ENG

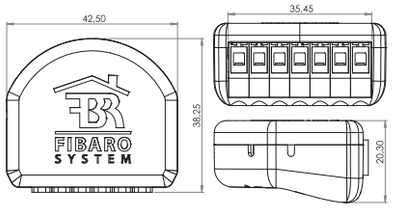
OPERATING MANUAL
DOUBLE RELAY SWITCH
FGS-222-EN-A-v1.1

Remotely Controlled Double Relay Switch of Fibaro System is designed to operate in a wall switch box or in locations where the control of an electric device (up to 1.5kW) is needed.

It is also possible to send a signal to any system that is to be integrated with Fibaro system.

Specifications

Power supply:	110 - 240V ~ 50 - 60Hz
Power consumption:	to 0,8W
Operational temperature:	0 - 35°C
Dimensions (L x W x H):	42,50 x 38,25 x 20,30 mm
For installation in boxes:	Ø ≥ 50mm
Rated load current:	6,5A per channel for resistive load, but total current can not exceed 10A*
Overcurrent protection:	required external 10A circuit breaker
Active element:	micro-gap relay switch µ
Device control:	remotely - radio waves directly - push buttons
Radio protocol:	Z-Wave
Radio signal power:	1mW
Radio Frequency:	868,4 MHz EU; 908,4 MHz US; 921,4 MHz ANZ; 869,0 MHz RU; 865,2 MHz IN;
Range:	up to 50 m outdoors up to 30 m indoors (depending on building materials)
Comply with EU directives:	RoHS 2011/65/EU RED 2014/53/EU



FGS-222	240 V~	120 V~
incandescent lamp load	2 x 1500 W	2 x 750 W
	2 x 6,5 A max. total 10 A	

Technical Information

- Controlled by FIBARO system devices or any Z-Wave controller.
- Electronic switch is a remote control unit.
- Microprocessor control.
- Active element: electromagnetic, micro-gap relay switch.
- The device may be operated by momentary and toggle push-buttons.
- To be installed in wall switch boxes of dimensions allowing for installation, conforming to provisions of applicable regulations.

I General information about Fibaro system

FIBARO is a wireless system, based on Z-Wave technology. FIBARO provides many advantages when compared to similar systems. In general, radio systems create a direct connection between the receiver and transmitter. But the radio signal is weakened by various obstacles located on its path (apartment walls, furniture, etc.) and in extreme cases it fails to transfer required data. The advantage of FIBARO system is that its devices apart from being transmitters and receivers of signals, they are also a signal "duplicators". When a direct connection path between the transmitter and the receiver can not be established, the connection may be achieved through other intermediate devices.

FIBARO is a bi-directional wireless system. It means that the signal is not only sent to the receivers but also the receivers send the confirmation of its reception. This operation confirms their status so to check whether they are active. Safety of the FIBARO system transmission is comparable to the safety of transmission in data bus wired systems.

FIBARO operates in the free band for data transmission. The frequency depends on radio regulations in individual country . Each FIBARO network has its own unique network identification number (home ID), which is why it is possible to co-operate two or more independent systems in a single building without any interference.

Although Z-Wave is quite new technology, it has already become recognizable and officially binding standard, similarly to Wi-Fi. Many manufacturers in various industries offer solutions based on Z-Wave technology, guaranteeing their compatibility. This means that the system is open and it may be extended in the future. Find more information at www.fibaro.com.

FIBARO generates a dynamic network structure. After FIBARO system is switched on, the location of its individual components is automatically updated in real-time through status confirmation signals received from devices operating in a "mesh" network.

The In-Wall Double Relay Switch is hereinafter referred to as Fibaro Switch. It is designed to switch on/off devices connected to its terminals using radio waves, controllers and a push button directly connected to Fibaro Switch.

II Assembling Double Relay Switch

CAUTION
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 Sp. z o.o., will not be held responsible for any loss or damage resulting from not following the instructions of operating manual.

CAUTION
Product must be installed on a 10A line.

DANGER
Danger of electrocution! Electronic switch is designed to operate in electrical home installation. Faulty connection or use may result in fire or electric shock.

DANGER
Danger of electrocution! All works on the device may be performed only by a qualified and licensed electrician. Observe national regulations.

DANGER
Danger of electrocution! Even when the device is turned off, voltage may be present at its terminals. Any works introducing changes into the configuration of connections or the load must be always performed with disconnected voltage (disable the fuse).

CAUTION
Do not connect the device to loads exceeding recommended values. Connect only in accordance with the diagram presented in the manual. Improper connections may be dangerous.

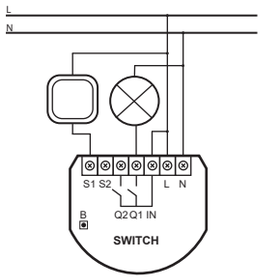
1. Before installation ensure that the voltage supply is disconnected.

2. Connect Double Relay Switch as shown on the diagram.

3. Place the switch in the switch box.

4. Arrange the antenna (tips are presented further).

Single switch - mains electricity power connection



Double switch - mains electricity power connection

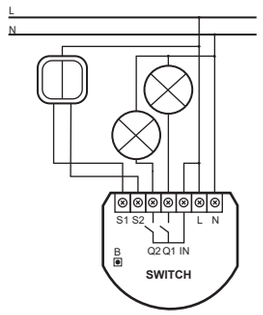


Fig.1 Wiring diagrams for Double Relay Switch.

NOTES FOR THE DIAGRAM:
N - terminal for neutral lead
L - terminal for live lead
IN - input terminal for load power supply
Q1 - output terminal of the first load
Q2 - output terminal of the second load
S2 - terminal for key no. 2
S1 - terminal for key no. 1 (has the option of entering the device in learning mode)
B - service button (used to add or remove a device from the system)

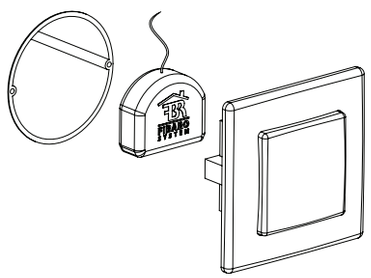


Fig.2 Installation of Fibaro Relay Switch in wall switch box.

CAUTION
The switch box must be compliant with the relevant national safety standards and it's depth should not be less than 60mm.

CAUTION
The device is designed for installation in wall switch boxes and can work only with the electrical connectors compliant with the relevant safety standards.

NOTE
Durability of the device depends on applied load. For resistive load (light bulbs, etc.) and 6,5A current per channel, the durability exceeds 200 000 switches.

TIPS FOR ARRANGING THE ANTENNA:

Locate the antenna as far from metal elements as possible (connecting wires, bracket rings, etc.) in order to prevent interferences.

Metal surfaces in the direct vicinity of the antenna (e.g. flush mounted metal boxes, metal door frames) may impair signal reception!

Do not cut or shorten the antenna - its length is perfectly matched to the band in which the system operates.

NOTE
It should be noted that only the push-button connected to S1 terminal and service push-button B enables "learning" mode (Include/ Exclude).

DICTIONARY:

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

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

• **Association (linking devices)** - direct control of other devices within the Z-Wave system network.

• **Multi-channel association** - controlling other multi-channel devices within the Z-Wave network.

III Activating Double Relay Switch

1. Installing the Double Relay Switch

STEP 1
Connect the device in accordance with the wiring diagram presented in Figure 1. Switch on the mains voltage.

[Adding/Removing] Double Relay Switch [to/from] Z-wave network

STEP 2
Double Relay Switch must be placed within the range of Home Center controller, as adding mode requires direct communication with the controller.

STEP 3
Find key no. 1 which allows to switch circuit 1 on, in accordance with the diagram

STEP 4
Set the Home Center controller in add/remove mode (see the controller's manual)

STEP 5
Add Double Relay Switch to the network by pushing three times key no. 1 or push-button B located inside the housing of the device. For toggle switch perform 3 position changes.

During the installation it is recommended to use a momentary key connected to S1.

STEP 6
The controller indicates when the device is correctly added to the network, (see the manual of Home Center controller).

CAUTION
Double Relay Switch cancels the "learning" mode after key no. 1 is pressed once. Therefore, pressing key no. 1 four times will not add the devices to the network. The same applies to push-button B.

CAUTION
Double Relay Switch is set by default to operate with toggle switches. While adding Double Relay Switch to the network with toggle switches, ensure that all switch contacts are open (off), because closing them results in activating the push-button and this will prevent adding the device to the network.

2. Resetting Double Relay Switch

Fibaro Switch provides two methods for resetting.

Method I : Reset by removing Double Relay Switch from the existing Z-Wave network. The device may be removed using the controller that has the ability to include/exclude devices from/to Z-Wave network (see the manual of controller).

Method II : Reset by holding B button for 3 sec. after connecting mains voltage to the Switch

3. Controlling Double Relay Switch by momentary or toggle switches.

Momentary switch (after releasing the push-button a spring automatically pushes back and disconnects the button)

- Turning on/off circuit 1 or 2 - briefly press the push-button corresponding to a chosen circuit (see diagram).

Toggle switch (operates as a two-position switch, it has no spring that would push back the device after releasing manual pressure)

- Turning on/off the circuit - change the position of selected push-button from the current position.

4. Controlling Double Relay Switch using a command: ALL ON / ALL OFF

Fibaro Switch responds to commands ALL ON / ALL OFF that may be sent by the controller. ALL ON / ALL OFF commands are usually implemented in Z-Wave remote control.

By default, Fibaro Switch accepts both active commands ALL ON and ALL OFF. Settings may be changed by entering an appropriate value into configuration register no. 1 (see configuration)

5. Controlling Double Relay Switch using Home Center controller

After adding Double Fibaro Switch to the network, it will be represented in Home Center by the following two icons (one icon represents one channel):

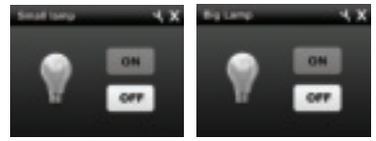


Fig.3 Icons of Double Relay Switch shown by Home Center controller

Turning on/off the device connected to Double Relay Switch is performed by pressing ON/OFF icon.

IV Association

Association enables Fibaro Switch to directly control a device included in Z-Wave network e.g. Dimmer, Switch (ON-OFF), Roller Shutter or scene (scene may be controlled only through the Home Center controller).

Association ensures direct transfer of control commands between devices, and is performed without participation of the main controller.

Fibaro Switch provides association of three groups.

1st group is assigned to key no. 1

2nd group is assigned to key no. 2

3rd group reports state of devices. Only one device can be associated to this group.

Fibaro Switch enables user to control up to 5 normal devices, and 5 MultiChannel devices in group no. 1 and no. 2, group no. 3 has only one field. One field is reserved for the network controller.

To add an association (using the Home Center controller), go to device options by clicking the following icon:

Select the "device options" tab. Then specify to which group and what devices are to be associated. Sending relevant information to devices added to associated groups may take even a few minutes.

WARNING
When Fibaro Switch sends control commands and a new command is issued, then the current one command transmission is interrupted to send new commands.

FGS-222 Fibaro Switch supports the operation of multi-channel devices. Multichannel devices are devices that include two or more circuits inside one physical unit.

FGS-222 Double Relay Switch is a multichannel device. It means that it has two independent executive circuits - each circuit is recognized by the Home Center controller as a separate device. Accordingly, each channel is represented by an independent icon. The first channel is operated by a push-button connected to S1 terminal and it is the main (default) channel.
The association of the second channel of the double relay switch may be operated only by devices supporting multi-channel association !

V Configuration

The following settings are available in the Fibaro interface as simple options that may be chosen by selecting the appropriate box.

In order to configure Fibaro Switch (using the Home Center controller), go to device options by clicking the following icon:

Select „Advanced" tab.

Parameter No. 1 - Activate / deactivate functions ALL ON / ALL OFF.
Default value: 255

Options for changing parameter 255, 0, 1, 2

Available configuration parameters:
255 - ALL ON active, ALL OFF active.
0 - ALL ON is not active ALL OFF is not active
1 - ALL ON is not active ALL OFF active
2 - ALL ON active ALL OFF is not active

Parameter No. 3 - Auto off relay after specified time, with the possibility of manual override - immediate Off after button push.
Default value: 0

Available settings:
0 - manual override disabled. After single button push the relay turns on and automatically turns off after specified time.
1 - manual override enabled. After single button push the relay turns on and automatically turns off after specified time. Another button push turns the relay off immediately.

Parameter No. 4 - Auto off for relay 1.
Default value: 0

Available settings:
[1 - 65535] (0,1 s – 6553,5 s) Time period for auto off, in miliseconds
0 - Auto off disabled

Parameter No. 5 - Auto off for relay 2.
Default value: 0

Available settings::
[1 - 65535] (0,1 s – 6553,5 s) Time period for auto off, in miliseconds
0 - Auto off disabled

Parameter No. 6 - Sending commands to control devices assigned to 1-st association group (key no. 1).
Default value: 0

Available configuration parameters:

0 - commands are sent when device is turned on and off

1 - commands are sent when device is turned off. Enabling device does not send control commands. Double-clicking key sends 'turn on' command, dimmers memorize the last saved state (e.g. 50% brightness).

2 - commands are sent when device is turned off. Enabling device does not send control commands. Double-clicking key sends 'turn on' command and dimmers are set to 100% brightness.

NOTE: Parameter 15 value must be set to 1 to work properly. This activates the double-click functionality - dimmer/roller shutter control.

Parameter No. 7 – Sending commands to control devices assigned to 2-nd association group (key no. 2).
Default value: 0

Available configuration parameters:

0 - commands are sent when device is turned on and off

1 - commands are sent when device is turned off. Enabling device does not send control commands. Double-clicking key sends 'turn on' command, dimmers memorize the last saved state (e.g. 50%)

2 - commands are sent when device is turned off. Enabling device does not send control commands. Double-clicking key sends 'turn on' command and dimmers are set to 100% brightness.

Info: Parameter 15 must be set to 1 to make this parameter work properly. This activates the double-click functionality - dimmer/roller shutter control.

Parameter No. 13 - Assigns bistable key status to the device status.
Default value: 0

Available configuration parameters:
0 - [On / Off] device changes status on key status change.
1 - Device status depends on key status: ON when the key is ON, OFF when the key is OFF.

Remote control from Fibaro System is still possible. This function is useful when you want display status of external devices, e.g. Motion Sensor, in Fibaro System.

Parameter No. 14 - Switch type connector, you may choose between momentary and toggle switches.
Default value: 1

Options for changing the parameter:
0 - momentary switch
1 - toggle switch

Parameter No. 15 - Operation of the Dimmer and Roller Shutter Controller - enabling this option allows the user to dim lighting/shut roller by associating Dimmer/Roller Shutter Controller and holding or double press of double switch (only mono-stable switch).
Default value: 0

Available configuration parameters:
0 - Dimmer/Roller Shutter Controller control is not active
1 - Dimmer/Roller Shutter Controller control is active

Parameter No. 16 - Saving the state of the device after a power failure. Fibaro Switch returns to the last position saved before a power failure.
Default value: 1

Options for changing the parameter 0-1

0 - Fibaro Switch does not save the state after a power failure, it returns to "off" position
1 - Fibaro Switch saves its state before power failure

Possibility to change the configuration of the following parameters [30 – 33, 40 - 43].

0 - DEACTIVATION - the device does not respond to alarm data frames
1 - ALARM RELAY ON - the device turns on after detecting an alarm
2- ALARM RELAY OFF - the device turns off after detecting an alarm
3 - ALARM FLASHING - the device periodically changes its status to the opposite, when it detects an alarm within 10 min.

Parameter No. 30 - General Alarm, set for relay no. 1.

Default value: 3[byte] ALARM FLASHING

Parameter No. 40 - General Alarm, set for switch no. 2.

Default value: 3[byte] ALARM FLASHING

Parameter No. 31 - Alarm of flooding with water, set for relay no. 1.

Default value: 2[byte] ALARM RELAY OFF

Parameter No. 41 - Alarm of flooding with water, set for relay no. 2.

Default value: 2[byte] ALARM RELAY OFF

Parameter No. 32 - Smoke, CO, CO2 Alarm. Set for relay no. 1.

Default value: 3[byte] ALARM FLASHING

Parameter No. 42 - Smoke, CO, CO2 Alarm. Set for relay no. 2.

Default value: 3[byte] ALARM FLASHING

Parameter No. 33 - Temperature Alarm, set for relay no. 1.

Default value: 1[byte] ALARM RELAY ON

Parameter No. 43 - Temperature Alarm, set for relay no. 2.

Default value: 1[byte] ALARM RELAY ON

Parameter No. 39 - Active flashing alarm time.
Default value: 600

Available configuration parameters: [1-65535][ms]

VI Additional Functionality

Operating alarm data frames

Fibaro system allows user to set response of devices to alarm situations (response to data-frames ALARM_REPORT and SENSOR_ALARM_REPORT) Fibaro Double Relay Switch responds to the following types of alarms:

• General Purpose Alarm - GENERAL PURPOSE ALARM [0x00]
• Smoke Alarm - ALARM CO2 [0x02], ALARM CO [0x01], ALARM SMOKE [0x03]
• Water Flooding Alarm - ALARM WATER [0x05]
• Temperature Alarm - ALARM HEAT [0x04]

Alarm data-frames are sent by devices that are system sensors (e.g., flood sensors, smoke detectors, motion detectors, etc.).

The device may respond in the following manner to received data-frames (settings are configured in configuration parameters, see section V Configuration):

• 0 - DEACTIVATION - the device does not respond to alarm data frames
• 1 - ALARM ON - the device turns on after detecting an alarm
• 2 - ALARM OFF - the device turns off after detecting an alarm
• 3 - ALARM FLASHING - the device periodically changes its status to the opposite when it detects an alarm (lights on/off alternately)

Fibaro Double Relay Switch has two independent alarm groups (i.e. each of its channels may respond in an individual way to received alarm data-frames).

VII Operating Fibaro Switch

Fibaro Switch may be operated using the following control elements:

− any controller compatible with the system (e.g. Home Center controller)
− a mobile phone (e.g. iPhone and phones from other manufacturers with appropriate software)
− tablet (such as iPad)
− PC, using a web browser
− push-buttons connected to inputs S1 and S2
− service button B, located inside the housing (activates learn mode)

VIII Procedures for malfunctions

The device does not respond to a pre-programmed transmitter:

• Make sure that the maximum range is not exceeded and the signal path is not obstructed by metal surfaces such as metal cabinets, etc.
• Make sure the device is not in the programming mode,
• Repeat the programming process.

IX Guarantee

1. FIBAR GROUP S.A. with its registered office in Poznan, ul. Lotnicza 1, 60-421 Poznań, entered into the Register of Entrepreneurs of the National Court Register maintained by the District Court for Poznań-Nowe Miasto and Wilda in Poznań, VIII Commercial Division of the National Court Register (KRS) under number: 553265, NIP 7811858097, REGON: 301595664, share capital PLN 1,182,100 paid in full, other contact information is available at: www.fibaro.com (hereinafter "the Manufacturer") guarantees that the device sold (hereinaftr: "the Device" is free from material and manufacturing defects.
2. The Manufacturer shall be responsible for malfunctioning of the Device resulting from physical defects inherent in the Device that cause its operation to be incompatible with the specifications within the period of:
- 24 months from the date of purchase by the consumer,
- 12 months from the date of purchase by a business customer (the consumer and business customer are further collectively referred to as "Customer").
3. The Manufacturer shall remove any defects revealed during the guarantee period, free of charge, by repairing or replacing (at the sole discretion of the Manufacturer) the defective components of the Device with new or regenerated components. The manufacturer reserves the right to replace the entire Device with a new or regenerated device. The Manufacturer shall not refund money paid for the device.
4. Under special circumstances, the Manufacturer may replace the Device with a different device most similar in technical characteristics.
5. Only the holder of a valid guaranty document shall be entitled to make claims under guarantee.
6. Before making a complaint, the Manufacturer recommends using the telephone or online support available at https://www.fibaro.com/-support/.
7. In order to make a complaint, the Customer should contact the Manufacturer via the email address given at https://www.fibaro.com/-support/.
8. After the complaint has been properly filed, the Customer will receive contact details for the Authorized Guarantee Service ("AGS"). The customer should contact and deliver the Device to AGS. Upon receipt of the Device, the manufacturer shall inform the Customer of the return merchandise authorization number (RMA).
9. Defects shall be removed within 30 days from the date of delivering the Device to AGS. The guarantee period shall be extended by the time in which the Device was kept by AGS.
10. The faulty device shall be provided by the Customer with complete standard equipment and documents proving its purchase.
11. The cost of transporting the Device in the territory of the Republic of Poland shall be covered by the Manufacturer. The costs of the Device transport from other countries shall be covered by the Customer. For unjustified complaints, AGS may charge the Customer with costs related to the case.
12. AGS shall not accept a complaint claim when:
- the Device was misused or the manual was not observed,
- the Device was provided by the Customer incomplete, without accessories or nameplate,
- it was determined that the fault was caused by other reasons than a material or manufacturing defect of the Device
- the guarantee document is not valid or there is no proof of purchase,
13. The guarantee shall not cover:
- mechanical damages (cracks, fractures, cuts, abrasions, physical deformations caused by impact, falling or dropping the device or other object, improper use or not observing the operating manual);
- damages resulting from external causes, e.g.: flood, storm, fire, lightning, natural disasters, earthquakes, war, civil disturbance, force majeure, unforeseen accidents, theft, water damage, liquid leakage, battery spill, weather conditions, sunlight, sand, moisture, high or low temperature, air pollution;
- damages caused by malfunctioning software, attack of a computer virus, or by failure to update the software as recommended by the Manufacturer;
- damages resulting from: surges in the power and/or telecommunication network, improper connection to the grid in a manner inconsistent with the operating manual, or from connecting other devices not recommended by the Manufacturer.
- damages caused by operating or storing the device in extremely adverse conditions, i.e. high humidity, dust, too low (freezing) or too high ambient temperature. Detailed permissible conditions for operating the Device are defined in the operating manual;
- damages caused by using accessories not recommended by the Manufacturer
- damages caused by faulty electrical installation of the Customer, including the use of incorrect fuses;
- damages caused by Customer's failure to provide maintenance and servicing activities defined in the operating manual;
- damages resulting from the use of spurious spare parts or accessories improper for given model, repairing and introducing alterations by unauthorized persons;
- defects caused by operating faulty Device or accessories.
14. The guarantee shall not cover natural wear and tear of the Device and its components listed in the operating manual and in technical documentation as such elements have a defined operational life.
15. The Device Guarantee shall not exclude, limit or suspend the Customer's warranty rights.
16. The Manufacturer shall not be liable for damages to property caused by defective device. The Guarantor shall not be liable for indirect, incidental, special, consequential or punitive damages, or for any damages, including, inter alia, loss of profits, savings, data, loss of benefits, claims by third parties and any other damages

Simplified EU declaration of conformity:
Hereby, Fibar Group S.A. declares that the device is in compliance with Directive 2014/53/EU. 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.

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

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.

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.

Note
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.

This Device may be used with all devices certified with Z-Wave certificate and should be compatible with such devices produced by other manufacturers.
Any device compatible with Z-Wave may be added to Fibaro system.