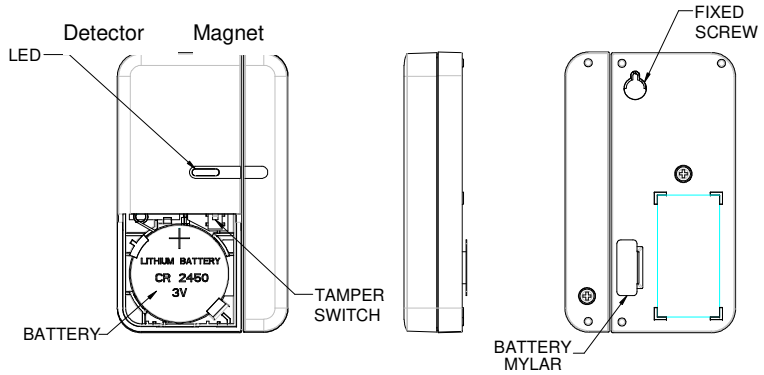
SM810 DOOR/WINDOW DETECTOR

The Door/Window Detector is a Z-Wave Plus™ enabled device and is fully compatible with any Z-Wave™ enabled network. The device can be set up in a Z-Wave network to communicate directly with other end devices such as lighting controllers, or to report directly to a Z-Wave controller (usually a gateway).

Z-Wave™ enabled devices displaying the Z-Wave™ logo can also be used with it regardless of the manufacturer, and ours can also be used in other manufacturer's Z-Wave™ enabled networks. Inclusion of this Door/Window Detector on other manufacturer's Wireless Controller menu allows remote turn-on of connected modules and their connected lighting when the Detector is triggered.

Product Overview

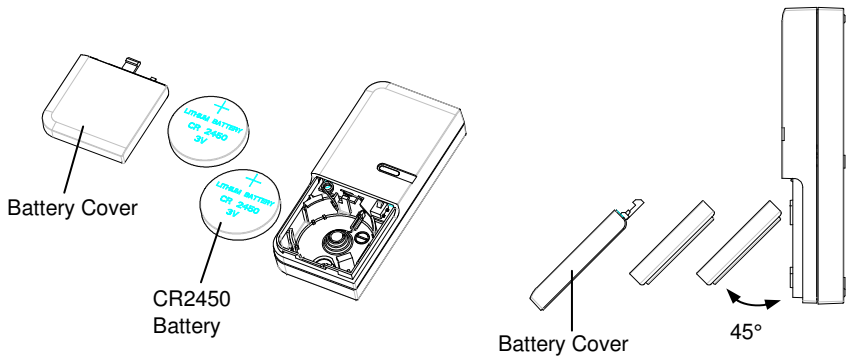


Adding to Z-Wave Network

Auto Inclusion

The detector supports Auto Inclusion feature where it will automatically enter Inclusion mode when first powered up after a factory reset.

1. In the front casing, there is a tamper switch which is used to carry out inclusion, exclusion or reset.
2. Put a Z-Wave Controller into inclusion mode.
3. Insert 2 CR2032 batteries to the battery compartment with the correct polarity. The LED on the device will turns on.



4. The Inclusion process should be completed when the LED turns off.

Note: If Auto Inclusion fails, refer to the Troubleshooting section regarding Manual Inclusion.

Testing

1. Remove the battery cover with the tamper switch not being pressed on the detector (test mode), detach or close the magnet from the Detector, the LED on the detector will illuminate.
2. After proper installation and test, put the battery cover back to the detector and the detector enters the normal mode.

Note: After removing batteries, wait for 5 seconds to refit batteries.

Mounting the Detector

Choosing the location

The Door/Window Detector is suitable for mounting in dry interior locations only.

Decide which doors/windows are to be protected by Door/Window Detectors, (usually the front and back doors as a minimum will have Door/Window Detectors fitted). Additional detectors may also be fitted where required to other vulnerable doors or windows, (e.g. garage, patio/conservatory doors etc).

Note: Take care when fixing the Detector to a metal frame, or mounting within 1m of metalwork (i.e. radiators, water pipes, etc) as this could affect the radio range of the device. If required, it may be necessary to space the magnet and detector away from the metal surface using a plastic or wooden spacer to achieve the necessary radio range.

Installation

1. Use the adhesive tape to fit detector on the door or window.
2. Fit the magnet to the moving part of the door/window opposite the detector using the adhesive tape.
3. Ensure that the parallel gap between the magnet and detector is less than 20mm and that the matching line on the magnet is pointing towards and aligned with the line on the detector. An alarm condition will be occurred if the gap is greater than 35mm.

Operation

1. If first use of SM810 with no node ID, LED will turns ON for 30 sec. when first power on the device to lead the user for auto inclusion. After Inclusion is completed, the device will stay awake for 25 sec. for set up by user from the controller. After 25 sec., the unit will enter sleeping mode, if set up is still needed, the user can press tamper switch for SM810 to be awake for another setting.

2. Due to limited power from CR2450, the unit may not continuously operate for a long time due to power consumption. Therefore, set up time for SM810 should be minimized, and repeatedly press of Tamper should be avoided as well, in order to prevent unusual incident by a quick battery voltage drop down.

3. User can enter test mode by releasing the Tamper switch; in the meantime if magnetic sensor is triggered then the LED will be illuminated. User can confirm whether the Tamper switch has been pressed properly by implementing this function. When Tamper switch is to be pressed and enter normal mode, LED will not be illuminated even if the magnetic sensor is triggered, unless low battery is detected.

4. When the tamper switch is pressed, the unit enters normal mode and the red indicator LED on the Detector will not illuminate to conserve battery life when the detector is triggered, (unless the battery power is low).

Programming

Z-Wave Group

The detector supports either one of two Z-Wave Association Groups:
Group 1: Association with 1 Controller node.
Group 2: Association with 4 nodes (i.e. end devices such as smart plugs and other lighting controllers). This allows the detector to transfer commands directly to end devices without the participation of the controller. This has the effect that when the detector triggers, all devices associated with detector will be operated.

Group 1 commands:
- When the unit is powered up and was already a part of a Z-Wave network, the unit will send a Notification Report to the node of Group 1.
- When the tamper switch is released, the unit will send ALARM REPORT command to the nodes of Group 1.
- Upon detector status being changed, the unit will check its battery status simultaneously. When the battery level of the unit drops to an unacceptable level, the unit will emit Battery report to the nodes of Group 1.
- When performing Factory Reset the unit will send Device Reset Locally Notification to the node of Group1.

Group 2 commands:
- When the door/window is opened, the unit will send BASIC_SET command which contains a value to the nodes of Group 2.
- When the door/window is closed, the BASIC_SET command will also be sent to the nodes of Group 2.

Z-Wave Plus Info

Role Type	Node Type	Installer Icon	User Icon
Slave Sleeping report	Z-Wave Plus node	Sensor Notification Device Type (Access Control)	Sensor Notification Device Type (Access Control)

Version

Protocol Library	3 (Slave_Enhance_232_Library)
Protocol Version	4.6 (6.71.00)

Manufacturer

Manufacturer ID	Product Type	Product ID
0x0060	0x0002	0x0003

AGI (Association Group Information) Table

Group	Profile	Command Class & Command (List) N bytes	Group Name(UTF-8)
1	General	Notification Report Device Reset Locally Notification	Lifeline
2	Control	Basic Set	Basic Set

Notification

Event	Type	Event	Event Parameters Length	Event Parameters
The power is applied for the first time	0x08	0x01	null	
The battery is Low	0x08	0x0A	null	
Door/Window detector trigger OPEN	0x06	0x16	null	
Door/Window detector trigger Close	0x06	0x17	null	
Tamper switch being press more than 10 seconds and released	0x07	0x03	null	
Tamper switch being press	0x07	0x00	null	

Battery

Battery Report (value)	Description
0x64	Battery is high
0x10	Battery is normal
0x00	Battery is low

Command Classes

The module supports Command Classes including…
- COMMAND_CLASS_ZWAVEPLUS_INFO_V2
- COMMAND_CLASS_ASSOCIATION_V2*
- COMMAND_CLASS_ASSOCIATION_GRP_INFO*
- COMMAND_CLASS_TRANSPORT_SERVICE_V2
- COMMAND_CLASS_VERSION_V2*
- COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2*
- COMMAND_CLASS_DEVICE_RESET_LOCALLY*
- COMMAND_CLASS_POWERLEVEL*
- COMMAND_CLASS_BATTERY *
- COMMAND_CLASS_SECURITY
- COMMAND_CLASS_SECURITY_2
- COMMAND_CLASS_NOTIFICATION_V8*
- COMMAND_CLASS_WAKE_UP_V2*
- COMMAND_CLASS_FIRMWARE_UPDATE_MD_V4*

*Items marked an asterisk are secure command classes.

Wakeup Command Class
After it has been included into a Z-Wave network, the detector will go to sleep but will send a Wakeup Notification Command periodically at preset period to the controller. The detector will stay awake for 10 seconds at least and then go back to sleep to conserve battery life.

The time interval between Wakeup Notification Commands can be set in the Wakeup Command Class based on the range values below:

Minimum Wake Up Interval	600s (10 minutes)
Maximum Wake Up Interval	86400s (1 day)
Default Wake Up Interval	14400s (4 hours)
Wake Up Interval Step Seconds	600s (10 minutes)

Troubleshooting

The table below lists the several steps involved when adding or removing the detector from the Z-Wave network.

Action/Status	**Description**	**LED indication**
No node ID	The Z-Wave Controller does not allocate a node ID to the unit.	2-second on, 2-second off For 2 minutes

Auto Inclusion	The power is applied for the first time and no node ID has been stored in the module, or after executing reset.	
Manual Inclusion	1. Put the Z-Wave Controller into inclusion mode.	
	2. Press the tamper switch 3 times within 1.5 seconds to put the unit into inclusion mode.	
Exclusion	1. Put the Z-Wave Controller into exclusion mode.	
	2. Press the tamper switch 3 times within 1.5 seconds to put the unit into exclusion mode.	
Factory Reset (This procedure should only be used when the controller is inoperable.)	1. Press the tamper switch 3 times within 1.5 seconds to put the unit into exclusion mode.	
	2. Within 1 second of step 1, press the tamper switch again and hold for 5 seconds.	
	3. Node ID is excluded. The device reverts to factory default state.	2-second on, 2-second off For 2 minutes
※ Failed or successful results in including/excluding the ID can be viewed on the Z-Wave Controller.		

Table below lists typical problems encountered:

Symptom	Possible Cause	Recommendation
Cannot carry out inclusion and association	Included a node ID allocated by other Z-Wave Controller.	Exclude a node ID then carry out inclusion and association with new Controller.
	Does not fit batteries or run out of battery power.	Check if batteries are fitted or replace a new battery.
LED not illuminating and not working	Does not fit batteries or run out of battery power.	Check if batteries are fitted or replace with new batteries.
	Break down	Send it for repair and do not open up the unit.

Specifications

Battery	CR2450 3.0V 620mAh Lithium Battery x 2
Battery Life	1 year*
Range	Up to 100 meters line of sight
Frequency Range	EU: 868.42HMz US: 908.42 MHz JP: 922.5MHz
FCC ID	FU5SM810
IC	23210-SM810

Specifications are subject to change without notice

****measured at 10 triggers per day***

Federal Communication Commission Interference Statement

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.

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 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 Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Industry Canada statement:

This device complies with ISED's licence-exempt RSSs. 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.

Le présent appareil est conforme aux CNR d' ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:
Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

WARNING:

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available.
If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.
When replacing old appliances with new ones, the retailer is legally obligated to take back your old appliance for disposal at least for free of charge.

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