



Embedded Door Sensor

Model SS881ZB



User's Manual

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SAFETY INSTRUCTIONS

Please read these instructions carefully **before installing and using** the Embedded Door Sensor, and keep this guide in a safe place for future reference.

- **Verify compatibility** with your associated connected home system before installation.
- Follow all instructions provided by your connected home manufacturer regarding the addition of devices to your connected home system. An authorized, qualified installer may be required.

Salus accepts no responsibility for damage caused by not following these instructions.

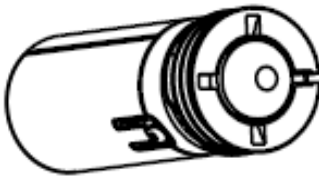
PRODUCT INTRODUCTION

The Salus Embedded Door Sensor is a ZigBee HA 1.2 compatible sensor used primarily to detect the opening and closing of a door. It is installed in the door frame so that it is hidden from view and does not detract from the room's décor.

Key features include:

- Quick and easy installation without special tools
- Adjusts for door-to-frame gaps up to 1/4 inch
- Tamper switch to detect removal
- Hidden installation does not disrupt room's décor
- ZigBee™ wireless technology for connected home systems
- 42-month battery life under normal usage

IN THE BOX



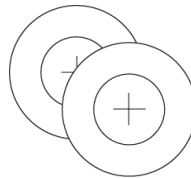
Embedded Door Sensor w/ Battery
(1x CR2 3V lithium)



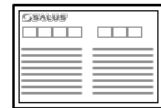
Sensor Sleeve



Installation Tool (2pcs)

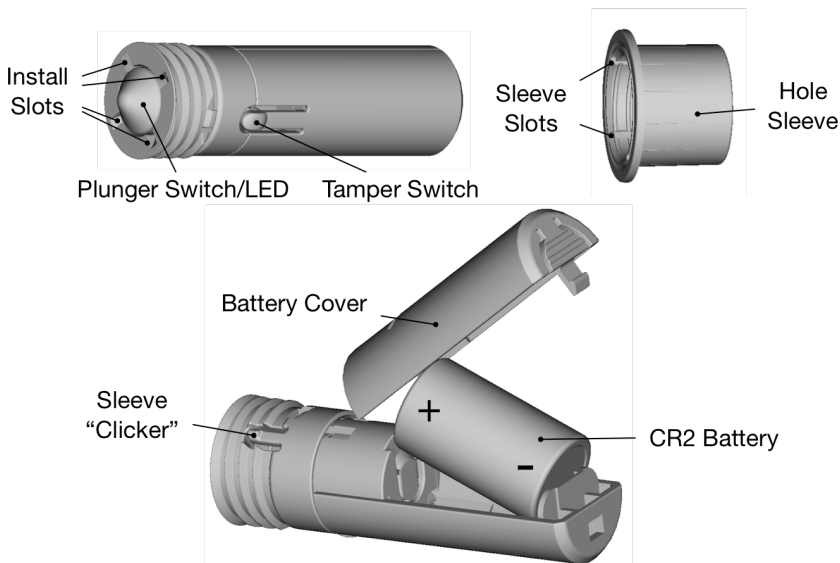


Drill Stickers (2pcs)



Quick Start Guide

CONTROLS AND INDICATORS



Item	Description
Install Slots	Slots allow Installation Tool to rotate sensor
Plunger Switch/LED	Switch detects open/close state of door or window. LED under plunger provides status.
Tamper Switch	Switch detects when sensor is removed from Hole Sleeve
Hole Sleeve	Inserted in hole and allows sensor height to be adjusted by rotating sensor
Sleeve "Clicker"	Aligns with Sleeve Slots to limit unwanted rotation of the sensor
Battery Cover	Protects and allows access to the lithium battery

LED Indications

Solid at power up: Initializing and checking for Factory Reset
 3 flashes then pause: Searching for network to join

INSTALLING THE SENSOR

There are three basic steps to installing the sensor

- Pair the sensor to the connected home system
- Install the sensor at the desired location
- Test the sensor

Tools

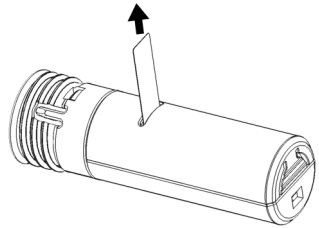
You will need the following tools to install the Embedded Door Sensor.

- 7/8" drill bit
- Drill
- Rubber mallet
- Pliers (optional)

Pairing the Sensor

Follow your connected home system's instructions to prepare to add devices to the system.

Once ready to add, go to where the sensor is being installed to account for any radio interference and pull the battery tab to start the pairing process.



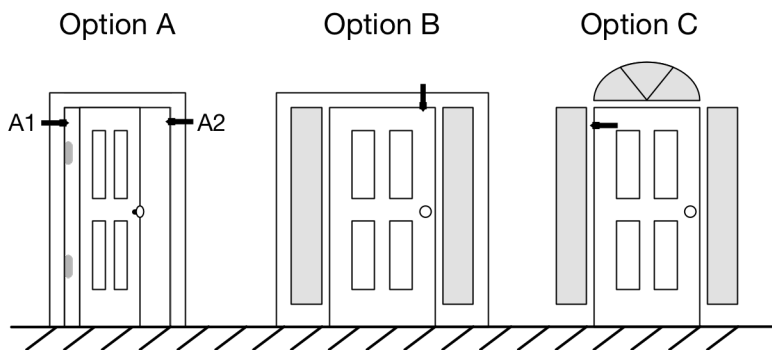
When the sensor is powered up, the LED will blink three times followed by a short pause before repeating the three blinks to indicate that it is searching for a network. If the Sensor does not blink, you may need to reset the sensor to factory defaults. See the Reset to Defaults section for instructions if required.

Depending on your connected home system, you may need to trip the plunger switch or the tamper switch to complete the pairing process. Press and release the Plunger once or twice to verify that the connected home system registers the close and open messages. Please refer to the system's instructions for how to find out the state of the sensor.

Once pairing is complete, you can install the sensor at the desired location. See the Troubleshooting section if you encounter problems pairing the sensor.

Installing the Sensor

There are a variety of options for mounting the Embedded Door Sensor depending on the configuration of the door and surrounding frame as shown in the figure below.

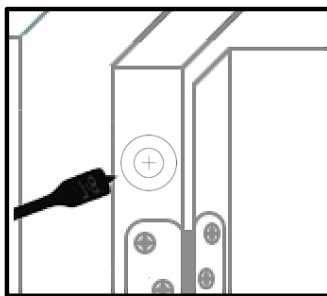


The preferred location is Option A1 above, in the door jamb on the hinge side of the door. Option A2 is also suitable if the frame does not allow locating the sensor on the hinge side.

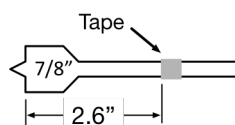
If space is not available in the door frame, the sensor can be mounted in the lintel above the door on the handle side (Option B), or in the door itself (Option C). Option C is not recommended if you have a metal door as it would interfere with the radio signals.

Once the location has been identified, mark the location with a Drill Sticker, making sure that the inner circle is centered on the surface that faces the side of the door directly.

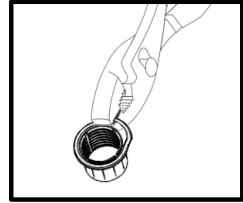
Drill a 7/8" hole at least 2.6" deep through the sticker, making sure the hole is straight into the door jamb. Clear out any debris in the hole.



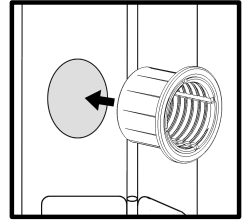
Tip: Mark the drill bit with tape 2.6 inches from the front edge of the blades and stop drilling when the tape is even with the surface of the jamb.



Close the door and note the size of the gap between the door and the jamb. If it is less than 1/16 inch (the thickness of a penny), then you will need to remove the flange from the Sensor Sleeve with a pair of pliers.



Next, insert the Sensor Sleeve into the hole and use the rubber mallet to make sure the Sensor Sleeve is fully inserted.



Insert the Sensor into the Sensor Sleeve and screw the Sensor into the sleeve until the distance from the front of the sensor to the jamb surface is slightly less than the size of the gap noted earlier.

You may need the Installation Tool or a coin to properly adjust the sensor depth. To use the tool, align the edge of the tool with opposing Install Slots on the front of the sensor and insert into the slots, pushing the Plunger down as you do so. Once in the slots, rotate clockwise to move the Sensor into the Sensor Sleeve and counter-clockwise to move the Sensor out of the Sensor Sleeve.

Testing the Sensor

Once the Sensor is installed, test the Sensor by opening and closing the door, and verifying that the connected home system registers the activity.

If the activity is not being registered, 1) verify that when the door is closed, it is pushing the plunger into the rest of the sensor and that the plunger is extended when the door is open, and 2) there is nothing in the wall between the sensor and the connected home system receiver that would block the radio signal.

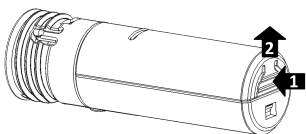
USING THE SENSOR

There are no user configurable options in the sensor, so aside from battery changes (low battery messages are sent to the connected home system), no further interaction with the sensor is required.

CHANGING THE BATTERY

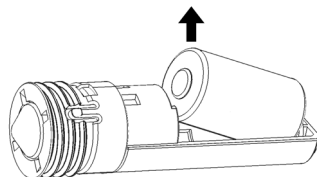
Use only Duracell DL-CR2, Rayovac RL-CR2, Energizer EL1CR2, or GP Batteries GPCR2 batteries to meet UL certification requirements.

To change the battery, note the depth of the Sensor relative to the Sensor Sleeve and remove the Sensor from the Sensor Sleeve by rotating the Sensor counter-clockwise until the Sensor is loose. The Installation Tool or a coin may be required.

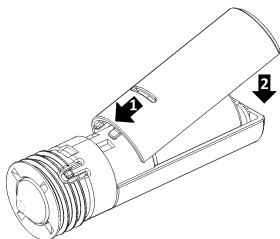


Once the Sensor is removed, press on the back of the Battery Cover and lift up to remove the cover.

Grasp the front/positive end of the old battery to remove from the Sensor.



Insert the battery negative end first and drop the positive end into place in the sensor.



Replace the battery cover by inserting the front of the battery cover under the retainers and snapping the back of the cover into the sensor housing.

Battery Disposal

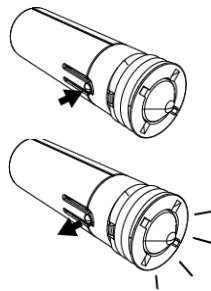
Lithium batteries are considered hazardous waste in most municipalities.

Please dispose of the used batteries in accordance with the regulations for your municipality.

RESET TO DEFAULTS

To reset the Sensor to factory defaults, remove the Sensor from the Sensor Sleeve and remove the battery. While holding down the Tamper Switch, re-insert the battery and release the Tamper Switch when the LED lights up. The Sensor is now reset to defaults and will enter pairing mode to join a network.

Replace the battery cover and re-install the Sensor in the Sensor Sleeve at the original depth.



SPECIFICATIONS

Operating temperature	32 - 113°F / 0 - 45°C	
Operating humidity	20 - 90% non-condensing	
Storage	-4 - 185 °F / -20 - 85°C 20 - 90% non-condensing	
Protocols Supported	ZigBee HA 1.2 Profile OpenHome	
RF frequency	2.40-2.48 GHz	
RF range	Up to 1300 ft (400 m) line of sight	
Battery Power	1 x CR2 3V Lithium battery (Use only Duracell DL-CR2, Rayovac RL-CR2, Energizer EL1CR2, or GP Batteries GPCR2 batteries)	
Thread Pitch	10 threads per inch	
Size	Sensor: 67 (L) x 20 (D) mm 2.64" (L) x 0.78" (D)	Sleeve: 19 (L) x 28 (D) mm 0.75" (L) x 1.1" (D)
Weight without battery	0.43 oz. (12 g)	

TROUBLESHOOTING

Will not pair initially	Radio interference is present for the desired location. Possible solutions: <ul style="list-style-type: none"> Relocate the ZigBee receiver Select a different location for the sensor Add a ZigBee repeater to the system
Does not detect door opening and closing	<ul style="list-style-type: none"> Check connected home system for low battery messages. Replace battery if required. Verify sensor depth is correct, and has not changed since installation. Verify that there is no radio interference within the walls. If so, try possible solutions above for radio interference.
Loses connection after pairing	<ul style="list-style-type: none"> Check connected home system for low battery messages. Replace battery if required. Radio environment may have changed. Apply radio interference solutions above.
Multiple events per door open/close	Adjust depth by a quarter turn counter-clockwise to eliminate border line condition.

REGULATORY DECLARATIONS

FCC Statements

WARNING: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two 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.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC and Industry Canada

RF Radiation Exposure statement: This equipment complies with FCC and Industry Canada RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the antenna and all persons.

Industry Canada

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

SALUS WARRANTY

Salus Controls Inc. ("Salus") warrants that for a period of two (2) years ("Warranty Period") from the date of purchase by the consumer ("Customer"), this device, excluding batteries ("Product"), shall be free of defects in materials and workmanship under normal use and service in accordance with all supplied instructions. During the warranty period, Salus shall, at its option, repair or replace any defective Products, at no charge for the device. Any replacement and/or repaired devices are warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer.

This warranty does not cover removal or reinstallation costs. This warranty does not apply to any Product (i) which has been modified, repaired, or altered, except by Salus or an authorized Salus representative, (ii) which has not been maintained in accordance with any handling or operating instructions supplied by Salus, or (iii) which has been subjected to unusual physical or electrical stress, misuses, abuse, negligence or accidents.

This warranty is the only express warranty Salus makes for the Product. Any implied warranties, including warranties of merchantability or fitness for a particular purpose, are limited to the Warranty Period or the shortest period allowed by law.

SALUS SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND, INCLUDING ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF ANY WARRANTY, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages, or limitation on the duration of implied warranties of merchantability or fitness, so these exclusions or limitations may not apply to you.

No oral or written information or advice given by Salus or a Salus-authorized representative shall modify or extend this warranty. If any term is held to be illegal or unenforceable, the legality or enforceability of the remaining terms shall not be affected or impaired.

Customer's sole and exclusive remedy under this limited warranty is product repair or replacement as provided herein. If a Product under warranty is defective, the Customer may:

- contact the party ("Seller") from which the Customer purchased the Product to obtain an equivalent replacement product after the Seller has determined that the Product is defective and the Customer is eligible for a replacement, or,
- contact Salus Service at 4700 Duke Drive, Suite 200, Mason, OH 45040, to determine whether the device qualifies for a replacement. If a replacement is warranted and is shipped prior to the return of the device under warranty, a credit card is required and a hold may be placed on the Customer's credit card for the value of the replacement until the returned device is verified as eligible for replacement, in which case, the Customer's credit card will not be charged.

This warranty gives you specific legal rights, and you may also have other rights that vary from jurisdiction to jurisdiction. If you have any questions regarding this warranty, please write Salus at:

850 Main Street.
Redwood City, CA 94063



Salus Controls Inc.
850 Main Street
Redwood City, CA 94063