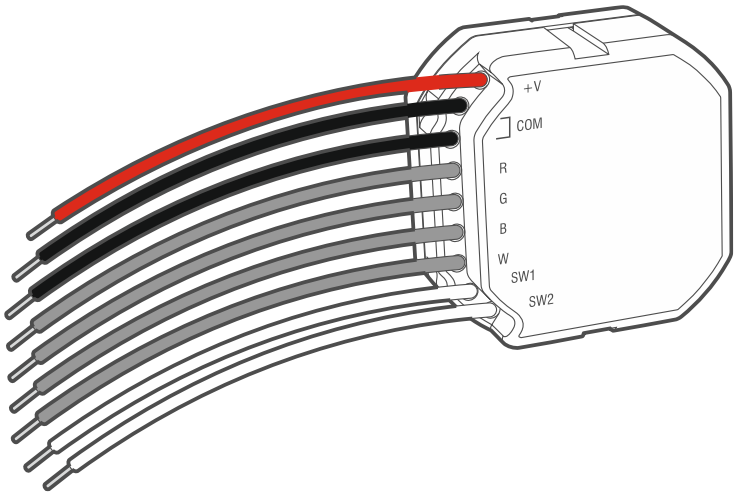
Smart RGBW LED Driver

ARC-200

EN

Firmware version 1.02



CE

arc-200_BW_en 11/25

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www.satel.pl

IMPORTANT

Changes, modifications or repairs not authorized by the manufacturer shall void your rights under the warranty.

Description of symbols on the device:

The device meets the requirements of the applicable EU directives.

The device must not be disposed of with other municipal waste. It should be disposed of in accordance with the existing rules for environment protection (the device was placed on the market after 13 August 2005).

The device is designed for indoor installation.

Direct current (DC).

SATEL aims to continually improve the quality of its products, which may result in changes in their technical specifications and software. Current information about the changes being introduced is available on our website.
Please visit us at:
https://support.satel.pl

Hereby, SATEL sp. z o.o. declares that the radio equipment type ARC-200 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.satel.pl/ce

Signs in this manual

Caution – information on the safety of users, devices, etc.

Note – suggestion or additional information.

CONTENTS

The ARC-200 controller (Smart RGBW LED Driver) is used to control the light color and adjust the brightness of 12...48 VDC LED lighting. It allows you to turn on / turn off / dim down / dim up the lights / change the light color. The manual applies to the controller installed in the BE WAVE system.

1. Features

- Control of various light sources:
  - RGBW LED strip,
  - RGB LED strip,
  - CCT LED strips (cool/warm),
  - single color LED strips,
  - LED bulbs,
  - halogen bulbs.
- Remote control or local control by means of control inputs.
- Stepless adjustment of light brightness.
- Memory of set color and brightness level.
- 2 control inputs:
  - capability to connect a push-button or a switch,
  - lighting controlled locally,
  - capability to control any device in the system.
- Operation in the 868 MHz frequency band.
- AES encrypted two-way radio communication.
- Transmission channel diversity – 4 channels for automatic selection of the one that will enable transmission without interference with other signals.
- Remote settings programming.
- Remote firmware update.
- Hardware protection against overheating.
- Powered by 12...48 VDC.
- Installed in a flush- or surface-mounted junction box with a minimum diameter of 60 mm.

2. Description

Figure 1 shows the controller.

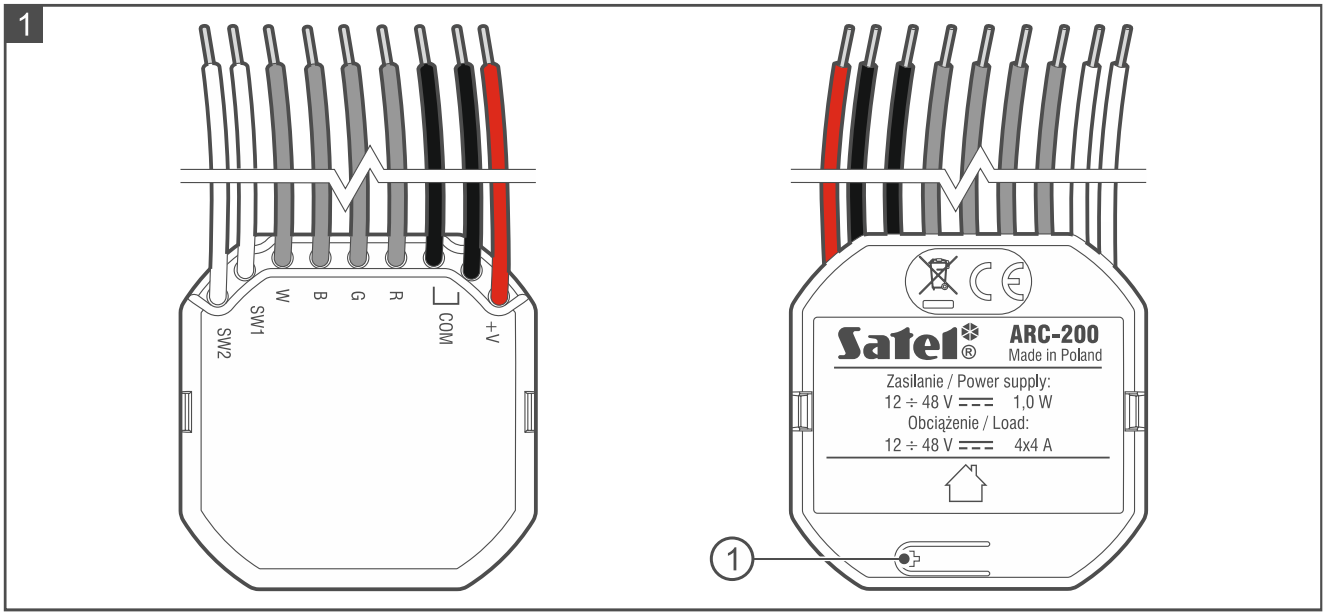
① button used to:

- register the controller in the system – press while adding the controller to the system,
- block / unblock the registration – press and hold for 10 seconds to block / unblock the capability to add the controller to the system.

Wires

+V [red] - for connecting a 12...48 VDC power wire.
COM [black] - for connecting the common ground wire.
R [gray] - output to control the red color.
G [gray] - output to control the green color.
B [gray] - output to control the blue color.

W [gray] - output to control the white color.
SW1 [white] - control input 1.
SW2 [white] - control input 2.



3. Installation

Disconnect power before making any electrical connections.

To power the controller, use a 12...48 VDC power supply with current limitation up to 16 A.

Do not remove the controller from the enclosure. Installing the controller without enclosure or with a damaged enclosure poses a risk of electric shock and may damage the device.

Do not use the controller to control the lighting powered by AC because this may damage the controller and the connected lighting device.

3.1 Tips for installation

- The controller should be installed indoors, in spaces with normal air humidity.
- Do not install the controller outdoors.
- When selecting a place of installation, consider the radio communication range.
- Thick walls, metal partitions, etc. reduce the range of the radio signal.
- Install the controller in an electrical junction box (a deep junction box with a diameter of at least 60 mm).
- The controller can control:
  – 1 RGBW LED strip,
  – 1 RGB LED strip,
  – 2 CCT LED strips (cool/warm),
  – 4 single color LED strips,
  – 4 groups of LED bulbs / halogen bulbs.

- The current consumption by the lighting connected to one controller output cannot exceed:
  - 4 A / 12...48 VDC when all 4 outputs are used,
  - 8 A / 12...24 VDC when 2 outputs are used.
- To connect the wires, use screw terminal blocks, splicing connectors, etc.
- You can connect a push-button or a switch to the controller inputs. The push-button is the preferred choice. It provides more functionality.

3.2 Mounting

1. Power off the circuit to which the controller is to be connected.
2. Open the electrical junction box in which the controller is to be installed.
3. Connect the controller to the 12...48 VDC supply circuit (Fig. 2 / 3 / 4 / 5 / 6).
4. Connect the lighting to the controller outputs:
   Fig. 2 – RGBW LED strip,
   Fig. 3 – RGB LED strip,
   Fig. 4 – CCT LED strips (cool/warm) – R and B outputs control the warm color (W), G and W outputs control the cool color (C),
   Fig. 5 – single color LED strips – each output controls the lighting,
   Fig. 6 – LED bulbs / halogen bulbs – each output controls the lighting.
5. Connect the push-buttons / switches to the controller inputs (Fig. 2 / 3 / 4 / 5 / 6).
6. Place the controller in the junction box. Make sure the wires are behind the controller enclosure.
7. Power on the circuit to which the controller is connected.
8. Add the controller to the system (see the manual for the BE WAVE system controller or the BE WAVE Hybrid system control panel).

If you select the COLD/WARM *operating mode when adding the controller to the system, you will be able to add 2 channels. Each channel controls 2 controller outputs (Fig. 4). If you only add channel 1 (R+G), when controlling this channel, you control the R+G outputs and B+W outputs simultaneously.*

If you select the MONO *operating mode when adding the controller to the system, you will be able to add 4 channels. Each channel controls 1 controller output (Fig. 5). If you only add channel 1 (R), when controlling this channel, you control all outputs simultaneously. If you add 2 channels (channel 1 and channel 2), when controlling channel 1 (R), you control the R and B outputs simultaneously, and when controlling channel 2 (G), you control the G and W outputs simultaneously.*

The configurations described above for the MONO *and* COLD/WARM *operating modes allow you to connect lighting devices with power consumption of up to 500 W (16 A / 12...48 VDC) to the controller outputs.*

The controller outputs that are unused must be secured.

9. Close the junction box.

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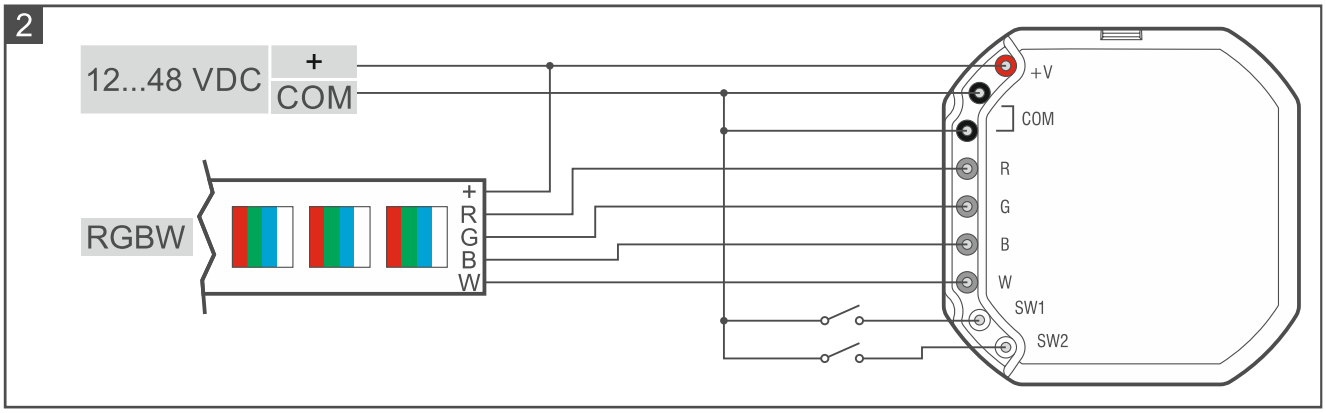
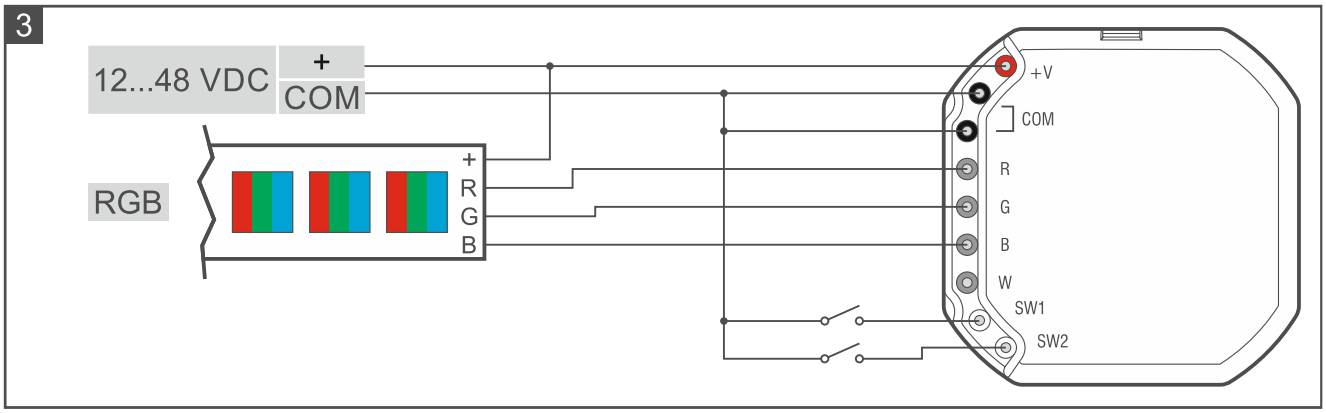

12...48 VDC
+
COM
RGBW
+
R
G
B
W
+V
COM
R
G
B
W
SW1
SW2

3


12...48 VDC
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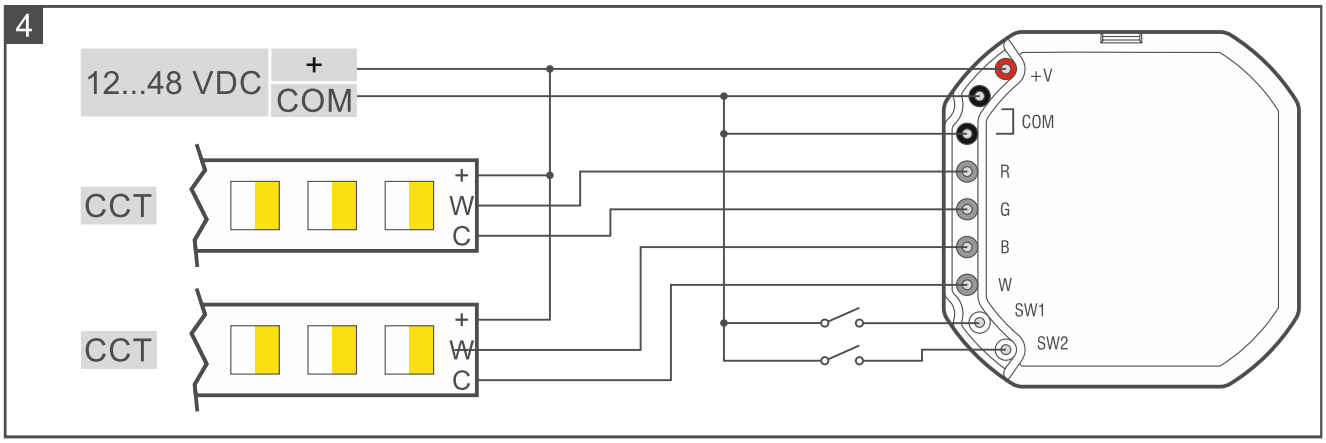
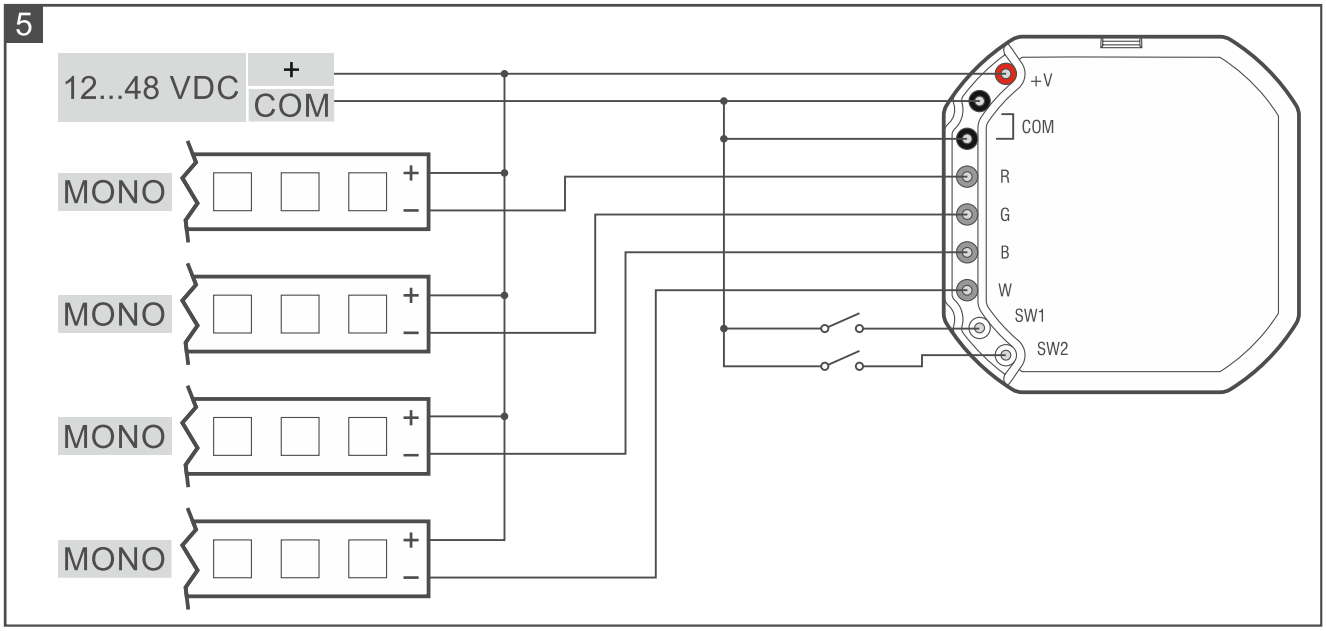
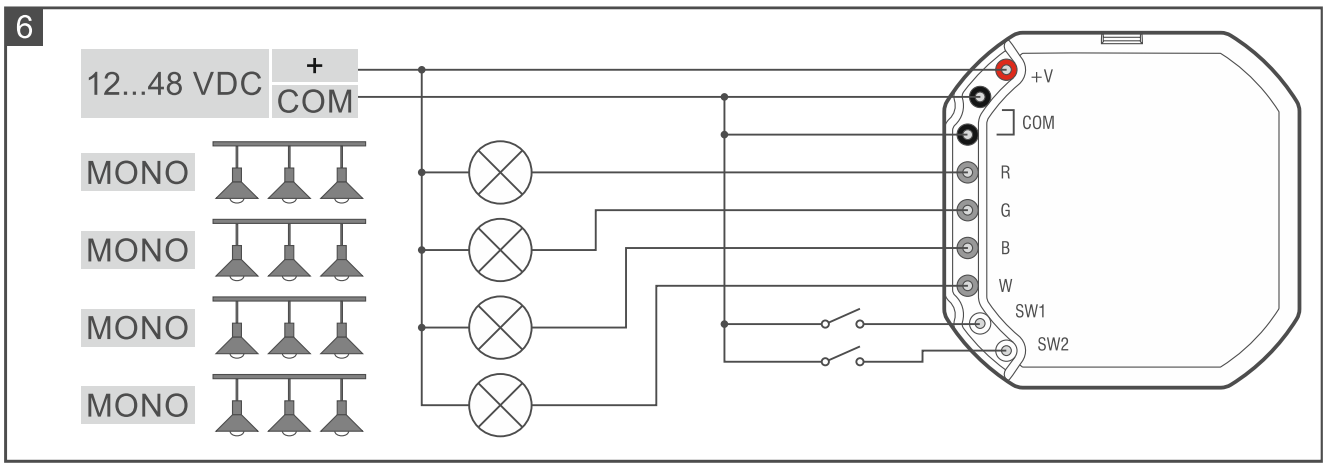
COM
RGB
+
R
G
B
+V
COM
R
G
B
W
SW1
SW2

4


12...48 VDC
+
COM
CCT
+
W
C
CCT
+
W
C
+V
COM
R
G
B
W
SW1
SW2

5


12...48 VDC
+
COM
MONO
MONO
MONO
MONO
+
+V
COM
R
G
B
W
SW1
SW2



4. Specifications

Operating frequency band ..... 868.0 MHz ÷ 868.6 MHz
Radio communication range (in open area) ..... up to 1200 m
Supply voltage ..... 12...48 VDC
Standby power consumption ..... 0.2 W
Maximum power consumption ..... 1 W
Maximum output load
- 4 outputs used ..... 4 A / 125 W / 12...48 VDC
- 2 outputs used ..... 8 A / 192 W / 12...24 VDC

Complied with standards ..... EN 50130-4, EN 50130-5
Environmental class according to EN50130-5 II
Operating temperature range ..... -10°C...+55°C
Maximum humidity ..... 93±3%
Dimensions ..... 47 x 47 x 22 mm
Weight ..... 34 g