FIBARO

FIBARO KeyFob

SKU: FIBEFGKF-601

Quickstart

This is a **secure Handheld Controller** for **Europe**. To run this device please insert fresh **1 * CR2450 3.0V** batteries. Please make sure the internal battery is fully charged. 1) Place the KeyFob within the direct range of your Z-Wave controller.
2) Set the main Z-Wave controller in (security/non-security) add mode (see the controller's manual).
3) Press any button three times.
4) Wait for the adding process to end.
5) Successful adding will be confirmed by the Z-Wave controller's message and green LED colour.

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 KeyFob is a Z-Wave Plus compatible, battery-powered, compact remote control. Six buttons allow you to control other devices through the Z-Wave network and run various scenes defined in FIBARO System. Configure actions for one, two, three clicks and holding the button to suit all your needs. Built-in locking system will ensure that unauthorized person will not take control of your home.

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.

There are two ways of resetting the device:

• **Resetting using the menu**
1) Press O and – simultaneously.
2) Press Δ or X until LED glows yellow.
3) Press + to confirm.

• **Resetting on start-up**
1) Remove the battery.
2) Hold O and + while inserting the battery.

Safety Warning for Batteries

The product contains batteries. Please remove the batteries when the device is not used. Do not mix batteries of different charging level or different brands.

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
Press any button three times.

Exclusion
1) Press O and – simultaneously.
2) Press Δ or X until LED glows green.
3) Press + to confirm.

Product Usage

Menu:

1. Press **O** and **-** simultaneously.
2. Press **Δ** or **X** until LED indicates desired menu position with colour:
    • White - wake up the device
    • Green - learning mode (adding/removing)
    • Cyan - check battery level
    • Yellow - the device reset*
3. Press **+** to confirm selection, press **-** to exit the menu.
4. LED will pulse twice with same colour as selected menu position to confirm completing action.

Lock Mode

KeyFob can be protected with a sequence of 2 to 5 button clicks.
When unlocking sequence is set, the device will lock itself after:
• being inactive for time set in parameter 2 (60 seconds by default),
• pressing and holding selected button (if set in parameter 2).

To enable Lock Mode:
• set sequence in parameter 1,
• set time or locking button in parameter 2 (60 seconds by default),
• set PROTECTION CC to Local Protection by Sequence (done automatically by Home Center controller).

Lock Mode will be disabled when:
• parameter 1 and/or parameter 2 is set to 0,
• PPROTECTION CC is set to Unprotected.

When device is locked:
• pushing buttons will not activate any actions,
• menu is available, but without option of resetting the device.

Setting the unlocking sequence using advanced parameter:

1. Calculate value of parameter using table and formula:

Button	□	O	✕	Δ	−	✛
Value	1	2	3	4	5	6

> **Value of parameter** = Value of first button +
> + 8 * Value of second button + 64 * Value of third button +
> + 512 * Value of third button + 4096 * Value of third button

2. Change the value of parameter 1 [2 bytes] to calculated value.
3. Press **O** and **+** simultaneously to wake up the device.
4. Wait for the device to configure.

Setting time to lock and locking button using advanced parameter:

1. Calculate value of parameter using table and formula:

Button	□	O	✕	Δ	−	✛
Value	1	2	3	4	5	6

> Time to lock should be 0 or 5-255 (seconds)
> **Value of parameter** = Time to lock in seconds +
> + 256 * Value of locking button

2. Change the value of parameter 2 [2 bytes] to calculated value.
3. Press **O** and **+** simultaneously to wake up the device.

4. Wait for the device to configure.

Sequences:
User can create sequences of two to five button to expand number of possible actions. Every sequence sends corresponding Scene ID to the Z-Wave controller with attribute "Key pressed 1 time" (see "Scene activation" on page 11). Sequences are saved in advanced parameters (no. 3-8). Activating sequence introduces delay in single, double and tripple press actions for first button in the sequence. Rules of creating sequences:
• Maximum of six sequences can be created.
• Each sequence must be unique.
• Sequence can consist of two to five button pushes.
• Sequence can contain multiple presses of the same button.
Setting a new sequence using advanced parameter:

1. Calculate value of parameter using table and formula:

Button	☐	○	✕	△	−	+
Value	1	2	3	4	5	6

Value of parameter = Value of first button +
+ 8 * Value of second button + 64 * Value of third button +
+ 512 * Value of third button + 4096 * Value of third button
2. Change the value of corresponding parameter [2 bytes] (parameters 3 to 8 for slots 1 to 6).
3. Press and simultaneously to wake up the device.
4. Wait for the device to configure.

Activating scenes:
The KeyFob can activate scenes in the Z-Wave controller by sending scene ID and attribute of a specific action.
By default scenes are activated after single clicking or pressing and holding any of the buttons and sequences. Other actions can be activated in parameters 21-26.
Activating a double click will introduce delay to a single click reaction and activating a triple click will introduce delay to a double click reaction.

Scene IDs of buttons:

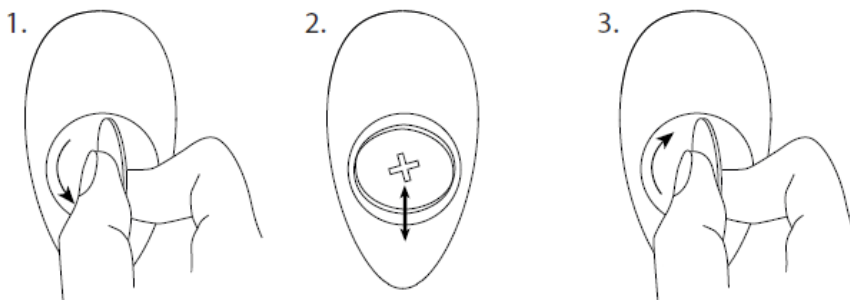| Button	☐	○	✕	△	−	+
Scene ID	1	2	3	4	5	6

Battery:
KeyFob can be powered with CR2450 (included) battery. Estimated battery life with device added once, default settings, direct range and maximum 5 pushes per day is 2 years.

Checking battery level:
KeyFob automatically warns about low battery with 3 yellow blinks, when battery level is below value selected in parameter 3.
1. Press **O** and **-** simultaneously.
2. Press **Δ** or **X** until LED glows cyan.
3. Press **+**
4. LED indicates battery level with a smoothly transitioning colours, where:
    • Green - 100%
    • Yellow - 50%
    • Red - 1%
5. Wait 2 second or press any button to exit.

Replacing the battery:

1. Using a coin, open the battery cover by turning it counter-clockwise.
2. Replace the battery.
3. Using a coin, close the battery cover by turning it clockwise.

Communication to a Sleeping device (Wakeup)

This device is battery operated and turned into deep sleep state most of the time to save battery life time. Communication with the device is limited. In order to communicate with the device, a static controller **C** is needed in the network. This controller will maintain a mailbox for the battery operated devices and store commands that can not be received during deep sleep state. Without such a controller, communication may become impossible and/or the battery life time is significantly decreased.

This device will wakeup regularly and announce the wakeup state by sending out a so called Wakeup Notification. The controller can then empty the mailbox. Therefore, the device needs to be configured with the desired wakeup interval and the node ID of the controller. If the device was included by a static controller this controller will usually perform all necessary configurations. The wakeup interval is a tradeoff between maximal battery life time and the desired responses of the device. To wakeup the device please perform the following action: To wake up the device press O and + simultaneously or use 1st menu position:

    1) Press O and – simultaneously.
    2) Press Δ or X until LED glows white.
    3) Press + to confirm.

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	1	Lifeline - reports the device status and allows for assigning single device only (main controller by default).
2	5	Square - On/Off - is assigned to clicking the square button and is used to turn on/off associated devices.
3	5	Square - Multilevel - is assigned to clicking and holding the square button and is used to turn on/off and change level of associated devices.
4	5	Circle - On/Off - is assigned to clicking the circle button and is used to turn on/off associated devices.
5	5	Circle - Multilevel - is assigned to clicking and holding the circle button and is used to turn on/off and change level of associated devices.
6	5	Cross - On/Off - is assigned to clicking the cross button and is used to turn on/off associated devices.
7	5	Cross - Multilevel - is assigned to clicking and holding the cross button and is used to turn on/off and change level of associated devices.
8	5	Triangle - On/Off - is assigned to clicking the triangle button and is used to turn on/off associated devices.
9	5	Triangle - Multilevel - is assigned to clicking and holding the triangle button and is used to turn on/off and change level of associated devices.
10	5	Minus - On/Offu201d is assigned to clicking the minus button and is used to turn on/off associated devices.
11	5	Minus - Multilevel - is assigned to clicking and holding the minus button and is used to turn on/off and change level of associated devices.
12	5	Plus - On/Off - is assigned to clicking the plus button and is used to turn on/off associated devices.
13	5	Plus - Multilevel - is assigned to clicking and holding the plus button and is used to turn on/off and change level of associated devices.

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: Lock Mode activation

This parameter allows to activate Lock Mode and set up unlocking sequence. Device will lock after time set in parameter 2 or after pressing and holding selected button. See (Lock Mode) on page 9 of the manual for more information.
Size: 2 Byte, Default Value: 0

Setting	Description
0	Lock Mode disabled
9 - 28086	unlocking sequence

Parameter 2: Lock Mode - time to lock and locking button

This parameter allows to set time that must elapse from the last press of the button to lock the device and locking button. Setting locking button will deactivate associations and scenes for pressing and holding the selected button. This parameter is irrelevant if parameter 1 is set to 0 (Lock Mode disable).See (Lock Mode) on page 9 of the manual for more information.

Size: 2 Byte, Default Value: 60

Setting	Description
0	Lock Mode disabled
5 - 1791	calculated value

Parameter 3: First scene sequence

This parameter allows to set up sequence that activates scene with ID 7. See (Sequences) in the manual for more information.

Size: 2 Byte, Default Value: 0

Setting	Description
0	1st sequence disabled
9 - 28086	value of sequence

Parameter 4: Second scene sequence

This parameter allows to set up sequence that activates scene with ID 8. See Sequences in the manual for more information.

Size: 2 Byte, Default Value: 0

Setting	Description
0	2nd sequence disabled
9 - 28086	value of sequence

Parameter 5: Third scene sequence

This parameter allows to set up sequence that activates scene with ID 9. See Sequences in the manual for more information.

Size: 2 Byte, Default Value: 0

Setting	Description
0	3rd sequence disabled
9 - 28086	value of sequence

Parameter 6: Fourth scene sequence

This parameter allows to set up sequence that activates scene with ID 10. See Sequences in the manual for more information.

Size: 2 Byte, Default Value: 0

Setting	Description
0	4th sequence disabled
9 - 28086	value of sequence

Parameter 7: Fifth scene sequence

This parameter allows to set up sequence that activates scene with ID 11. See Sequences in the manual for more information.

Size: 2 Byte, Default Value: 0

Setting	Description
0	5th sequence disabled
9 - 28086	value of sequence

Parameter 8: Sixth scene sequence

This parameter allows to set up sequence that activates scene with ID 12. See Sequences in the manual for more information.

Size: 2 Byte, Default Value: 0

Setting	Description
0	6th sequence disabled
9 - 28086	value of sequence

Parameter 9: Sequences - timeout

This parameter allows to set time that must elapse from the last press of the button to check if the sequence is valid.
Size: 1 Byte, Default Value: 10

Setting	Description
5 - 30	0,5 - 3s time to lock (0,1)

Parameter 10: Single button associations - operating mode
This parameter allows to choose operating mode for single button associations.
Size: 1 Byte, Default Value: 0

Setting	Description
0	single press switches state to opposite
1	single press switches state to opposite, double press sets to maximum level
2	single press turns on, double press turns off

Parameter 11: Value sent to Square association group
This parameter allows to set value sent to devices in association group. It will result in turning multilevel devices on with set or last level. Value is irrelevant for simple on/off devices.
Size: 2 Byte, Default Value: 255

Setting	Description
1 - 99	Forcing level of associated devices
255	setting associated devices to the last remembered state or turning them on

Parameter 12: Value sent to Cicle association group
This parameter allows to set value sent to devices in association group. It will result in turning multilevel devices on with set or last level. Value is irrelevant for simple on/off devices.
Size: 2 Byte, Default Value: 255

Setting	Description
1 - 99	forcing level of associated devices
255	setting associated devices to the last remembered state or turning them on

Parameter 13: Value sent to Cross association group
This parameter allows to set value sent to devices in association group. It will result in turning multilevel devices on with set or last level. Value is irrelevant for simple on/off devices.
Size: 2 Byte, Default Value: 255

Setting	Description
1 - 99	forcing level of associated devices
255	setting associated devices to the last remembered state or turning them on

Parameter 14: Value sent to Triangel association group
This parameter allows to set value sent to devices in association group. It will result in turning multilevel devices on with set or last level. Value is irrelevant for simple on/off devices.
Size: 2 Byte, Default Value: 255

Setting	Description
1 - 99	forcing level of associated devices
255	setting associated devices to the last remembered state or turning them on

Parameter 15: Value sent to Minus association group
This parameter allows to set value sent to devices in association group. It will result in turning multilevel devices on with set or last level. Value is irrelevant for simple on/off devices.
Size: 2 Byte, Default Value: 255

Setting	Description
1 - 99	forcing level of associated devices
255	setting associated devices to the last remembered state or turning them on

Parameter 16: Value sent to Plus association group
This parameter allows to set value sent to devices in association group. It will result in turning multilevel devices on with set or last level. Value is irrelevant for simple on/off devices.
Size: 2 Byte, Default Value: 255

Setting	Description
1 - 99	forcing level of associated devices
255	setting associated devices to the last remembered state or turning them on

Parameter 17: Paired buttons association for Square and Circle

This parameter allows to activate paired buttons association mode for **Square** and **Circle** buttons. Paired buttons are dependent and association are sent only to Square groups. **Circle** turns devices on and increases value, **Square** turns them off and decreases value.

Size: 1 Byte, Default Value: 0

Setting	Description
0	paired buttons association inactive
1	paired buttons association active

Parameter 18: Paired buttons association for Cross and Triangle

This parameter allows to activate paired buttons association mode for **Cross** and **Triangle** buttons. Paired buttons are dependent and association are sent only to **Cross** groups. **Triangle** turns devices on and increases value, **Cross** turns them off and decreases value.

Size: 1 Byte, Default Value: 0

Setting	Description
0	paired buttons association inactive
1	paired buttons association active

Parameter 19: Paired buttons association for Minus and Plus

This parameter allows to activate paired buttons association mode for **Minus** and **Plus** buttons. Paired buttons are dependent and association are sent only to **Minus** groups. **Plus** turns devices on and increases value, **Minus** turns them off and decreases value.

Size: 1 Byte, Default Value: 0

Setting	Description
0	paired buttons association inactive
1	paired buttons association active

Parameter 21: Scene activation for Square button

This parameter determines which actions result in sending assigned scene IDs and attributes to the controller.

NOTE: Parameter values may be combined, e.g. 1+2=3 means that pressing button once or twice will result in sending assigned scene ID.

Size: 1 Byte, Default Value: 9

Setting	Description
1	Key Pressed 1 time
2	Key Pressed 2 times
4	Key Pressed 3 times
8	Key Held Down & Released

Parameter 22: Scene activation for Circle button

This parameter determines which actions result in sending assigned scene IDs and attributes to the controller.

NOTE: Parameter values may be combined, e.g. 1+2=3 means that pressing button once or twice will result in sending assigned scene ID.

Size: 1 Byte, Default Value: 9

Setting	Description
1	Key Pressed 1 time
2	Key Pressed 2 times
4	Key Pressed 3 times
8	Key Held Down & Released

Parameter 23: Scene activation for Cross button

This parameter determines which actions result in sending assigned scene IDs and attributes to the controller.

NOTE: Parameter values may be combined, e.g. 1+2=3 means that pressing button once or twice will result in sending assigned scene ID.

Size: 1 Byte, Default Value: 9

Setting	Description
1	Key Pressed 1 time
2	Key Pressed 2 times
4	Key Pressed 3 times
8	Key Held Down & Released

Parameter 24: Scene activation for Triangle button
This parameter determines which actions result in sending assigned scene IDs and attributes to the controller.
***NOTE:** Parameter values may be combined, e.g. 1+2=3 means that pressing button once or twice will result in sending assigned scene ID.*
Size: 1 Byte, Default Value: 9

Setting	Description
1	Key Pressed 1 time
2	Key Pressed 2 times
4	Key Pressed 3 times
8	Key Held Down & Released

Parameter 25: Scene activation for Minus button
This parameter determines which actions result in sending assigned scene IDs and attributes to the controller.
***NOTE:** Parameter values may be combined, e.g. 1+2=3 means that pressing button once or twice will result in sending assigned scene ID.*
Size: 1 Byte, Default Value: 9

Setting	Description
1	Key Pressed 1 time
2	Key Pressed 2 times
4	Key Pressed 3 times
8	Key Held Down & Released

Parameter 26: Scene activation for Plus button
This parameter determines which actions result in sending assigned scene IDs and attributes to the controller.
***NOTE:** Parameter values may be combined, e.g. 1+2=3 means that pressing button once or twice will result in sending assigned scene ID.*
Size: 1 Byte, Default Value: 9

Setting	Description
1	Key Pressed 1 time
2	Key Pressed 2 times
4	Key Pressed 3 times
8	Key Held Down & Released

Parameter 29: Associations in Z-Wave network security mode
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 (Lifeline) association group.1
***NOTE:** Parameter 29 values may be combined, e.g. 1+2=3 means that 2nd & 3rd group are sent as secure.*
Size: 2 Byte, Default Value: 4095

Setting	Description
1	2nd group sent as secure
2	3rd group sent as secure
4	4th group sent as secure
8	5th group sent as secure
16	6th group sent as secure
32	7th group sent as secure
64	8th group sent as secure
128	9th group sent as secure
256	10th group sent as secure
512	11th group sent as secure
1024	12th group sent as secure
2048	13th group sent as secure

Technical Data

Dimensions	70 x 38 x 15 mm
Weight	30 gr
Hardware Platform	ZM5101
EAN	5905279987562
Battery Type	1 * CR2450 3.0V
Device Type	Handheld Controller
Network Operation	Portable Slave
Z-Wave Version	6.51.09
Certification ID	ZC10-16125346
Z-Wave Product Id	0x010F.0x1001.0x1000
Frequency	Europe - 868,4 Mhz
Maximum transmission power	5 mW

Supported Command Classes

- Application Status
- Association Grp Info
- Association V2
- Battery
- Central Scene V3
- Configuration
- Crc 16 Encap
- Device Reset Locally
- Firmware Update Md V3
- Manufacturer Specific V2
- Multi Channel Association V2
- Powerlevel
- Protection V2
- Security
- Version V2
- Wake Up V2
- Zwaveplus Info V2

Controlled Command Classes

- Basic
- Switch Multilevel V3

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.