FIBARO RAINBOW
CONTROLLER

FGBHRGBW-041-1
FGBHRGBW-041-2
FGBHRGBW-041-3
FGBHRGBW-041-4

Works with
Apple HomeKit

v1.0

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1: Important safety information

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 S.A. will not be held responsible for any loss or damage resulting from not following the instructions of operating manual.

Do not modify!

Do not modify this device in any way not included in this manual.

Other devices

The manufacturer, Fibar Group S.A. will not be held responsible for any damage or loss of warranty privileges for other connected devices if the connection is not compliant with their manuals.

DANGER!

The device is powered with a secure voltage. Nevertheless, the user should be careful or should commission the installation to a qualified person.

DANGER!

To avoid risk of electrical shock, do not operate the device with wet or moist hands.

This product is intended for indoor use only in dry locations.

Do not use in damp or wet locations, near a bathtub, sink, shower, swimming pool, or anywhere else where water or moisture are present.

Not a toy!

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

2: Description and features

2.1: Description

FIBARO Rainbow Controller is a universal, HomeKit-enabled RGB/RGBW controller.

FIBARO RGBW Controller uses PWM output signal, allowing it to control LED, RGB, RGBW strips. It can also measure active power and energy consumed by the load. The module is powered by 12/24V DC via a standard DC-jack connector.

2.2: Main features

- Works with Apple HomeKit technology for home management.
- Responds to Siri, letting you control the lights directly from your iPhone, iPad, or Apple Watch.
- No hub required, uses Bluetooth® low energy technology for wireless communication.
- Preconfigured with 18 colorful light programs.
- Allows for connecting:
    » RGB LED strips,
    » RGBW LED strips,
    » one-color LED strips.
- Active power and energy metering.
- Controllable also via a physical button on top.
- Portable, plug and play device.

3: Specifications

3.1: Available variants

Name	Variant	LED strip	Power adapter
Rainbow Controller	FGBHRGBW-041-1	no*	no
Rainbow Controller Kit (EU)	FGBHRGBW-041-2	2m	type C plug
Rainbow Controller Kit (US)	FGBHRGBW-041-3	2m	type A plug
Rainbow Controller Kit (UK)	FGBHRGBW-041-4	2m	type G plug

* Instead of the LED strip light, a MOLEX 105307-1205 connector to fix the LED strip is included.

3.2: Rainbow Controller specification

Power supply	12V/24V DC
Rated load current	5A total for all outputs (12VDC) 4.1A total for all outputs (24VDC)
Maximum power output	60W combined for 12V 98.4W combined for 24V
Outputs	4 outputs, PWM
PWM frequency	505Hz
Maximum length of wires	2m
Operating temperature	0–40°C (32–104°F)
Operating environment	Indoor, dry location only
Radio protocol	Bluetooth® low energy
Radio frequency	2.4 GHz ISM band
Transmit power	up to + 10dBm
Range	up to 50m (164 ft) free range
Dimensions (Length x Width x Height)	53.5 x 58.0 x 20.8 mm (2.11" x 2.28" x 0.82")
Compliance with EU directives	RoHS 2011/65/EU RED 2014/53/EU

3.3: LED Strip specification

Max power	14.4 W/m
Voltage	24V DC
Waterproof Grade	IP65
LEDs per meter	60
LED colors	RGB + W
White color temperature	2700K
Operating temperature	-20–50°C
Strip length	2m
Compliance with EU directives	RoHS 2011/65/EU RoHS 2015/863/E

The specification of the LED strip applies only to kits with the LED strip included:

- FGBHRGBW-041-2
- FGBHRGBW-041-3
- FGBHRGBW-041-4

3.4: Power adapter specification

Input power	100-240V AC, 50/60 Hz
Input current	0.8A
Output power	24V DC, 1A (Class 2 unit)
Output current	1.0A
Standard DC-Jack	5.5 x2.1
Power adapter plug type	type C for FGBHRGBW-041-2 type A for FGBHRGBW-041-3 type G for FGBHRGBW-041-4

4: Installation

4.1: Connecting Rainbow Controller (FGBHRGBW-041-1)

⚠ **Connecting the device in a manner inconsistent with this manual may cause risk to health, life or material damage.**

- Connect LED strip channels in accordance with the diagram 1.

- Rainbow Controller and the load connected to its output must be powered by 12V DC or 24V DC stabilized power supply (Class 2 unit) with short circuit protection. Connecting higher voltage or voltage not matching the load's voltage may cause damage to the device.

- The device is powered with secure voltage; nevertheless, the user should be extra careful or should commission the installation to a qualified person.

- **Do not** connect devices which are not compliant with the specification.

- Every connected device should be compliant with the relevant safety standards.

- Connecting long RGBW/RGB/LED strips may cause voltage drops, resulting in lower light brightness further from R/G/B/W outputs. To eliminate this effect it is recommended to connect a few shorter strips in parallel connection instead of one long strip connected serially.

- The LED strip should be mounted to aluminium profile for better heat dissipation.

- If you connect a 12V DC LED strip, you also need to use the 12V DC power adapter. For 24V DC LED strip use 24V DC power adapter.

ⓘ FIBARO Rainbow Controller (FGBHRGBW-041-1) sold without any LED strip lights has a MOLEX 105307-1205 connector included.

ⓘ We recommend connecting LED strip channels in the same order as on the diagram 1 (B - OUT1, R - OUT2, G - OUT3, W - OUT4). If you want to connect a RGB strip, use the same diagram, but do not connect the OUT4 channel.

To install FIBARO Rainbow Controller with LED strip and power adapter:

1. Connect the LED strip channels to the MOLEX connector using a wire connector according to the diagram below.
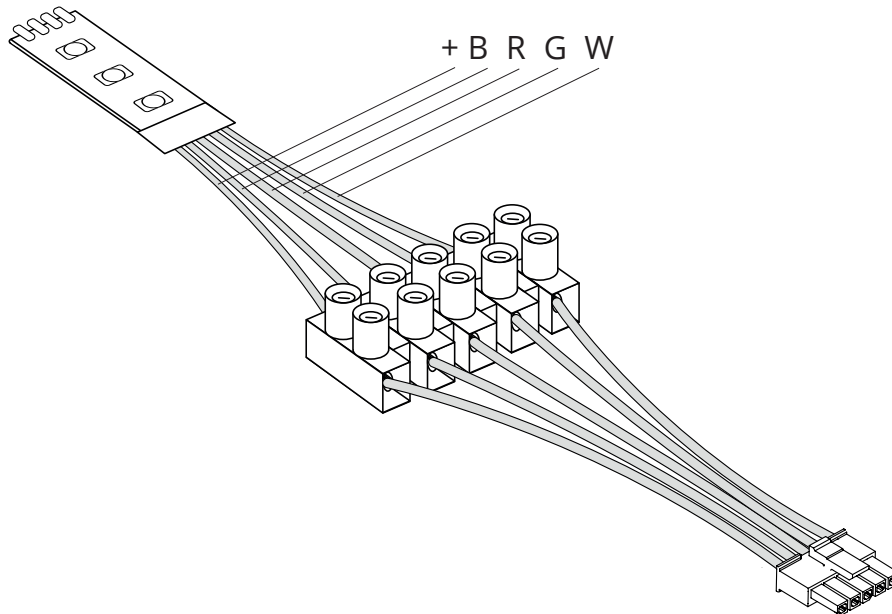
2. Fix the connector to the FIBARO Rainbow Controller.
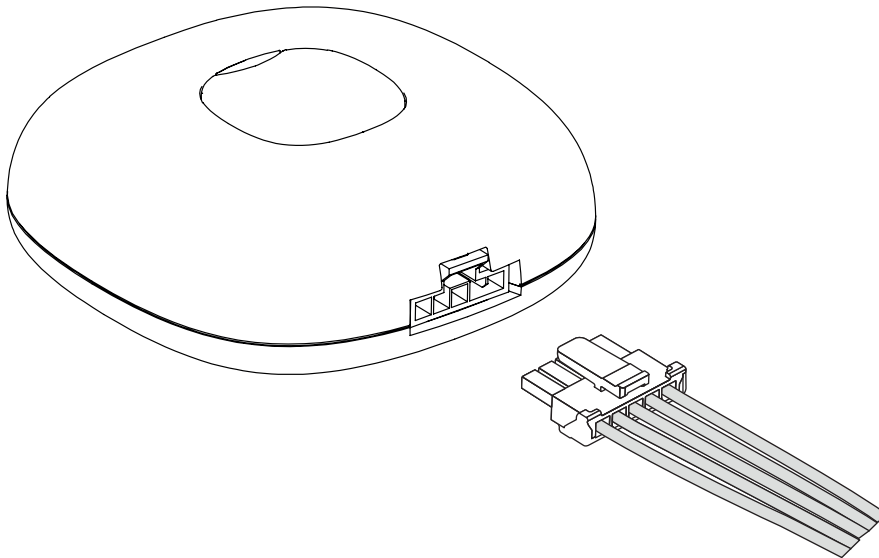
3. Connect the device to the power supply.

4. Add the device to HomeKit or start using it with the button located on the top of the device.

5. If you connected the channels in a different order you can change the order in the device parameter in the Fibaro for HomeKit app. Also, if you connect the RGB led strip instead of the RGBW led strip, please remember to change the respective setting in the app as well.

4.2: Connecting FIBARO Rainbow Controller Kit (FGBHRGBW-041-2, FGBHRGBW-041-3, FGBHRGBW-041-4)

In case of the FIBARO Rainbow Controller Kit, the device comes with preconfigured LED Strip Lights and a wall power adapter.

LED Strip Lights included with the controller are prepared to be connected to the FIBARO Rainbow Controller.

To install FIBARO Rainbow Controller Kit:

1. Connect the LED Strip Lights to the controller.
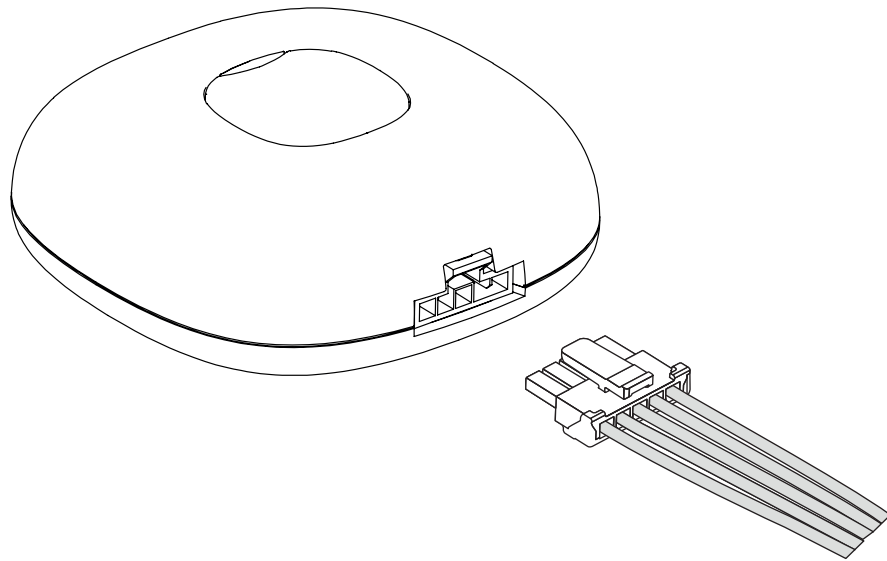
2. Make sure that everything fits tightly.
3. Connect the device to the power supply.
4. Add the device to HomeKit or start using it with the button located on the top of the device.

5: HomeKit Technology

Apple HomeKit technology provides an easy, secure way to control HomeKit-enabled accessories using Siri on your iPhone, iPad, iPod touch, or HomePod.

After installing your **FIBARO Rainbow Controller**, configure it from a compatible app with just a few simple steps.

You can even create your own custom scenes to control your home settings. For example, you can create a scene to automatically turn off the main lights, lock your doors, close the garage door, and set the mood lights to the desired color or program in just one step.

> **i** To control this HomeKit-enabled accessory, iOS 11.2 or later is recommended.

> Controlling this HomeKit-enabled accessory automatically and away from home requires an Apple TV with tvOS 11 or later or an iPad with iOS 11.2 or later set up as a home hub.

5.1: Adding to HomeKit

1. Place the accessory next to your iOS device.
2. Open a HomeKit compatible app of your choosing on your iOS device.
3. Find HomeKit Setup Code attached to the device, or at the back of the Quick Start Guide, which looks like this:

4. Start pairing with your HomeKit app.
5. Follow the on-screen instruction in the app on your mobile device.

5.2: Removing from HomeKit

You can remove the device from HomeKit by either:

1. Resetting to factory defaults (see section 6.4).
2. Removing the device in the HomeKit app.

6: Operating the device

6.1: Operating the device and colors

It is possible to control connected LED / RGB / RGBW strip with the button located on the top of the device.

- 1xclick – change to the opposite state (ON/OFF)
- hold – start a gradual change of colour, releasing the button saves the given value

6.2: HomeKit status

After powering the device, the built-in LED light shows the current device status:

- **GREEN** – device added to HomeKit
- **RED** – device not added to HomeKit

6.3: Menu

Menu allows to perform basic device actions. In order to use the menu:

1. Triple click and hold the button to enter the menu.
2. Release the button when device signals the desired position with colour:
    - **GREEN** - reset energy consumption memory
    - **YELLOW** - reset to factory defaults
3. Quickly click the button to confirm.

6.4: Resetting to factory defaults

Reset procedure allows to restore the device back to its factory settings, which means all information about HomeKit and user configuration will be deleted.

1. Triple click and hold the button to enter the menu.
2. Release button when the device glows yellow.
3. Quickly click the button to confirm.
4. After few seconds the device will be restarted, which is signalled with the red colour.

> ⓘ Resetting the device will not reset the energy consumption memory nor channels configuration. To reset energy consumption memory, see "Menu" subchapter.

6.5: Power and energy metering

Active power metering

FIBARO Rainbow Controller measures active power consumption of the strip lights and reports it to your iOS device.

Active power measuring accuracy is ±1% for loads greater than 5W and is not sent during an active sequence.

Energy metering

FIBARO Rainbow Controller counts energy consumed since the last energy reset.

6.6: Light programs

The device comes with 18 preconfigured light programs, which can be set in FIBARO for HomeKit app using the apropriate parameters.

Available programs:

- Fireplace
- Storm
- Rainbow
- Aurora
- LPD
- Jungle
- Sunrise
- Jamaica
- Breathe

- Romantic
- Flamenco
- Deep Ocean
- Fireworks
- Halloween
- Party Time
- Sunset
- Stroboscop
- Book reading

7: Advanced parameters

The device allows to customize its operation to user's needs using configurable parameters. The settings can be adjusted in the FIBARO for HomeKit app.

Available parameters:

1.	Device state after power cycle
Description	This parameter determines how the device will react in the event of power supply failure (e.g. power outage or switching off the main fuse).
Default value	2
Available values	0 - device remains off 1 - device returns to white on full brightness 2 - device restores the state from before the power cycle

2.	Active program
Description	This parameter determines which program of the preprogrammed lighting programs is currently active.
Default value	0
Available values	1–18 - the number of the program

3	RGBW channels configuration
Description	This parameter determines the order of the connected channels and the type of the strip.
Default value	"BRGW"
Available values	String value representing RGBW channels, i.e. 'B' 'R' 'G' 'W' in an order corresponding to the actual connection. The colors should be listed from the power supply side pin.

4.	Auto-off type
Description	This parameter defines the type of auto-off mode.
Default value	1
Available values	0 - auto-off mode disabled 1- device will turn off once after the set time 2 - device turns off after the set period of time each time it is switched on

8: Regulations

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.

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.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

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 in-terférences qui peuvent affecter son fonctionnement.

Déclaration d'exposition aux radiations
Cet équipement est conforme Canada limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et votre corps.

Legal Notices

All information, including, but not limited to, information regarding the features, functionality, and/or other product specification are subject to change without notice. Fibaro reserves all rights to revise or update its products, software, or documentation without any obligation to notify any individual or entity.

FIBARO and Fibar Group logo are trademarks of Fibar Group S.A. All other brands and product names referred to herein are trademarks of their respective holders.

Declaration of conformity

Hereby, Fibar Group S.A. declares that the device is in compliance with the essential requirements and other relevant provisions of 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.