 monitoring wires must be properly connected to the door control.
3. The Approach Side Detection Zone (Act:Dist) and Swing Side Safety Zone (Safe:Dist) are independently adjustable.

OVERVIEW OF SETTINGS (cont.)

MENU	ConfiLCD DISPLAY	PARAMETERS			DESCRIPTION
Menu 3 (DIAGNOSTICS)	DispDoor[4]	Closed Opening Open	Closing NotClosed Manual	HoldOpen Off AdvanceSafe	Displays current position/state of door
	DispSens[5]	A1 A2 PP	MO S1	S2 HM	Displays active devices A1: Approach microscan T 1 A2: Approach microscan T 2 PP: Push Plate MO: Motion Sensor S1: Safety microscan T 1 S2: Safety microscan T 2 HM: Home Switch Closed
	DispPos[6]		% %		Displays opening position (0% = full closed, 100% = full open relative to learn cycle)
					ID# ..... unique ID number Config ..... configuration part number Software ..... software part number ErrorLog ..... last 20 errors ZIP ..... all parameter settings in zipped format HubTemp ..... operating temperature of hub PowerSupply ..... supply voltage at power connector OperatingTime ..... power duration since first start-up ResetLog[7] ..... delete all saved errors Admin ..... enter code to access admin mode Network ..... sensor info: software, configuration, mounting location

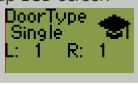
NOTES:

4. Display Door (DispDoor): Displays current position / state of doors.
5. Display Sensor (DispSens): Displays which device(s) are active.
6. Display Position (DispPos): Displays opening position (0% = full closed, 100% = full open relative to teach-in open cycle.
7. If experiencing issues, reset error log and review at a later time for possible new error(s) to help solve the issue.

TROUBLESHOOTING

General

Troubleshooting tools can be viewed on Hub LCD within Menu 3 (DIAGNOSTICS).

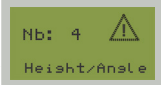
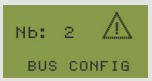
Hub LCD is not on	No input power	Verify power supply connection.
	Bad power	Verify power supply. Power from BEA power supply.
	Faulty hub	Replace hub.
No "CLEAR AREA" during setup	Sensors not discovered	Verify sensor harness connection.
No Floppy Disk after setup	Learn failed	Perform new Learn.
		Verify Home Switch is functioning properly.
Door(s) will not open/close	Door control issue	Verify door control is operational with nothing wired to it.
	No inputs/outputs connected	Verify all connections are secure (sensors and On/Off/Hold Open switch must be connected).
	Knowing Act turned on	Turn Knowing Act off or use Knowing Act devices.
	Incorrect wiring	Verify wiring from hub to door control.
	Incorrect monitoring settings or wiring	Verify monitoring settings and wiring.
Door(s) keep recycling (ghosting)	Approach-side sensors going into detection	Adjust approach-side sensors Activation Distance and/or motion sensor.
	Home Switch not "making" at door-closed	Adjust Home Switch and verify proper wiring.
Cap LCD screen 	Learn required	Perform re-Learn.
Orange flashing LED on Sensor - reference Hub for error	height/angle	Sensor mounted too high or adjusted too close to door.
		Verify handedness (right- or left-handed) for correct orientation.
	EDPS	Door did not open or reach full-open during Learn.
	BUS config	Number of doors configured incorrectly.
	boundary	Sensor masked by foreign object.
	lost message	Loose or broken sensor harness.
Door never reaches "Hold Open" or "Off" states	Not using *On / Off / Hold Open* Switch	Wire existing *On / Off / Hold Open* switch to jumper or plug BEA *On / Off / Hold Open* Switch into hub.
Hub Environment error	Voltage too high/low	Verify power supply voltage, power from BEA power supply.
	Temperature too high/low	Envionment may be too cold/hot for hub operation.
Visible Monitoring indication LED does not flash.	Monitoring installation/set-up error.	Verify door control is capable of monitoring and the sensor monitoring wires are properly connected to the door control.
		Verify monitoring is active in the sensor settings (high/low for each door control).
	Sensor and/or wiring malfunction.	Replace the sensor.

TROUBLESHOOTING (cont.)

Set-up Errors

The following LCD screenshots list potential set-up errors that could occur during a "teach-in" process.

If the sensor causes the error, you'll see an orange blinking LED on that sensor(s). This error will by displayed on the LZR-microscan T hub LCD screen as shown (see "Orange Sensor LED Errors").

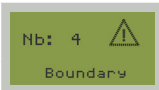
most common 	Sensor mounted too low/high	Mounting height (from floor to sensor LED): min: 6'3" (75") max: 8'2" (98") *(review mounting template)*
	Sensor mounted incorrectly in relation to RH and LH mount	Position arrow on sensor to point towards jamb.
	Sensor mounting angle out of tolerance	Correct the mounting angle: 35 (±5)° *(review mounting template)*
	Sensor tilt angle too close to the door	Tighten tilt angle screw
	Sensor is seeing door hardware (crash bars, panic bars etc.) protrusion	Install LZR spacers if required. Perform a new "teach-in".
2nd most common 	Door(s) did not move/open	Door(s) must open fully. Check the auto-switch.
	Door(s) are not moving fast enough or door(s) did not move at least 80° during "learn" process	Check and adjust door for proper operation and perform a new "learn". Increase door speed to 9 seconds or less of opening time.
	Home switch is not breaking soon enough	Adjust the home switch to break with very little door movement.
	Possible bad sensor gyro	Replace sensor.
	Trouble with lost pulses during "learn" process while door is in motion	Door must move thru a full open/close cycle with home switch making. Perform a new "learn".
	Attempting a dual-egress "learn" on a simultaneous pair or vice versa	Set hub for proper door type. Initiate a new "Learn".
	Attempting a "teach-in" and the hub LCD immediately displays "StartUp". *(hub is not getting information from the sensor)*	Possible temperature too cold or bad cable or faulty sensor.

TROUBLESHOOTING (cont.)

Runtime Errors

The following lists potential errors following a successful "teach-in".

These can be viewed in the Error Log screen. The hub will store up to 20 errors (numbered 0 – 19).

	Sensor is seeing door hardware (crash bars, panic bars etc.)	Install LZR spacers if required and perform a new "learn".
	Sensor is tilted too close to door	Tighten tilt angle screw.
	Transfer loop is hanging under sensor(s)	Trim and adjust the transfer loop, and then perform a new "learn".
Environ (environmental)	Voltage and/or temperature too high/low	Install BEA power supply (PN 30.5558).
EDPS	Door moved manually during closed door tracking	Automatic Recovery.
	Possible sensor gyro issue.	Replace the sensor.
Lost Message	No communication between the hub and sensor	Cable disconnected/pinched. Plug in or replace cable.
	Door slammed by pedestrian or cart, causing sensor to shut down	Set switch to OFF and allow door to see home. Set switch to ON for Auto-Recovery.
Fork	Processor unable to move to next process	Automatic Recovery.
PWR:LSR	Sensor power is out of tolerance	Install BEA power supply (PN 30.5558).
PWR:APD	Laser Photo Diode voltage is out of tolerance	Replace the sensor.
Motor	Sensor motor RPM too low	Replace the sensor.
	Door slammed by pedestrian or cart, causing sensor to shut down	Set switch to off and allow door to see home. Set switch to ON for Auto-Recovery.
Drum	Mirror drum not spinning true	Replace the sensor.
5V	Rail voltage too high/low	Sensor is pulling too much voltage or the hub is bad.
D2DC	"Distance to Digital Converter"	Replace the sensor.
NTC	"Network Time Communication"	Replace the sensor and/or hub if cycling the power doesn't resolve the issue.
CPU	Internal microprocessor fault	Cycle the power. Replace the hub if power cycling faults.
Startup	Hub is not getting info from sensors	Sensor is not plugged in.
	Sensor and/or hub is too cold	Warm sensor/hub and perform "teach-in".

TROUBLESHOOTING (cont.)

Orange LED (Sensor) Errors

The following lists potential set-up errors caused by the sensor during a "teach-in" process.

# of Flashes	Error Description	Occurence (Set-up / Runtime)	Possible Solution
1	The sensor signals an internal fault	BOTH	Cycle the power. If the orange LED flashes again, replace the sensor.
2	The sensor signals an external fault; power supply or temperature; environment	BOTH	Install BEA power supply. Verify temperature.
3	The sensor encounters an internal hardware error	BOTH	Cycle the power. If the orange LED flashes again, replace the sensor.
4	**Height/Angle Error**: No floor recognized *(most common)* 1. Incorrect mounting height/ angle 2. Transfer loop is hanging under the sensor 3. Sensor is seeing door hardware 4. Sensor handing incorrect	SET-UP	1. Check mounting height and angle; review template. 2. Trim transfer loop. 3. Tighten tilt adjustment screw. Install LZR spacers if necessary. 4. Verify sensors are handed correctly for the mounting location (i.e. Left Mount / Right Mount).
5	**Fields Error**: Trouble with lost pulses during the "teach-in" process while door is in motion	SET-UP	Door must move through a full open-and-close cycle with the home switch making and without losing pulses. Verify home switch closes at "door closed" position.
6	**EDPS "teach-in" error**: *(2nd most common)* 1. Door(s) did not open/move 2. Door(s) did not open at least 80° 3. Door(s) not moving fast enough 4. Home switch(s) not breaking soon enough or at all 5. Possible bad sensor gyro	BOTH	1. Ensure that the switch is set to ON and is wired correctly. 2. Adjust door(s) to open at least 80°. 3. Increase door opening speed to 9 sec. or less. 4. Adjust the home switch as needed. 5. Replace the sensor.
7	**Boundary error** 1. Sensor is seeing door hardware 2. Sensor is tilted too close to the door 3. Transfer loop is hanging under the sensor	RUNTIME	1. Install spacers and perform new "teach-in". 2. Tighten sensor tilt angle screw. 3. Trim transfer loop and perform new "teach-in".
8	The sensor reset due to unknown error	BOTH	Replace the sensor.
9	The sensor is locked due to several consectutive resets	BOTH	Cycle the power.

TECHNICAL SPECIFICATIONS

Technology:	laser, time-of-flight measurement
Detection mode:	presence
Detection width:	20 – 48" **(measured from leading edge to sensor LED)**
Mounting Height:	75 – 98" **(measured from finished floor to sensor LED)**
Remission factor:	> 2%
Angular resolution:	2.56°
Testbody:	28" (H) x 12" (W) x 8" (D)
Emission characteristics: IR laser:	 wavelength 905 nm; max. output pulse power 35 W (CLASS 1)
Supply Voltage:	12 – 30 VDC (15 W Class II)
Power Consumption:	< 15 W
Response time:	typ. 40 ms (max. 80 ms)
Output: Rating:	4 electro-mechanic relays (galvanic isolated - polarity free) All outputs Class 2 supply, 12 – 24 VAC / 12 – 30 VDC, max. 15 W
Input: Rating:	2 optocouplers (galvanic isolated – polarity-free) 12 – 24 VAC / 12 – 30 VDC, 50/60 HZ, max. 15 W
Test Input*:	8 – 15 VDC
Temperature Range:	-13 – 121 °F (-25 – 55 °C)
Degree of Protection:	Hub: IP20/NEMA 1 Sensor: IP53/NEMA 3
Humidity:	0 – 95% non-condensing
Vibrations:	< 2 G
Material:	PC/ASA
Norm Conformity:	EN 60825-1-Eye-safety class 1 IR laser (905 nm), UL60730, UL 10B/C Fire Rated 3hrs (file #R39071)
Mounting angle (rotational):	35° fixed
Tilt angle:	0 – 5° (for angles less than 5°, contact Tech Support)
Pollution on front screens:	max. 30%; homogenous

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

* SEE APPLICATION NOTES OR CONTACT BEA FOR TECHNICAL SUPPORT

For version compatibiltiy serial number information, please see Application Note 76.0017 or contact BEA for technical support.

BEA INSTALLATION/SERVICE COMPLIANCE EXPECTATIONS

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

BEA 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.

AAADM ANSI DASMA DHI IDA

Tech Support: 1-800-407-4545 | Customer Service: 1-800-523-2462
General Tech Questions: Tech_Services@beainc.com | Tech Docs: www.BEAinc.com