

## OPERATING MANUAL DOOR / WINDOW SENSOR FGK-10x-EN-A-v1.01

The Fibaro Door / Window Sensor is a wireless, battery powered, Z-Wave compatible reed sensor. Each time its two parts, i.e. the sensor's body and a magnet separate, a radio signal is sent. In addition the Fibaro Door / Window Sensor supports one DS18B20 temperature sensor and has one potential free input. The Fibaro Door / Window Sensor is designed for use with scenes in home automation systems and everywhere else where information related to opening / closing of doors, windows, garage gates, etc. is needed.

### Technical data:

Power supply	single ER14250 (1/2AA) 3,6V battery
Inputs	single, potential-free
In accordance with EU standards	R&TTE 1999/5/WE LVD 2006/95/WE EMC 2004/108/WE RoHS2 2011/65/UE
Supported temperature sensors	single, DS18B20
Operating temperature	0 - 40 °C
Radio protocol	Z-Wave
Radio frequency	868,4 MHz EU; 908,4 MHz US; 921,4 MHz AU/NZ; 869,2 MHz RU;
Range	up to 30m indoors, depending on building materials used and the building structure
Dimensions (L x W x H)	76 x 17 x 19 mm

### Technical information:

- Controlled via. Fibaro System components or any other Z-Wave compatible controller.
- Door/window opening detected through Sensor's body and a magnet separation.
- Quick installation - easily mounted on doors, windows, garage gates, roller blinds, using double sided adhesive tape or screws.
- Compatible with DS18B20 temperature sensors.
- When connecting DS18B20 use single wire lead, no longer than 30 meters.
- May be connected to a switch via potential-free IN input.



#### HINT

Connections should be made specifically according to the diagrams presented in this manual. Incorrect connections may be hazardous or lead to device damage.

### I General Information on the Fibaro System:

Fibaro is a system that does not require any additional conductors; it is based on the Z-Wave technology. Fibaro offers a wide array of advantages in comparison to other, similar systems. In general, radio-based systems establish a direct connection between the receiver and the transmitter. The radio signal is attenuated by every obstacle along its path (in the household e.g. walls, furniture, etc). In the worst case the radio system ceases to function. The advantage of the Fibaro System is the fact that the devices act not only as a signal receiver and transmitter, but also as a signal repeater. If a direct radio link between the transmitter and the receiver cannot be established, the connection will be carried out with the use of other devices participating in communication.

Fibaro is a bidirectional wireless system. This means the signal is not only sent to the receivers, but also the receivers send feedback confirming the reception of the signal. This also confirms the condition of receivers, which allows us to check whether or not a device has actually been switched on. The safety of transmission of the Fibaro System is comparable with a wire-linked bus system. Fibaro operates in the free band for data transmission. The frequency depends on the radio regulations in each individual country.

Each Fibaro network has its own unique network identification number (home ID), which is why two or more independent systems may be installed in a single building without any interference.

Although the Z-Wave technology is fairly new, it has already been accepted as an official standard, just like Wi-Fi. Numerous manufacturers from various fields offer solutions based on Z-Wave technology, compatible with one another. This makes the system fit for the future and allows for further development. For more information go to [www.fibaro.com](http://www.fibaro.com).

Fibaro establishes a dynamic network structure. From the moment of start-up, the location data of respective devices of the Fibaro System is updated automatically, in real time, by confirming their condition in the working mesh network.

### II Sensor Installation:

1. Connect Fibaro Door/Window Sensor according to the appropriate diagram (if necessary)
2. Place battery inside the Sensor's casing.
3. Include into the Z-Wave network.
4. Install Fibaro Door/Window Sensor observing diagram 4.

#### EXPLANATION OF CONDUCTOR MARKINGS:

**TMP** - Tamper button. Detects removal, tampering etc. Used also as a service button, to include/exclude the device to/from the Z-Wave network.  
**IN** - Potential-free input.  
**TP – (TEMP\_POWER)** - Power out for DS18B20 temperature sensor.  
**TD – (TEMP\_DATA)** - Signal terminal for DS18B20 temperature sensor.  
**GND – (GROUND)** - Ground terminal.



#### NOTE!

To ensure the most accurate position detecting always install the magnet in relation to the Sensor's body, as shown in diagram 4.



#### NOTE!

Fibaro Door/Window Sensor has two TMP buttons - inside and underside the casing. During normal operation both TMP buttons must be secure. Do not use the sensor with opened casing.



#### NOTE!

TMP button, located on the underside of the device, has two functions:  
 1. sets a device into the learn mode (Include to / Exclude from a Z-Wave network).  
 2. tamper button. After correct installation (fig. 5 and 6), removing the whole sensor from its location or opening its casing may release the TMP button and trigger an alarm. If the TMP is to serve as a tamper button, association for II-nd association group must be configured (optionally, use the Parameter 13).

#### USING IN INPUT:



The Fibaro Door/Window Sensor has a one, potential-free IN input. IN input status may be modified through the Sensor itself or by sending GND signal to IN (diagram 3). If the Door/Window Sensor will be used only as a binary sensor, do not install the magnet.

#### USING DS18B20 TEMPERATURE SENSOR:



The DS18B20 temperature sensor may be installed anywhere where very precise temperature readings are necessary, if adequately protected, the DS18B20 sensor may be installed in humid conditions, under water, sealed in concrete or placed under the floor.

#### ANTENNA ARRANGEMENT INSTRUCTIONS:



The antenna should be placed above the battery. Never cut, shorten or bend the antenna. Its length is suited ideally to the band at which the system functions.



Metal surfaces in close vicinity (e.g. metal switch boxes, metal door trims) may impair the reception capability!

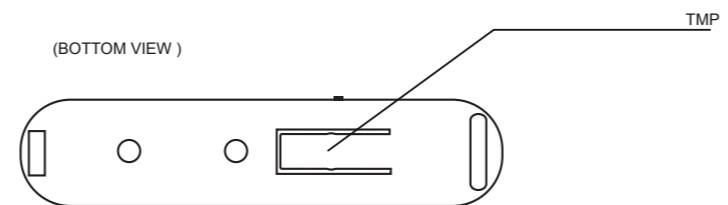
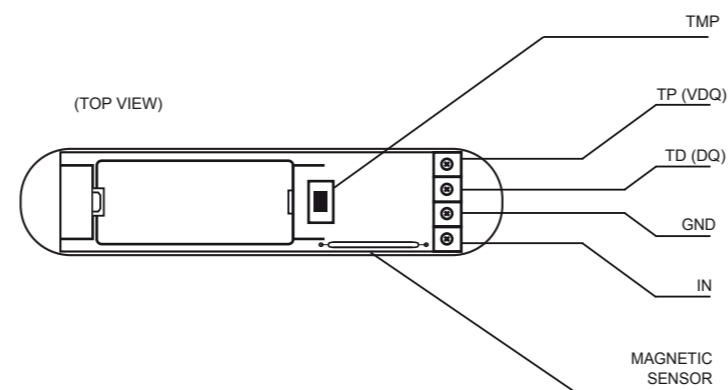


Diagram 1 - General

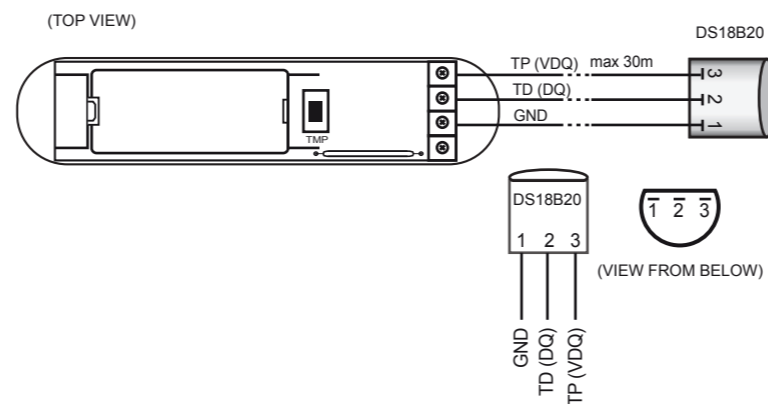


Diagram 2 - Connection to DS18B20 sensor

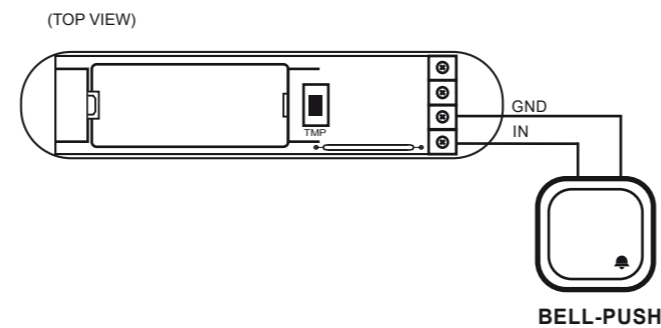


Diagram 3 - Example connection - momentary switch

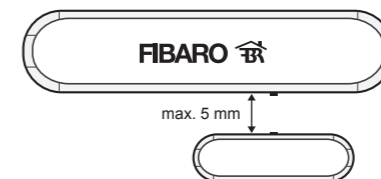


Diagram 4 - Correct positioning of the Sensor and the magnet

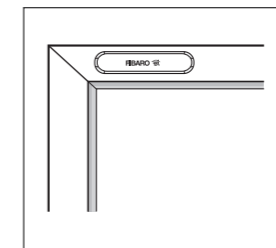


Diagram 5 - Correct sensor installation

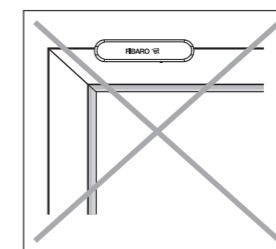


Diagram 6 - Incorrect sensor installation

#### GLOSSARY OF TERMS:

- INCLUSION** - the device sends out a Node Info frame, which makes it possible to add it to the Fibaro System (Home Center 2).
- EXCLUSION** - remove the device from the Fibaro System.
- ASSOCIATION** - controlling other devices included in the Fibaro System.
- Multi Channel Association** - controlling other multi-channel devices included in the Fibaro System

### III Fibaro Sensor Start-up

#### 1. Installation of the Door/Window Sensor

**STEP 1**  
Install the device observing the Figure 4 for correct positioning of the Sensor and the magnet. Close the Sensor's casing.

[Inclusion/Exclusion] of the Fibaro Door/Window Sensor [to/from] the Z-Wave network.

**STEP 2**  
The Fibaro module must be in range of the Z-Wave controller, because the procedure of inclusion to the system requires direct communication with the controller.

**STEP 3**  
Be sure that Sensor's cover is closed. Locate TMP button, which allows for proper inclusion of device.

**STEP 4**  
Set the controller to the inclusion or exclusion mode (see: Z-Wave controller instructions).

**STEP 5**  
The Fibaro Door/Window Sensor is added to the network by quickly pressing the TMP button three times (the button is located on the underside of the device and the casing). One of the buttons needs to be pressed constantly (by closing the lid or by installing it on a wall).

**STEP 6**  
Install the sensor's cover in desired location. Wake it up by triple clicking the TMP-button.



#### BATTERY USE:

The Fibaro Door/Window Sensor's battery life is up to 2 years, on default settings. Current battery level is displayed in the Home Center 2 configuration interface. If a battery icon turns red, it means the battery needs replacement. In order not to trigger an alarm when replacing the battery, II-nd association group must be deleted and the Sensor's configuration must be changed to default, prior to the battery change.



#### NOTE!

Door/Window Sensor is equipped with a built-in LED. LED blinks each time Door/Window Sensor changes its state. LED blinking slowly = correct inclusion. LED blinking rapidly = inclusion error.



#### NOTE!

Every time any changes are made to the configuration of TP and TD lines (1-wire), i.e. when DS18B20 sensor is connected/disconnected, it is necessary to execute the procedure of exclusion and repeated inclusion of the sensor module to the Z-Wave network. The system will enter into the learning mode only after connected DS18B20 sensor has been detected (about 10 s).



#### NOTE!

Do not connect sensors other than DS18B20 to the 1-wire line (TP and TD terminals).



#### NOTE!

It is prohibited to connect the TP and TD lines to devices not compatible with the 1-wire protocol.



#### NOTE!

Risk of explosion if the battery is replaced with an incorrect type. Batteries should be recycled where possible. Dispose of used batteries according to the instructions.

### 2. Resetting the Fibaro Door/Window Sensor

There is one way to reset the Fibaro Door/Window Sensor. The procedure cleans its EPROM memory, including the main controller and Z-Wave network data.

To reset the Fibaro Door/Window Sensor please follow below instructions:

- 1) Take off the Sensor's cover and remove battery. Make sure the TMP button is intact.
- 2) Touch the Sensor's body with a magnet.
- 3) Insert the battery.
- 4) Within 2 seconds remove the magnet from the Sensor's body, the LED will turn off. Wait 3 seconds until the LED starts blinking.
- 5) Remove the battery
- 6) Re-install the battery,
- 7) Reset will be confirmed by LED blinking



#### NOTE!

Resetting the device memory doesn't remove it from the Z-Wave network's main controller memory. To be able to re-include the device into the Z-Wave network please exclude it first. Exclusion may be performed either before or after the reset procedure.

### 3. Controlling the Fibaro Door/Window Sensor with the Home Center 2 Controller

The Door/Window Sensor ss a multifunctional device. This means that it is equipped with an independent input circuit and a 1-wire bus allowing it to be connected to a DS18B20 temperature sensor. As a result, each device is represented by an independent icon in the System.

