FIBARO
HOME INTELLIGENCE

O P E R A T I N G
M A N U A L

EN

FIBARO DOOR/WINDOW SENSOR 2
FGDW-002

CONTENTS

Important safety information

⚠ **Read this manual before attempting to install the device!**
Failure to observe recommendations included in this manual may be dangerous or cause a violation of the law. The manufacturer, Fibar Group S.A. will not be held responsible for any loss or damage resulting from not following the instructions of operating manual.

The alarm functionality of devices is an additional feature increasing the comfort level of your home automation system. If you want to use professional security service, please contact them to determine what systems can provide a protection of your estate.

Compliance with safety standards:

The device is designed to be used in Z-Wave home automation systems (e.g. FIBARO) and is complaint with IEC 62368-1. In case of the integration with another system, e.g. alarm system, it is required to verify the compliance with additional standards.

General information about the FIBARO System

FIBARO is a wireless smart home automation system, based on the Z-Wave protocol. All of available devices can be controlled through a computer (PC or Mac), smartphone or tablet. Z-Wave devices are not only receivers, but can also repeat the signal, increasing the Z-Wave network's range. It gives advantage over traditional wireless systems that require direct link between transmitter and receiver, as a result the construction of the building could affect network's range negatively.

Every Z-Wave network has its unique identification number (home ID). Multiple independent networks can exist in the building without interfering. Transmission security of FIBARO System is comparable to wired systems.

Z-Wave technology is the leading solution in smart home automation. There is a wide range of Z-Wave devices that are mutually compatible, independently of manufacturer. It gives the system the ability to evolve and expand over time. For more information visit www.fibaro.com.

#1: Description and features

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.

Sensor 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 Plus 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,
- 3 color variations.

**FIBARO Door/Window Sensor 2 is a fully compatible Z-Wave Plus device.**

i NOTE

This device may be used with all devices certified with Z-Wave Plus certificate and should be compatible with such devices produced by other manufacturers.
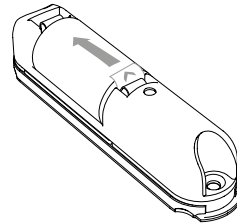
i NOTE

Z-Wave Controller must support Z-Wave Security Mode in order to fully utilize the product.

#2: Basic activation

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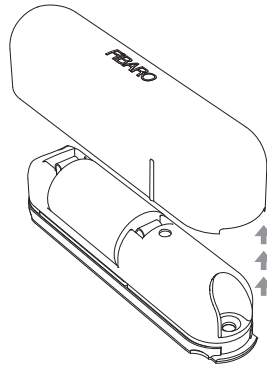
2. Remove the battery blocker.

3. Close the cover.

4. Add the device (see "Adding/removing the device" on page 5).
5. Install the device (see "Physical installation" on page 6).

#3: Adding/removing the device

Adding (Inclusion) - Z-Wave device learning mode, allowing to add the device to existing Z-Wave network.

To add the device to the Z-Wave network:

1. Place the Door/Window Sensor 2 within the direct range of your Z-Wave controller.

2. Set the main controller in (Security/non-Security Mode) add mode (see the controller's manual).

3. Quickly, three times press one of the TMP buttons (while the other button is pressed).

With cover closed   When attached to a surface
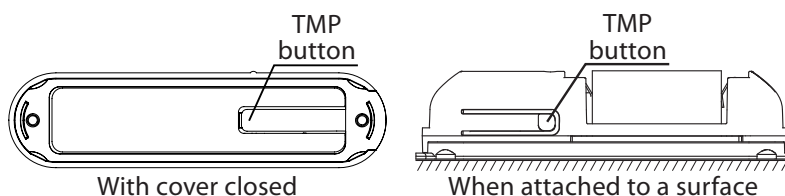
4. Wait for the adding process to end.

5. Successful adding will be confirmed by the Z-Wave controller's message.

Removing (Exclusion) - Z-Wave device learning mode, allowing to remove the device from existing Z-Wave network.

To remove the device from the Z-Wave network:

1. Place the Door/Window Sensor 2 within the direct range of your Z-Wave controller.

2. Set the main controller into remove mode (see the controller's manual).

3. Quickly, three times press one of the TMP buttons (while the other button is pressed).

With cover closed   When attached to a surface
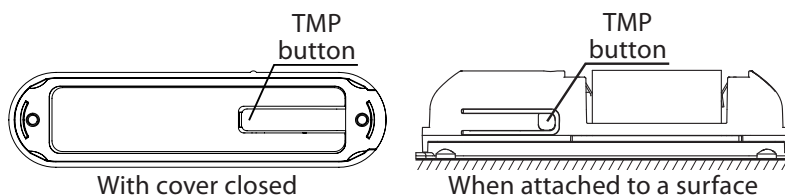
4. Wait for the removing process to end.

5. Successful removing will be confirmed by the Z-Wave controller's message.

> **i NOTE**
>
> Adding in Security Mode must be performed up to 2 meters from the controller.

> **i NOTE**
>
> In case of problems with adding the device, please reset the device and repeat the adding procedure.

#4: Physical installation

To install the Door/Window Sensor:

1. Check that the sensor and magnet surfaces are clean.

2. Carefully remove one protective layer from the double-sided stickers included in the package. Apply the stickers to the sensor and magnet.

3. Peel off protective layer from the sensor and magnet.

4. Stick the sensor onto the frame and magnet onto the moving part of the door/window (no further than 5mm from the sensor).

Positioning of the Sensor and the magnet:
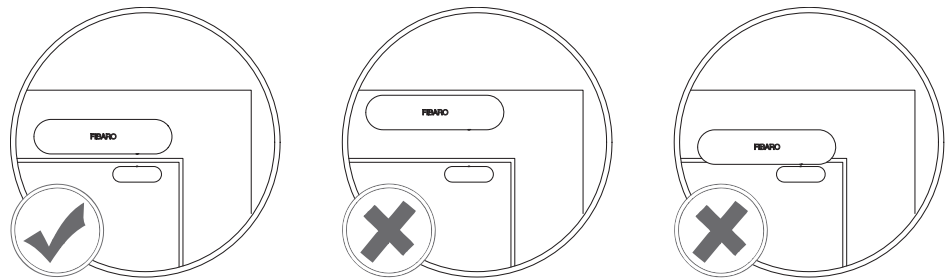
Correct positioning of the magnet in relation to the Sensor:
(vertical line marks should align)
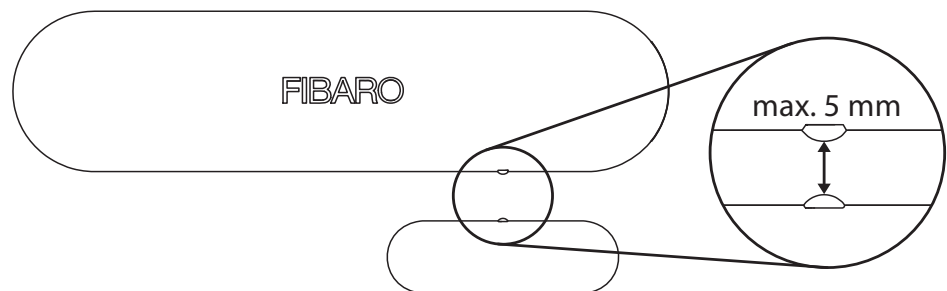
#5: Operating the device

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 openning 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.

With cover closed   When attached to a surface
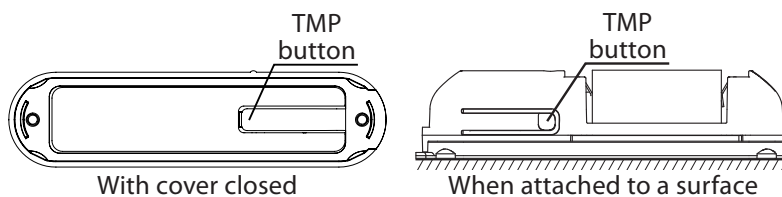
Controlling the Door/Window Sensor 2 with FIBARO Home Center controller:

After adding the Sensor to the FIBARO System, it will be represented by two or three icons in Home Center interface.

First icon informs about the status of magnetic sensor (open/close), second icon displays temperature measured by the built-in sensor. Third icon is assigned to high/low temperature alarm and is visible only if parameter 54 is not equal to 0.

132.0   132.0.1   54.0.1

Waking up the Door/Window Sensor 2:

The Door/Window Sensor 2 needs to be woken up to receive information about the new configuration from the controller, like parameters and associations.

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

Resetting the Door/Window Sensor 2:

Reset procedure allows to restore the device back to its factory settings, which means all information about the Z-Wave controller and user configuration will be deleted.

In order to reset the device:

1. Open the cover.
2. Remove the battery.
3. Install the battery while holding both TMP buttons.
4. Visual LED indicator will be flashing slowly for 5 seconds - keep holding the buttons.
5. Release one button when the LED indicator starts flashing quickly.
6. Click released button once to confirm launching of reset procedure.
7. Wait a few seconds until a long blink of the LED indicator. Do not remove the battery.
8. Visual LED indicator will blink 5 times quickly to confirm the reset.

Replacing the battery:

In FIBARO Home Center controller current battery level is displayed in the interface. If a battery icon turns red, it means the battery needs replacement.

Notification report:

The device uses Notification Command Class to report different events.

Notification Type	Event
Home Security	Tampering, product covering removed
Access Control	Door/window opened
Access Control	Door/window closed
Power Management	Replace battery now
Heat Alarm	Overheat detected, unknown location
Heat Alarm	Underheat detected, unknown location

#6: Association

Association (linking devices) - direct control of other devices within the Z-Wave system network e.g. Dimmer, Relay Switch, Roller Shutter or scene (may be controlled only through a Z-Wave controller).

The Door/Window Sensor 2 provides the association of three groups:

1st Association Group – "Lifeline" reports the device status and allows for assigning single device only (main controller by default).

2nd Association Group – "On/Off" is assigned to the device status - contact sensor (sends Basic Set command frames).

3rd Association Group – "Tamper" is assigned to the TMP switch (sends alarm command frames).

The Door/Window Sensor 2 in 2nd and 3rd group allows to control 5 devices (regular or multichannel) per an association group. "Lifeline" group is reserved solely for the controller and hence only 1 node can be assigned.

To add an association (using the Fibaro controller):

1. Go to *Settings* ⚙
2. Go to *Devices*.
3. Select the appropriate device from the list.
4. Select the *Associations* tab.
5. Define to which group and which devices to associate.
6. Save the changes.
7. Wake up the device manually or wait for the next automatic wake up.

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i **NOTE**

Association allows transfer of control commands between devices without participation of the main controller.
Direct range between devices is recommended.

i **NOTE**

"Lifeline" supported Z-Wave Command Classes: Notification, Battery, Sensor Multilevel, Device Reset Locally.

#7: Advanced parameters

The Door/Window Sensor 2 allows to customize its operation to user's needs. Settings are available in the FIBARO interface as simple options that may be chosen by selecting the appropriate box. In order to configure the Door/Window Sensor 2 (using the Home Center controller):

1. Go to *Settings* ⚙
2. Go to *Devices*.
3. Select the appropriate device from the list.
4. Select the *Parameters* tab.
5. Change values of selected parameters.
6. Save your changes.
7. Press the TMP button to wake up the device or wait until the auto--awaken time has elapsed.

Wake up interval

Available settings: **0** or **3600-64800** (in seconds (1-18h), 3600s (1h) step)

Default setting: **21600** (6h)

The Door/Window Sensor will wake up after each defined time interval and always try to connect with the main controller. After a successful communication attempt, the sensor will update configuration parameters, associations and settings and will go into standby mode. After failed communication attempt (e.g. lack of Z-Wave range) the device will go into standby mode and retry to establish connection with the main controller after the next time interval.

Setting wake up interval to 0 disables sending Wake Up Notification frame automatically. Wake up may be still performed manually by a clicking one of the TMP buttons (while the other button is pressed).

Longer time interval means less frequent communication and thus a longer battery life.

1. Door/window state

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

Available settings:	**0** - closed when magnet near		
	1 - opened when magnet near		
Default setting:	**0**	Parameter size:	**1** [byte]

2. Visual LED indications

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

Available settings:	**1** - indication of opening/closing status change		
	2 - indication of wake up (1 x click or periodical)		
	4 - indication of device tampering		
Default setting:	**6**	Parameter size:	**1** [byte]

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".

Available settings:	**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		
Default setting:	**3** (all)	Parameter size:	**1** [byte]

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.

Available settings:	**0** - switch after opening and closing		
	1 - switch after opening (parameter 12)		
	2 - switch after closing (parameter 13)		
Default setting:	**0**	Parameter size:	**1** [byte]

12. Association for opening - value sent

Value sent to devices in 2nd association group when opening is detected

The value of 0 turns OFF the device, 255 turns it ON.

In case of associating devices allowing smooth control, values 1-99 allow to set an associated device to a specified level.

Available settings:	**0-99** or **255**		
Default setting:	**255**	Parameter size:	**2** [bytes]

13. Association for closing - value sent

Value sent to devices in 2nd association group when closing is detected

The value of 0 turns OFF the device, 255 turns it ON.

In case of associating devices allowing smooth control, values 1-99 allow to set an associated device to a specified level.

Available settings:	**0-99** or **255**		
Default setting:	**0**	Parameter size:	**2** [bytes]

14. Association for opening - time delay

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

Available settings:	**0-32400** - time in seconds		
Default setting:	**0**	Parameter size:	**2** [bytes]

15. Association for closing - time delay

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

Available settings:	**0-32400** - time in seconds		
Default setting:	**0**	Parameter size:	**2** [bytes]

30. Tamper - alarm cancellation delay

Time period after which a tamper alarm will be cancelled.

Available settings:	**0-32400** - time in seconds		
Default setting:	**5**	Parameter size:	**2** [bytes]

31. Tamper - reporting alarm cancellation

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

Available settings:	**0** - do not send tamper cancellation report		
	1 - send tamper cancellation report		
Default setting:	**1**	Parameter size:	**1** [byte]

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.

Available settings:	**0** - temperature measurements disabled		
	5-32400 - time in seconds		
Default setting:	**300** (5min)	Parameter size:	**2** [bytes]

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.

Available settings:	**0** - temperature reports based on threshold disabled		
	1-300 - temperature threshold (0.1-30℃, 0.1℃ step)		
Default setting:	**10** (1℃)	Parameter size:	**2** [bytes]

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i **NOTE**

Parameter 51 is active only if parameter 50 is not set to 0.

i **NOTE**

Temperature measurement is performed before sending any report (regardless of parameter no. 50). Excessive reporting can affect battery lifetime. Reporting on the basis of temperature change (parameter no. 51) is recommended.

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).

Available settings:	**0** - periodic temperature reports disabled		
	300-32400 - time in seconds		
Default setting:	**0**	Parameter size:	**2** [bytes]

53. Temperature offset

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

Available settings:	**-1000–1000** (-100–100°C, 0.1°C step)		
Default setting:	**0** (0°C)	Parameter size:	**2** [bytes]

54. Temperature alarm reports

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

Available settings:	**0** - temperature alarms disabled		
	1 - high temperature alarm		
	2 - low temperature alarm		
	3 - high and low temperature alarms enabled		
Default setting:	**0**	Parameter size:	**1** [byte]

55. High temperature alarm threshold

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

Available settings:	**1-600** (0.1-60°C, 0.1°C step)		
Default setting:	**350** (35°)	Parameter size:	**2** [bytes]

56. Low temperature alarm threshold

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

Available settings:	**0-599** (0-59.9°C, 0.1°C step)		
Default setting:	**100** (10°)	Parameter size:	**2** [bytes]

#8: Specifications

ℹ **NOTE**

Battery life depends on frequency of usage, number of associations/scenes, Z-Wave routing and network load.

ℹ **NOTE**

Radio frequency of individual device must be same as your Z-Wave controller. Check information on the box or consult your dealer if you are not sure.

Power supply:	3.6V DC battery
Battery type:	ER14250 ½ AA, LS14250 ½ AAs
Battery life:	est. 2 years (default settings)
EU directives compliance:	RoHS 2011/65/EU, 2015/863 RED 2014/53/EU
Radio protocol:	Z-Wave (500 series chip)
Radio frequency:	868.4 or 869.8 MHz EU; 908.4, 908.42 or 916.0 MHz US; 921.4 or 919.8 MHz ANZ; 869.0 MHz RU;
Range:	up to 50m (164ft) outdoors up to 40m (131ft) indoors (depending on terrain and building structure)
Destined environment:	Indoor use only
Operating temperature:	0-40°C (32-104°F)
Temperature measuring range:	0-60°C (32-140°F)
Temperature measuring accuracy:	±0.5°C (±0.9°F)
Dimensions (L x W x H):	71 x 18 x 18 mm (2.8 x 0.7 x 0.7 inch)

#9: Regulations

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
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 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.

Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

Industry Canada (IC) Compliance Notice

This device complies with Industry Canada license-exempt RSSs. 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.

Cet appareil est conforme aux normes d'exemption de licence RSS d'Industry Canada. Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

Legal Notices

All information, including, but not limited to, information regarding the features, functionality, and/or other product specification are subject to change without notice. Fibaro reserves all rights to revise or update its products, software, or documentation without any obligation to notify any individual or entity.
FIBARO and Fibar Group logo are trademarks of Fibar Group S.A. All other brands and product names referred to herein are trademarks of their respective holders.

Product is covered by one or more claims of patents found at http://sipcollc.com/patent-list/ and http://intusiq.com/patent-list/.

DGT Warning Statement
Article 12
Without permission, any company, firm or user shall not alter the frequency, increase the power, or change the characteristics and functions of the original design of the certified lower power frequency electric machinery.
Article 14
The application of low power frequency electric machineries shall not affect the navigation safety nor interfere a legal communication, if an interference is found, the service will be suspended until improvement is made and the interference no longer exists.

第十二條
經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
第十四條

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。
前項合法通信，指依電信法規定作業之無線電通信。
低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Warning

This product is not a toy. Keep away from children and animals!

Declaration of conformity

Hereby, Fibar Group S.A. declares that the device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU, 2011/65/EU, 2015/863. The full text of the EU declaration of conformity is available at the following internet address: www.manuals.fibaro.com

WEEE Directive Compliance

Device labelled with this symbol should not be disposed with other household wastes. It shall be handed over to the applicable collection point for the recycling of waste electrical and electronic equipment.