CBU-PWM4-LR

Bluetooth-controllable 4ch PWM dimmer

Warning!

Only qualified professionals should make the connections. Disconnect the power supply and verify its absence prior to installation.

PRODUCT DESCRIPTION

CBU-PWM4-LR is a Bluetooth-controllable, Casambi-enabled four-channel PWM dimmer for constant voltage LED loads, such as LED strips and constant voltage LED modules. It is connected between a 12-24 VDC constant voltage power supply and the constant voltage LED load.

CBU-PWM4-LR can control up to four channels making it an ideal partner for RGBW and tunable white (TW) applications. The maximum combined output current is 6 A, which can be freely divided between all output channels. CBU-PWM4-LR is protected against overvoltage, overcurrent and short-circuit situations.

CBU-PWM4-LR can be controlled with the Casambi App, available for iOS and Android devices, as well as with traditional wall switches. The Casambi App can be downloaded free of charge from the Apple App Store and Google Play Store.

Different Casambi-enabled products can be used from a simple one-luminaire direct control setup to a complete and full-featured lighting control system, in which up to 250 units automatically form an intelligent mesh network.

TECHNICAL DATA

Input

- Voltage: 12–24 VDC, Class II
- Max. input current: 6,0 A
- No-load standby power: < 0,3 W
- Type of power supply: constant voltage

Output

- Output voltage: 12–24 VDC
- Max. output power: 144 W @ 24 VDC
72 W @ 12 VDC
- Max. output current: 6,0 A (can be freely divided between the channels)
- Min. load (recommended): 3 W (ref. to page 3)
- Load type: LED lights
- Dimming method: Pulse Width Modulation (PWM, freq. 400 Hz)

Radio transceiver

- Operating frequencies: 2402...2480 MHz
- Maximum output power: +8 dBm

Operating conditions

- Ambient temperature, t_a : -20 to +45°C
- Max. case temperature, t_c : +65°C
- Storage temperature: -25...+75°C
- Max. relative humidity: 0...80%, non-condensing
- Location of t_c point: The t_c point is marked on the enclosure.

Connectors

- Wire range, solid & stranded: 0,75–1,5 mm²
14–22 AWG
- Wire strip length: 6-7 mm
- Screw torque force: 0,4 Nm
- Input/output cable length: 3,0 m (Max.)

Mechanical data

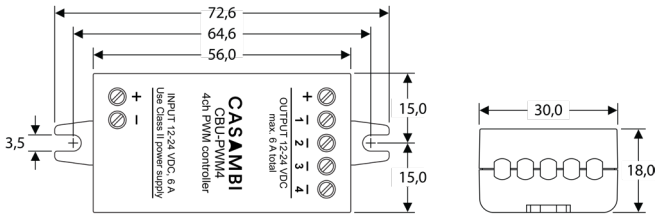
- Dimensions: 72,6 x 30,0 x 18,0 mm
- Weight: 23 g
- Degree of protection: IP20 (indoor use only)

Certifications

- CE
- AU/NZ

www.casambi.com

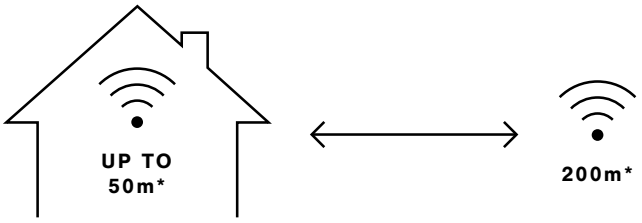
DIMENSIONS (IN MM)



*t_c point is on bottom side • | Mounting hole diamter 3,5mm

RANGE

The communication range in radio technology may ultimately vary depending on the design of the product in which the antenna is housed and on the environment in which it operates. In practice, this means a well-designed product from a radio point of view, with a good line of sight connection between nodes, can achieve radio coverage up to 50 meters indoors, and, in theory, up to 200 meters in the open air. Casambi uses a mesh network technology, whereby each Casambi unit, or Casambi Ready product, also acts as a repeater. Hence, longer ranges can be achieved by using multiple Casambi products within the network.



*The wireless range of a Casambi unit is dependent on several factors; how it has been integrated into a luminaire, where it has been installed; taking into consideration surrounding obstacles such as walls and other building materials that may block signals.

CASAMBI MESH NETWORK COMPATIBILITY

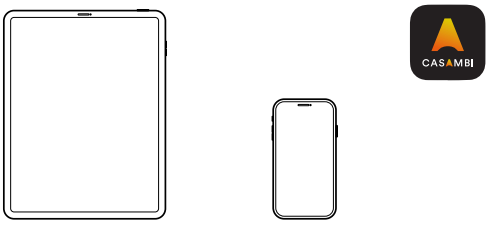
There are different radio modes that can be selected when creating a network in the Casambi App: ‘Balanced’, ‘Better Performance’ and now ‘Long Range’ options. The CBU-PWM4-LR enables long-range capabilities only when the long-range radio mode has been selected and all the other devices within the network are long-range capable. It will revert to the shorter, standard range when deployed in networks set to ‘Balanced’ or ‘Better Performance’ modes.

COMPATIBLE DEVICES

Download on the App Store GET IT ON Google Play

Compatible devices: Android and iOS Operating Systems.

We support the latest OS versions for Android and iOS, and their last two major versions respectively.



Tablets

Smartphone

TYPE OF LOAD	MAX. LOAD
Light-Emitting Diodes (LED)	144 W @24 VDC
Light-Emitting Diodes (LED)	72 W @12 VDC

INSTALLATION

Make sure that the power supply voltage is switched off before making any connections.

Connect a constant voltage 12-24 VDC Class II power supply to the input connector. Make sure not to use a constant current LED driver and make sure that the cable polarity is correct.

The product has one shared positive output connector (+) and each of the four channels has its own negative connector (-). This is the most typical case with multichannel LED strips. Connect the LED load wires accordingly.

Use 0,75–1,5 mm² solid or stranded conductor electrical wires. Strip the wire 7 mm from the end. Open the screw connector on top of the dimmer case and insert the wires into the corresponding terminals, tighten the screws. Overtightening the screws may damage the device. Make sure to connect the input and output correctly. If you install the dimmer in a heat-sensitive environment (e.g. inside a luminaire or in a ceiling outlet box above a luminaire), make sure that the ambient temperature does not exceed the specified maximum value. Using the dimmer in a heat-sensitive environment may limit the maximum output power.

CBU-PWM4-LR, as any other Casambi product, should not be placed in a metal enclosure or next to large metal structures. Metal will effectively block all radio signals which are crucial to the operation of the product.

The proper operation of CBU-PWM4-LR requires a carefully calculated total power consumption, the correct choice of a constant voltage power supply, and a suitable cross-section of the wires used in installation. Taking into account power derating is critical for stable operation over the designated temperature range. ‘Derating’ refers to the reduction of the output power depending on the ambient conditions.

CBU-PWM4-LR can be configured having different types of outputs, such as 4 channel RGBW, 3 channel RGB and 2 channel TW. Also, it is possible to configure 1-4 jointly and individually dimmable channels. These configurations can be made by the end user from Casambi App.

As default, CBU-PWM4-LR is delivered with RGBW configuration.

For small loads, the light intensity may appear higher than the set value. The intensity error is dependent on the load. At a load of 3 W, the error is less than 1% calculated from the total intensity value, thereby limiting the minimum intensity value.

Warning!

Using CBU-PWM4-4-LR with maximum load will make it hot. Make sure to place the product in well-ventilated space and away from any flammable materials.

FIXTURE PROFILES

Each CBU product can operate in various roles according to the chosen profile. It is possible to change the profile of an unpaired device using the Casambi App. Below are listed the fixture profile options for the CBU-PWM4-LR.

Profile#	Profile name / in app description	Description	Wiring
4027* (default)	PWM/4ch/Dim,RGBW	Pulse Width Modulation controlled outputs for RGBW LED strips.	1
4029	PWM/3ch/Dim,RGB	Pulse Width Modulation controlled outputs for RGB LED strips.	2
4030	PWM/2ch/Dim,TW	Pulse Width Modulation controlled outputs for tunable (cold+warm) white LED strips.	3
8122	PWM/1ch/Dim	Pulse Width Modulation controlled 1x output for LED strip.	4
4031	PWM/2ch/Dim	Pulse Width Modulation controlled 2x outputs for LED strips.	5
4032	PWM/3ch/Dim	Pulse Width Modulation controlled 3x outputs for LED strips.	6
4033	PWM/4ch/Dim	Pulse Width Modulation controlled 4x outputs for LED strips.	7
4885	PWM/4ch/Dim,RGB/White	Pulse Width Modulation controlled outputs for RGBW LED strips.	1
4887	PWM/ VirtualDim,Elements	Pulse Width Modulation controlled 4x outputs for LED strips with master and separate dim control elements (sliders) in UI.	7
5037	PWM/3ch/Dim,RGB	Pulse Width Modulation controlled outputs for RGB LED strips.	2
8331	PWM/2ch/Dim[WarmCool]	Pulse Width Modulation controlled outputs for tunable (cold+warm) white LED strips.	3
18568	PWM/2ch/Dim,TW	Pulse Width Modulation controlled outputs for tunable (cold+warm) white LED strips.	3
38066	CBU-PWM4 2xTW (lin)	Pulse Width Modulation controlled outputs for 2x tunable (cold+warm) white LED strips with linear response (lin).	8
38171	CBU-PWM4 2xTW	Pulse Width Modulation controlled outputs for 2x tunable (cold+warm) white LED strips.	8

* Default profile for CBU-PMW4-LR products delivered from the factory.

WIRING DIAGRAMS

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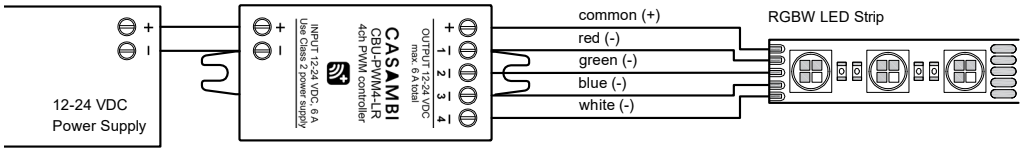

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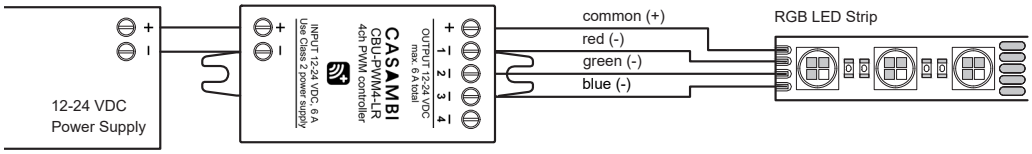

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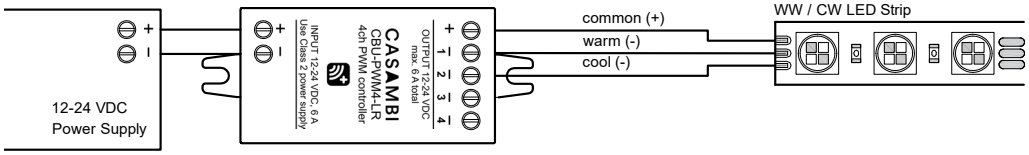

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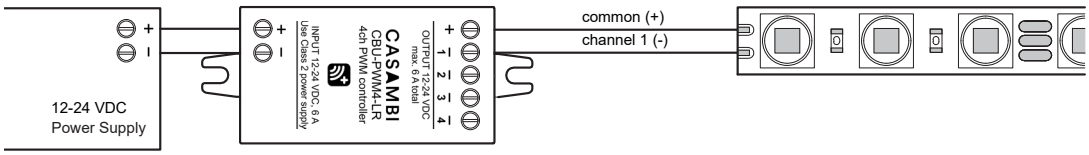

WIRING DIAGRAMS

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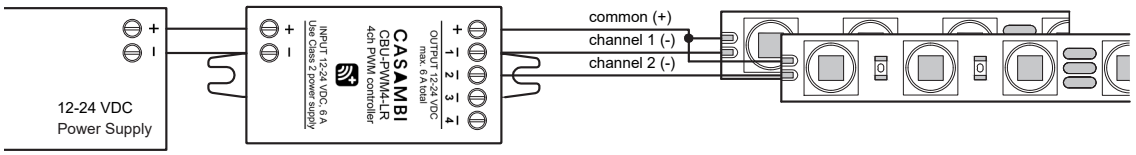

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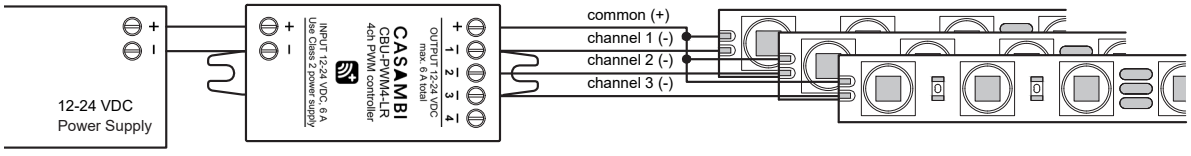

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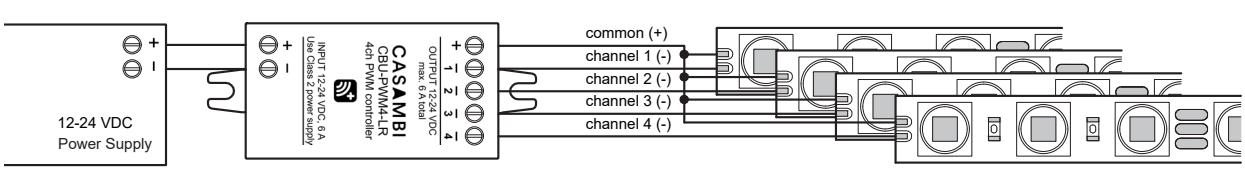

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