INTELLECT LED

4 in 1 2.4GHz wireless-sync-control RF remote controller-DIM/CCT/RGB/RGBW

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; It belongs to low-voltage DC power input and output with five interfaces, including V+ is extremely common interfaces, the other four for the 4 channels output control interface. Meanwhile, you could adjust brightness, static color choices and various dynamic changes in lighting effects through RF remote control. Especially, it is integrated 4 optional programs for different color type LEDs, contains single color/CW+WW/RGB/RGBW. It means only one item stock for 4 types applications.

Product Features

- Designed as 4 in 1 controller for DIM/CCT/RGB/RGBW constant voltage LED lights.
- DC12-24V, four channels output, Max. load current: 4CH*6A; Max. load power: 288W/12V; 576W/24V.
- Adopts RF remote control, no need line-of-sight. Control range up to 20 meters.
- Wireless-sync-control in both static color and dynamic modes, unlimited by remote control distance.
- Memory function, each time power-on reserve the mode which stop in the last power-off.
- Perfect control effect, including 1024 static colors(RGB/RGBW) 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.
- Short circuit protection.
- Warranty of this product is three years, exclude the artificial situation of damaged or overload working.

Technical Parameters

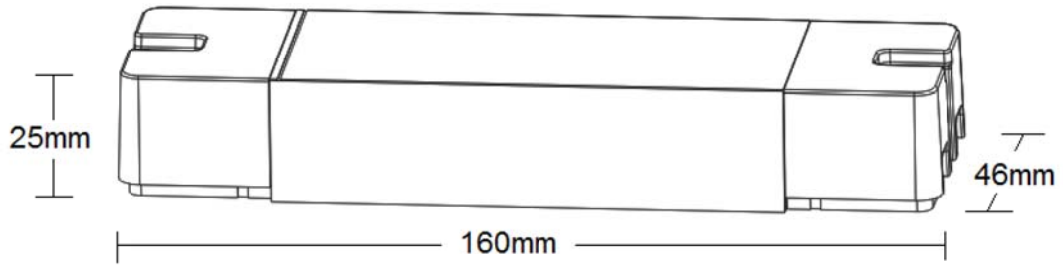
Controller

Working temperature	-20-60℃	Supply voltage	DC12V-24V
Static power consumption	<1W	Connecting mode	Common anode
Grayscale	1024levels	Speed stage	1024 grade
External dimension	L160*W46*H25 mm	Packing size	L170*W50*H29mm
Net weight	100g	Gross weight	130g
RF frequency	2.4GHz	RF distance	≤20m
Short circuit protection	Yes	Memory function	Yes
Output	4 channels	Output current	≤6A(each channel)
PWM frequency	1.95KHz	Max. Output power	12V:<288W, 24V:<576W

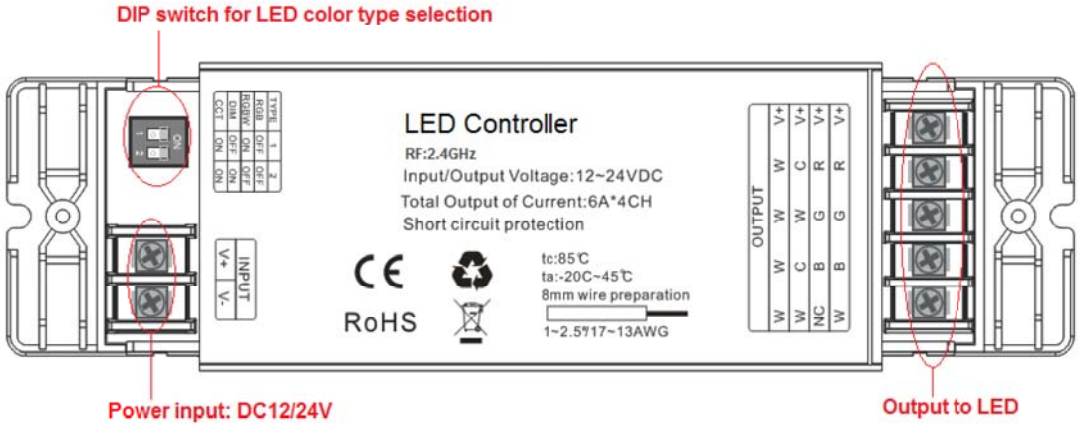
Remote control

Working temperature	-20℃~60℃	Supply voltage	DC3V（AAA*2）
Standby current	<25uA	Working current	<20mA
Standby power	<75uW	Working power	<60mW
Net weight	95g	RF frequency	2.4GHz
External dimension	L150*W40*H20 mm	RF distance	≤20m

Dimensions



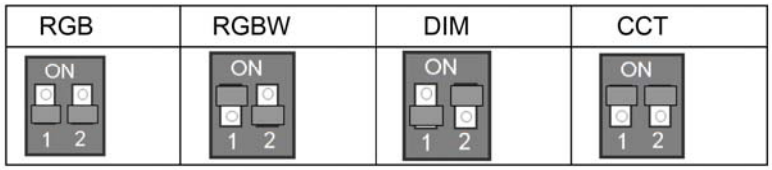
Interface Specifications



Direction for use

Step 1: Connect the load wire at first, followed by the power wire, please ensure short circuit can not occur between wires before turning on the power;

Step 2: Setting the type of output as blow, please ensure the DIP switch in correct state according to the loading LED's type:



(DIP switch & output type)

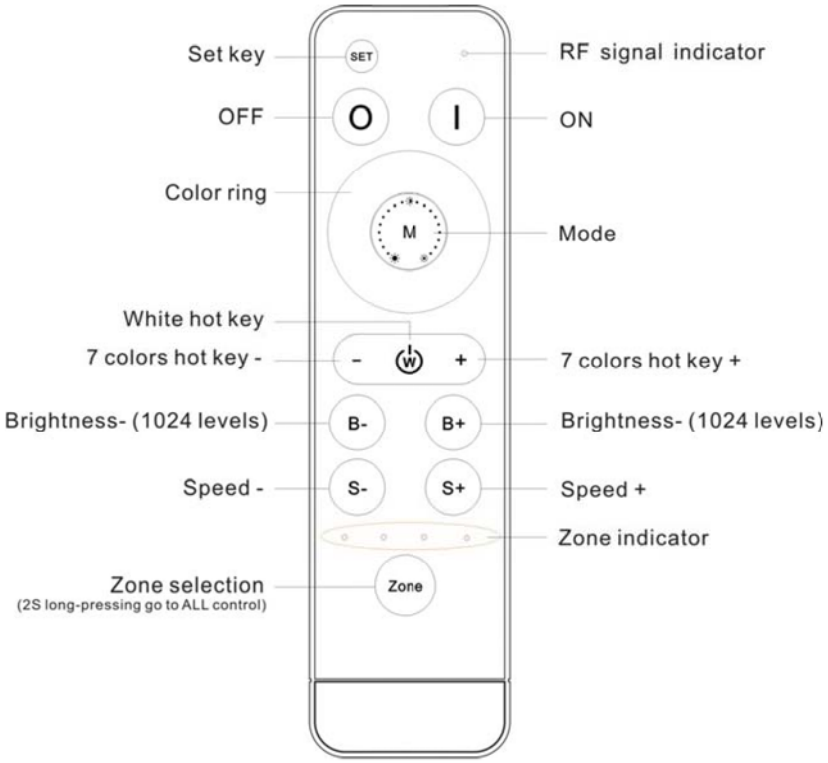
Step 3: Matching the code with remote. The receiver can not be controlled by remote control before this step. Matching code operation will set correct program in remote control according to receiver's output type and also achieve unique-control. Please read "About RF code" part for operation instruction.

(Tips: Please ensure to set output type before matching RF code, or will be asked for re-matching operation)

RF remote button functions

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

Type 1: RGB

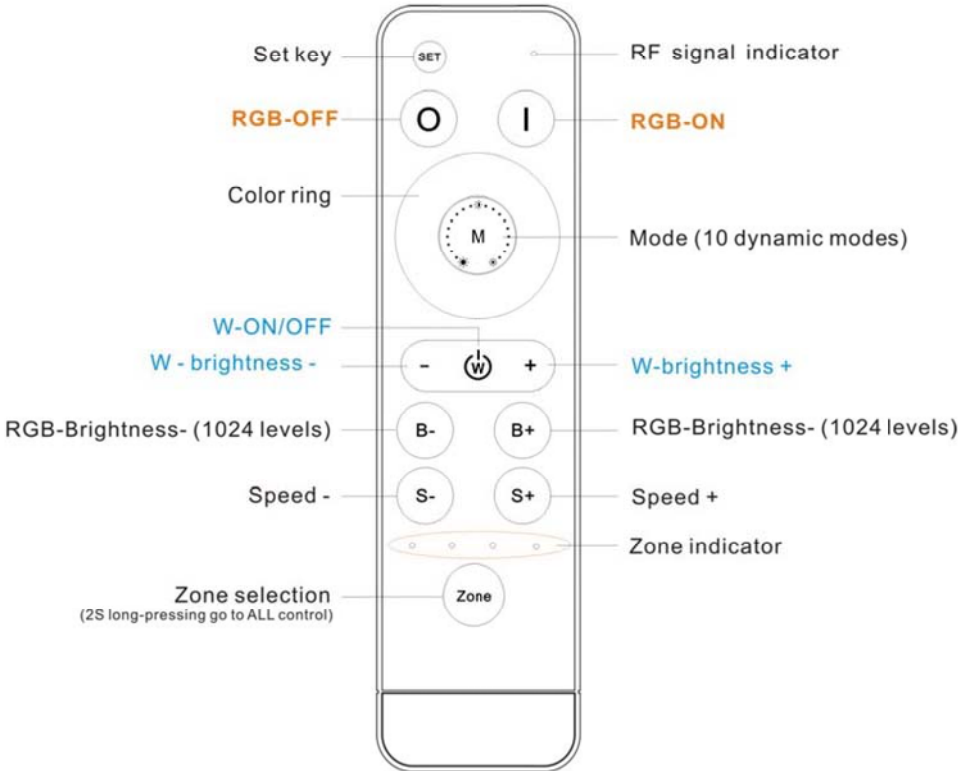


Name	Description
SET	Nonfunctional
I	Turn on
O	Turn off
Color ring	Static color options, 64 colors in total.
M	Dynamic modes, 8 modes in total.
⏻	White color hot key
−	6 static colors (cyan, purple, yellow, blue, green, red)
+	6 static colors (red, green, blue, yellow, purple, cyan)
B-	Brightness – for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

Type 2: RGBW

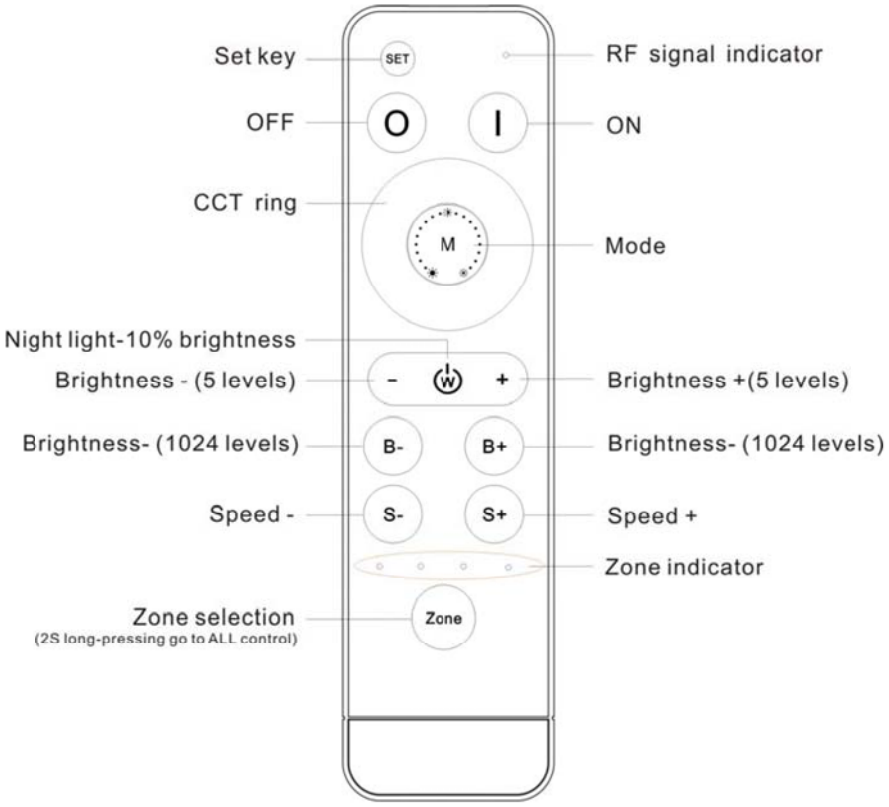


Name	Description
SET	Nonfunctional
I	RGB channels-Turn on
O	RGB channels-Turn off
Color ring	Static color options, 64 colors in total.
M	Dynamic modes, 8 modes in total.
⏻	W channel-Turn ON/OFF
−	W channel- brightness -, 1024 levels, long-press can get fast adjusting.
+	W channel- brightness +, 1024 levels, long-press can get fast adjusting.
B-	Brightness – for RGB static colors by 1024 levels. Long-press can get fast adjusting.
B+	Brightness + for RGB static colors by 1024 levels. Long-press can get fast adjusting.
S-	Speed up for dynamic mode (100 levels). Long-press can get fast adjusting.
S+	Speed down 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	

Type 3: CW+WW

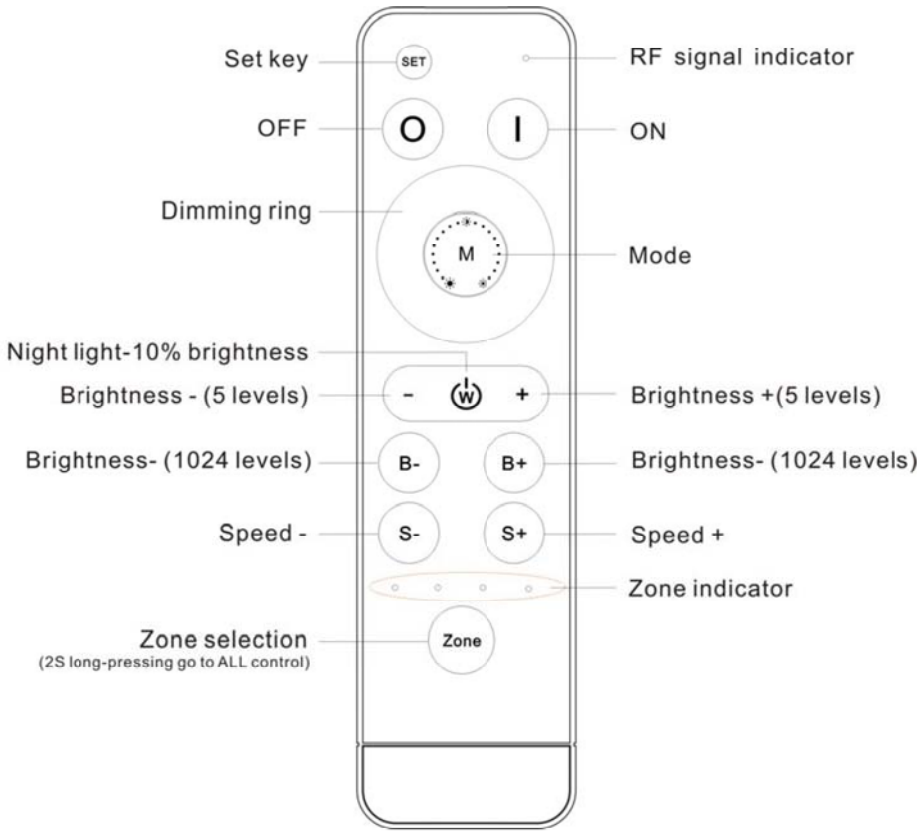


Name	Description
SET	Nonfunctional
I	Turn on
O	Turn off
CCT ring	Corresponding full range color temperature of the tunable LED from 100%CW to 100%WW.
M	4 modes in total: all flash, 2 color flash, all fade, 2 color fade.
⏻	10% night light hot key
−	Brightness – by 5 levels (10%, 30%, 50%, 70%, 100%)
+	Brightness + by 5 levels (10%, 30%, 50%, 70%, 100%)
B-	Brightness – by 1024 levels. Long-press can get fast adjusting.
B+	Brightness + by 1024 levels. Long-press can get fast adjusting.
S-	Speed up for dynamic mode (100 levels). Long-press can get fast adjusting.
S+	Speed down for dynamic mode (100 levels). Long-press can get fast adjusting.
Zone	Zone selection, 2 seconds long-press get “all-control”.

4 dynamic modes as below:

NO	Patterns	Remarks
1	CW and WW flash alternately	Speed is adjustable, brightness is unadjustable
2	CW and WW fade alternately	
3	CW and WW flash	
4	CW and WW fade	

Type 4: Single color



Name	Description
SET	Nonfunctional
I	Turn on
O	Turn off
Dimming ring	Dim down brightness by clockwise direction.
M	2 modes in total: flash, fade.
⏻	10% night light hot key
–	Brightness – by 5 levels (10%, 30%, 50%, 70%, 100%)
+	Brightness + by 5 levels (10%, 30%, 50%, 70%, 100%)
B-	Brightness – by 1024 levels. Long-press can get fast adjusting.
B+	Brightness + by 1024 levels. Long-press can get fast adjusting.
S-	Speed up for dynamic mode (100 levels). Long-press can get fast adjusting.
S+	Speed down for dynamic mode (100 levels). Long-press can get fast adjusting.
Zone	Zone selection, 2 seconds long-press get “all-control”.

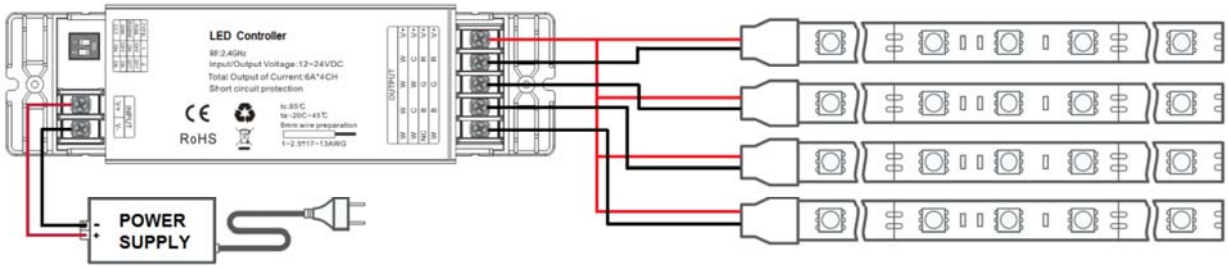
About “all-control”.

All buttons are functional when 4 zones receivers are same output type; Only ON/OFF are available when 4 zones receivers are different.

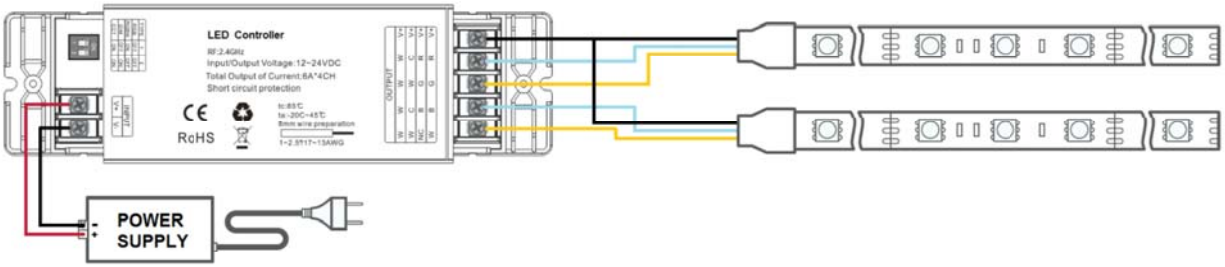
For example: Zone 1 – DIM, Zone 2- CCT, Zone3- RGB, Zone 4- RGB, “All control” function equal “All turn ON/OFF”.

Typical Applications

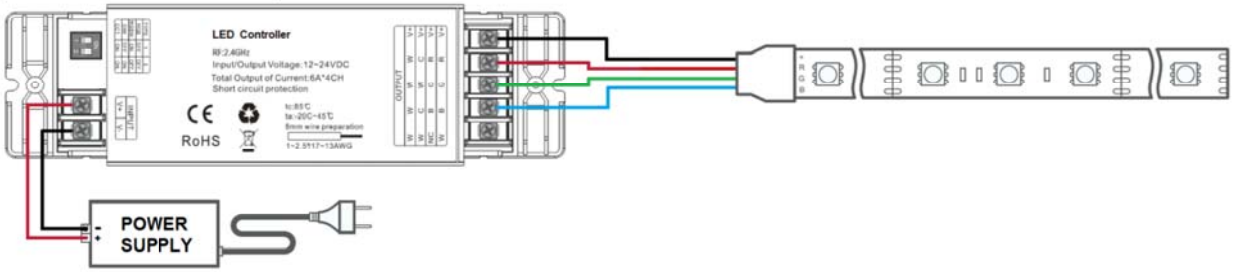
Application Circuit 1: Single color (V+→V+、CH1→GND、CH2→GND、CH3→GND, CH4: GND.)



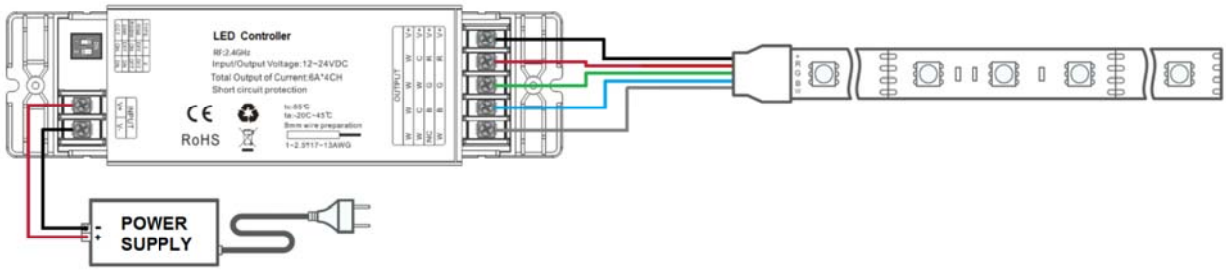
Application Circuit 2: CW+WW(V+→COMMON、CH1→CW、CH2→WW、CH3→CW, CH4: WW.)



Application Circuit 3: RGB (V+→COM、CH1→R、CH2→G、CH3→B, CH4: NC.)



Application Circuit 4: RGBW (V+→COM、CH1→R、CH2→G、CH3→B, CH4: W.)



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, 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	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.
3	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 2 minutes 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.	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

	There is no need to select the corresponding area when clearing code.	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 0%, 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) 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).