



Fibaro Group

FIBARO Wall Plug

SKU: FIBFGWPF-102-5



Quickstart

This is a **secure On/Off Power Switch for Europe**. To run this device please connect it to your mains power supply. To add this device to your network execute the following action:

- Triple click the B button

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 Wall Plug is a universal, Z-Wave compatible, relay switch in the form of a socket adapter. The Plug may be used to operate any device up to 2,500W power output. The Plug features power consumption measuring and uses a crystal LED ring to visualize the current load by color changing illumination. Fibaro Wall Plug may be operated using the service button located on its casing, or via any Z-Wave compatible controller.

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.

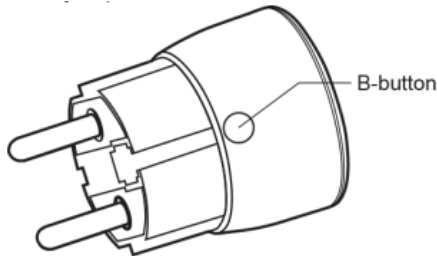
- Insert the Plug into a socket.
- Press and hold the B button for 15 - 20 seconds until LED ring glows yellow
- Release the B button.
- Press the B button, briefly.

Safety Warning for Mains Powered Devices

ATTENTION: only authorized technicians under consideration of the country-specific installation guidelines/norms may do works with mains power. Prior to the assembly of the product, the voltage network has to be switched off and ensured against re-switching.

Installation

1. Insert device into a socket.
2. Add device into the Z-Wave network if necessary.
3. Connect load to the Plug, making sure it does not exceed 2500W.
4. Set the connected device switch to ON.
5. To turn on connected device manually turn on the Plug using B button. (Alternative to remote control via Z-Wave controller) Once the Plug is turned on, LED ring will glow.
6. Current power load is visualized with LED ring color.
7. Press B button to turn off the Plug manually.
8. Once the Plug is turned off, LED ring illumination is turned off as well.



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

- Triple click the B button

Exclusion

- Triple click the B button

Auto-Inclusion

Beside the standard inclusion this devices supports the so called **auto inclusion**. Right after powering up the device remains in inclusion state and can be included by (any) gateway without further actions on the device itself. The auto inclusion mode will time out after some time.

Product Usage

Range test

FIBARO Wall Plug has a built-in Z-Wave network main controller's range tester.

NOTE: To make Z-Wave range test possible, the device must be added to the Z-Wave controller. Testing may stress the network, so it is recommended to perform the test only in special cases.

Follow the below instructions to test the main controller's range:

1. Insert the device into a socket
2. Press and hold the B-button until the visual indicator glows violet
3. Release the B-button
4. Press the B-button again, briefly
5. Visual indicator will indicate the Z-Wave network's range (range signalling modes described below)
6. To exit Z-Wave range test, press the B-button briefly

Z-Wave range tester signalling modes:

- Visual indicator pulsing green – Wall Plug attempts to establish a direct communication with the main controller. If a direct communication attempt fails, the device will try to establish a routed communication, through other modules, which will be signalled by visual indicator pulsing yellow.
- Visual indicator glowing green – Wall Plug communicates with the main controller directly.
- Visual indicator pulsing yellow – Wall Plug tries to establish a routed communication with the main controller through other modules (repeaters).
- Visual indicator glowing yellow – Wall Plug communicates with the main controller through the other modules. After 2 seconds the device will retry to establish a direct communication with the main controller, which will be signalled with visual indicator pulsing green.
- Visual indicator pulsing violet – Wall Plug does communicate at the maximum distance of the Z-Wave network. If connection proves successful it will be confirmed with a yellow glow. It is not recommended to use the device at the range limit.
- Visual indicator glowing red – Wall Plug is not able to connect to the main controller directly or through another Z-Wave network device (repeater).

Visual LED indicator

FIBARO Wall Plug is equipped with a colour changing LED ring, signalling operating status and connected devices power. Colours shown are those of a RGB scheme. In addition, the LED ring signals Plugs range in relation to the Z-Wave networks main controller and overheating protection activation

Visual indicator signalling modes:

- Wall Plug status (On/Off) signalled with a color defined by relevant parameter settings (see parameters no. 60, 61, 62).

- Alarm status signalled according to parameters 63 settings.
- Energy meter reset signalled by double, green blink.
- Once inserted to mains socket, LED ring signals Z-Wave network inclusion status. Single green blink means it's included. Single red blink means Plug has not been included in the Z-Wave network.
- Blinking yellow means memory write during software update process.
- Alternating blinking, yellow / red, signals overheating warning (overload).

Menu

FIBARO Wall Plug has a MENU with each position indicated by the specified LED ring indicator colour.

In order to enter the menu press the B-button and hold for at least 2 seconds. While the B-button is still pressed, LED ring indicator colour will change in the following sequence:

- WHITE – activate/deactivate LED ring indications
- GREEN – reset the energy consumption data memory
- VIOLET – initiate the Z-Wave network range test
- YELLOW – reset the Wall Plug to factory defaults

Release the B-button to choose the desired function and confirm your choice with the B-button click.

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	5	Is assigned to the device status – sending command frames to the associated devices whenever the Wall Plug is turned ON or OFF via B-button.
2	5	is assigned to the measured active power – sending command frames to the associated devices depending on the measured load (configured via advanced parameters 50, 51 and 52)
3	1	Reports the device status and allows to assign single device only (the main controller by default).

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: Always On function

Once activated, Wall Plug will keep a connected device constantly ON, will stop reacting to alarm frames and B-button push.

"Always on" function turns the Plug into a power and energy meter. Also, connected device will not be turned off upon receiving an alarm frame from another Z-Wave device (parameter 35 will be ignored).

In "Always on" mode, connected device may be turned off only after user defined power has been exceeded (parameter 70). In such a case, connected device can be turned on again by pushing the B-button or sending a control frame. By default, overload protection is inactive.

Size: 1 Byte, Default Value: 1

Setting	Description
0	function activated
1	function inactive

Parameter 16: Remember device status after power failure

Define how will the Plug react after the power supply is back on.

Size: 1 Byte, Default Value: 1

Setting	Description
0	Wall Plug does not memorize its state after a power failure. Connected device will be off after the power supply is reconnected.
1	Wall Plug memorizes its state after a power failure.

Parameter 34: Reaction to alarms

Z-Wave network alarm will be signalled by LED ring according to the parameter 63 settings. Blinking in Red/Blue/White is a default setting. Connected device state will be changed according to the parameter 35 settings. By default, connected device state will remain unchanged. Wall Plug will be signaling an alarm through the time period specified in the parameter 39 (10 minutes by default), unless the alarm is cancelled earlier. In addition Wall Plug may exit the alarm mode after the B-button has been pressed and held for 2 – 5 seconds.

Define Z-Wave network alarms to which the Wall Plug will respond.

Note: If Always On function is active (parameter 1), this parameters settings are ignored.

Size: 1 Byte, Default Value: 63

Setting	Description
0 - 63	Calculate value of the parameter: 1 - general alarm 2 - smoke alarm 4 - CO alarm 8 - CO2 alarm 16 - high temperature alarm 32 - flood alarm

Parameter 35: Wall Plugs response to alarm frames

Parameter defines how the Wall Plug will respond to alarms (device's status change)

Size: 1 Byte, Default Value: 0

Setting	Description
0	no reaction
1	turn on connected device. LED ring signals an alarm through defined time period (parameter 39) or until the alarm is cancelled
2	turn off connected device. LED ring signals an alarm through defined time period (parameter 39) or until the alarm is cancelled
3	cyclically change device state, each 1second. In alarm mode Wall Plug does not report status change, power changes, ignores alarm frames. After the defined time period has passed (parameter 39) or after the alarm cancellation, connected device is set to the previous state

Parameter 39: Alarm duration

Wall Plug's alarm mode duration. If a device sending an alarm frame through the Z-Wave network sets alarm duration as well, this parameter's settings are ignored.

Size: 2 Byte, Default Value: 600

Setting	Description
1 - 65535	in seconds

Parameter 40: Immediate power report

Reports on power load, sent to the main controller. Default settings of below parameters are chosen in such a way that instantaneous power load is shown without blocking the Z-Wave network in the process. Default settings are good for most of the devices. In specific cases it may be necessary to modify default settings in order to optimize Z-Wave network's use.

Fibaro Wall Plug reports the power load with specified frequency. Below configuration parameters allow to specify how and how frequently power load will be reported.

Parameter defines by how much power load must change, in percents, to be reported to the main controller, with the highest priority in the Z-Wave network. By default, Wall Plug immediately sends power report if the power load changes by 80%. Value of 100 (%) means the reports are turned off.

NOTE: In extreme cases, reports may be sent every second if rapid and significant power load changes occur. Frequent reporting may overload the Z-Wave network so these parameters settings should reflect significant changes in power load only.

Size: 1 Byte, Default Value: 80

Setting	Description
1 - 100	in %

Parameter 42: Standard power load reporting

Parameter defines by how much power load must change, in percents, to be reported to the main controller. By default, Wall Plug sends power report if the power load changes by 15%.

By default such changes in power load may be reported up to 5 times per 30 seconds. Wall Plug sends 5 reports during time period specified in parameter 43.

Size: 1 Byte, Default Value: 15

Setting	Description
0	reports are turned off
1 - 99	in %

Parameter 43: Power reporting frequency

This parameter defines how frequently standard power reports (parameter 42) will be sent. By default Wall Plug sends up to 5 reports each 30 seconds, provided the power load changes by 15%.

Size: 1 Byte, Default Value: 30

Setting	Description
1 - 254	time in seconds
255	reports will be sent only as a result of parameter 47 settings or in case of polling

Parameter 45: Reporting changes in energy consumed by controlled devices

New, reported energy value is calculated based on last reported value.

Size: 1 Byte, Default Value: 10

Setting	Description
1 - 254	0.01-2.54kWh, step 0.01kWh
255	changes in consumed energy will not be reported, reports will be sent only in case of polling

Parameter 47: Time period between reports on power load and energy consumption

Parameter defines time period between reports sent when changes in power load have not been recorded. By default, if power load changes have not been recorded, reports are sent every hour.

Size: 2 Byte, Default Value: 3600

Setting	Description
1 - 65534	in seconds
65535	no periodic reports. Reports will be sent only in case of power load / energy consumption changes (parameters 40, 42, 43,45) or in case of polling.

Parameter 49: Metering energy consumed by the Wall Plug itself

This parameter determines whether energy metering should include the amount of energy consumed by the Wall Plug itself. Results are being added to energy consumed by controlled device.

Size: 1 Byte, Default Value: 0

Setting	Description
0	function inactive
1	function active

Parameter 50: DOWN value

Status of devices added to 2nd Association Group may depend on power consumed by the connected device. For example, turning on the TV controlled by the Plug will turn off the lights in the room.

User defines two thresholds: UP and DOWN, and then defines the reaction to them being exceeded (parameter 52).

Lower power threshold, used in parameter 52.

Size: 2 Byte, Default Value: 300

Setting	Description
0 - 25000	0-2500W, step 0.1W

Parameter 51: UP value

Upper power threshold, used in parameter 52

Size: 2 Byte, Default Value: 500

Setting	Description
0 - 25000	0.1-2500W, step 0.1W

Parameter 52: Action in case of exceeding defined power values (parameters 50 and 51)

Parameter defines the way 2nd association group devices are controlled, depending on the current power load.

Size: 1 Byte, Default Value: 6

Setting	Description
0	function inactive
1	turn the associated devices on, once the power drops below DOWN value (parameter 50)
2	turn the associated devices off, once the power drops below DOWN value (parameter 50)
3	turn the associated devices on, once the power rises above UP value (parameter 51)
4	turn the associated devices off, once the power rises above UP value (parameter 51)
5	1 and 4 combined. Turn the associated devices on, once the power drops below DOWN value (parameter 50). Turn the associated devices off, once the power rises above UP value (parameter 51)
6	2 and 3 combined. Turn the associated devices off, once the power drops below DOWN value (parameter 50). Turn the associated devices on, once the power rises above UP value (parameter 51)

Parameter 60: Power load, which when exceeded, makes the LED ring flash violet

Function is active only when parameter 61 is set to 0 or 1.

Size: 2 Byte, Default Value: 25000

Setting	Description
1000 - 32000	100-3200W, step 0.1W

Parameter 61: LED ring illumination colour when controlled device is on

Size: 1 Byte, Default Value: 1

Setting	Description
0	LED ring illumination colour changes in predefined steps, depending on power consumption changes
1	LED ring illumination colour changes continuously, using full spectrum of available colorus, depending on power consumption changes
2	white illumination
3	red illumination
4	green illumination
5	blue illumination
6	yellow illumination
7	cyan (Greenish blue) illumination
8	magenta (Purplish red) illumination
9	illumination turned off completely

Parameter 62: LED ring illumination color when controlled device is off

Size: 1 Byte, Default Value: 8

Setting	Description
0	LED ring is illuminated with a color corresponding to the last measured power, before the controlled device was turned off
1	white illumination
2	red illumination
3	green illumination
4	blue illumination
5	yellow illumination
6	cyan (Greenish blue) illumination
7	magenta (Purplish red) illumination
8	illumination turned off completely

Parameter 63: LED ring illumination colour at the Z-Wave network alarm detection

Size: 1 Byte, Default Value: 1

Setting	Description
0	no change in colour, LED ring illumination colour determined by parameters 61 or 62 settings
1	LED ring flashes red / blue / white
2	white illumination
3	red illumination
4	green illumination
5	blue illumination
6	yellow illumination
7	cyan (Greenish blue) illumination
8	magenta (Purplish red) illumination
9	illumination turned off completely

Parameter 70: Overload safety switch

*This function allows for turning off the controlled device in case of exceeding the defined power. Controlled device will be turned off even if “always on” function is active (parameter 1).
Controlled device can be turned back on via B-button or sending a control frame. By default this function is inactive.*

NOTE: *This functionality is not an overload safety protection nor a short circuit protection. Circuit needs additional short circuit and overload protection.*

*Value higher than 32000 (3200W) turns the overload safety switch off, i.e. this functionality is turned off by default.
Size: 2 Byte, Default Value: 65535*

Setting	Description
10 - 65535	1-6553.5W, step 0.1W

Technical Data

Dimensions	43x43x65 mm
Weight	55 gr
Hardware Platform	ZM5202
EAN	5902020528647
IP Class	IP 20
Voltage	230 V
Load	2500 W
Device Type	On/Off Power Switch
Generic Device Class	Binary Switch
Specific Device Class	Binary Power Switch
Firmware Version	03.02
Z-Wave Version	04.05
Certification ID	ZC10-16035016
Z-Wave Product Id	0x010f.0x0602.0x1001
Frequency	Europe - 868,4 Mhz
Maximum transmission power	5 mW

Supported Command Classes

- Basic
- Application Status
- Switch Binary
- Sensor Multilevel
- Meter

- Crc 16 Encap
- Association Grp Info
- Device Reset Locally
- Zwaveplus Info
- Configuration
- Alarm
- Manufacturer Specific
- Powerlevel
- Firmware Update Md
- Association
- Version
- Multi Channel Association
- Security

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 announces that 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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