



FIBARO

FIBARO DOOR/WINDOW SENSOR 2

SKU: FIBFGDW-002



Quickstart

This is a **secure Door/Window Sensor** for **Europe**. To run this device please insert fresh 1 * **ER14250 1/2AA** batteries. Please make sure the internal battery is fully charged.

1. Take off the cover.
2. Remove the battery blocker.
3. Close the cover.

4. Place the Door/Window Sensor 2 within the direct range of your Z-Wave controller.
5. Set the main controller in (Security/non-Security Mode) add mode (see the controller's manual).
6. Quickly, three times press one of the TMP buttons (while the other button is pressed).
5. Wait for the adding process to end.
6. Successful adding will be confirmed by the Z-Wave controller's message.

Important safety information

Please read this manual carefully. Failure to follow the recommendations in this manual may be dangerous or may violate the law. The manufacturer, importer, distributor and seller shall not be liable for any loss or damage resulting from failure to comply with the instructions in this manual or any other material. Use this equipment only for its intended purpose. Follow the disposal instructions. Do not dispose of electronic equipment or batteries in a fire or near open heat sources.

What is Z-Wave?

Z-Wave is the international wireless protocol for communication in the Smart Home. This device is suited for use in the region mentioned in the Quickstart section.

Z-Wave ensures a reliable communication by reconfirming every message (**two-way communication**) and every mains powered node can act as a repeater for other nodes (**meshed network**) in case the receiver is not in direct wireless range of the transmitter.

This device and every other certified Z-Wave device can be **used together with any other certified Z-Wave device regardless of brand and origin** as long as both are suited for the same frequency range.

If a device supports **secure communication** it will communicate with other devices secure as long as this device provides the same or a higher level of security. Otherwise it will automatically turn into a lower level of security to maintain backward compatibility.

For more information about Z-Wave technology, devices, white papers etc. please refer to www.z-wave.info.



Product Description

FIBARO Door/Window Sensor 2 is a wireless, battery powered Hall effect contact sensor, compatible with the Z-Wave Plus standard. Changing the device's status will automatically send signal to the Z-Wave controller and associated devices.

ensor can be used to trigger scenes and wherever there is a need for information about opening or closing of doors, windows, garage doors, etc. Opening is detected by separating the sensor's body and the magnet.

In addition the FIBARO Door/Window Sensor 2 is equipped with a built-in temperature sensor.

Main features of FIBARO Door/Window Sensor 2:

- Compatible with any Z-Wave or Z-Wave+ Controller,
- Supports protected mode (Z-Wave network Security Mode) with AES-128 encryption,
- Door/window opening detected through separation of Sensor's body and a magnet,
- Built-in temperature sensor,
- Detects tampering, when detached or opened,
- Easily mounted on doors, windows, garage gates and roller blinds,
- Battery powered,
- Visual LED indicator signalling status of the device,
- 7 color variations.

Prepare for Installation / Reset

Please read the user manual before installing the product.

In order to include (add) a Z-Wave device to a network it **must be in factory default state**. Please make sure to reset the device into factory default. You can do this by performing an Exclusion operation as described below in the manual. Every Z-Wave controller is able to perform this operation however it is recommended to use the primary controller of the previous network to make sure the very device is excluded properly from this network.

Reset to factory default

This device also allows to be reset without any involvement of a Z-Wave controller. This procedure should only be used when the primary controller is inoperable.

1. Open the cover.
2. Remove the battery.
3. Install the battery while holding both TMP buttons.
4. Release the TMP button within 5 seconds.
5. Visual indicator will blink 3 times to confirm launching of reset procedure.
6. Wait around 30s for the resetting process to end, do not remove the battery.
7. Visual LED indicator will blink 6 times to confirm the reset.

Safety Warning for Batteries

The product contains batteries. Please remove the batteries when the device is not used. Do not mix batteries of different charging level or different brands.

Installation

To install the Door/Window Sensor:

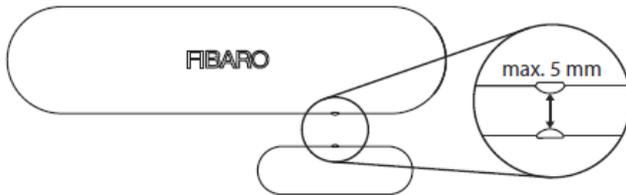
1. Peel off the protective layer from the sticker on the device.
2. Stick the device onto the door/window frame.
3. Peel off the protective layer from the sticker on the magnet.
4. Stick the magnet onto the moving part of the door/window, no further than 5mm from the sensor.

Positioning of the Sensor and the magnet:



Correct positioning of the magnet in relation to the Sensor:

(vertical line marks should align)



Inclusion/Exclusion

On factory default the device does not belong to any Z-Wave network. The device needs to be **added to an existing wireless network** to communicate with the devices of this network. This process is called **Inclusion**.

Devices can also be removed from a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller is turned into exclusion respective inclusion mode. Inclusion and Exclusion is then performed doing a special manual action right on the device.

Inclusion

1. Close the cover.
2. Place the Door/Window Sensor 2 within the direct range of your Z-Wave controller.
3. Set the main controller in (Security/non-Security Mode) add mode (see the controller's manual).
4. Quickly, three times press one of the TMP buttons (while the other button is pressed).
5. Wait for the adding process to end.
6. Successful adding will be confirmed by the Z-Wave controller's message.

Exclusion

1. Close the cover.
2. Place the Door/Window Sensor 2 within the direct range of your Z-Wave controller.
3. Set the main controller into remove mode (see the controller's manual).
4. Quickly, three times press one of the TMP buttons (while the other button is pressed).
5. Wait for the removing process to end.
6. Successful removing will be confirmed by the Z-Wave controller's message.

Product Usage

Tamper (TMP) button:

The Door/Window Sensor 2 is equipped with a tamper switch with two buttons.

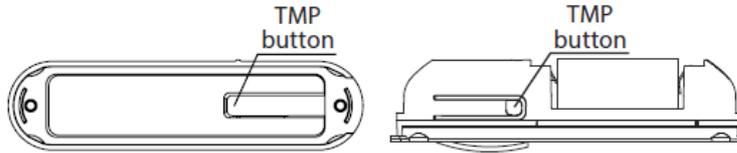
First TMP button is located inside the device, pressed by the closed cover and is used to detect opening it.

Second TMP button is located at bottom of the device, pressed by the surface on which the device is mounted and is used to detect detaching the device.

For the tamper switch to work one of the buttons must always be pressed!

When one of the buttons is released, the tamper alarm will be send to the controller and associated devices.

Additionally, tamper button allows to control the device directly.



Node Information Frame

The Node Information Frame (NIF) is the business card of a Z-Wave device. It contains information about the device type and the technical capabilities. The inclusion and exclusion of the device is confirmed by sending out a Node Information Frame. Beside this it may be needed for certain network operations to send out a Node Information Frame. To issue a NIF execute the following action: Press Tamper

Communication to a Sleeping device (Wakeup)

This device is battery operated and turned into deep sleep state most of the time to save battery life time. Communication with the device is limited. In order to communicate with the device, a static controller **C** is needed in the network. This controller will maintain a mailbox for the battery operated devices and store commands that can not be received during deep sleep state. Without such a controller, communication may become impossible and/or the battery life time is significantly decreased.

This device will wakeup regularly and announce the wakeup state by sending out a so called Wakeup Notification. The controller can then empty the mailbox. Therefore, the device needs to be configured with the desired wakeup interval and the node ID of the controller. If the device was included by a static controller this controller will usually perform all necessary configurations. The wakeup interval is a tradeoff between maximal battery life time and the desired responses of the device. To wakeup the device please perform the following action:

To wake up the sensor manually, click one of the TMP buttons (while the other button is pressed).

Quick trouble shooting

Here are a few hints for network installation if things dont work as expected.

1. Make sure a device is in factory reset state before including. In doubt exclude before include.
2. If inclusion still fails, check if both devices use the same frequency.
3. Remove all dead devices from associations. Otherwise you will see severe delays.
4. Never use sleeping battery devices without a central controller.
5. Dont poll FLIRS devices.
6. Make sure to have enough mains powered device to benefit from the meshing

Association - one device controls an other device

Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called association. In order to control a different device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called association groups and they are always related to certain events (e.g. button pressed, sensor triggers, ...). In case the event happens all devices stored in the respective association group will receive the same wireless command wireless command, typically a 'Basic Set' Command.

Association Groups:

Group Number	Maximum Nodes	Description
1	1	Lifeline - reports the device status and allows for assigning single device only (main controller by default).
2	5	On/Off is assigned to the device status - Hall effect sensor (sends Basic Set command frames).
3	5	Tamper is assigned to the TMP switch (sends alarm command frames).

Configuration Parameters

Z-Wave products are supposed to work out of the box after inclusion, however certain configuration can adapt the function better to user needs or unlock further enhanced features.

IMPORTANT: Controllers may only allow configuring signed values. In order to set values in the range 128 ... 255 the value sent in the application shall be the desired value minus 256. For example: To set a parameter to 200 it may be needed to set a value of 200 minus 256 = minus 56. In case of a two byte value the same logic applies: Values greater than 32768 may needed to be given as negative values too.

Parameter 1: Door/window state

This parameter allows to set in what state is door/window when the magnet is close to the sensor.

Size: 1 Byte, Default Value: 0

Setting	Description
0	closed when magnet near
1	opened when magnet near

Parameter 2: Visual LED indications

This parameter defines events indicated by the visual LED indicator. Disabling events might extend battery life.

Parameter 2 values may be combined, e.g. 1+2=3 means that indications for opening/closing and waking up are enabled.

Size: 1 Byte, Default Value: 6

Setting	Description
1	indication of opening/closing status change
2	indication of wake up (1 x click or periodical)
4	indication of device tampering

Parameter 3: Associations in Z-Wave network Security Mode

This parameter defines how commands are sent in specified association groups: as secure or non-secure. Parameter is active only in Z-Wave network Security Mode. It does not apply to 1st group "Lifeline".

Size: 1 Byte, Default Value: 3

Setting	Description
0	none of the groups sent as secure
1	2nd group "On/Off" sent as secure
2	3rd group "Tamper" sent as secure
3	2nd and 3rd group sent as secure

Parameter 11: 2nd association group triggers

Parameter defines events which result in sending on/off commands to devices added to the 2nd association group. These commands are sent alternately to switch the devices on and off.

Size: 1 Byte, Default Value: 0

Setting	Description
0	switch after opening and closing
1	switch after opening (parameter 12)
2	switch after closing (parameter 13)

Parameter 12: Association for opening - value sent

Value sent to devices in 2nd association group when opening is detected. In case of associating devices allowing smooth control, values 1-99 allow to set an associated device to a specified level.

Size: 2 Byte, Default Value: 255

Setting	Description
0	Turn off
1 - 99	Value
255	Turn on

Parameter 13: Association for closing - value sent

Value sent to devices in 2nd association group when closing is detected. In case of associating devices allowing smooth control, values 1-99 allow to set an associated device to a specified level.

Size: 2 Byte, Default Value: 0

Setting	Description
0	Turn off
0 - 99	Value
255	Turn on

Parameter 14: Association for opening - time delay

Time that must elapse from opening to send the command frame to devices in 2nd association group.

Size: 2 Byte, Default Value: 0

Setting	Description
0 - 32400	time in seconds

Parameter 15: Association for closing - time delay

Time that must elapse from closing to send the command frame to devices in 2nd association group.

Size: 2 Byte, Default Value: 0

Setting	Description
0 - 32400	Time period after which a tamper alarm will be cancelled.

Parameter 30: Tamper - alarm cancellation delay

Time period after which a tamper alarm will be cancelled.

Size: 2 Byte, Default Value: 5

Setting	Description
0 - 32400	Tamper - alarm cancellation delay

Parameter 31: Tamper - reporting alarm cancellation

Reporting cancellation of tamper alarm to the controller and 3rd association group.

Size: 1 Byte, Default Value: 1

Setting	Description
0	do not send tamper cancellation report
1	send tamper cancellation report

Parameter 50: Interval of temperature measurements

This parameter defines how often the temperature will be measured. The shorter the time, the more frequently the temperature will be measured, but the battery life will shorten.

Size: 2 Byte, Default Value: 300

Setting	Description
0	temperature measurements disabled
5 - 32400	time in seconds

Parameter 51: Temperature reports threshold

This parameter defines the change of temperature in comparison with last reported, resulting in temperature report being sent to the main controller.

Size: 2 Byte, Default Value: 10

Setting	Description
0	temperature reports based on threshold disabled
1 - 300	temperature threshold (0.1-30°C, 0.1°C step)

Parameter 52: Interval of temperature reports

This parameter determines how often the temperature reports will be sent to the main controller (regardless of parameters 50 and 51).

Size: 2 Byte, Default Value: 0

Setting	Description
0	periodic temperature reports disabled
300 - 32400	time in seconds

Parameter 53: Temperature offset

The value to be added to the actual temperature, measured by the sensor (temperature compensation).

Size: 2 Byte, Default Value: 0

Setting	Description
-1000 - 1000	(-100-100°C, 0.1°C step)

Parameter 54: Temperature alarm reports

Temperature alarms reported to the Z-Wave controller. Thresholds are set in parameters 55 and 56.

Size: 1 Byte, Default Value: 0

Setting	Description
0	temperature alarms disabled
1	high temperature alarm
2	low temperature alarm
3	high and low temperature alarms enabled

Parameter 55: High temperature alarm threshold

If temperature is higher than set value, overheat notification will be sent and high temperature scene will be triggered (if activated).

Size: 2 Byte, Default Value: 0

Setting	Description
1 - 600	(0.1-60°C, 0.1°C step)

Parameter 56: Low temperature alarm threshold

If temperature is lower than the set value, underheat notification will be sent and low temperature scene will be triggered (if activated).

Size: 2 Byte, Default Value: 100

Setting	Description
0 - 599	(0-59.9°C, 0.1°C step)

Technical Data

Hardware Platform	ZM5202
IP Class	IP 20
Voltage	230 V
Battery Type	1 * ER14250 1/2AA
Device Type	Door/Window Sensor
Network Operation	Reporting Sleeping Slave
Firmware Version	03.02
Z-Wave Version	04.26
Certification ID	ZC10-17035459
Z-Wave Product Id	0x010f.0x0702.0x1000
Supported Notification Types	Access ControlHeat AlarmHome SecurityPower Management
Firmware Updatable	Updatable by Consumer by RF
Sensors	Air Temperature
Frequency	Europe - 868,4 Mhz
Maximum transmission power	5 mW

Supported Command Classes

- Basic
- Application Status
- Sensor Multilevel
- Crc 16 Encap
- Association Grp Info
- Device Reset Locally
- Zwaveplus Info
- Configuration
- Alarm
- Manufacturer Specific
- Powerlevel
- Firmware Update Md
- Battery
- Wake Up
- Association
- Version
- Multi Channel Association
- Security

Controlled Command Classes

- Basic

- Notification V5

Explanation of Z-Wave specific terms

- **Controller** — is a Z-Wave device with capabilities to manage the network. Controllers are typically Gateways, Remote Controls or battery operated wall controllers.
- **Slave** — is a Z-Wave device without capabilities to manage the network. Slaves can be sensors, actuators and even remote controls.
- **Primary Controller** — is the central organizer of the network. It must be a controller. There can be only one primary controller in a Z-Wave network.
- **Inclusion** — is the process of adding new Z-Wave devices into a network.
- **Exclusion** — is the process of removing Z-Wave devices from the network.
- **Association** — is a control relationship between a controlling device and a controlled device.
- **Wakeup Notification** — is a special wireless message issued by a Z-Wave device to announce that it is able to communicate.
- **Node Information Frame** — is a special wireless message issued by a Z-Wave device to announce its capabilities and functions.

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