

LD4

Waterproof DALI LED Constant Voltage Decoder



The LD4 is a high-performance LED constant-voltage controller with IP67 waterproof rating. It receives standard DALI protocol signals and is compatible with all DALI systems on the market, specifically designed for precise control of LED lighting fixtures. Featuring 4 channels, it delivers a maximum output current of 20A and a maximum output power of 960W, enabling stable operation of various LED constant-voltage fixtures.

Parameters such as DALI address, dimming curve, dimming range, dimming ramp time, color temperature range, power-on status, system failure status, and DALI templates can be quickly configured via the DALI master controller or NFC Lighting app. The DALI address can also be manually set via buttons and displayed on the digital tube. Basic operations like quick switching, dimming, and color adjustment are supported through the button-operated digital tube, balancing intuitive operation with deep customization.

The LD4 flexibly enables dimming, color temperature adjustment, and full-color RGB/RGBW control for diverse lighting needs, integrating 8 DT6/DT8 device types: RGBW, RGB+W, XY+W, RGB, XY, 2*CT (synchronous control), 2*CT (asynchronous control), and 4*W. Device types can be switched via the NFC Lighting app.

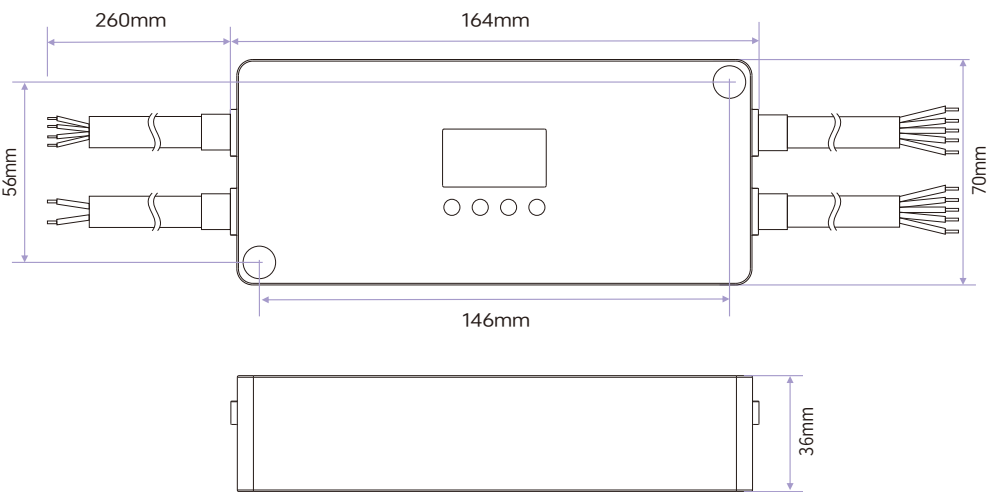
With IP67 waterproofing and stable performance, the LD4 is suitable for diverse indoor and outdoor environments, reliably operating even in humid conditions to deliver efficient, flexible control solutions for lighting systems.

Technical Specifications

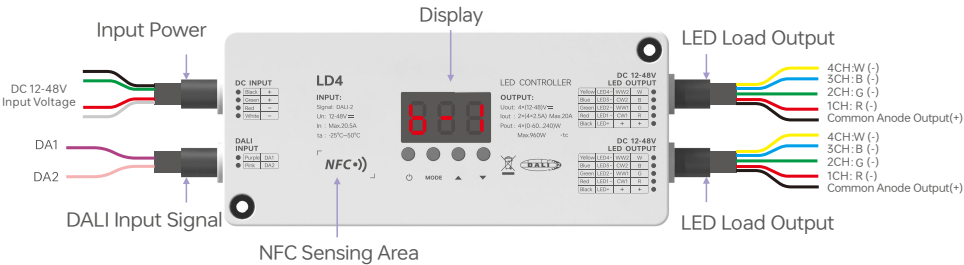
LD4

Input signal:	DALI-2	Operating temperature:	-25°C-50°C
Input Voltage:	12-48V $\equiv$	Product Weight:	670g
Input current:	Max. 20.5A	Product dimensions:	L164×W70×H36mm
Output Voltage:	4×(12-48)V $\equiv$	Package dimensions:	L230×W95×H47mm
Output Current:	2×(4CH×2.5A) Max. 20A	Waterproof rating:	IP67
Output Power:	4CH×(0-60...240)W Max. 960W	Protect:	Short-circuit, over-temperature, and over-current protection with automatic reset capability

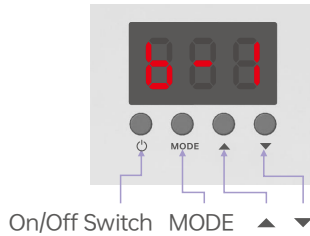
Product Dimensions



Parts Diagram



LED Display:



Key Operation

1.Button-controlled dimming

(1) Power Button: A single short press turns the light on or off.

When the light is on, a short press turns it off. The display will show OFF.

When the light is off, a short press turns it on. The display will show the last setting before it was turned off.

(2) MODE Button: Functions vary based on the device's current dimming interface (default RGBW, configurable via NFC).

W: Permanently in brightness adjustment mode; no action on short press.

CT: Brightness (default)/Color Temperature; short press to toggle.

RGB/XY: Brightness (default)/RGB; short press to toggle.

RGBW/RGB+W/XY+W: Overall brightness (default)/RGB/W, short press to toggle;

After 2 minutes of inactivity, automatically returns to default.

(3) ▲/▼ Keys: When the fixture is on, a single short press cycles through settings. A long press continuously adjusts the current mode. No cycling.

2. Set button DALI address

Press and hold the MODE button to enter DALI address settings (A00-A63).

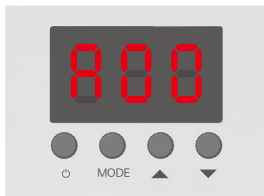
You can press ▲ or ▼ briefly to set the DALI address, or press and hold ▲ or ▼ to set the DALI address quickly.

Notes:

- Press and hold the MODE button or leave the screen idle for 15 seconds to save and exit DALI address settings.
- DALI addresses can be set from 00 to 63.
- By default, the controller has no assigned DALI address, and the display shows "AFF".

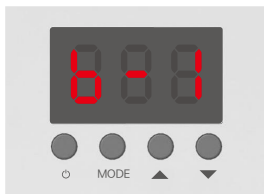
LED Display Interface Diagram

Default Display (DALI Address)



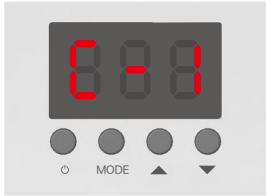
- After 2 minutes of inactivity, the device will automatically return to the default display screen (DALI address).

Brightness Mode



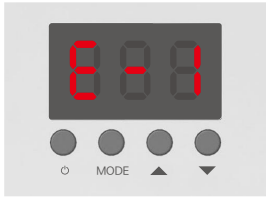
- b-1: 0.1% brightness
- b-2: 5% brightness
- b-3: 10% brightness
- b-4: 25% brightness
- b-5: 50% brightness
- b-6: 75% brightness
- b-7: 100% brightness (Default)
- b-P: When in long-jump adjustment mode or other adjustment methods, the display shows b-P.

CT Mode



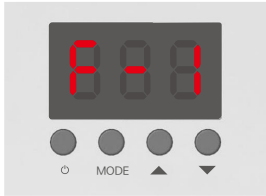
- C-1:2700K
- C-2:3000K
- C-3:4000K(Default)
- C-4:5000K
- C-5:6000K
- C-6:6500K
- C-P:When in long-press adjustment mode or other adjustment methods, the display shows C-P.

RGB Mode



- E-1: Red (default)
- E-2: Green
- E-3: Blue
- E-4: Yellow
- E-5: Purple
- E-6: Cyan
- E-7: White
- E-P:When in long-press adjustment mode or other adjustment methods, the display shows E-P.

W Mode



- F-1: 5% brightness
- F-2: 10% brightness
- F-3: 25% brightness
- F-4: 50% brightness
- F-5: 75% brightness
- F-6: 100% brightness (default)
- F-P: When in long-press adjustment mode or other adjustment methods, the display shows F-P.

Load Parameters

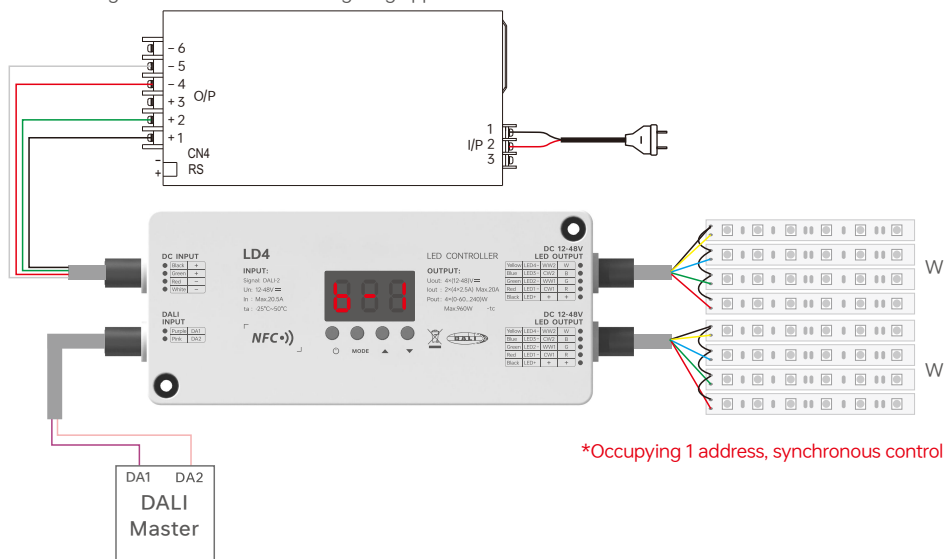
At different PWM frequencies and different voltages, the max. load current and the total power of each channel vary. Before you do the wiring,please strictly follow the load parameters in the table below to operate.

Max. current/ power Voltage	Frequency 300Hz (F=0)	600Hz (F=1)	1.2kHz (F=2)	1.5kHz (F=3)	1.8kHz (F=4)	2.4kHz (F=5)
12V	5A×4CH/240W	5A×4CH/240W	5A×4CH/240W	5A×4CH/240W	5A×4CH/240W	5A×4CH/240W
24V	5A×4CH/480W	5A×4CH/480W	5A×4CH/480W	5A×4CH/480W	5A×4CH/480W	5A×4CH/480W
36V	5A×4CH/720W	5A×4CH/720W	5A×4CH/720W	5A×4CH/720W	5A×4CH/720W	5A×4CH/720W
48V	5A×4CH/960W	5A×4CH/960W	5A×4CH/960W	5A×4CH/960W	5A×4CH/960W	5A×4CH/960W
Max. current/ power Voltage	Frequency 3.6kHz (F=6)	7.2kHz (F=7)	10.8kHz (F=8)	14.4kHz (F=9)	18kHz (F=A)	/
12V	5A×4CH/240W	5A×4CH/240W	4A×4CH/192W	3A×4CH/144W	2.5A×4CH/120W	
24V	5A×4CH/480W	5A×4CH/480W	4A×4CH/384W	3A×4CH/288W	2.5A×4CH/240W	
36V	5A×4CH/720W	5A×4CH/720W	3A×4CH/432W	3A×4CH/432W	2A×4CH/288W	
48V	5A×4CH/960W	4A×4CH/768W	3A×4CH/576W	3A×4CH/576W	2A×4CH/384W	

Connection Diagram

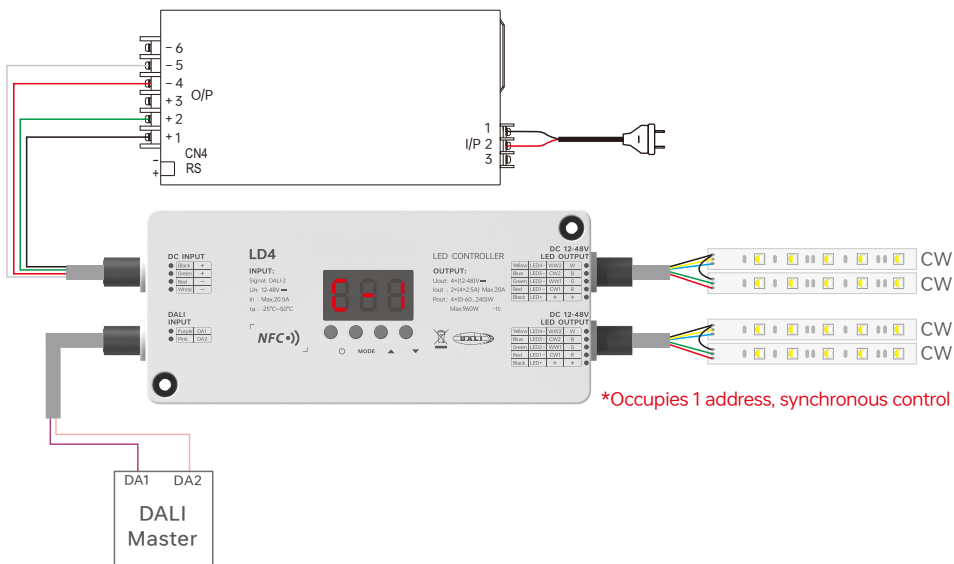
1. Connect 4 dimmable lights simultaneously

Set the dimming mode to 4*W in the NFC lighting app.



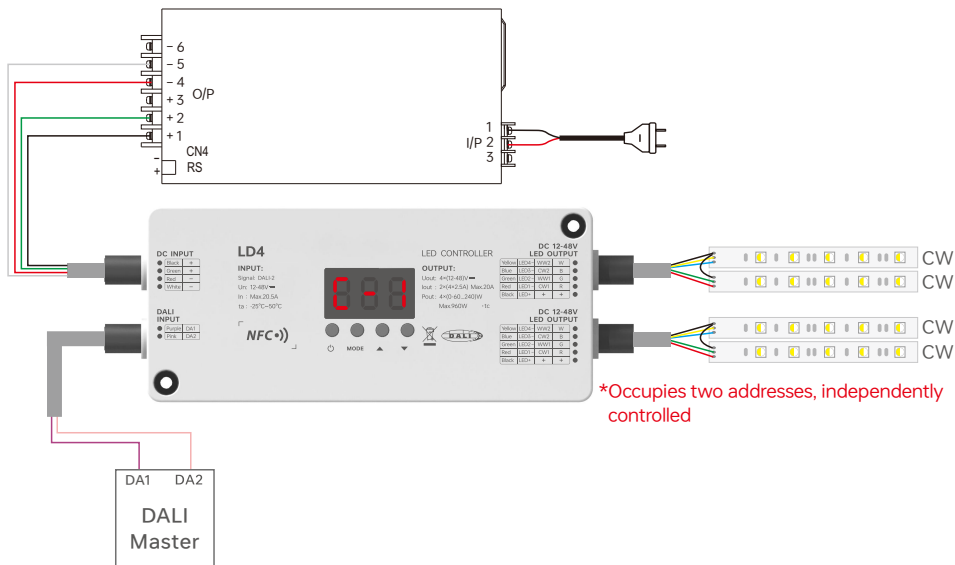
2. Connect two color temperature lamps simultaneously.

Set the dimming mode to 2*CT (DT8 synchronized) in the NFC lighting app.



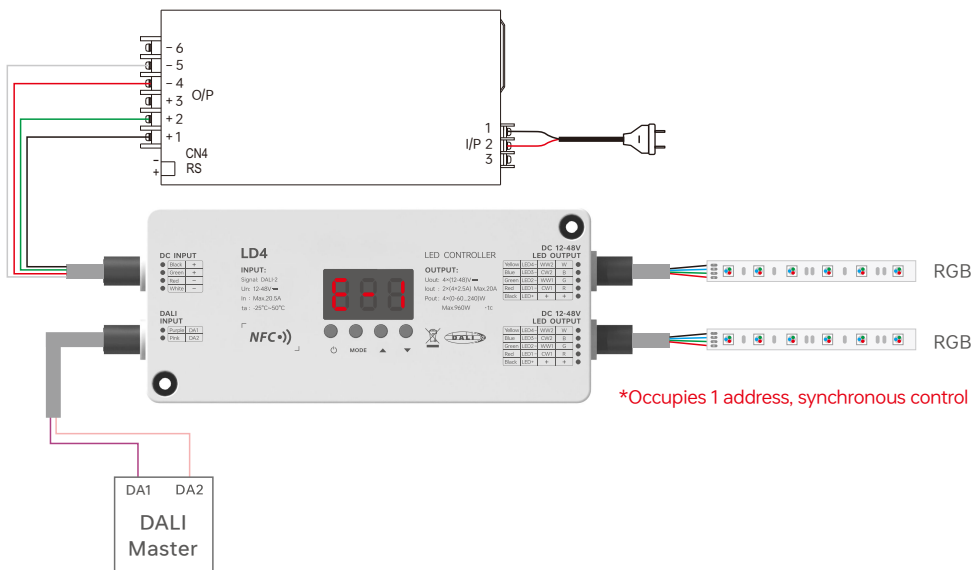
3. Connect 2 independent color temperature lights

Set the dimming mode to 2*CT (DT8 asynchronous) in the NFC lighting app.



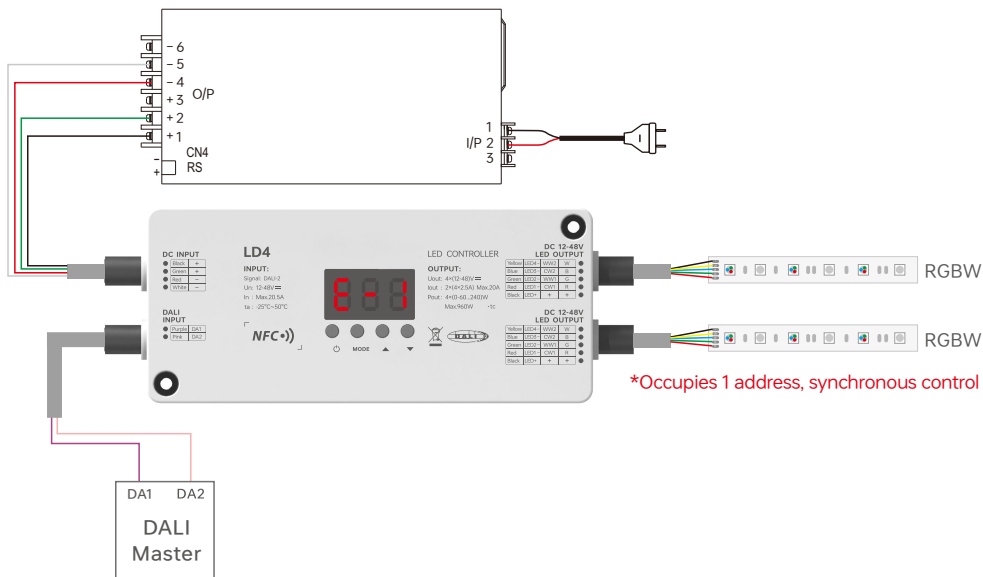
4. Connect 1 RGB light

Set the dimming mode to RGB or XY in the NFC lighting app.



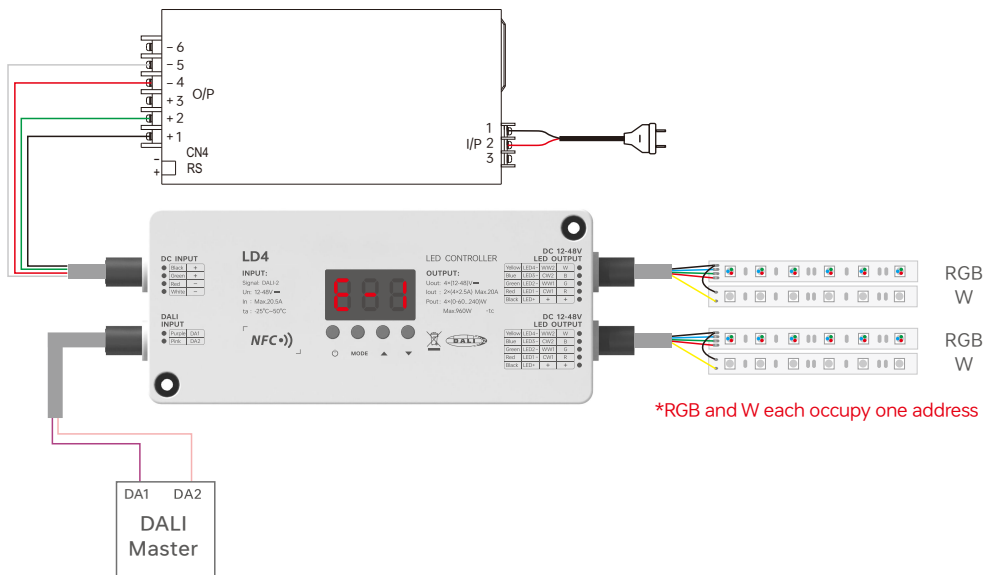
5. Connect 1 RGBW light

Set the dimming mode to RGBW in the NFC lighting app.



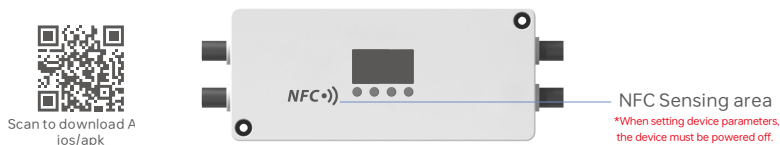
6. Connect 1 set of RGB+W lights

Set the dimming mode to RGB+W or XY+W in the NFC lighting app.



Use the NFC Lighting APP

Scan the QR code below with your mobile phone and follow the prompts to complete the APP installation (According to performance requirements, you need to use a NFC-capable Android phone, or an iPhone 8 and later that are compatible with iOS 13 or higher).



1. Read the LED driver

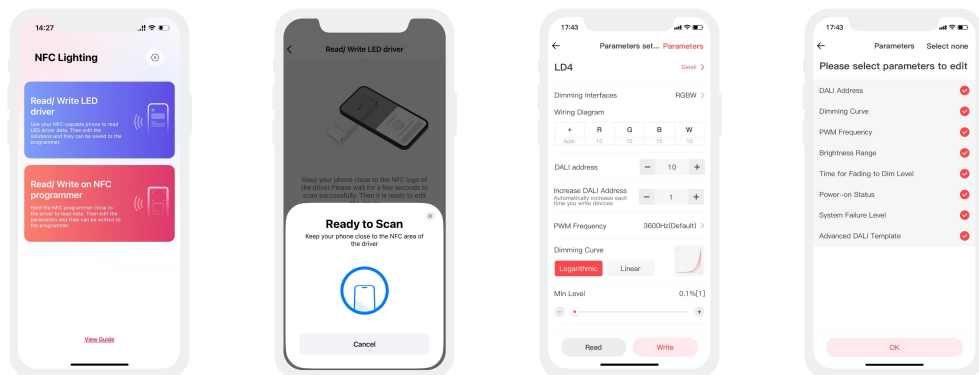
On the APP home page, click **[Read/Write LED driver]** , then keep the programmer's sensing area close to the NFC sensing area to read the driver parameters.

2. Edit parameters

Click **[Parameters]** to edit parameters such as DALI Address, Dimming Curve, PWM Frequency, Brightness Range, Dimming Curve, Time for Fading to Dim Level, Power-on Status, System Failure Level, Advanced DALI Template, and Brightness Range.

3. Write to the driver

After completing the parameter settings, click **[Write]** in the upper right corner, and keep the programmer's sensing area close to the NFC sensing area, so the parameters can be written to the driver.



Transportation and Storage

1. Transportation

Products can be shipped via vehicles, boats and planes.

During transportation, products should be protected from rain and sun. Please avoid severe shock and vibration during the loading and unloading process.

2. Storage

The storage conditions should comply with the Class I Environmental Standards. The products that have been stored for more than six months are recommended to be re-inspected and can be used only after they have been qualified.

Warranty Agreement

- Warranty periods from the date of delivery: 5 years.
- Free repair or replacement services for quality problems are provided within warranty periods.

Warranty exclusions below:

Following conditions are not within the guarantee range of free repairing or replacement services:

- Beyond warranty periods.
 - Any artificial damage caused by high voltage, overload, or improper operations.
 - Products with severe physical damage.
 - Damage caused by natural disasters and force majeure.
 - Warranty labels and barcodes have been damaged.
 - No any contract signed by our company.
1. Repair or replacement provided is the only remedy for customers. Our company is not liable for any incidental or consequential damage unless it is within the law.
 2. Our company has the right to amend or adjust the terms of this warranty, and release in written form shall prevail.

Attention

- Product installation and commissioning should be done by a qualified professional.
 - Our company products are and not lightningproof non-waterproof(special models excepted). Please avoid the sun and rain. When installed outdoors, please ensure they are mounted in a water proof enclosure or in an area equipped with lightning protection devices.
 - Good heat dissipation will prolong the working life of products. Please ensure good ventilation.
 - Please check if the working voltage used complies with the parameter requirements of products.
 - Avoid installation near large metal surfaces, in thunder-prone areas, strong magnetic fields, or high-voltage zones.
 - The diameter of wire used must be able to load the light fixtures you connect and ensure the firm wiring.
 - Before you power on products, please make sure all the wiring is correct in case of incorrect connection that causes damage to light fixtures.
 - If a fault occurs, please do not attempt to fix products by yourself. If you have any question, please contact your suppliers.
- * This manual is subject to changes without further notice. Product functions depend on the goods. Please feel free to contact our official distributors if you have any question.