

LED驱动电源使用说明书

首先，非常感谢您对本公司产品的信任，选择崧盛LED 驱动电源。为了保障您的权益，在使用本公司产品之前，请仔细阅读如下内容：

一、原理概况

本产品采用有源 PFC 电路与软开关技术(QR 或 LLC)控制的新型恒流型电源。输入的交流电压经过整流滤波，在有源 PFC 专用芯片的控制下，可以获得高 PF 值与较低的THD；前级采用软开关专用 IC 控制，获得较低的开关损耗，极高的转换效率，经变压器与次级功率整流管后输出高精度、稳定的直流电流，且输出的电压能在一定范围内会随着负载电压变化而变化，最新的产品具有在一定范围内恒功率输出特性，部分产品是具有可编程输出电压、电流的智能 LED 驱动电源。

二、特点

1. 体积小，重量轻，效率高，寿命长，符合节能标准；
2. 工作电压范围宽：输入电压 100-277Vac/120-347Vac/277-480Vac 可选；
3. 认证齐全：产品能满足 UL/cUL(Class P)，TUV，ENEC，CB，CE，RCM，BIS，CQC/CCC，Dali-2 等认证要求；
4. 安全(符合世界各国安规要求)，可靠性高；
5. 电源启动时间小于 500mS，可编程智能电源的启动时间可以在 1-30S 自由设定；
6. 保护功能：短路、过流、过压、过载，过热保护；
7. 安装方便：业内标准的外壳安装尺寸，适合不同种类的灯具；
8. 防护高：户外防水 LED 驱动满足 IP67 防护要求，防雷等级为 10kV/6kV；工业照明圆形 LED 驱动满足 IP65 防护等级要求，防雷等级为 4kV/4kV 或 6kV/6kV；。
9. 在满足对应 LED 驱动电源规格书要求的条件下正常使用，工作寿命可达 50000-72000 小时。

三、使用注意事项及安装方法

1. 使用注意事项
 - (1) LED 驱动电源的输入电压应在规格书标称的工作电压范围内，超出标称的输入电压范围可能会造成电源的保护或损坏；
 - (2) LED 驱动电源必须首先将输出线正确连接好负载，然后再连接输入线，在保证所有连线牢固之后，方可通电测试；
 - (3) 严禁在高温密闭的环境下使用，LED 驱动电源应有良好的散热空间与环境，否则有可能会造成电源的过热保护，甚至损坏；
 - (4) 严禁将电源安装在易燃物上如木制品、易燃塑料等（取得防爆安全认证的产品除外），要远离加油站及其他禁止烟火的地方；
 - (5) 严禁将 LED 驱动电源直接裸露安装，或裸露安装在 LED 灯具的散热器上，需要加装防雨罩或专用电源腔体；
 - (6) 严禁将室内 LED 驱动电源安装在户外，如需将室内 LED 驱动电源在户外使用，须在电源交流电输入端口加装不小于 10KV 的防雷器，且采取防淋雨措施；
 - (7) 严禁将 I 类 LED 驱动电源输入地线悬空，必须将电源的地线通过专用的接地装置良好接地，同时保证电源外壳与灯具外壳保持良好接触；
 - (8) 根据灯具相关的安规标准 IEC/EN60598-1.IEC/EN61347，或对应的国标 GB4706.1.GB7000.1 的要求，接地线路通流量 $\geq 25A$ ，接地电阻 $< 0.5 \Omega$ ；
 - (9) 严禁将电源垂直安装在灯杆上，或利用电源的输入或输出线材悬吊安装，必须将电源水平安装，且用螺丝固定；
 - (10) 光源铝基板灯串正负极爬电距离 $> 5mm$ ，光源板单个灯珠LED+与LED-爬电距离 $> 1.8mm$ ，光源铝基板耐压以雷击测试中LED不损坏为标准；
 - (11) LED灯珠排布方式建议先并后串，光源板铺铜面积应在满足通流的前提下，尽量减小；
 - (12) 严禁将两台及两台以上 LED 驱动电源的输出端或辅助源并联使用。
2. 安装方法
 - (1) 严格按照 LED 驱动电源标签上的标识接线，接线要牢固，严禁输入，输出线接反输入“ACL，ACN”接市电，接地线；输出“V+，V-”接负载）；
 - (2) 在通电前，先确定输入电压与频率是否与 LED 驱动电源标签上的工作电压与频率范围相符，确认符合后才可以接线与通电；
 - (3) LED 驱动电源要用螺丝水平安装固定，严禁改装或破坏 LED 驱动电源结构安装，严禁将两台或两台以上电源无空隙堆叠安装；
 - (4) 辅助电源输出线与调光线与 AC 交流线不可靠近平行走线，避免干扰；
 - (5) LED 驱动电源地线必须与电网地线形成通路，避免通过电杆、灯具外壳等作为接地媒介；
 - (6) LED 灯具在老化时，避免一盏灯的光照直接照射另一盏灯体，导致灯具温度过高而引起 LED 驱动电源TC 点温度超出最高温度要求。
3. 测试组装注意事项
 - (1) LED 驱动电源输出端不能接错，“V+，V-”分别接负载正，负极；“DIM+，DIM-”分别接调光器正，负极；“Vaux+，Vaux-”分别接辅助供电正，负极。
 - (2) 严禁 LED 驱动电源输入线、输出线、调光线、编程线、辅助电源线相互碰触或与其它带电（交流或直流）物体接触。
 - (3) 非隔离电源调光线需做好保护、严禁在不使用调光线时将护套取下。反向调光不使用调光线时，必须短路调光线；正向调光，需要使用保护套保护调光线。
 - (4) 辅助电源调光线，编程线、辅助电源线在不使用的情况下，要求做好单独绝缘与防水措施。
 - (5) 电位器调整：调节力度不能超过 500g.cm min，建议使用塑胶螺丝刀调整。
4. 安装接线图



四、质保说明

1. 在 LED 驱动电源规格书要求的条件下正常使用，产品按出厂标记日期起在保修期内发生故障，经检测属于本公司电源本身的质量问题，本公司提供免费保修。
2. 严格按照本公司的品保规定进行质保服务。
3. 以下情况，不在保修范围内
 - (1) 不按说明书要求安装、使用而损坏的；
 - (2) 未获得崧盛授权，私拆电源；
 - (3) 不按照安装要求而导致电源损坏的；
 - (4) 产品外形严重损坏或变形的；
 - (5) 产品机身日期被人为擦除或涂改的；
 - (6) 输入或输出接线端子被烧焦的；
 - (7) 输入、输出接反导致电源损坏的；
 - (8) 未经允许私自改装电源，或者私自更改电源安装方式与使用条件的；
 - (9) 不可抗力或自然灾害；
 - (10) 存放满半年以上 2 年以内的电源，使用前必须进行充放电老化测试（充放电测试方法：在额定电压范围内，先低压通电 2 小时，再高压通电 3 小时）。存放超过 2 年，必须强制报废处理；
 - (11) 超出电源质保期限。

Acknowledgement: Thank you for selecting SOSEN LED drivers. To ensure operational safety and warranty validity, thoroughly review this manual prior to installation.

Product Theory

This constant-current LED driver employs active PFC circuits and soft-switching technology (QR or LLC) control. Input AC voltage is rectified and filtered. Under control of a dedicated active PFC chip, high PF value and low THD are achieved. Primary-stage soft-switching minimizes switching losses, enabling high efficiency. The transformer and secondary rectifier deliver high-precision, stable DC current. Output voltage varies within a defined range relative to load voltage. Latest products feature constant-power output characteristics within a specific range. Some models offer programmable output voltage/current.

Features

1. Compact size, light weight, high efficiency, long lifespan, Energy-saving compliant.
2. Input voltage: 100-277Vac/120-277Vac/120-347Vac/200-480Vac/277-480Vac.
3. Certifications: UL/cUL(Class P), TUV, ENEC, CB, CE, RCM, BIS, CQC/CCC, Dali-2.
4. Safety compliant (global standards) . High reliability.
5. Start up time<500ms (Programmable models: 1-30s adjustable).
6. Protection: Short circuit protection(SCP), Over current protection(OCP), Over voltage protection(OVP), Over temperature protection(OTP), Over load protection(OLP).
7. Easy Installation: Industry-standard housing mounting dimensions compatible with various luminaire types.
8. Outdoor waterproof drivers satisfy IP67, Surge protection: 10KV/6KV; Industrial high bay drivers meet IP65 and surge protection: 4KV/4KV or 6KV/6KV.
9. Lifetime can reach to 50k-72k hours under the application of corresponding LED Driver specification.

Usage Precautions and Installation Methods

1. Usage Precautions

- (1) The input voltage of the LED driver must be within the nominal operating voltage range specified in the datasheet. Exceeding this range may trigger protection or cause damage.
- (2) Connect output wires to the load BEFORE connecting input wires. Only power on after ensuring all connections are secure.
- (3) Strictly prohibit use in enclosed high-temperature environments. Ensure adequate heat dissipation space. Otherwise, OTP or damage may occur.
- (4) Do NOT install LED driver on flammable material, such as wood products, inflammable plastics, etc.(except for products with explosion-proof safety certification). Keep away from the gas station or places where fireworks are forbidden.
- (5) Do NOT expose LED driver to direct sunshine or rain. Rain covers or dedicated enclosures are required.
- (6) Do NOT install the indoor LED driver outdoors. When needed, a lightning protection device of no less than 10KV must be installed at the AC input port of LED driver, and rain protection measures must be taken.
- (7) Ground wire of Class I LED Driver must be grounded and ensure good connection between LED Driver housing and lighting fixture.
- (8) According to safety standards of IEC/EN60598-1, IEC/EN61347 or requirements of GB4706.1, GB7000.1, the current capacity of grounding wire needs more than 25A and the grounding resistance needs less than 0.5Ω.
- (9) Do NOT install LED Driver on pole upright, or suspend LED Driver with input and output wires. Make sure to install LED Driver horizontally and fixed with screws.
- (10) Aluminum substrate: string creepage > 5mm; Per-LED spacing > 1.8mm; Aluminum substrate withstand voltage shall prevent LED damage during surge testing.
- (11) LED arrays should adopt parallel-first-then-series topology; PCB copper coverage must be minimized while meeting current-carrying capacity requirements.
- (12) Strictly prohibit parallel connection of output terminals or auxiliary sources across two or more LED drivers.

2. Installation Procedure

- (1) Strictly wire according to the labels on the LED driver - ensure secure connections and never reverse input ("ACL/ACN" connect to mains/ground) and output ("V+/V-" connect to load).
- (2) Before power on, verify input voltage/frequency matches the driver's labeled specifications - only connect and energize after confirmation.
- (3) The LED driver must be securely mounted horizontally using screws. Modification or damage to the power supply structure is strictly prohibited. Stacking two or more power supplies directly without any gap is strictly prohibited.
- (4) Avoid routing auxiliary power output wires and dimming wires parallel and in close proximity to AC power lines to prevent interference.
- (5) Connect driver ground directly to grid ground, never use poles or luminaire housings as ground path.
- (6) During luminaire aging, prevent direct light exposure between fixtures to avoid overheating and exceeding TC point limits.

3. Testing and Assembly Precautions

- (1) Do NOT miswire LED Driver output. V+ and V- shall be connected to the positive and negative of loads respectively. DIM+ and DIM- shall be connected to positive and negative of dimmer respectively, Vaux+, Vaux- shall be connected to the auxiliary LED Driver positive and negative respectively.
- (2) It is strictly prohibited for the LED driver input wires, output wires, dimming wires, programming wires, and auxiliary power wires to touch each other or come into contact with any other live (AC or DC) objects.
- (3) Protect dimming wire of non-isolated dimming LED Driver. It is forbidden to remove cap when the dimming wire is not used. Keep the dimming wire in short-circuit condition when it is not used for reverse dimming. And use a cap to protect dimming wire for normal dimming.
- (4) When dimming wire, programming wire and auxiliary LED Driver wire are not used, it is required to take separate insulation and waterproof measures.
- (5) Potentiometer adjustment: adjustment force NOT allowed to exceed 500g.cm min. and it is recommended to use plastic screwdriver for adjustment.

4. Installation Diagram



Warranty Explanation

1. With normal using on the condition of LED Driver specifications, in case of failure within the warranty period from the date of marked producing, SOSEN will provide free repair/replacement if verified it is a quality issue caused by SOSEN.
2. Provide quality assurance services in strict accordance with the company's quality assurance agreement.
3. Following conditions are not covered by the warranty.
 - (1) Breakdown caused by improper use, installation or not following the instructions;
 - (2) Breakdown caused by dismantling the power supply without authorization from SOSEN;
 - (3) Breakdown caused by not following installation requirements;
 - (4) Severe damage or distortion on the appearance of product;
 - (5) Erasing or altering the QR code on product artificially;
 - (6) The input or output terminals are burnt;
 - (7) Breakdown caused by reverse connection of input and output ;
 - (8) Modify the product, or privately change the power supply installation method and use conditions without permission from SOSEN;
 - (9) Breakdown caused by force majeure or natural disasters.
 - (10) For Driver stored between 6 months and 2 years must be charged and discharged before using (power on for 2 hours with low voltage and then power on for 3 hours with high voltage). Storage >2 years: Mandatory scrapping.
 - (11) Beyond the warranty of the LED Driver.