

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.

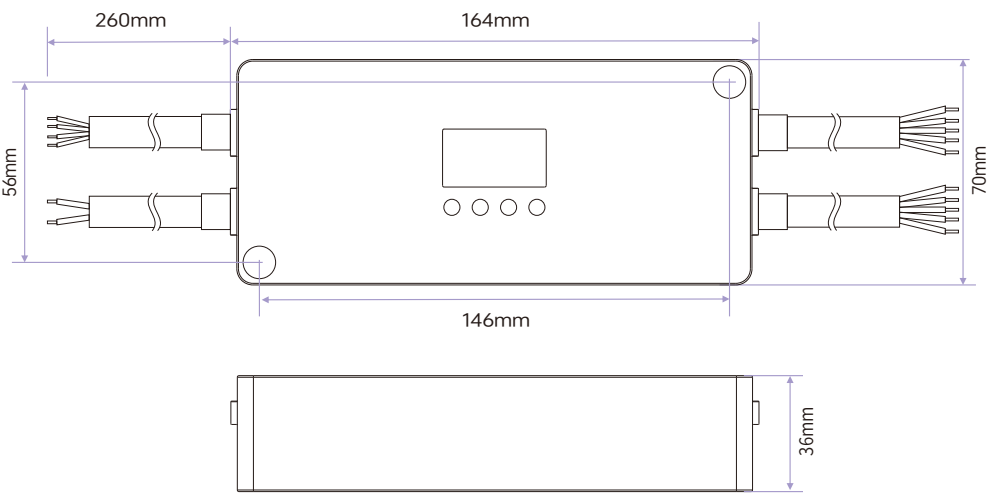
With IP67 waterproofing and stable performance, the LD4 is suitable for diverse indoor and outdoor environments, reliably operating even in humid conditions to deliver efficient, flexible control solutions for lighting systems.

Technical Specifications

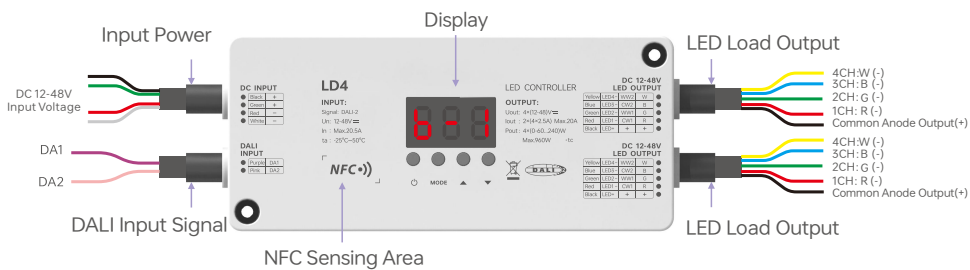
LD4

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

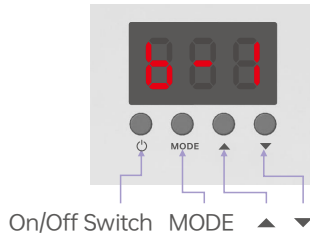
Product Dimensions



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).

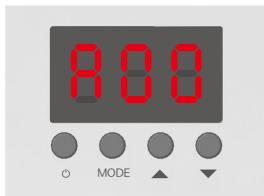
You can press ▲ or ▼ briefly to set the DALI address, or press and hold ▲ or ▼ to set the DALI address quickly.

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".

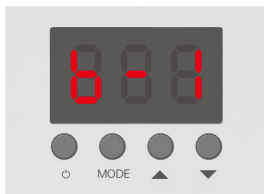
LED Display Interface Diagram

Default Display (DALI Address)



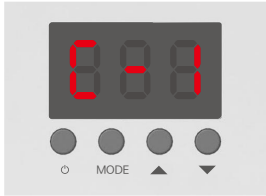
- After 2 minutes of inactivity, the device will automatically return to the default display screen (DALI address).

Brightness Mode



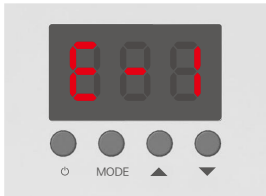
- b-1: 0.1% brightness
- b-2: 5% brightness
- b-3: 10% brightness
- b-4: 25% brightness
- b-5: 50% brightness
- b-6: 75% brightness
- b-7: 100% brightness (Default)
- b-P: When in long-jump adjustment mode or other adjustment methods, the display shows b-P.

CT Mode



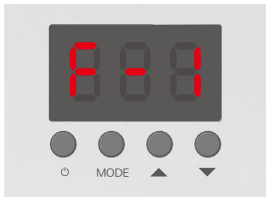
- C-1:2700K
- C-2:3000K
- C-3:4000K(Default)
- C-4:5000K
- C-5:6000K
- C-6:6500K
- C-P:When in long-press adjustment mode or other adjustment methods, the display shows C-P.

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

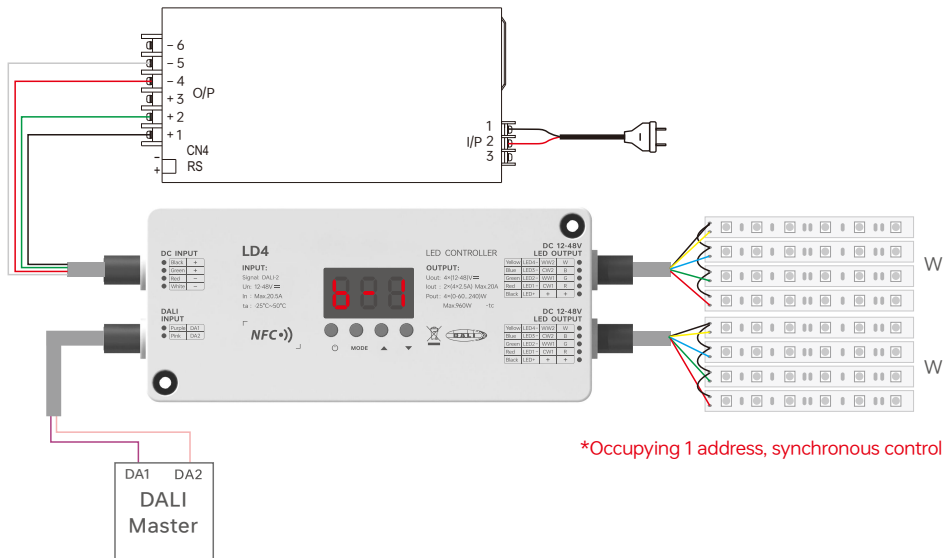
At different PWM frequencies and different voltages, the max. load current and the total power of each channel vary. Before you do the wiring,please strictly follow the load parameters in the table below to operate.

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

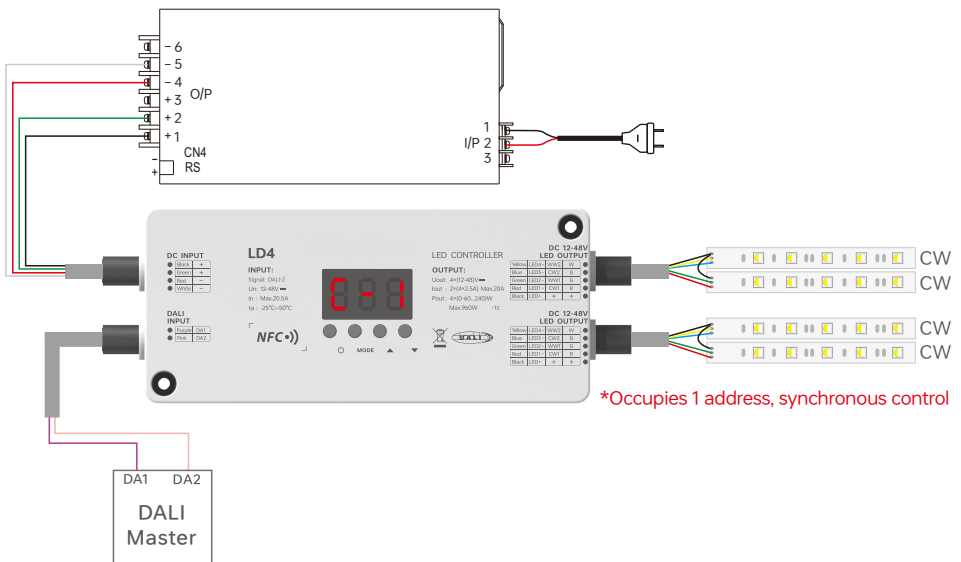
1. Connect 4 dimmable lights simultaneously

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



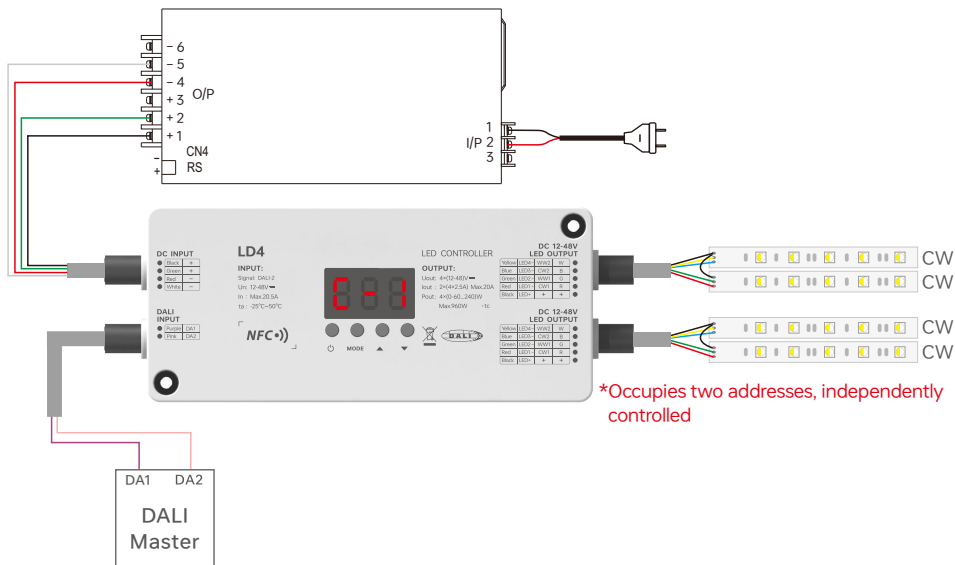
2. Connect two color temperature lamps simultaneously.

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



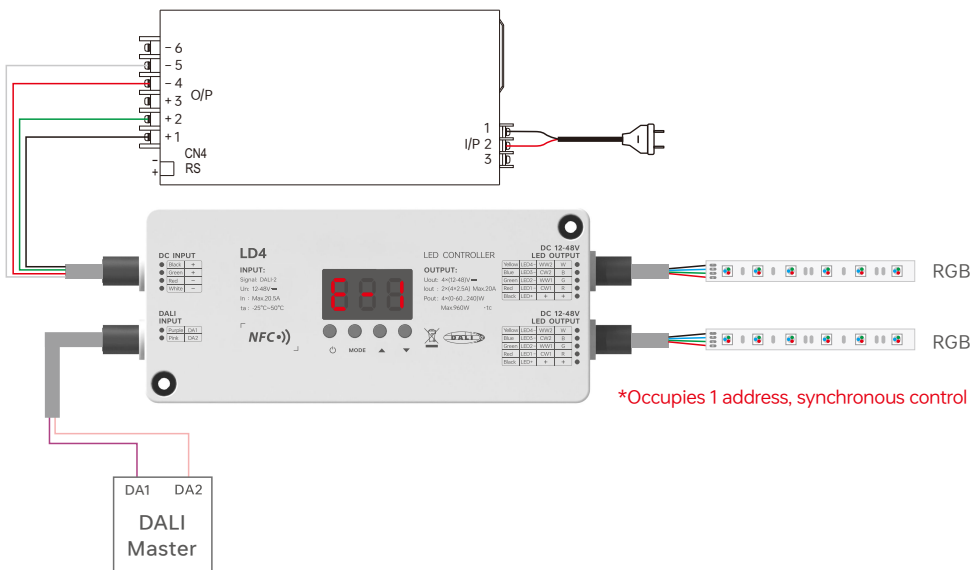
3. Connect 2 independent color temperature lights

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



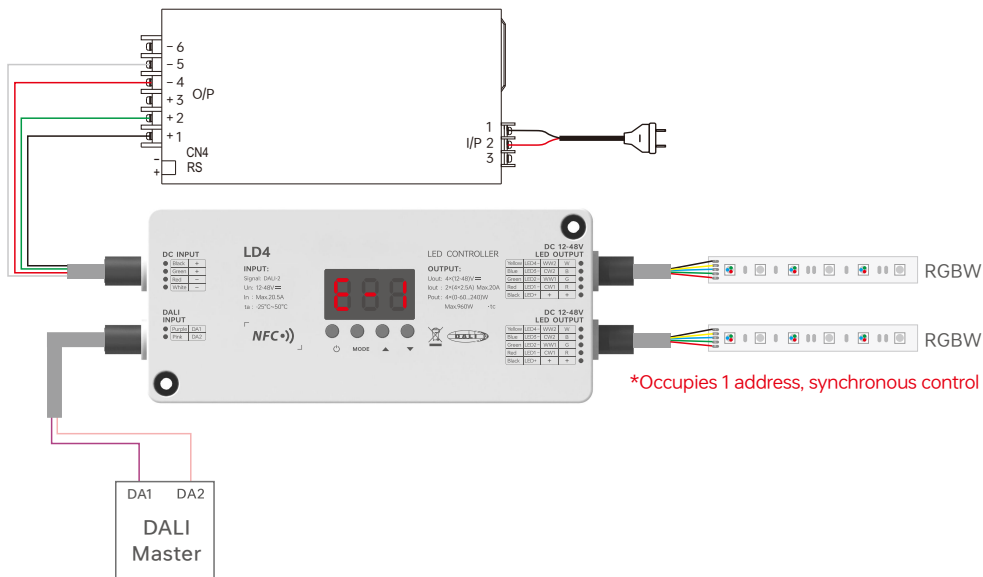
4. Connect 1 RGB light

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



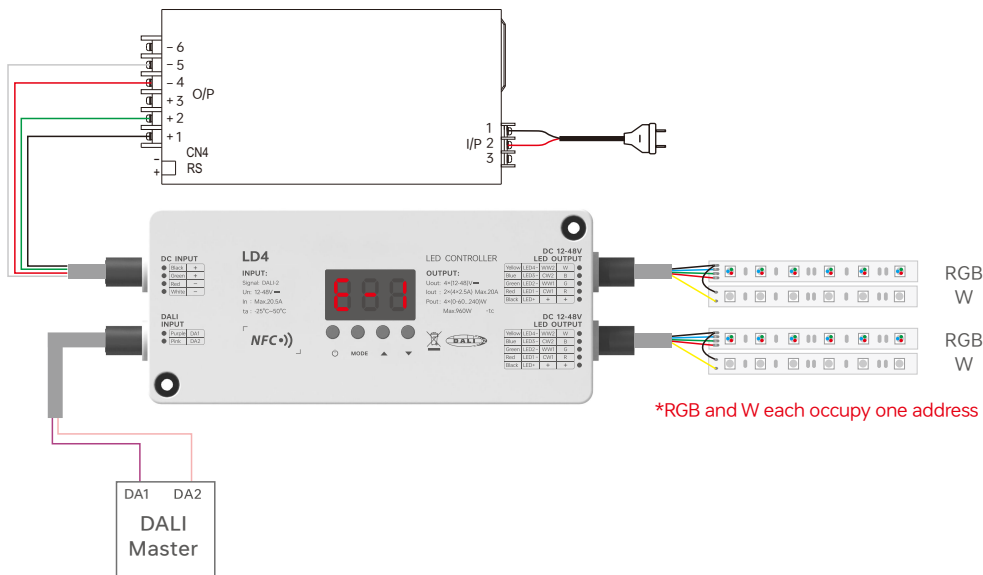
5. Connect 1 RGBW light

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).



NFC Sensing area
*When setting device parameters,
the device must be powered off.

1. Read the LED driver

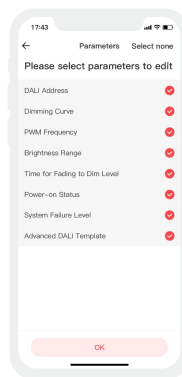
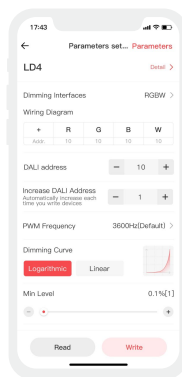
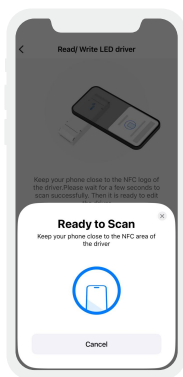
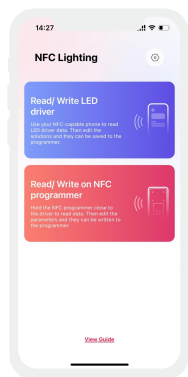
On the APP home page, click **[Read/Write LED driver]** , then keep the programmer's sensing area close to the NFC sensing area to read the driver parameters.

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.

LD4

防水DALI LED恒压控制器



NFC-1 CE RoHS IP67 DALI 2

LD4是一款具备IP67防水等级的高性能LED恒压控制器，接收标准DALI协议信号，可以匹配市场上所有DALI系统，专为精准调控LED灯具设计。具有4通道，最大输出电流可达20A，最大输出功率高达960W，能稳定驱动各类LED恒压灯具。

通过DALI主控或者NFC Lighting app可以快速DALI地址，调光曲线，调光范围，调光渐变时间，色温范围，通电状态，系统失效状态，DALI模板等参数。其中DALI地址还可以通过按键手动设置并显示在数码管上。支持通过按键数码管进行快捷开关、调光调色等基础操作，兼顾直观操作与深度定制。

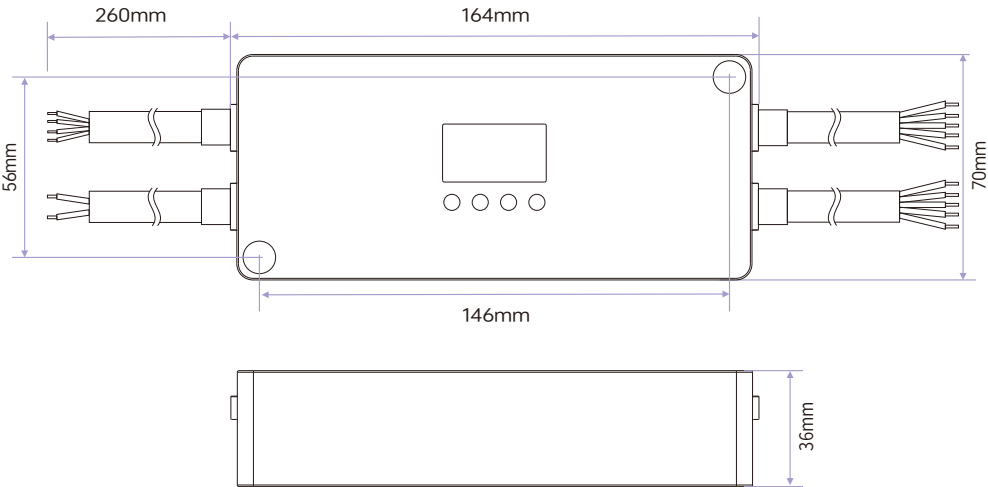
LD4可灵活实现灯具的调光、色温调节及RGB、RGBW全彩控制，适配多样化照明需求，集成了8种DT6/DT8设备类型。包括RGBW，RGB+W,XY+W，RGB，XY，2*CT(同步控制)，2*CT(异步控制)，4*W，可通过NFC Lighting app切换设备类型。

凭借IP67级防水性能与稳定的运行表现，LD4可广泛应用于室内外各类环境，即使在潮湿场景中也能可靠工作，为照明系统提供高效、灵活的控制解决方案。

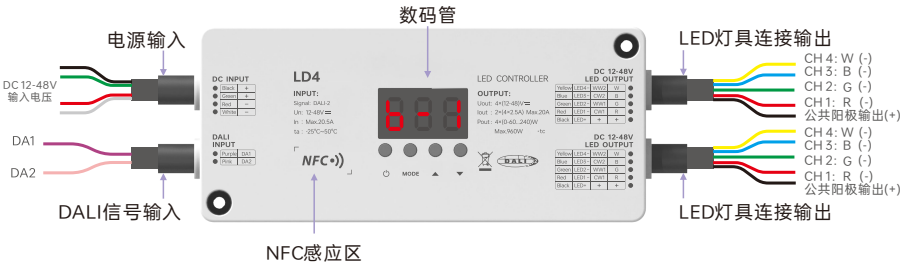
技术参数

LD4			
输入信号:	DALI-2	工作温度:	-25°C-50°C
输入电压:	12-48V =	产品重量:	670克
输入电流:	Max. 20.5A	产品尺寸:	L164×W70×H36mm
输出电压:	4×(12-48)V =	包装尺寸:	L230×W95×H47mm
输出电流:	2×(4路×2.5A) Max. 20A	防水等级:	IP67
输出功率:	4路×(0-60...240)W Max. 960W	保 护:	短路、过温、过流保护，可自行恢复

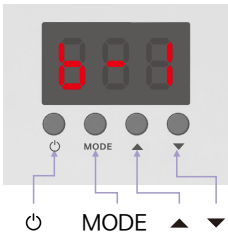
产品尺寸



产品部件图



数码管：



按键操作

1.按键调光

- (1)开关键: 短按1次可以执行开灯或关灯的操作。
- 当灯具处于开启状态，短按开关键则会关闭灯具。并且数码管会显示OFF。
- 当灯具处于关闭状态时，短按开关键则会开启灯具，并且数码管会显示上一次关闭前的内容。
- (2)MODE键:根据当前设备调光接口(默认为RGBW，可通过NFC设置成不同的调光接口)，具有不同的操作。
- W: 一直处于亮度调节，短按无动作；
- CT: 亮度（默认）/色温，短按可以切换；
- RGB/XY: 亮度（默认）/RGB,短按可以切换；
- RGBW/RGB+W/XY+W:总亮度（默认）/RGB/W,短按可以切换；
- 当无操作2分钟后，会自动回到默认
- (3)▲/▼键: 当灯具处于开启状态时，短按一次可以切换一个档位，长按可以持续调节当前模式，不可循环。

2.按键设置DALI地址

长按MODE键进入DALI地址设置(A00-A63)，可以短按▲或▼设置DALI地址，也可以长按▲或▼快速设置DALI地址。

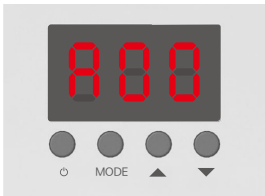
备注：

- 长按MODE键或15秒无操作，保存并退出DALI地址设置。
- DALI地址可设置为00-63
- 出厂默认情况下，控制器未分配DALI地址，数字显示“AFF”

数码管界面图

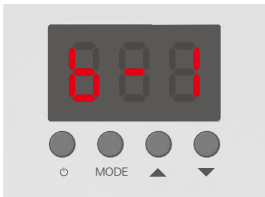
默认显示(DALI地址)

- 当用户无操作2分钟后，会自动返回默认显示界面（DALI 地址）

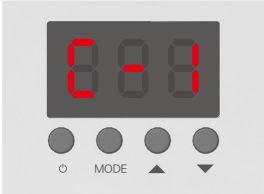


亮度模式

- b-1:0.1%亮度
- b-2:5%亮度
- b-3:10%亮度
- b-4:25%亮度
- b-5:50%亮度
- b-6:75%亮度
- b-7:100%亮度（默认）
- b-P:当处于长按调节或其他手段调节后显示b-P

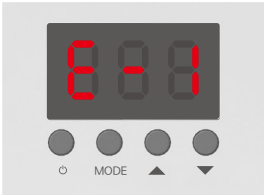


色温模式



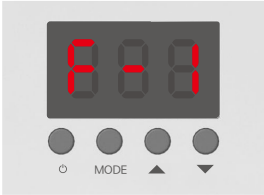
- C-1:2700K
- C-2:3000K
- C-3:4000K(默认)
- C-4:5000K
- C-5:6000K
- C-6:6500K
- C-P:当处于长按调节或其他手段调节后显示C-P

RGB模式



- E-1:红色（默认）
- E-2:绿色
- E-3:蓝色
- E-4:黄色
- E-5:紫色
- E-6:青色
- E-7:白色
- E-P:当处于长按调节或其他手段调节后显示E-P

W模式



- F-1:5%亮度
- F-2:10%亮度
- F-3:25%亮度
- F-4:50%亮度
- F-5:75%亮度
- F-6:100%亮度(默认)
- F-P:当处于长按调节或其他手段调节后显示F-P

带载容量表

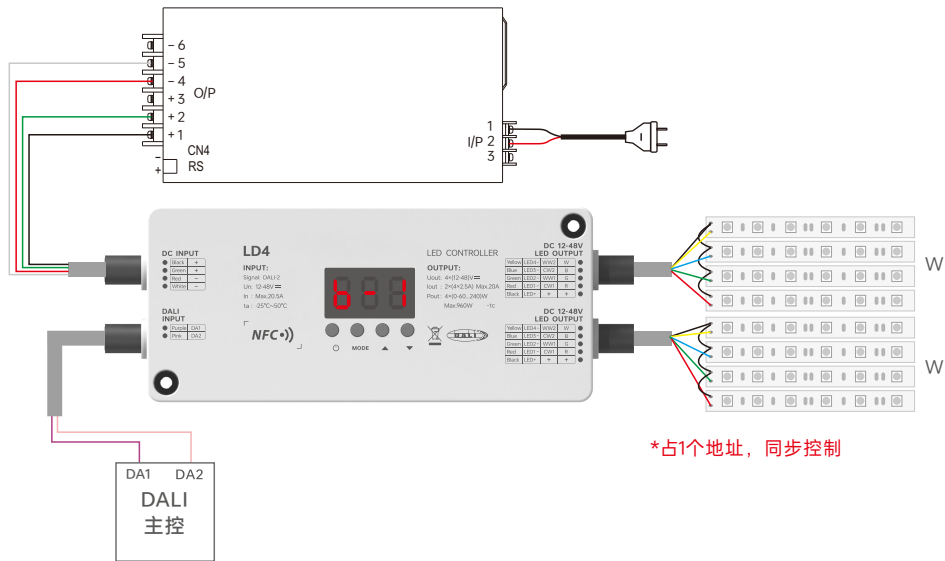
不同PWM频率、不同电压下，每路最大带载电流和总功率不同。接线前，请严格按照表格中的带载参数进行操作。

最大电流/功率 电压 \ 频率	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
最大电流/功率 电压 \ 频率	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	

连接示意图

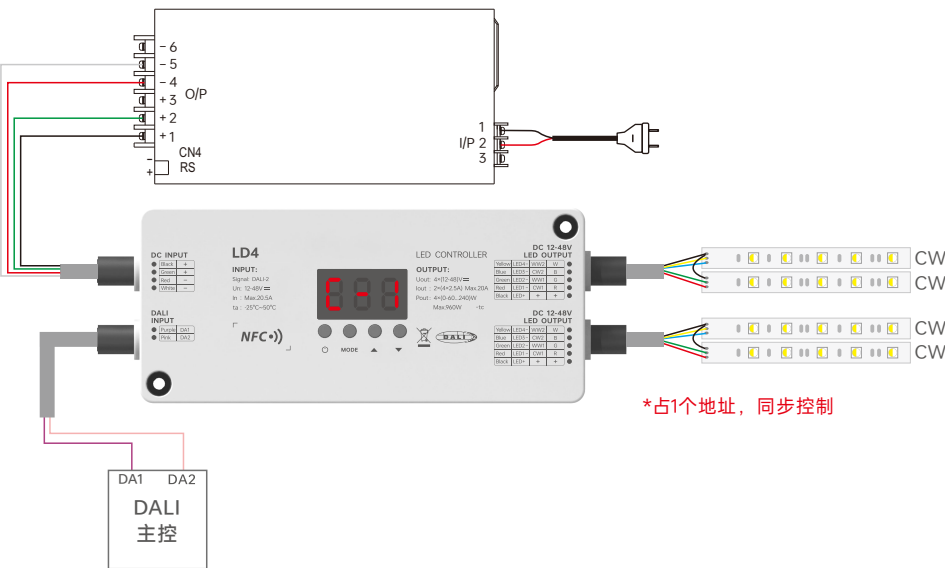
1.同时接4个调光灯

需要在NFC lighting APP中设置调光方式为4*W



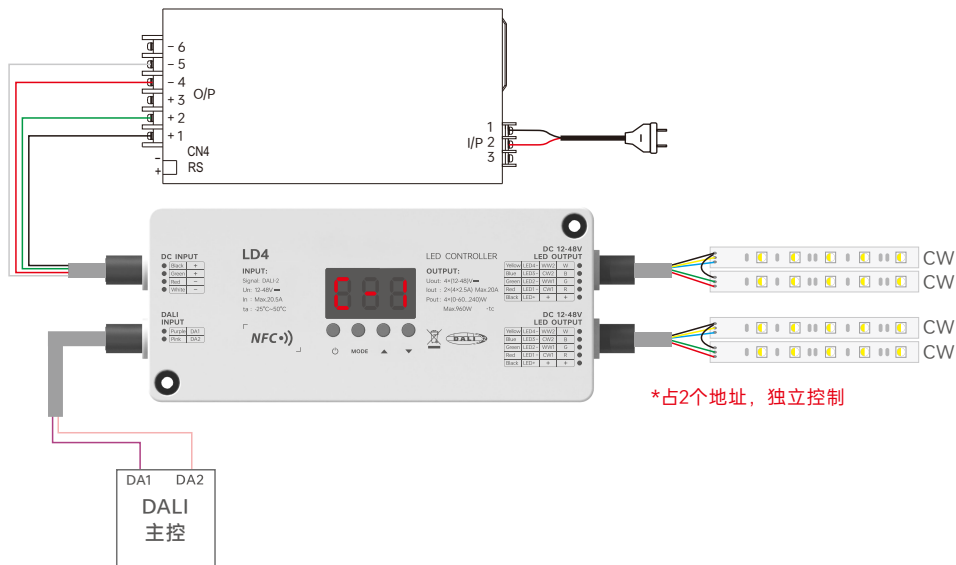
2.同时接2个色温灯

需要在NFC lighting APP中设置调光方式为2*CT(DT8同步)



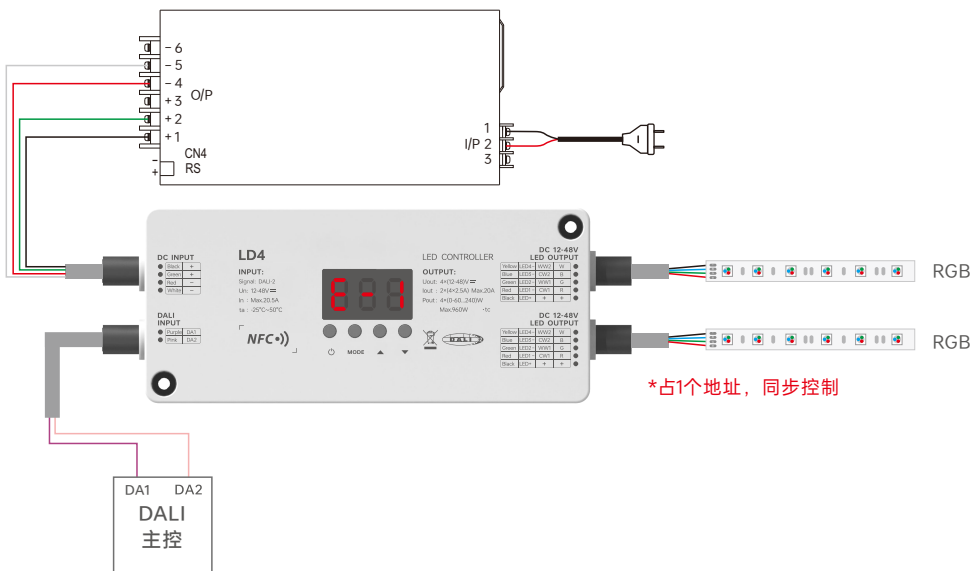
3.接2个独立色温灯

需要在NFC lighting APP中设置调光方式为2*CT(DT8异步)



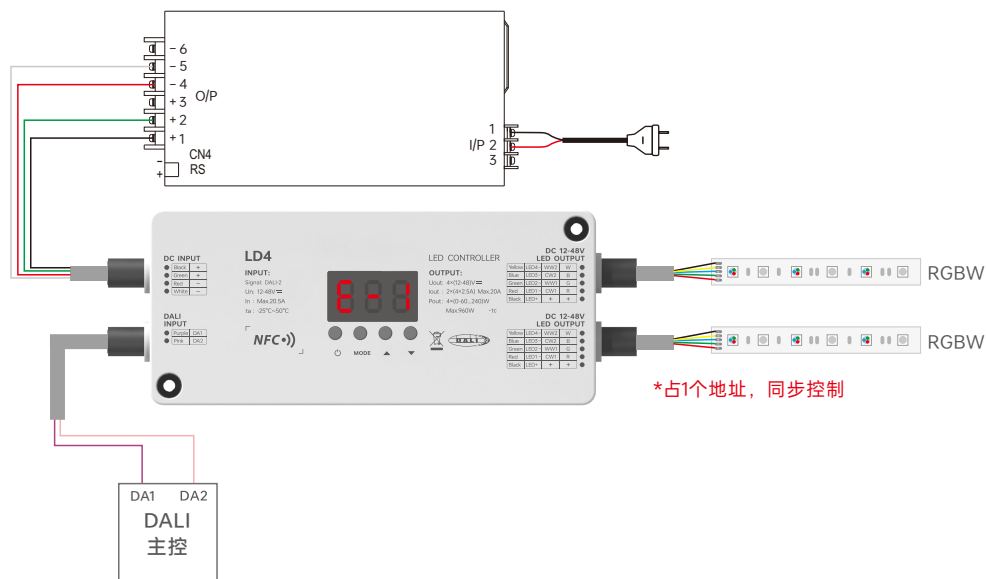
4.接1个RGB灯

需要在NFC lighting APP中设置调光方式为RGB或XY



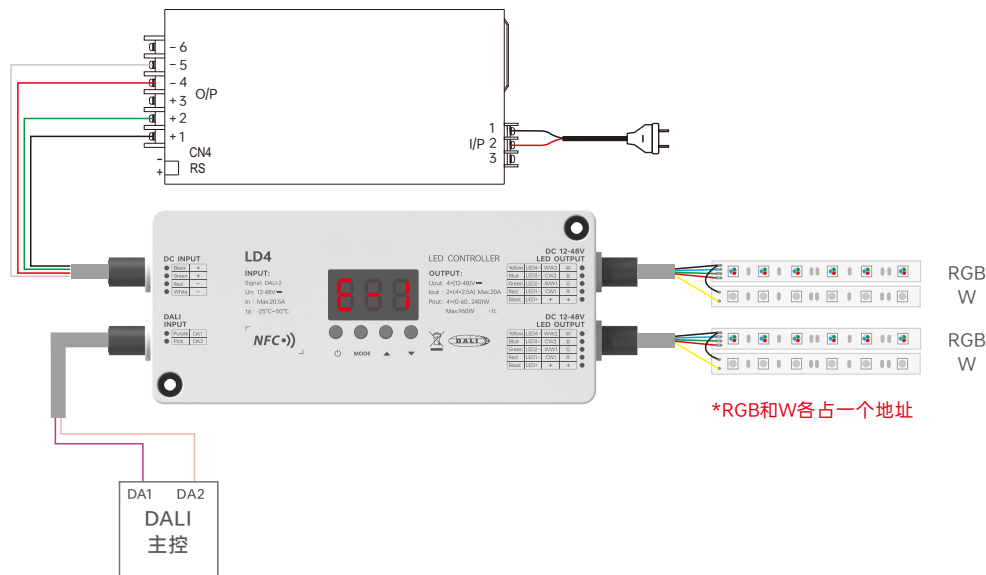
5.接1个RGBW灯

需要在NFC lighting APP中设置调光方式为RGBW



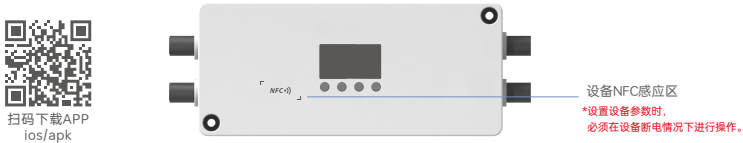
6.接1组RGB+W灯

需要在NFC lighting APP中设置调光方式为RGB+W或XY+W



搭配NFC Lighting APP使用

通过手机扫描下方二维码，按提示完成APP安装。（因性能需求，要求手机型号苹果：iPhone8及以上、且操作系统iOS13 及以上；
安卓：具备NFC功能机型）



1.读取设备

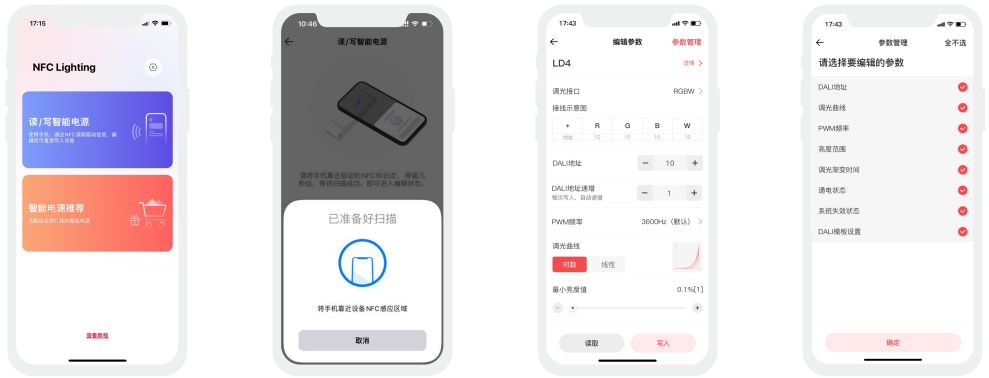
在APP【首页】点击“读/写智能电源”将手机感应区域靠近驱动器NFC感应区，读取设备参数。

2. 编辑参数

点击【参数管理】可编辑DALI地址、调光曲线、PWM频率、亮度范围、调光渐变时间、通电状态、系统失效状态、DALI模板设置等参数。

3. 写入驱动器

参数设置完成后，点击右上角【写入】，将手机感应区域靠近驱动器NFC感应区，即可写入驱动器成功修改参数。



运输和贮存

1. 运输

产品适用车、船、飞机交通运输工具运输。

在运输中，应使用遮蓬进行防雨和防晒，并保持文明装卸，不应有剧烈振动、撞击等。

2. 贮存

贮存符合I类环境的规定。贮存期限超过6个月的产品建议重新检验，合格后方可使用。

保修协议

- 自出厂之日起保修服务期为5年。
- 在保修服务期内出现产品质量问题我司将给予免费修理或更换服务。

非保修条例：

属下列情况不在免费保修或更换服务范围之内：

- 已经超出保修服务期；
- 过高电压、超负载、操作不当等人为造成的损坏；
- 产品外形严重损坏或变形；
- 自然灾害以及人力不可抗拒原因造成的损坏；
- 产品保修标签和产品唯一条形码损坏；
- 无我司签订的合同或发票凭证。

1. 修理或更换是我司对客户的一补救措施。雷特不承担任何附带引起的损害赔偿責任，除非在适用法律范围之内。
2. 我司享有修正或调整本保修条款的权利，并以书面形式发布为准。

注意事项

- 本产品请由具有专业资格的人员进行调试安装；
- 我司产品（专有型号除外）不能防水防雷，需避免日晒雨淋，如安装在户外，请用防水箱和防雷装置；
- 良好的散热条件会延长产品的使用寿命，请把产品安装在通风良好的环境；
- 安装时，避免靠近大面积金属物体，或堆叠摆放，以免信号干扰影响使用；
- 避免安装在雷区、强磁场和高压区域；
- 请检查使用的工作电压是否符合产品的参数要求；
- 通电调试前，确保所有接线正确且牢固，以免短路损坏部件，触发事故；
- 如果发生故障，请勿私自维修；如果有疑问，请联系供应商。

***** 本说明书的内容如有变更，恕不另行通知。若内容与您使用的功能有所不同，则以实物为准。如有疑问，请与供应商联系。