Open/Close Sensor

Owner's Manual
2843-222 (US)
2843-422 (EU)
2843-522 (AUS/NZ)
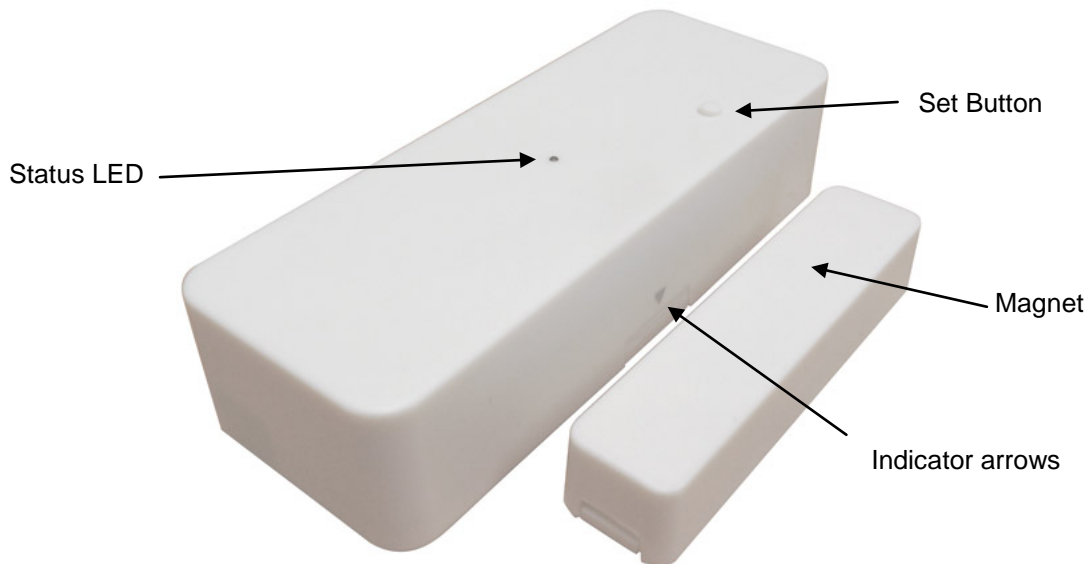
INSTEON

Hardware Revision 1.9+

About Open/Close Sensor

In the Box	Tools Needed	Optional Accessories
Open/Close Sensor	None	INSTEON Hub
Magnet		Mini Remote
Quick Start Guide		
One (1) AA Battery		

Open/Close Sensor Hardware

Reed Switch
Detects whether magnet is within ½" of the main case:
- Closed state when magnet is within ½"
- Opened state when magnet is further than ½"

Jumper
When jumper is installed (default), Open/Close Sensor will send an INSTEON "on" command when it opens and an "off" command when it closes. When jumper is uninstalled (as in Multi-Scene Mode), Open/Close Sensor will activate scene 1 when it opens and activate scene 2 when it closes.
NOTE: When installing or uninstalling jumper, remove and replace battery for new jumper setting to take effect

Set Button
- Links other INSTEON devices (responders)
- Controls linked responders (scene 1): Tap to toggle between on and off

External Sensor Terminals
When using an external sensor, Open/Close Sensor is in closed state when **either** external sensor terminals or reed switch are closed. In other words, Open/Close Sensor opens when **both** external sensor terminals and reed switch are open. See *Advanced External Sensor Use* for more information.

Status LED
Indicates:
- Change in state (open or close)
- Linking/unlinking mode (blinks)

Arrows
Arrows indicate reed switch location inside main case, so magnet should be installed as close as to them as possible.

Magnet
Included magnet is installed on opposing plane than Open/Close Sensor main case. It should be less than ½" away from the main case when door/window, etc. is closed and further than ½" when open.
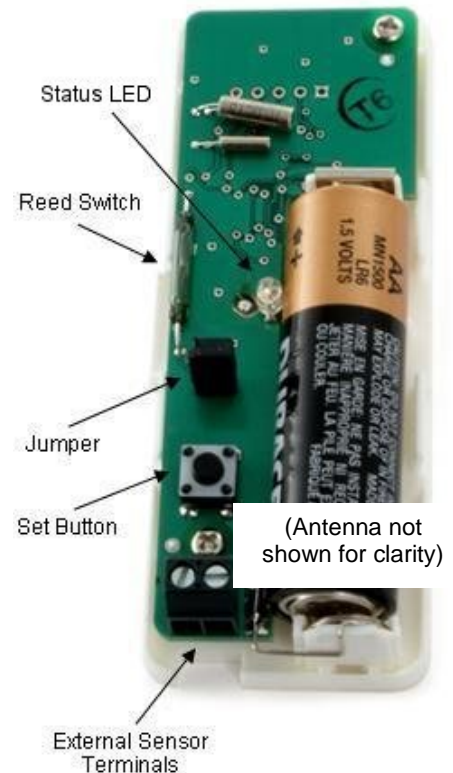
Installation

Install Open/Close Sensor

1) Remove sensor (larger device) cover by prying up at "open"
2) Install included AA battery (don't replace cover yet)
3) Peel backing off double-stick tape on back of sensor
4) Mount sensor:
   - If installing on door, with white set button between door edge and battery, gently press sensor to door frame approximately 3" from top of door (such that door slightly clears it when closing)
   - If installing on window, with set button between window and battery, gently press to window frame (such that window will slightly clears it when closing)
5) Press and hold sensor set button for 5 seconds until LED begins blinking
6) For US installations, press and hold nearest Range Extender (previously called Access Point) set button until it beeps
   a) If sensor LED continues blinking, sensor is not within range, move Range Extender to a closer outlet and return to step 5
7) Peel backing off double-stick tape on back of magnet case
8) Mount magnet:

- If installing on door, mount magnet as near door edge as possible (within ½" of sensor horizontally) and with one end of magnet aligned with set button and other end of magnet aligned with far end of sensor, gently press on door
- If installing on window:
  a) Open window and carefully replace sensor cover (open label on same side as battery)
  b) Close window
  c) Gently apply magnet to window as close to sensor as possible
  d) Open window and carefully remove sensor cover
9) Test by opening and closing door or window
   Sensor LED will blink once each time opened or closed
   Otherwise, move sensor and magnet closer together when closed and test again

Connecting an External Sensor to Open/Close Sensor

NOTE: For basic use of Open/Close Sensor's external sensor terminals, it is not recommended to also use Open/Close Sensor's internal reed switch to help ensure desired behavior. If connecting multiple sensors to Open/Close Sensor's external sensor terminals and/or using Open/Close Sensor's reed switch in addition to an external sensor, see Advanced External Sensor Use.
1) Use a small screwdriver to remove Open/Close Sensor main case cover
2) Strip sensor wire about ¼"
3) Unscrew external sensor terminals, connect sensor wire, and screw in terminals
4) Test by opening and closing sensor
   Open/Close Sensor status LED will blink once when sensor opens or closes
5) If you haven't already done so, link desired responders before replacing cover. See Make Open/Close Sensor a Controller.
6) Replace Open/Close Sensor main case cover

INSTEON Setup

INSTEON Controllers, Responders and Links

Let's define a few terms.

- The INSTEON "transmitter" is called a **controller**

- The INSTEON "receiver" is called a **responder**

Note: Some devices are controllers only (e.g., open/close and motion sensors, handheld remotes), some are responders only (e.g., FanLinc), and some can be controllers and responders (e.g., switches and dimmers).

- The association between the controller and responder is called a **link**

Controller — Link → Responder
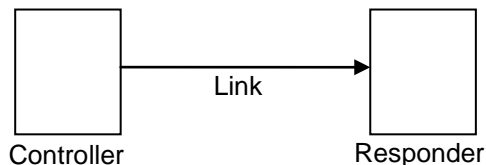
Note that a link is one way. If you want control the other way (making the responder a controller), and the devices are capable of it, simply add a link "the other way."

Default Mode

In default mode, Open/Close Sensor will:
- Turn on responders when it opens
- Turn off responders when it closes
This mode is ideal for garage doors, closets, sheds, etc.
If you require more flexible functionality, see *Using Open/Close Sensor's Multi-Scene Mode.*

Make Open/Close Sensor a Controller

Use Open/Close Sensor to control other INSTEON devices:
1) If using default mode, ensure Open/Close Sensor jumper is installed. If using multi-scene mode, jumper should be uninstalled (or removed).
   NOTE: When changing jumper setting, battery will need to be removed and then reinstalled for new jumper setting to take effect.
2) Press and hold Open/Close Sensor set button for 3 seconds
   Open/Close Sensor LED will start blinking green
3) Turn responder on (or any other state such as on 50% or even off)
4) Press and hold responder set button for 3 seconds
   Open/Close Sensor LED will turn solid green
5) Test by opening and closing magnet/sensor
   Responder load will respond appropriately
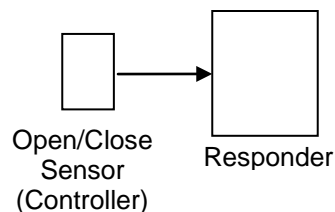
Notes:
- To add multiple responders, repeat steps 2-4 or see *Make Open/Close Sensor a Controller of Multiple Responders*

Make Open/Close Sensor a Controller of Multiple Responders

1) Press and hold Open/Close Sensor set button for 3 seconds
   LED will start blinking green
2) Tap Open/Close Sensor set button
   LED will start double-blinking green
3) For each responder you are adding:
   a. Adjust responder to desired scene brightness/state
   b. Press and hold set button for 3 seconds
4) Press and hold Open/Close Sensor set button for 3 seconds
   LED will stop blinking
6) Test by opening and closing magnet/sensor
   All responder loads will respond appropriately

Remove Open/Close Sensor as a Controller

If you no longer want Open/Close Sensor to control another device (or are removing Open/Close Sensor) it is important that you follow the instructions below for each responder.
1) Press and hold Open/Close Sensor set button for 3 seconds
   Open/Close Sensor LED will start blinking green
2) Press and hold Open/Close Sensor set button again for 3 seconds
   Open/Close Sensor LED will continue blinking green
3) Press and hold responder set button for 3 seconds
   Open/Close Sensor LED will stop blinking and turn solid
4) Test by opening and closing magnet/sensor
   Former responder will not respond
   Open/Close Sensor status LED will continue blinking

NOTE: If you are using multi-scene mode, devices linked to scene 2 will not respond when Open/Close Sensor set button is tapped

Using Open/Close Sensor's Multi-Scene Mode

In multi-scene mode, Open/Close Sensor will:
- Activate scene 1 when it opens
- Activate scene 2 when it closes

This mode is ideal when you need more flexibility:
- For rooms where you want lights left on after door is closed – simply don't link any responders to scene 2 in this case
- Turning lights on at full-bright when door is opened and dim when door is closed
- Activating two independent scenes when door/window is opened as opposed to closed

Linking in Multi-Scene Mode

1) Open Open/Close Sensor cover and ensure jumper is uninstalled (or removed). When uninstalling jumper, battery needs to be removed and then reinstalled for new jumper setting to take effect
2) Move Open/Close Sensor magnet away from main case, putting it in open state
   If Open/Close Sensor was closed, LED will blink once
3) Link desired responders for when Open/Close Sensor opens (scene 1). See *Make Open/Close Sensor a Controller.*
   Scene 1 will activate whenever Open/Close Sensor is opened. The Set button toggle sending ON between Scene 1 and Scene 2 when tapped (while Open/Close Sensor is opened).
4) Move Open/Close Sensor magnet close to main case, putting it in closed state
   Open/Close Sensor status LED will blink once
5) Link desired responders for when Open/Close Sensor opens (scene 2)
   Scene 2 will activate whenever Open/Close Sensor is closed. The Set button toggle sending ON between Scene 1 and Scene 2 when tapped (while Open/Close Sensor is opened).
6) Test that responders are working as expected by opening and closing your door or window
   Scene 1 will activate when door or window is opened and scene 2 will activate when closed

Unlinking in Multi-Scene Mode

1) Open Open/Close Sensor cover and ensure jumper is uninstalled (or removed)
2) Move Open/Close Sensor magnet away from main case, putting it in open state
   If Open/Close Sensor was closed, LED will blink once
3) Unlink desired responders from scene 1. See *Unlinking an INSTEON Responder from Open/Close Sensor.*
   Responders will no longer respond when Open/Close Sensor is opened or set button is tapped
4) Move Open/Close Sensor magnet close to main case, putting it in closed state
   Open/Close Sensor status LED will blink once
5) Unlink desired responders from scene 2
   Responders will no longer respond when Open/Close Sensor is closed or set button is tapped
6) Test by opening and closing your door or window
   Responders will no longer respond when Open/Close Sensor is opened or closed

Scenes

Devices in a scene can each have different settings. This provides for advanced lighting, audio, etc scene creation. Software is recommended for scene management.

INSTEON scenes are very easy to set up – just link more than one responder to the same controller. Then, all INSTEON devices linked in the scene will respond as a group.

Advanced Features

Advanced External Sensor Use

For advanced users, a single Open/Close Sensor can be used to:
- Monitor several doors/windows
- Monitor several different types of sensors
- Monitor external sensors in addition to its internal reed switch

Using Several Sensors

When several sensors (even of different types) are connected to Open/Close Sensor external sensor terminals, keep in mind that Open/Close Sensor only has two states: opened and closed. So if you have several sensors connected in the following configurations, note Open/Close Sensor behavior (it is assumed in this example Open/Close Sensor internal reed switch is not being used).
- Several sensors connected in **series** – Open/Close Sensor will show open if *any* sensors are open and closed when *all* sensors are closed
- Several sensors connected in **parallel** – Open/Close Sensor will show open when *all* sensors are open and closed if *any* sensors are closed

NOTE: If magnetic door/window contacts are used, there are two types:

- Normally open – when door/window is closed, sensor will show *open*. When door/window is open, sensor will show *closed*
- Normally closed – when door/window is closed, sensor will show *closed*. When door/window is open, sensor will show *open*

Using Internal Reed Switch and External Sensors

When Open/Close Sensor external sensors input is used in conjunction with its internal reed switch, Open/Close Sensor behaves much like several sensors connected in parallel (above), meaning:

- Open/Close Sensor will be open when *both* internal reed switch and external reed switch sensor terminals show open
- Open/Close Sensor will be closed when *either* internal reed switch or external sensor terminals show closed

Power Restore

Open/Close Sensor stores all of its settings, such as links to other INSTEON devices, with non-volatile memory. Because settings are saved in non-volatile memory, they will not be lost when the battery is removed.

Factory Reset

All settings and scenes will be erased and return to factory default settings.
1) If you are using Open/Close Sensor to control any responders, unlink them from Open/Close Sensor. See *Remove Open/Close Sensor as a Controller.*
2) Use a small screwdriver to gently remove Open/Close Sensor main case
3) Remove battery and wait at least 15 seconds
4) Press and hold set button on Open/Close Sensor while reinstalling battery
5) Release set button when the status LED turns on
    Open/Close Sensor status LED will stay on for about 4 seconds and then turn off

Specifications

General		
Product name	INSTEON Open/Close Sensor (formerly #2421, TriggerLinc)	
Brand/manufacturer	INSTEON	
Manufacturer product number	US	2843-222 (formerly #2421)
	EU	2843-422
	AUS/NZ	2843-522
UPC	US	718122388912
	EU	813922013009
	AUS/NZ	813922013016
Warranty	2 years, limited	
Operation		
Status LED	Green. Blinks on activation	
Operational Gap:	1/2" between magnet and main case	
Sense Modes:	Jumper Installed: Open = Group 1 On, Closed = Group 1 Off	
	Jumper Uninstalled: Open = Group 1 On (or off), Closed = Group 2 On (or Off)	
Aux. Sensor Input:	Senses contact closure	
Aux. Sensor Input Wire:	>= 20 gauge wire	
Setup Memory:	Non-volatile EEPROM	
INSTEON		

INSTEON Addresses	1 hard-coded out of 16,777,216 possible	
INSTEON controller	Yes	
INSTEON responder	No	
Maximum links/scenes	30	
Software configurable	Yes	
RF range	Up to 150 feet (50 meters) open air* *Range may vary due to local interference	
INSTEON device category	0x10 (all frequencies)	
INSTEON device subcategory	US	0x02
	EU	0x06
	AUS/NZ	0x07
Mechanical		
Case color	White	
Set button	Yes	
Dimensions	Main Case: 3.46" x 1.32" x 0.76" (88mm x 34mm x 19mm) Magnet: 2.28" x 0.55" x 0.43" (58mm x 14mm x 11mm)	
Weight	3.5 oz (99g)	
Operating environment	Indoors	
Operating temperature range	32° to 104° F (0° to 40° C)	
Operating humidity range	0-85% relative humidity	
Storage temperature range	-4° o to 158° F (-20° to 70° C)	
Electrical		
RF Frequency	US	915 MHz
	EU	869 MHz
	AUS/NZ	921 MHz
Power:	1 AA Alkaline Battery (included)	
Battery Life:	6 months (w/ 2 links @ 50 activations per day)	
Certification:	FCC & Industry Canada	
X10		
X10 Support	N/A	

Certification and Warranty

FCC and Industry Canada Compliance Statement
This device complies with FCC Rules Part 15 and Industry Canada RSS-210 (Rev. 7). Operation is subject to the following two conditions:
    (1) This device may not cause harmful interference, and
    (2) This device must accept any interference, including interference that may cause undesired operation of the device.
Le present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorise aux deux conditions suivantes:
    (1) l'appareil ne doit pas produire de brouillage, et
    (2) l'utilisateur de l'appareil doit accepter tout brouillage radioelectrique subi, mme si le brouillage est susceptible d'en compromettre le fonctionnement.
The digital circuitry of this device 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 residential installations. 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 and television reception. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause such interference, which can be verified by turning the device off and on, the user is encouraged to eliminate the interference by one or more of the following measures:
    - Re-orient or relocate the receiving antenna of the device experiencing the interference
    - Increase the distance between this device and the receiver
    - Connect the device to an AC outlet on a circuit different from the one that supplies power to the receiver
    - Consult the dealer or an experienced radio/TV technician

WARNING: Changes or modifications to this device not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Declaration of Conformity
Hereby, INSTEON declares that this device is in compliance with the essential requirements and other relevant provisions of the following Directives:
1) Electromagnetic Compatibility Directive 2004/108/EC
2) Hazardous Substance Directive 2005/95/EC
Technical data and copies of the original Declaration of Conformity are available and can be obtained from INSTEON; 16542 Millikan Ave, Irvine, CA, USA.
User Information for Consumer Products Covered by EU Directive 2002/96/EC on Waste Electric and Electronic Equipment (WEEE)
This document contains important information for users with regards to the proper disposal and recycling of INSTEON products. Consumers are required to comply with this notice for all electronic products bearing the following symbol:

Environmental Information for Customers in the European Union
European Directive 2002/96/EC requires that the equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams.
It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health.
For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

DECLARATION OF CONFORMITY TO R&TTE DIRECTIVE 1999/5/EC for the European Community, Switzerland, Norway, Iceland and Liechtenstein
Product category: general consumer (category 3).
English: This equipment is in compliance with the essential requirements and other relevant provisions of the European R&TTE Directive 1999/5/EC
Deutsch [German]: Dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 1999/5/EU.
Nederlands [Dutch]: Dit apparaat voldoet aan de essentiele eisen en andere van toepassing zijnde bepalingen van de Richtlijn 1999/5/EC.
Svenska [Swedish]: Denna utrustning står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Français [French]: Cet appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la Directive 1999/5/EC
Español [Spanish]: Este equipo cumple con los requisitos esenciales asi como con otras disposiciones de la Directiva 1999/5/CE.
Português [Portuguese]: Este equipamento está em conformidade com os requisitos essenciais e outras provisões relevantes da Directiva 1999/5/EC.
Italiano [Italian]: Questo apparato é conforme ai requisiti essenziali ed agli altri principi sanciti dalla Direttiva 1999/5/CE.
Norsk [Norwegian]: Dette utstyret er i samsvar med de grunnleggende krav og andre relevante bestemmelser i EU-direktiv 1999/5/EF.
Suomi [Finnish]:Tämä laite tyttää direktiivin 1999/5/EY olennaiset vaatimukset ja on siinä asetettujen muiden laitetta koskevien määräysten mukainen.
Dansk [Danish]: Dette udstyr er i overensstemmelse med de væsentlige krav og andre relevante bestemmelser i Direktiv 1999/5/EF.
Polski [Polish]: Urządzenie jest zgodne z ogólnymi wymaganiami oraz szczególnymi warunkami okreslonymi Dyrektywą UE: 1999/5/EC

Limited Warranty
Seller warrants to the original consumer purchaser of this product that, for a period of two years from the date of purchase, this product will be free from defects in material and workmanship and will perform in substantial conformity to the description of the product in this Owner's Manual. This warranty shall not apply to defects or errors caused by misuse or neglect. If the product is found to be defective in material or workmanship, or if the product does not perform as warranted above during the warranty period, Seller will either repair it, replace it, or refund the purchase price, at its option, upon receipt of the product at the address below, postage prepaid, with proof of the date of purchase and an explanation of the defect or error. The repair, replacement, or refund that is provided for above shall be the full extent of Seller's liability with respect to this product. For repair or replacement during the warranty period, call INSTEON at 866-243-8022 with the Model # and Revision # of the device to receive an RMA# and send the product, along with all other required materials to:

INSTEON
ATTN: Receiving
16542 Millikan Ave.
Irvine, CA 92606-5027

Limitations
The above warranty is in lieu of and Seller disclaims all other warranties, whether oral or written, express or implied, including any warranty or merchantability or fitness for a particular purpose. Any implied warranty, including any warranty of merchantability or fitness for a particular purpose, which may not be disclaimed or supplanted as provided above shall be limited to the two-year of the express warranty above. No other representation or claim of any nature by any person shall be binding upon Seller or modify the terms of the above warranty and disclaimer.
Home automation devices have the risk of failure to operate, incorrect operation, or electrical or mechanical tampering. For optimal use, manually verify the device state. Any home automation device should be viewed as a convenience, but not as a sole method for controlling your home.

In no event shall Seller be liable for special, incidental, consequential, or other damages resulting from possession or use of this device, including without limitation damage to property and, to the extent permitted by law, personal injury, even if Seller knew or should have known of the possibility of such damages. Some states do not allow limitations on how long an implied warranty lasts and/or the exclusion or limitation of damages, in which case the above limitations and/or exclusions may not apply to you. You may also have other legal rights that may vary from state to state.

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