Z-Wave DIN Rail 2.5kW Switch module
(Insert Fibaro FGS-212)

- Ventilated DIN enclosure
- 16A rated PCB power tracks and terminals
- Fibaro FGS-212 ON/OFF relay included
- Power Source 110V ... 230V, 50 / 60Hz
- Max. AC output: 10A / 230V
- Max. DC output: 10A / 30V
- Max. Power load 2.5kW resistive load
- Conforms to EU regulations: EN55022 EN61000-6
- Surge protection: 2.5A
- Overheating protection: safety off at 105°C
- To be mounted on standard DIN Rail
- Radio protocol: Z-Wave, 868MHz
- Antenna range: up to 50m outdoor / 30m indoor
**Operating Manual Relay Switch**

**FGS-212-EN-A-v1.01**

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**Technical Information**

- Controlled by Fibaro System devices or any Z-Wave controller.
- Electronic switch is a remote control unit.
- Monopolar 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 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 in its path (wall, paper, wood, furniture, etc.) and in extensive applications, this leads to signal loss. Fibaro uses the Z-Wave technology, which allows a signal transmission is compatible with the safety of transmission in radio systems. FIBARO operates in the free band for data transmission. The frequency depends on radio regulations in individual countries. Each FIBARO network has its own unique network identification number (home ID), which is why it is possible to co-exist 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 licensed standard, i.e. to the IEEE 1451. 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.

**Specifications**

- **Power:**
  - 110 - 240 V ~ 50 - 60Hz
- **Power consumption:** 0.5W
- **Operational temperature:** 0°C - 35°C
- **Dimensions (L x W x H mm):** 42.50 x 38.25 x 20.30 mm
- **For installation in boxes:** Ø 50mm
- **Certified test:** 10A for resistive load
- **Overprotection:** restricted external 10A circuit-breaker
- **Active element:** micro-gap relay switch
- **Device control:** remotely, radio waves, directly - push buttons
- **Radio protocol:** Z-Wave
- **Radio signal power:** 1mW
- **Radio Frequency:**
  - 868.4 MHz EU
  - 868.4 MHz DE
  - 921.4 MHz ANZ
  - 868.4 MHz EU
  - 868.4 MHz ANZ

**Resistance:**

- up to 50 m outdoors
- up to 30 m indoors (depending on building materials)

**Comply with EU directives:**

- Low Voltage Directive (2006/95/EC)

**II Assembling Fibaro Switch**

**I Wiring diagrams for Fibaro Switch.**

**III Activating Fibaro Switch**

1. **Installing the Fibaro Switch**

![Fig.1 Wiring diagram of Fibaro Switch.](image-url)

**NOTES FOR THE DIAGRAM:**

- **N**: terminal for neutral wire
- **L**: terminal for live wire
- **Q**: terminal for device power supply
- **O**: terminal output of the load
- **S1**: terminal for key no. 1
- **S2**: terminal for key no. 2
- **B**: service button (used to add or remove a device from the system)

**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 (Fibaro Switch) - direct control of other devices within the Z-Wave system network.**
- **Multichannel association - controlling other multi-channel devices within the Z-Wave system network.**

2. **Resetting Fibaro Switch**

Fibaro Switch provides two methods for resetting:

**Method 1 - Reset by removing Fibaro Switch from the existing 2-Wave network.**

- The device may be removed using the controller. If the controller has the ability to identify inactive devices from Z-Wave network (e.g. Score Hub Controller), the device may be removed using the ‘delete’ button. If the controller is not able to identify inactive devices, device will be removed after approx. 7 days (depending on battery level).

**Method 2 - Reset by holding B button for 3 sec, after connecting mains voltage to the Switch.**

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**III Controlling Fibaro 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 commands usually are implemented in Z-Wave remote control.

- By default, Fibaro Switch accepts both commands.
- ALL ON:all switches are turned on.
- ALL OFF:all switches are turned off.

**IV Association**

- **Association** enables Fibaro Switch to directly control a device present in Z-Wave network e.g. Dimmer/Roller Shutter Controller or Remote Switch (on/off activity trigger), or device controlling another device (e.g. motion sensor, active element: electromagnetic, micro-gap relay switch.

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**V Configuration**

The following settings are available in the Fibaro interface as additional options that may be selected by the following:

- **Select:** Advanced tab

**Parameter no. 1:**  **Activate / deactivate functionality ALL ON / ALL OFF.

Default value: 255

**Options for changing parameter 255:**

- **ALL ON is not active** ALL OFF is active
- **ALL OFF is active** ALL ON is not active

**Parameter no. 2:**  **Auto off** after specified time with the activated controller - immediate off after button is pressed.

Default value: 0

**Parameter no. 3:**  **Auto off** after specified time with the activated controller - direct OFF after button is pressed.

Default value: 0

**Parameter no. 4:**  **Auto off Off after specified time with the activated controller - delayed OFF after button is pressed.

Default value: 0

**Parameter no. 6:**  **Sending commands to devices associated with the group (key 1)**

Default value: 0

**Parameter no. 12:**  **Assign inactive status to the device status.**

Default value: 0

**Parameter no. 14:**  **Device associations status:**

- **On:** device is active
- **Off:** device is inactive

**Parameter no. 15:**  **Operation of the Dimmer and Roller Shutter Controller + enabling option the user to define dimmer and roller shutter Controller and holding or double press of double switch (only momentary switches).**

Default value: 0

**Parameter no. 16:**  **Saving the state of the device after a power failure.**

Fibaro Switch refers to the last position saved before a power failure.

**Parameter no. 17:**  **Fibaro Switch saves to state before power failure.**

**Parameter no. 18:**  **Fibaro Switch does not save the state after a power failure.**

**Parameter no. 19:**  **Fibaro Switch saves to state before power failure.**
Technical Information

- Controlled by FIBARO System devices or any Z-Wave controller.
- Electronic switch is in a remote control unit.
- Monopolar control.
- Active element: electromechanical, 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 compared to analogue systems. In general, radio systems create a direct connection between the receiver and transmitter. But the radio signal can be weakened by various obstacles located in its path (wall, window, furniture, etc.) and in extreme cases, losses in links tend to be significant. Moreover, radio signals can still be affected by external factors, such as temperature and humidity. In addition, radio signals cannot be received from devices that are turned off. On the other hand, signals are transmitted in both directions (exclusive). FIBARO operates in the free band for data transmission. The frequency depends on radio-regulations in individual countries. Each FIBARO network has its own unique network identifier (home ID), which is why it is possible to co-exist 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 lending standard (e.g. EN 300 175). 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 on www.fibaro.com.

FIBARO generates a dynamic network structure. After FIBARO system in switched on, the location of all individual components is automatically updated in real-time through static confirmation signals received from device operating in the network.

The In-Wall Relay Switch is referred to as Fibaro Switch. It is designed to switch craft objects connected to building power lines through radio waves with a push-button directly connected to In-Wall Switch.

Assembling Fibaro Switch

1. Before installation ensure that the voltage supply is disconnected.
2. Connect Fibaro switch as shown on the diagram.
3. Place the switch in the box.
4. Arrange the antenna (pins are presented further). Single switch - mains electricity power connection

NOTES FOR THE DIAGRAM:

- N - terminal for neutral lead
- L - terminal for live lead
- i - for use supply
- Q - output terminal of the last relay
- S1 - to the first relay, 1.
- S2 - to the second relay, 1.
- B - service button (used to remove a device from the system)

II Dictation:

- Activating Fibaro Switch

1. Installing the Fibaro Switch

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

[Adding/Removing] Fibaro Switch (before/ after zone network)

STEP 2
Fibaro Switch must be placed within the range of Home Center controller, or else additional wiring required.

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

STEP 4
Set the Home Center controller in admissible mode (see controller’s manual).

STEP 5
Add Fibaro Switch to the network by pushing three times key no.1, or pushbutton B located inside the housing of the device. For toggle switch perform 2 position changes.

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

1. The controller indicates when the device is correctly added to the network.

DICTIONARY:

- Toggle switch
- Center controller

III Fibaro Switch provides two methods for resetting.

Method 1: Reset by pushing Fibaro Switch from the existing 2-Wave network. The device may be removed using the controller if the device is registered to multi-channel devices (Fibaro System). In the case of removal all 2-Wave networks are open (off), because closing them results in automatic activation of device.Reset by holding B button 3 sec. after connecting mains voltage to the Switch.

Method 2: Reset by removing Fibaro Switch from the existing 2-Wave network. The device may be removed using the controller if the device is registered to multi-channel devices (Fibaro System). In the case of removal all 2-Wave networks are open (off), because closing them results in automatic activation of device.

WARNING

When Fibaro Switch sends control commands and the receiver of the command does not receive the command, the command transmission is interrupted to send new command.

PFS-212 Fibaro Switch supports the operation of multi-channel devices. Multi-channel devices are devices that include two or more circuits inside one physical unit.
Possible to change the configuration of the following parameters [38–39].

- **DEACTIVATION** - the device does not respond to alarm frames.
- **ALARM RELAY OFF** - the device turns off after detecting an alarm.
- **ALARM FLASHING** - the device periodically changes its status to the opposite when it detects an alarm within 10 sec.

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

Default value: 2[byte] ALARM FLASHING

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

Default value: 23[byte] ALARM RELAY OFF

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

Default value: 3[byte] ALARM FLASHING

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

Default value: 13[byte] ALARM RELAY ON

**Parameter No. 39 - Active flashing alarm time.**

Default value: 600

Available configuration parameters: [1-1555263][ms]

### VI Additional Functionality

#### Operating alarm data frames

The system allows user to set responses of devices to alarm situations (response to data frames: ALARM REPORT and SENSOR_ALARM_REPORT). Fibaro switch responds to the following types of alarms:

- **General Purpose Alarm** - GENERAL PURPOSE ALARM [0x01]
- **Smoke Alarm** - ALARM CO2 [0x02], ALARM CO [0x01], ALARM SMOKE [0x00]
- **Water Flooding Alarm** - ALARM WATER [0x06]
- **Temperature Alarm** - ALARM HEAT [0x0A]

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

### 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)
- a tablet (such as iPad)
- a PC, using a web browser
- push buttons connected to inputs 51 and 52

### VIII Procedures for malfunctions

The device does not respond to a pre-programmed transmission.

- Make sure that the maximum range is not exceeded and the signal is not interrupted by metal objects or such similar obstacles, as these may cause a problem.
- Make sure that the switch is in the programming mode, or repeat the programming process.

### IX Guarantee

1. The Guarantee is provided by FIBARO S.A. (hereinafter “Manufacturer”), based in Poznan, ul. Lotnicza 1, 60-421 Poznan, entered in the register of the National Court Register kept by the District Court in Poznan, VIII Economic Department of the National Court Register, no. 2/2017, NIP: 892-005-6994, REGON: 310399994.

2. The Manufacturer is responsible for equipment malfunction resulting from physical defects (manufacturing or material) of the Device for 12 months from the date of its purchasing.

3. During the Guarantee period, the Manufacturer shall remove any defects, free of charge, by repairing or replacing all the components of the Device with new or regenerated components, that are free of defects. When the repair impossible, the Manufacturer reserves the right to replace the device with a new or regenerated one, which shall be free of any defects and its condition shall not be worse than the original device owned by the Customer.

4. In special cases, when the device cannot be replaced with the device of the same type (e.g. the device is no longer available in the market), the Manufacturer reserves the right to replace the device with a device having technical parameters similar to the faulty one. Such action shall be considered as fulfilling the obligations of the Manufacturer. The Manufacturer shall not refund money for the device.

5. The holder of a valid guarantee shall submit a guarantee claim through the guarantee service. Remember before you submit a guarantee claim, contact our technical support using telephone or e-mail. If the claim is submitted by mail or in person, a saving time and money is spent in initiating guarantee procedures. If remote support is insufficient, the Customer shall fill the guarantee claim form (using our website - www.fibaro.com) in order to obtain claim authorization.

6. Then the claim may be also submitted by telephone. In this case, the call is recorded and the Customer shall be informed about it by a consultant before submitting the claim. Immediately after submitting the claim, the consultant shall provide the Customer with the claim number (claimID).

7. When the guarantee claim form is submitted correctly, the Customer shall receive the claim confirmation with an unique number (Return Material Authorization - RMA).

8. The claim may be also submitted by telephone. In this case, the call is recorded and the Customer shall be informed by a consultant before submitting the claim. Immediately after submitting the claim, the consultant shall provide the Customer with the claim number (RMA number).

9. When the guarantee claim form is submitted correctly, a representative of the Authorized Guarantee Service (hereinafter as “AGS”) shall contact the Customer.

10. Defects revealed within the guarantee period shall be removed no later than 30 days from the date of delivering the Device to AGS.

11. The guarantee period shall be extended by the time in which the Device was kept by AGS.

12. The faulty device shall be provided by the Customer with complete instructions and documents proving its purchase.

13. Parts replaced under the guarantee are the property of the Manufacturer.

14. The guarantee shall not cover any defects caused by the following reasons:

- Inconsistent with the operating manual, or from connecting other devices not recommended by the Manufacturer.
- From using accessories improper for given model, repairing and introducing additional alterations by unauthorized person.
- From using accessories not recommended by the Manufacturer.
- From using a device having technical parameters similar to the faulty one.

15. The guarantee shall not cover:

- Personal injuries arising from or related to the use of the Device.
- Loss of benefits, claims by third parties and any property damage or any other damage, including, inter alia, loss of profits, savings, data.
- Damages caused by unprofessional, incorrect or incomplete programming of the device, failure to provide the original device for 12 months from the date of its purchasing.
- Damages caused by using accessories not recommended by the Manufacturer.
- Damages caused by using accessories improper for given model, repairing and introducing additional alterations by unauthorized person.
- Damages caused by malfunctioning software, attack of a computer virus.
- Damages resulting from the use of spurious spare parts or damages caused by other reasons than a material or manufacturing defect of the Device.

16. If a defect is not covered by the guarantee, the Manufacturer reserves the right to remove such defect at the sole discretion of the Manufacturer, and the owner of the device will be charged for any damages, including, inter alia, loss of profits, savings, data.

17. The Manufacturer reserves the right to disconnect the Device or accessories or nameplate, if the guarantee document is not valid or there is no proof of its existence.