
Controller Introduction

MINI series wireless-sync-control led controller for light with RFBK remote

Controller adopts the most advanced PWM (Pulse Width Modulation) digital control technology, it is used for controlling constant voltage LED lamps. For instance, point source of light, flexible light strip, led modules, led strings and so on; Receiver items are for RGB , remote control adapts RFBK remote the same one for all types, and available for mixed control.

Basic Operation Introduction

(Button Functions On The Third Page)

1. Code clearing: within 1 minute of turning on the light, press and hold "OFF" for 5 seconds, the indicator light flashes quickly, and code clearing begins. (Automatically exit after 60 seconds or press any button to exit) (The coded lights can only be coded again after clearing the code)
2. Code pairing: within 1 minute of turning on the light, press and hold "ON" for 5 seconds, the indicator light flashes quickly, and code pairing starts. After the indicator light flashes 3 times, it returns to the initial state, indicating that the code matching is successful.
3. Within 1 minute: The light can only be coded and cleared within 1 minute after it is turned on. It is more stable to prevent interference from other remote controllers later. Uncoded lights can be controlled by all remote controls, and paired remote controls can only be controlled by the corresponding remote control.
4. Grouping: "Zone" can divide multiple lights into different groups when pairing codes, and control the codes separately. The Zone indicator light is on to indicate the currently controlled group. After a long press for 2 seconds, the Zone indicator lights up, indicating that all groups are selected for unified control.
5. Dynamic mode: "Mode" selects 8 dynamic modes of lighting. At this time, you can only adjust the speed but not the brightness.
6. "Color ring" adopts new touch technology, which can be touched into corresponding colors.
7. Static mode: "White hot key" selects the static mode of white light, "-" and "+" are used to select 6 different colors. You can also touch the "Color ring" to directly change to the corresponding color.
8. Brightness and speed: "B-" and "B+" can adjust the brightness of the light in static mode, and "S-" and "S+" are used to adjust the speed of light change in dynamic mode.
9. Transmission and synchronization: The measured control distance of the remote control is 20m. The measured distance of signal transmission between lamp and lamp is 10m. In dynamic mode, if the light changes are not the same, the lights within 10m of each other will transmit and receive signals. Generally, it can be fully synchronized within ten seconds.

Attention: Due to the complexity of the installation environment, in order to get a better control effect, we recommend that the distance between the remote control and the light should not exceed 10m, and the distance between the lamp and the lamp should not exceed 2m. At the same time, in addition to the three buttons "OFF", "ON", and "Zone", please press and hold the other buttons to emit continuous signals to prevent some lights from not receiving signals in time and affecting the control effect.

If you have any questions, please contact us immediately and we will send professional people to solve your problem in time. Please rest assured~

Detailed Introduction

1、Product Features

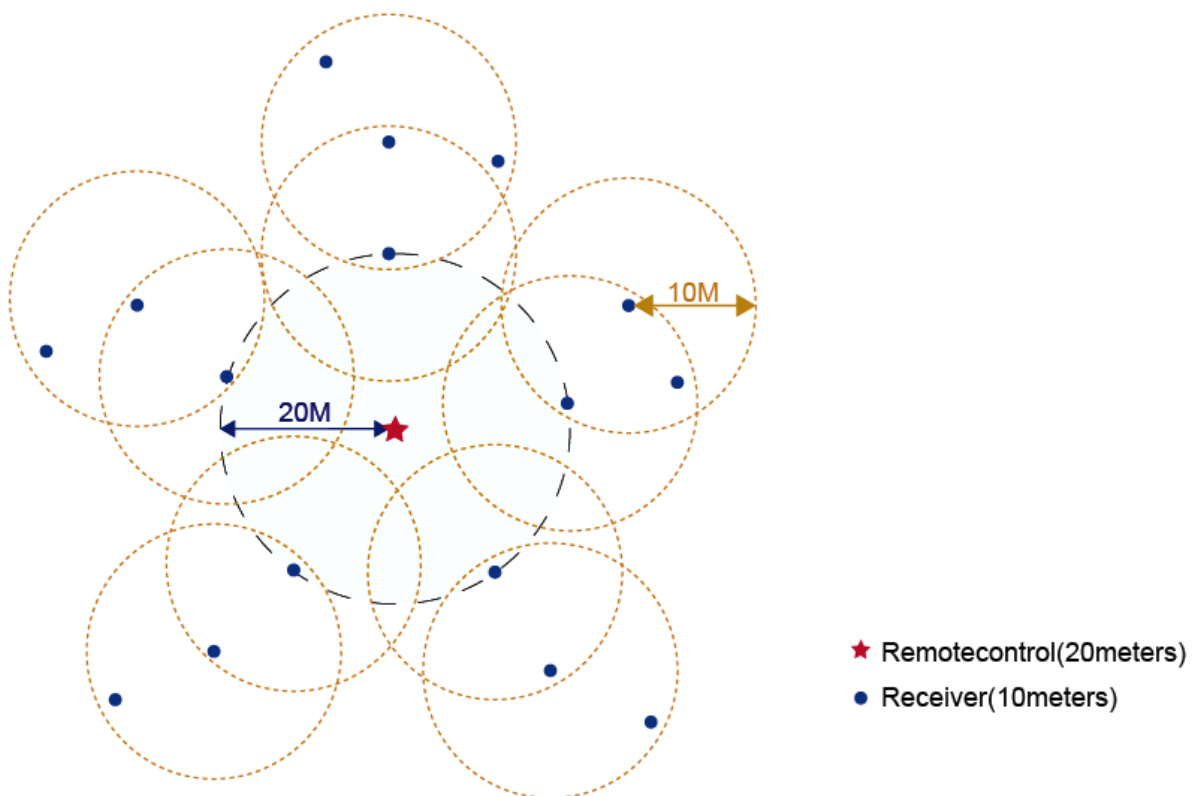
- Designed for RGB constant voltage LED lights.
- DC12-24V, output current: 3chs*2A.
- Adopts RF remote control, no need line-of-sight. 4 zones separately control or all-control.
- Wireless-sync-control in both static color and dynamic modes, unlimited by remote control distance.
- Batch-operation is available for RF code matching/clearing between remote control and receivers.
- Memory function, each time power-on reserve the mode which stop in the last power-off.
- Perfect control effect, including 1024 static colors and soft dim function.
- The brightness of static color is adjustable, 1024 levels in total; the speed of dynamic changes is adjustable, 100 levels in total.
- Long-press the brightness and speed key can get the fast adjustment, convenient for operation.
- Also adopts Button function for switch on/off and change color.
- Warranty of this product is three years, exclude the artificial situation of damaged or overload working.

2、Technical Parameters

Working temperature	-20-60℃	Supply voltage	DC12V-24V
Static power consumption	<1W	Connecting mode	Common anode
Grayscale	1024 levels	Speed stage	1024 levels
External dimension	L48*W26*H13 mm	Packing size	L100*W65*H40mm
Net weight	20g	Gross weight	40g
RF frequency	2.4GHz	RF distance	≤20m
Output color order settable	Yes, RGB/RGBW	Memory function	Yes
Output	Depends on DIM: 1 CH CCT: 2 CHs RGB: 3 CHs RGBW: 4 CHs	Output current	≤6A(total) DIM:1*6A CCT: 2*3A RGB: 3*2A RGBW: 4*1.5A
PWM frequency	1.95KHz	Max. Output power	12V:<72W, 24V:<144W

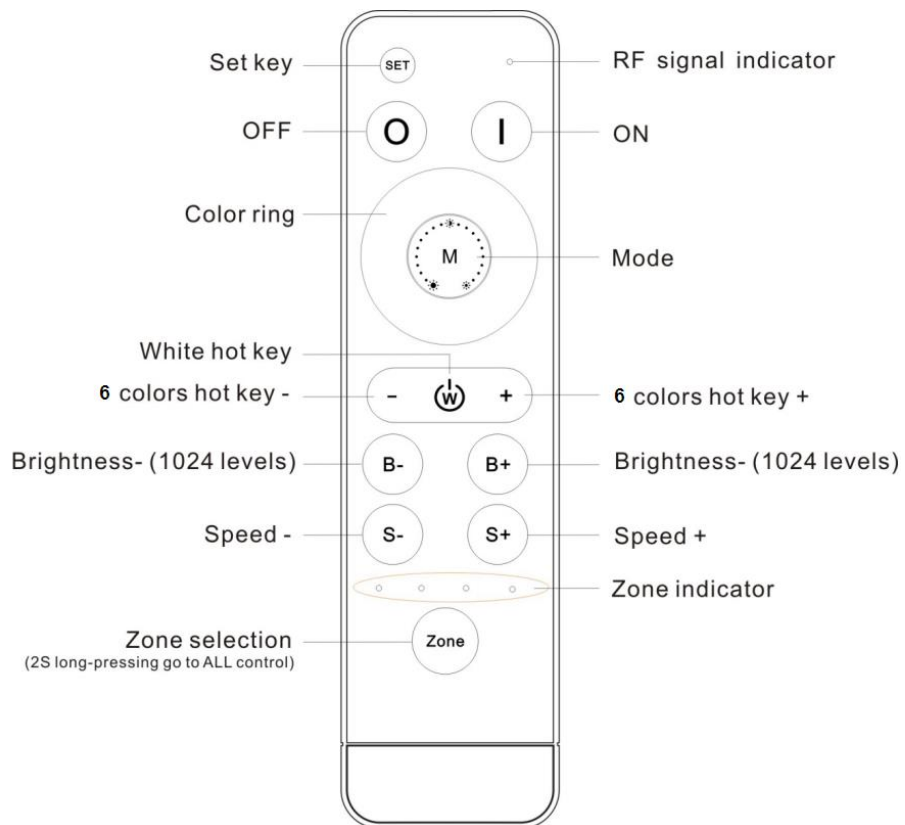
3、Wireless-synchronization function

Receivers will transmit the control signals from the remote control and self-inspection the work statues for each other, so multiple receivers in same zone will wireless-sync-work completely, not only static mode but also dynamic mode, to achieve wired-like operation experience.



4、RF remote button functions

1 color ring and 12 buttons in total, the function of buttons are shown as below:



Name	Description
SET	Nonfunctional
I	Turn on
O	Turn off
Color ring	Static color options, 64 colors in total.
M	Dynamic modes, 8 modes in total.
Ⓢ	White color hot key
—	6 static colors (cyan, purple, yellow, blue, green, red)
+	6 static colors (red, green, blue, yellow, purple, cyan)
B-	Brightness – for static colors by 1024 levels. Long-press can get fast adjusting.
B+	Brightness + for static colors by 1024 levels. Long-press can get fast adjusting.
S-	Speed down for dynamic mode (100 levels). Long-press can get fast adjusting.
S+	Speed up for dynamic mode (100 levels). Long-press can get fast adjusting.
Zone	Zone selection, 2 seconds long-press get “all-control”.

8 dynamic modes as below:

No	Patterns	Remarks	No	Patterns	Remarks
1	White breathe	Speed is adjustable, brightness is unadjustable	5	7 color fade	Speed is adjustable, brightness is unadjustable
2	3 color jumpy		6	R/G cross fade	
3	7 color jumpy		7	R/B cross fade	
4	3 color fade		8	G/B cross fade	

About RF code.

The biggest advantage of this system is that it can not only solve the cabling problem in engineering wirelessly, but also realize a wired-like operation experience. In order to facilitate the early testing and debugging of the project, the factory status of the receiver is normally unpaired and each remote controller has a unique code value. The user should perform the matching work of the remote controller and the receiver during the installation of the project to avoid the mutual influence of the radio frequency remote control technology during the later use.

Please pay attention to the following 3 points before operation:

1) All equipment in the complete system after installation should have a unified and unique code value, so as to achieve the security and stability of the system.

2) The receiver can only store one code value and cannot be overwritten. Before learning the new code value, it is necessary to clear the original code of the receiver; the remote controller can only save one code value but can be overwritten and can also restore the factory settings. In order to facilitate the later maintenance, the three components that may be involved in the system (including receivers, handheld remote controllers, and panel remote controllers) can realize mutual learning of code values.

3) Since the receiver performs code value learning in the power-on state, batch-operation is available **(power-one the all receivers which will be in same zone, and operate the matching/clearing the RF code all of them at the same time)**. And in order to avoid confusion in the area, it is recommended that each area has an independent power switch so that the power of other areas can be easily cut off when the code is being operated.

(1) Code pairing operation: means that the receiver will only be controlled by the value code remote controller.

Step	Operation	Instructions
1	Connecting the load to the receiver and power on it.	1.It is necessary to clear the code first, if the receiver was coded before. 2.Batch operation can be performed within the remote control range.
2	Select area	Select the area with the "Zone" key and the corresponding indicator lights up
3	Press and hold "ON" on the remote control for 5 seconds, the indicator of the remote control will flash quickly, means it enters the pairing code transmission status.	Will automatically exit code transmission status after 60 seconds, or pressing any key to exit.
4	See the load light flashes 3 times and return to the initial state	Pairing coding is finished successfully

(2) Code clearing operation: means that the original code value of the receiver will be cleared and returned to the factory state. Then it can be controlled by any compatible remote controller, and can learn to a new code.

Step	Operation	Instructions
1	Connecting the load to the receiver and power on it.	1. The clearing operation should be finished within 1 minute after the receiver is powered on. If exceeds the time, can be powered on again. 2. Batch operation can be performed within the remote control range.
2	Press and hold the remote control "Off" for 5 seconds. The indicator of the remote control flashes quickly, means it enters the clearing code transmission status. There is no need to select the corresponding area when clearing code.	1. Will automatically exit code transmission status after 60 seconds, or pressing any key to exit. 2. If the original remote controller is lost, the new remote controller can be used for clearing operations.
3	See the load light flashes 3 times and return to the initial state	Clearing coding is finished successfully

(3)Code learning operation between remote controls: Used to unify system code values or copy a new remote controls.

Since each remote controller has its own unique code at the time of delivery, when there are multiple remote controllers in one system, one of them (for example, remote controller A) must be selected as the system code value, and the code value of the rest remote controllers (for example, remote controller B) should be copied to the same one.

Step	Operation	Instructions
1	A remote control: Press and hold "ON" on the remote control for 5 seconds, the indicator of the remote control will flash quickly, means it enters the pairing code transmission status.	Will automatically exit code transmission status after 60 seconds, or pressing any key to exit.
2	B remote control: long press "mode key" for 5 seconds, the remote indicator light changes from 100% light to off then flash, means entering the code value receiving state	Will automatically exit the code value receiving state after 30 seconds, or exit after learning the code value successfully.
3	see the B remote control indicator light flash 3 times	Code copying is finished and exit code value receiving status.

(4) Copying code from receiver to remote control.

A new remote control can also copy code from any one of the receivers in the whole system, after the successful operation, the new remote control can replace the original remote (if it is lost).

Step	Operation	Instructions
1	Cut off the power of receiver.	Which one will be controlled by remote.
2	Long-press "mode key" for 5 seconds, the remote indicator light changes from 100% light to off, means entering the code value receiving state.	Will automatically exit the code value receiving state after 30 seconds, or exit after learning the code value successfully.
3	Power on the receiver, will see remote control indicator light flash 3 times.	Code copying is finished and exit code value receiving status.

* For security of the system, the distance from remote control to the one receiver should be less than 2 meters in this operation.

* Only one time operation is requested for the whole system, no need different operation for different zones.

(5)The remote controller restores the factory setting: it means that the remote controller will be restored to the factory's unique code value.

Step	Operation	Instructions
1	Long press "mode " for 20 seconds	The remote indicator light dim down and flashes continuously until the 20th second and then back to 100% light. Means this step is finished.
2	Press the "OFF" to confirm, the remote indicator light flashes 3 times	Restore factory settings successfully.

About installation of remote control's bracket:

1.Accessories include: bracket 1pc, 3M foam sponge glue 1pc, screw 2pcs, expansion tube 2pc.

2. There are 2 options for bracket installation:

- 1) Using screw and expansion tube make drilling installation (suitable for uneven and ash surface);
- 2) Using 3M foam sponge glue make free drilling installation (suitable for flat no ash surface).

Product information for placing order

Product name	Item number
MINI series wireless-sync-control led controller	Receiver: Underwater Boat Light Remote control: HX-RFBK-RGB-2.4G

FCC Statement

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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.a
- 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.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.