

## Rayrun K50 LED Controller Instructions

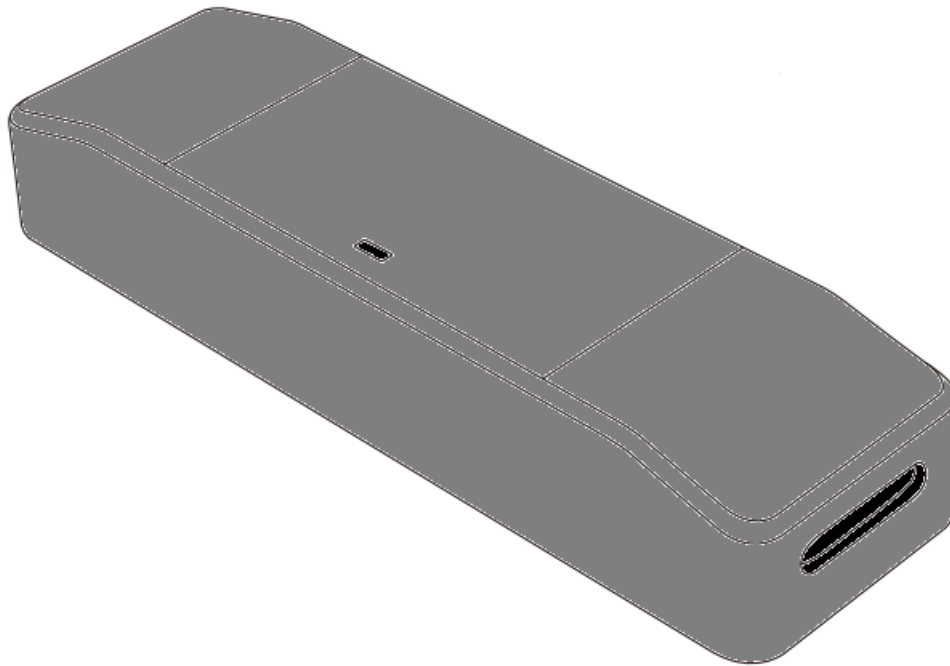
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# RayRun

**Rayrun K50 LED Controller**



## Product Information

The K50/K50W LED controller is a 5-in-1 multi-function model that can be controlled by an RF remote controller (K50) or a remote controller and Tuya smart app (K50W). It is designed to drive constant voltage LED products in a voltage range of DC 12-24V. The controller supports 1-5 channel applications, from single color to RGB+CCT. It has full protection features to ensure application safety. With easy-to-use push connectors, the installation is reliable and simple.

## Function & Size

- Multi-Function Remote + Phone
- Full Protection
- Push Terminal
- High Power
- Tuya Smart
- **Size:** 134mm x 112mm x 39mm

## Product Usage Instructions

### Power supply input

Connect the controller to a power supply with a voltage range of DC 12V to 24V. The maximum cable gauge is AWG12 or 2.5mm<sup>2</sup>. The controller's output voltage is at the same level as the power input voltage. Make sure the power supply voltage is correct and capable of handling the load wattage. The power input '+' unit is directly connected to the output terminal '+' unit inside the controller.

### Function DIP switch

The controller can be set to different functions from single color to RGB+CCT. To change the controller function, set the DIP switch to the corresponding position as shown in the manual when the power supply is off.

### Work status indicator

This indicator shows the different working status of the controller:

- **Steady green:** Ready (K50) / Tuya smart ready (K50W)
- **Steady yellow:** Tuya not connected (K50W)
- **Short blink:** New command received
- **Long single blink:** Edge of the content or scene saved
- **Blink for 3 times:** Remote paired or restored to factory default
- **Red flash:** Overload protection
- **Yellow flash:** Overheat protection

## LED output

Connect the LED loads to the controller's LED output. The LED loads must be constant voltage driving type and compatible with PWM modulation. For multi-channel models, the LED connection needs to be common anode. Make sure the LED rated voltage is the same as the power supply and each channel's maximum load current is within the controller's rated current range.

## Wiring

1. Connect the controller output to LED loads.
2. Connect the power supply to the controller power input. The power supply voltage must be the same as the LED load's rated voltage.
3. Check all cables to ensure they are well connected and insulated before powering on.

## Introduction

K50 / K50W LED controller is designed to drive constant voltage LED products in voltage range of DC 12- 24V. It can be controlled by RF remote controller (K50) or remote controller and Tuya smart app (K50W). The controller supports 1-5 channel application from single color to RGB+CCT. It has the full protection feature to guarantee the application safety. With the easy using push connectors, the installation is reliable and simple.

## Features



Multi-Function



Remote + Phone



Full Protection



Push Terminal

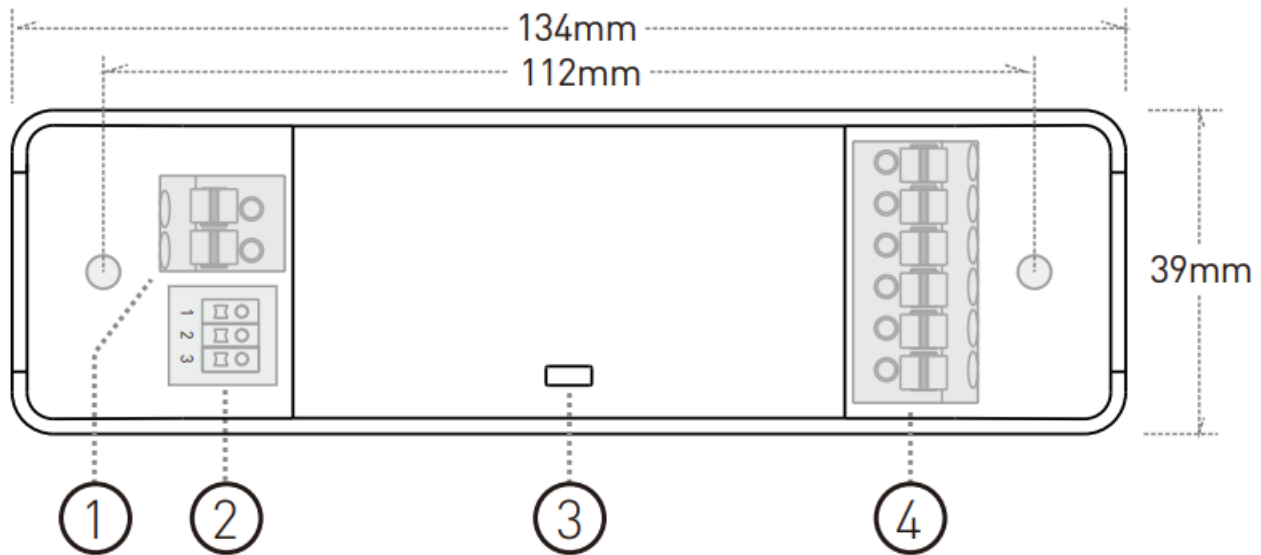


High Power



Tuya Smart

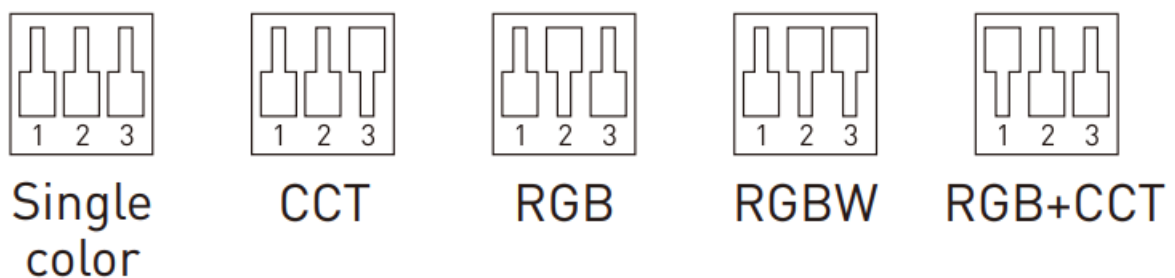
## Function & Size



### Power supply input

Connect to power supply. The controller can accept supply voltage from DC 12V to 24V, the maximum cable 2 gauge is AWG12 or 2.5mm . The controller's output voltage is at same level as the power input voltage, please make sure the power supply voltage is correct and the power is capable for the load wattage. The power input '+' unit is directly connected to the output terminal '+' unit inside the controller.

### Function DIP switch



The controller can be set to different function from single color to RGB+CCT. To change the controller function, please set the DIP switch to corresponding position as following picture when power supply is off.

### Work status indicator

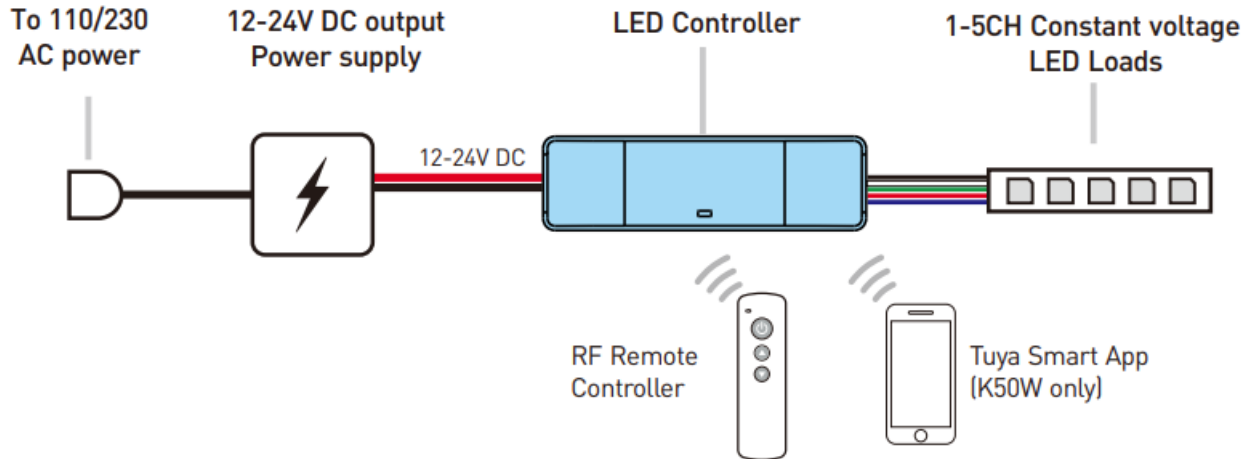
This indicator shows all working status of the controller. It displays different events as follows:

- **Steady green:** Ready(K50) / Tuya smart ready (K50W).
- **Steady yellow:** Tuya not connected(K50W).
- **Short blink:** New command received.
- **Long single blink:** Edge of the content or scene saved.
- **Blink for 3 times:** Remote paired or restored to factory default.
- **Red flash:** Overload protection.
- **Yellow flash:** Overheat protection.

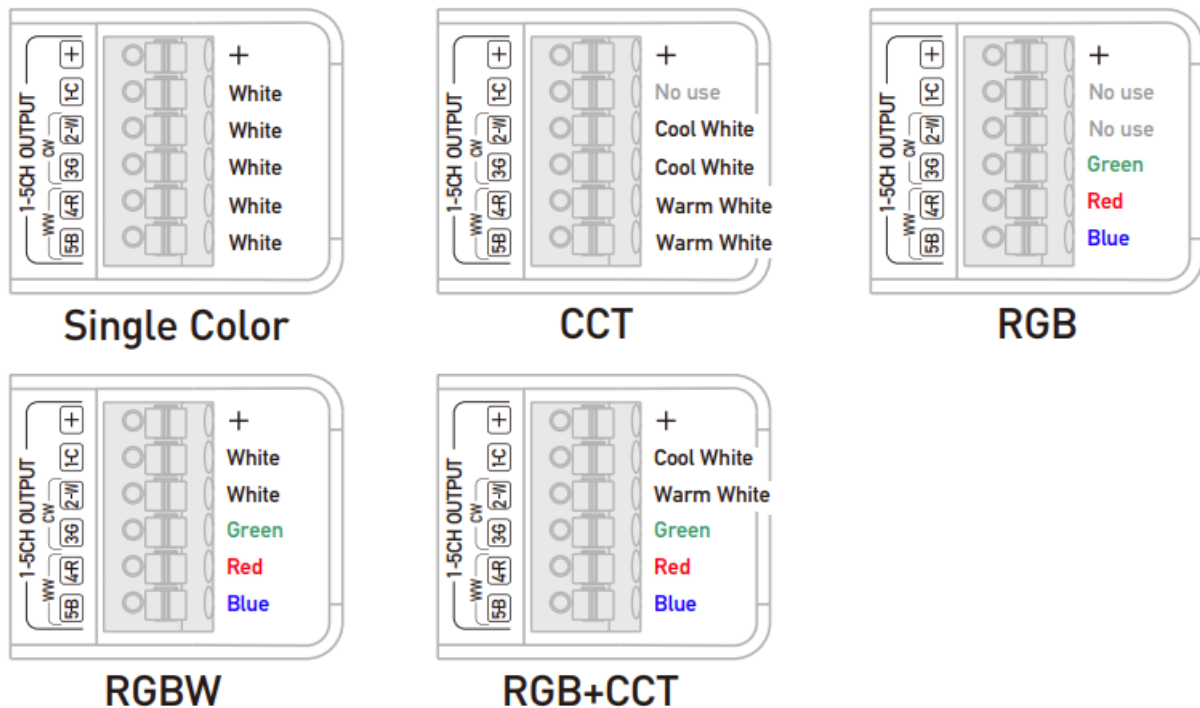
### LED output

Connect to LED loads. The LED loads must be constant voltage driving type and compatible with PWM modulation. For multi-channel models, the LED connection need to be common anode. Please make sure the LED rated voltage is same as the power supply and each channel's maximum load current is in range of the controller's rated current.

## Wiring



- Please connect the controller output to LED loads and power supply to the controller power input. The power supply voltage must be same as the LED load's rated voltage. Check all cables to be well connected and insulated before power on.



- This model supports 1-5 channel application from single color to RGB+CCT, please refer to following diagram for multiple application output wiring.

## Operation

### Pairing remote controllers

The controller can be paired with compatible RF remote controller for remote operation. To pair or unpair the

remote controller, user needs to connect and disconnect the power of controller and press specific combo keys on the remote controller. Each controller can be paired up to 5 remote controllers. Please refer to the remote controller's user's manual for detailed operation.

### **Control by smartphone (K50W only)**

- For K50W model, user can also control the controller by the Tuya app. The working status displayed on app will be synchronized with the remote control operation for static color and brightness.
- Before connecting to smartphone, please make sure the controller is at factory default mode and not connected to any other smart device.

### **Advanced features**

#### **Force turning on**

The controller will restore to the last on/off status on each power on as default. To force turning on the controller at OFF status, user can connect and disconnect the power of the controller for 3 times in a short time. After this operation, the controller will be reset to ON status.

#### **Protection feature**

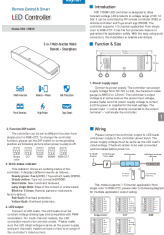
The controller has full protection function against wrong wiring, load short circuit, overload and overheat. The controller will stop working and the indicator will flash with red / yellow color to indicate the malfunction. The controller will try to recover from protection status in a short time when the working condition is good. For protection issues, please check the situation with different indicator information:

- **Red flash:** Check the output cables and load, make sure no short circuit and the load current is in rated range. Also the load must be constant voltage type.
- **Yellow flash:** Check the installation environment, make sure in a rated temperature range and with good ventilation or heat dissipation condition.

### **Specification**

Working mode	Single color	CCT	RGB	RGBW	RGB+CCT
Working voltage	DC 12-24V				
Rated output current	Max 8A for each channel, total max 24A				
Smart control	K50W only, via Tuya wifi				
Communication distance	>20 meters at open area				
Output mode	PWM constant voltage				
Remote frequency	433.92MHz				
Output PWM frequency	1KHz				
Dynamic effects	8	NA	42	42	42
Overload protection	Yes				
Overheat protection	Yes				
Working temperature	-20°C~+55°C				
Dimension	134x39x24mm				

## Documents / Resources

	<p><a href="#">Rayrun K50 LED Controller</a> [pdf] Instructions K50 LED Controller, K50, LED Controller, Controller</p>
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