

Installation of LED strips

SINCE 1978



LEADING LIGHT



Manual of COB Single Color LED Strip

To users

Thank you for purchasing our products! Please read this manual carefully before use and keep it for reference! Drivers and controllers are not included with this fixture. If a drive and controller are required, please purchase them separately.

Introduction

LED is a device which converts electrical energy into luminous energy. The light output of LED is up to more than 70%. Flexible LED strip illuminates the customers' brand image with excellent flexibility for easy installation. It's widely applicable to home, shopping mall, entertainment places etc.

Safety warning

1. Install in accordance with national standards and local electrical codes.
2. This product must be installed and maintained by a qualified electrician.
3. This product can only be installed and used with a level 2 energy efficiency DC constant voltage driver. If it does not meet the level 2 energy efficiency standard, please do not use it.
4. The power of the driver must meet the rated power output and not exceed the specified output power.
5. The rated temperature of the cable should be greater than 80°C, which is in line with the external connection of electrical equipment.
6. Improper electrical installation may cause the cable to overheat and cause a fire. Please use appropriate cables between drivers, lamps and controllers. When selecting wires, the voltage and current must conform to the rated values.
7. The LED module itself and all its components cannot withstand mechanical pressure.
8. The assembly must not damage or destroy the conduction paths on the circuit board.
9. In order to avoid mechanical damage, the LED module should be securely connected to the predetermined substrate, and violent vibration should be avoided.
10. Installation of the LED module (with power supply) needs to comply with all applicable electrical and safety standards. Installation should only be carried out by qualified personnel.
11. Observe whether the polarity is correct! Incorrect polarity will cause no light and may cause damage to the LED module.
12. Parallel connection is recommended for safe electrical operation. Serial connections are not recommended. Unbalanced voltage drops can cause dangerous overloads that can damage LED modules.
13. When mounted on metal or other conductive surfaces, electrical insulation protection is required at the solder joints between the module and the mounting surface.
14. Pay attention to ESD steps when installing modules.
15. Please ensure that the power of the power supply is greater than the total load to avoid overloading the power supply.
16. Damage caused by corrosion will not be compensated as a material defect. It is the user's responsibility to provide appropriate protection against corrosive agents such as moisture, condensation and other harmful components.
17. For applications exposed to humidity and dust, the module must be protected by a clamp or enclosure with an appropriate level of protection.
18. This product is not vulcanized, and damage caused by vulcanization will not be compensated as a material defect. It is the user's responsibility to provide appropriate protection against the harmful constituents of sulfide.

Features

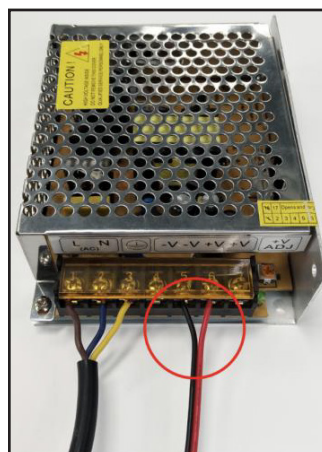
1. Good Flexibility: can be bent according to the customers' requirements.
2. Energy Efficient: High luminous efficacy, more than 1/3 energy savings VS fluorescent lamp and 2/3 energy savings compared with incandescent lamps.
3. Environment friendly: free from mercury, noise and EMI etc.
4. Long Lifespan: up to 50000hrs lifespan with low attenuation.
5. Safe: safe operating voltage with no harm to human body.

Working conditions

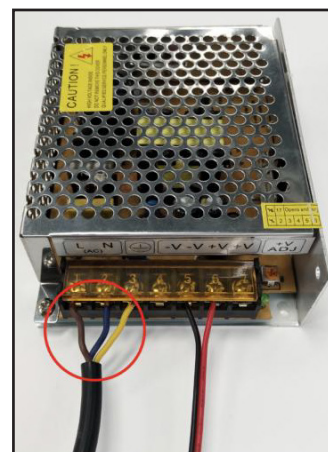
1. Operating temperature: -20~45°C.
2. Storage temperature: -20°C ~60°C.
3. Voltage range: 23 ~25V dc. 4. Reverse voltage: 25V dc.

Installation and usage

1. Before installing the product on the surface, make sure that the installation surface is clean.
2. The installation method for products with 3M double-sided tape is as follows. If you need clips, please purchase it separately.
 - (1) Take the flexible light strip out of the reel.
 - (2) Uncover the release paper of the double-sided tape on the back of the flexible light strip.
 - (3) Close the product to the installation surface in sequence.
3. The installation methods for flexible light strip products that need to be installed with the attached installation clips are as follows:
 - (1) Take out the flexible light strip from the reel, and take out the installation clip.
 - (2) Close the light strip to the installation surface and fasten the buckle. the user can use M3*6 screw to fix it.
 - (3) The installation is completed.
4. After installing the light strip on the installation surface, connect the power supply wire of this product to the output terminal of the constant voltage driver, and do proper insulation treatment. Pay attention to the polarity of the wires. Generally, the red wire is connected to the positive electrode, and the black wire is connected to the negative electrode. (As shown in Figure 1)
5. After the product cable is installed, connect the constant voltage driver to the mains to supply power to the driver. (as shown in picture 2)

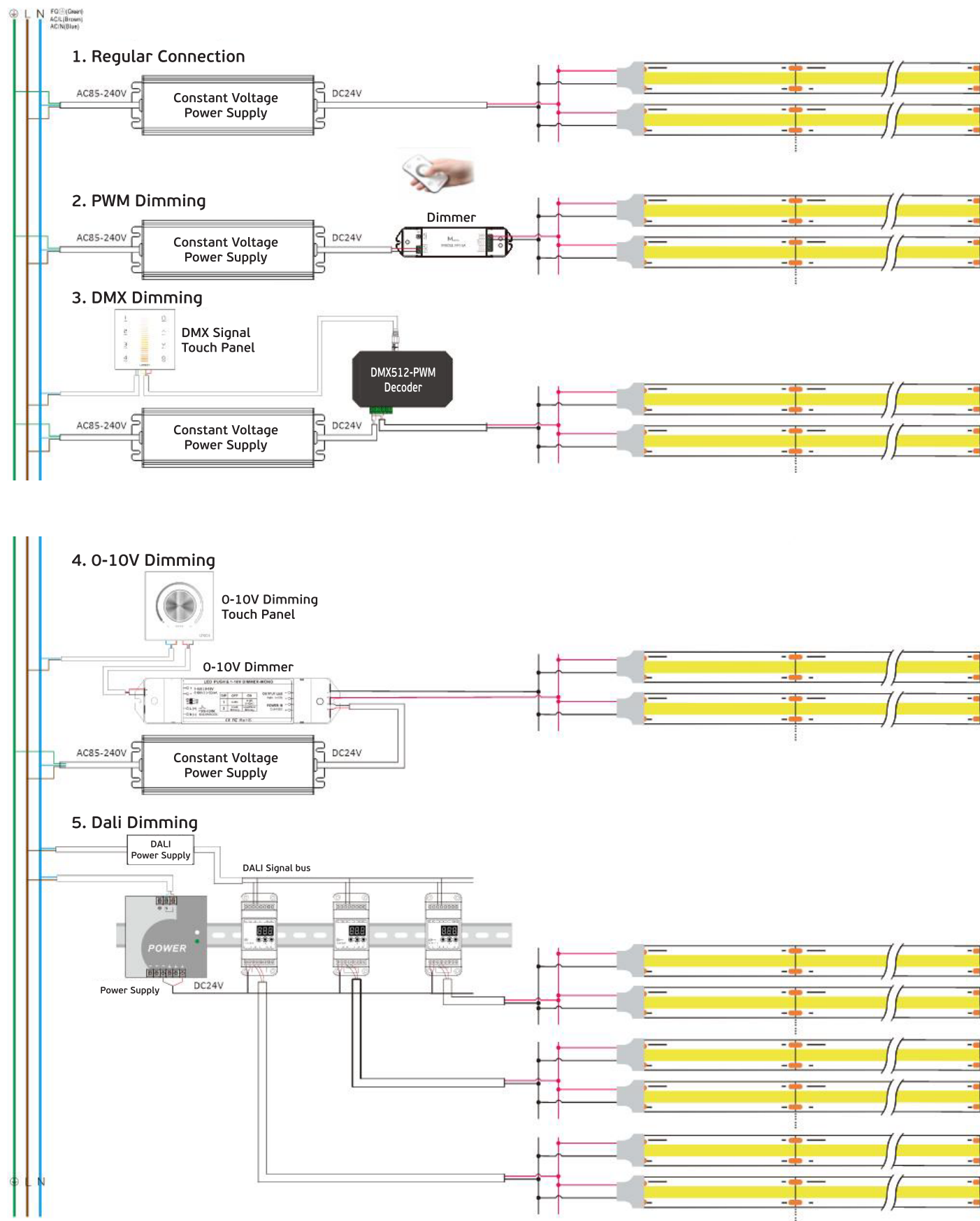


1. LED strip power cable installation



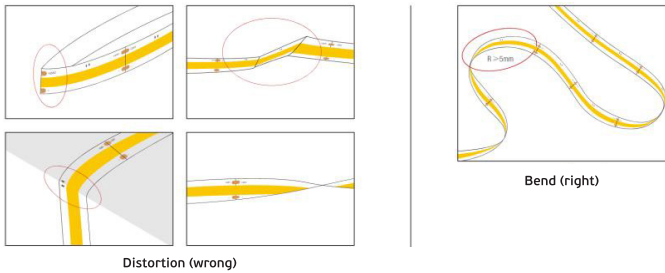
2. Power supply input power cable installation

6. Overall schematic diagram of product installation and wiring (as shown in the figure)



Cautions

When install the led strip, please note the installation technique. The led strip can be bent, but not distorted, as show below.



Precautions for use with other parts

1. The surface material installed on this product must meet the relevant flame retardant grade requirements.
2. The constant voltage driver selected by the user must have short-circuit and overvoltage protection functions, and the total load power is required to be less than 80% of the rated output power of the constant voltage driver. the output voltage of the constant current driver cannot exceed the rated voltage of this product specification. $\pm 5\%$ range, it is recommended to use root pro driver.
3. The cross-sectional area of the power supply main line conductor is determined by the total load power and the length of the power supply main line, and the length of the power supply main line is required to be $\leq 5m$. Refer to the table below for the corresponding cross-sectional area of the power supply main line conductor under various total load power conditions.

Power (W)	12	24	48	72	100
Current (A)	1	2	4	6	9
Copper cross-sectional area (mm²)	0.75	1	1.5	2	2.5



Malfunction & Solution Table		
Symptom	Possible Causes	Solutions
No LEDs work	1. No primary power for the power supply	Connect the power supply
	2. The power supply is connected to primary power reversely	Connect the wires correctly
	3. No output voltage from the power supply	Remove the malfunctions of the power supply or replace the power supply
	4. Over voltage damages the LEDs	The working voltage should be within $\pm 5\%$ of rated voltage. Over voltage may damage the product. If the product is damaged, please replace the product
Some LEDs don't work	1. These products are not connected to power supply	Check the power supply and connect the wires correctly
	2. These products are reversely connected to the power supply	
	3. Some LEDs are damaged.	Replace LEDs.
Brightness of the LED is dim or not even	1. The power load exceeds the rated power of the power supply	Use the power supply with higher power or adopt the double-ended power up mode
	2. The wire loss of power supply is too much	1. Use thicker supply wires or more supply wires 2. Adjust the position of power supply. make sure the input voltage of each LED strip within the 90%-110% of the rated voltage
	3. Too much LED strips are connected	Adjust LED strip length for each chain to meet the maximum connectable length with single-ended power mode. The length is no longer than 5 meters
All LEDs are blinking	Intermittent connections occur at the power supply	Find the intermittent connections and remove any malfunctions
Some LEDs are blinking	Intermittent connections occur in the branch	Find the intermittent connections and remove any malfunctions