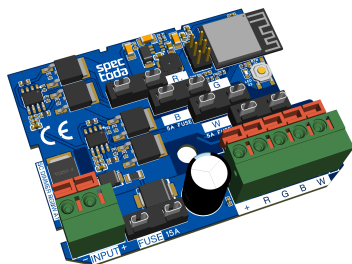


SC Dimmer RGBW Datasheet [EN]

Ordering code: SPE10104C-X-IA-0400

spectoda



SC Dimmer RGBW is a four-channel PWM controller for analog RGBW LED strips powered from a 12-24 V DC supply. It uses a common positive LED strip conductor and separately switched negative channels R, G, B and W. The controller is intended for installations where an analog RGBW LED strip is controlled directly from the Spectoda environment.

PRODUCT DESCRIPTION

- **4x PWM output** for an analog RGBW LED strip with a common positive conductor
- **12-24 V DC** supply for common low-voltage LED installations
- **Blade fuses** 15 A on the input and 5 A for each output channel
- **RGB limit 15 A** cumulative across the controller according to terminal and input fuse limits
- **RGBW limit 10 A** when white is derived from RGB and no more than two 5 A channels run simultaneously
- **Service elements** status LED, service button and service 3.3V header
- **Panel mounting** on insulating standoffs with access to fuses

TECHNICAL SPECIFICATIONS

Electrical specifications

- **Technical variant:** SC Dimmer RGBW A1
- **Input supply:** 12-24 V DC
- **Output topology:** low-side PWM for a common positive LED conductor
- **Outputs:** 4x PWM channel for R, G, B, W
- **Maximum current per channel:** 5 A
- **RGB mode:** max. 15 A cumulative across the controller
- **RGBW mode:** typically max. 10 A
- **Fusing:** input blade 15 A, channel blade 5 A
- **Power consumption:** 1 W

Operating and mechanical specifications

- **Operating temperature:** -20 °C to +60 °C
- **Storage temperature:** -25 °C to +70 °C
- **PCB dimensions:** 71.9 × 53.6 mm
- **Control dimensions from drawing:** 36.1 mm / 15.0 mm / 35.0 mm
- **Recommended installation space:** Spelsberg i 12-L, 85.0 × 85.0 × 37.0 mm
- **Recommended enclosure:** Spelsberg i 12-L, product number 33291201
- **Enclosure rating:** IP55
- **Impact rating:** IK07

CONNECTOR INTERFACE

Terminal / element	Function	Note
INPUT +	Power	Positive pole of the 12-24 V DC supply
INPUT -	Reference ground	Negative pole of the supply, common system ground
+	Common LED pole	Common positive conductor of the RGBW LED strip
R	PWM output R	Switched negative channel of the red branch
G	PWM output G	Switched negative channel of the green branch
B	PWM output B	Switched negative channel of the blue branch
W	PWM output W	Switched negative channel of the white branch

INSTALLATION INSTRUCTIONS

1. Disconnect the 12-24 V DC power supply.
2. Mount the PCB on insulating standoffs.
3. Connect the supply conductors to INPUT+ and INPUT-.
4. Connect the common positive LED strip conductor to output +.
5. Connect the LED strip channels to R, G, B and W.
6. Install the appropriate blade fuses and check terminal tightening.

INTEGRATION AND APPLICATIONS

Integration with the Spectoda ecosystem

SC Dimmer RGBW is intended as a standard Spectoda controller for analog RGBW LED strips:

- wireless control within the Spectoda mesh network,
- configuration through Spectoda Studio and related applications,
- scenes, timelines and group control of multiple controllers,
- standard Spectoda App pairing flow.

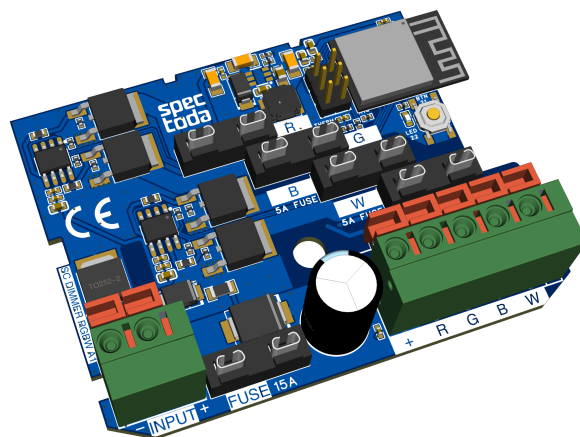
Applications

- architectural RGB/RGBW LED strips,
- ambient and decorative LED lighting,
- panel control of multiple LED branches,
- installations with local fusing of individual channels.

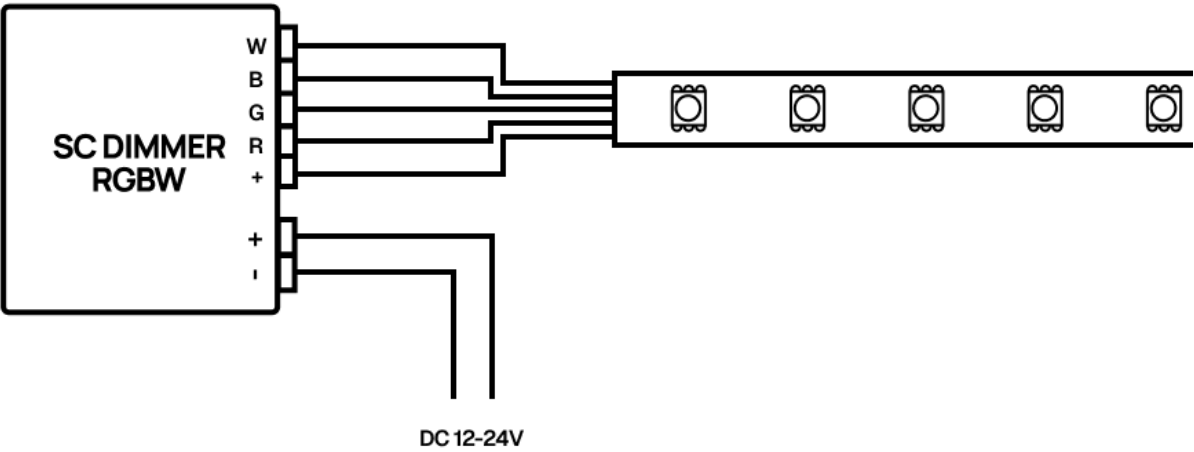
SAFETY

- The PCB underside must not touch a metal base or DIN rail.
- Observe power polarity and common positive conductor wiring.
- Do not exceed the cumulative 15 A limit.
- The device is not intended for long-term operation at 4 x 5 A simultaneously.
- Leave space for airflow above the power section and fuses.
- Size conductors and the power supply according to the actual load.

VISUALIZATION



WIRING DIAGRAM



Revision

2026-06-29	1.0	Initial version
------------	-----	-----------------