LED Driver User Manual

Thank you for choosing SOSEN LED driver. To ensure reliable operation and safe use, please read this guide carefully and follow all requirements before installation.

I. Precautions and Installation Methods

1. Usage Precautions

(1) The input voltage must be kept strictly within the rated operating range stated in the product specification. Exceeding this range may trigger protection or cause permanent damage.
(2) Do not use the driver in high-temperature, enclosed environments. Ensure adequate heat dissipation; otherwise, over-temperature protection may be triggered or the driver may be damaged.
(3) The creepage distance and electrical clearance of the LED module PCB must comply with UL 8750 / IEC 60598-1 safety requirements. An additional 10% design margin is recommended.
(4) The recommended LED layout is "parallel first, then series." In addition, while meeting current-carrying requirements, minimize the copper area (copper pour) as much as possible.
(5) Do not connect the output terminals or auxiliary power outputs of two or more LED drivers in parallel.
(6) For certain models, an auxiliary heat sink may be required to control temperature. Please refer to the product specification for the requirements of any auxiliary cooling components.

▸ **Special Precautions for Non-isolated LED Drivers**

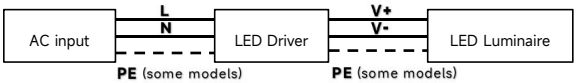
(7) It is recommended to install a residual current device (RCD) at the input of non-isolated LED drivers.
(8) Ensure the matching LED board has an insulation withstand voltage of at least 3 kV. Using an LED board rated at 4 kV or higher is recommended.
(9) During production and use, do not allow either output terminal (V+ / V−) to short to earth/ground.
(10) Do not perform dielectric withstand (hipot) tests directly between the input and output terminals of non-isolated LED drivers.

2. Installation Method

(1) Installation must comply with IEC/EN 60598-1, IEC/EN 61347, or GB 4706.1 / GB 7000.1. Ensure reliable grounding: grounding conductor current capacity ≥ 25 A and grounding resistance < 0.1 Ω. Do not use the pole or luminaire housing as a substitute for a proper grounding conductor.
(2) The driver must be installed horizontally and securely fastened with screws. Do not install it vertically on a pole, and do not suspend it by the input/output cables.
(3) For Class I LED drivers, do not leave the PE conductor unconnected. Use a dedicated grounding point to ensure effective grounding, and ensure good electrical contact between the driver enclosure and the luminaire enclosure.
(4) Do not mount the driver exposed or directly onto the luminaire heat sink. Provide a dedicated protective compartment or reliable waterproof protection.
(5) Do not use indoor drivers outdoors. If outdoor use is required, install an SPD rated at ≥10 kV (surge level) at the AC input and implement complete rainproof measures.
(6) Install the driver away from combustible materials (e.g., wood, flammable plastics) and avoid no-open-flame areas such as gas stations (unless the product is explosion-proof certified).
(7) Secure the driver horizontally with screws. Do not modify or damage the driver structure. Do not stack two or more drivers with no air gap.

3. Test and Assembly Precautions

(1) Follow the wiring markings on the driver label strictly. Do not reverse input/output wiring. Apply power only after confirming all wiring is correct and secure.
(2) Do not allow AC input wires, DC output wires, dimming wires, programming wires, or auxiliary power wires to contact each other or any other live parts.
(3) Dielectric withstand (hi-pot) tests must follow the specification strictly. Do not perform any over-spec tests.
(4) For auxiliary power wires, programming wires, and dimming wires not in use, apply separate insulation and waterproof sealing.
(5) When adjusting the potentiometer, do not exceed 500 g·cm of torque. A plastic screwdriver is recommended.
(6) Route AC input wires, DC output wires, auxiliary power wires, and dimming wires separately. Avoid long parallel routing at close distance to prevent signal crosstalk.
(7) During luminaire aging tests, arrange luminaires properly to prevent one luminaire's light from directly heating another luminaire's driver or heat-dissipating parts, which could cause localized overheating and exceed the TC point limit.



II. Warranty Statement

Article 1 General Warranty Terms

Under normal use in strict accordance with the product specification and accompanying documents, if a failure occurs within the warranty period from the ex-factory date and is confirmed by SOSEN as a manufacturing defect, SOSEN will provide free warranty service.

Article 2 Basis of Warranty Service

All warranty services are provided strictly in accordance with SOSEN's valid Quality Assurance Regulations.

Article 3 Exclusions (Not covered by warranty)

This product is not covered by warranty if any of the following applies (including but not limited to):
(1) Non-compliant use: damage caused by improper installation, operation, or storage contrary to SOSEN guidance documents.
(2) End of service life: the driver has exceeded the lifetime corresponding to the Tc temperature life curve defined in the specification.
(3) Unauthorized modification: disassembly, modification, repair, or changes to structure/ installation/ usage conditions without written authorization.
(4) Human-induced or accidental damage: severe enclosure deformation or internal damage caused by drop, impact, compression, etc.
(5) Invalid identification: traceability markings (serial number, production date, etc.) are altered, blurred, or removed.
(6) Improper operation: damage caused by incorrect wiring or electrical connection such as input/output reversal or short circuit (e.g., terminal burn).
(7) Force majeure damage: damage caused by fire, flood, lightning, earthquake, or other force majeure/natural disasters.
(8) Overdue storage without processing: stored for over 6 months without required electrical activation/inspection before use; or storage exceeds mandatory scrapping period.
(9) Warranty expired: beyond the warranty period stated in these terms.

Article 4 Special Notice (Product Storage)

To ensure reliability after long-term storage, users must follow these guidelines:
(1) If stored for more than 6 months but less than 2 years, perform a powered aging test before first use. Recommended method: within the rated voltage range, power at the lower-limit voltage for 2 hours, then at the upper-limit voltage for 3 hours.
(2) For safety, products stored for more than 2 years must be scrapped and must not be installed or used.

III. Waterproof Installation Instructions

1. IP67 drivers are designed for complex outdoor environments and are certified according to IEC 60529. Under this standard, an IP67-rated product must be fully dust-tight and withstand immersion in water up to 1 m for 30 minutes without performance degradation.
However, IP67 testing has clear limitations. It mainly evaluates protection against solid ingress and short-term immersion, but does not cover critical long-term outdoor challenges such as:
(1) long-term humidity/heat cycling that can age materials and degrade seals;
(2) corrosion from airborne chemical pollutants (e.g., acid rain, salt spray);
(3) damage to housing materials caused by prolonged UV exposure.
Therefore, an IP67 rating is an important foundation but not a permanent guarantee. Real-world conditions such as day–night temperature swings, coastal saline environments, and industrial pollution impose more comprehensive requirements on long-term driver reliability.
2. To ensure long-term stable operation in outdoor applications, in addition to selecting high IP-rated products, professional installation is essential. Three key principles are recommended: shielding, sealing, and drainage.

(1) Shielding installation

Place the driver inside a dedicated protective compartment or within reliable waterproof protection to avoid direct exposure to rain, snow, and splash.

(2) Tight sealing

Complete all electrical connections inside a waterproof junction box.
Use waterproof connectors (e.g., IP67 or higher).
Cable handling: Ensure no conductors are exposed, the cable jacket is intact, and the cable entry is properly sealed (e.g., with a waterproof grommet) to eliminate gaps.

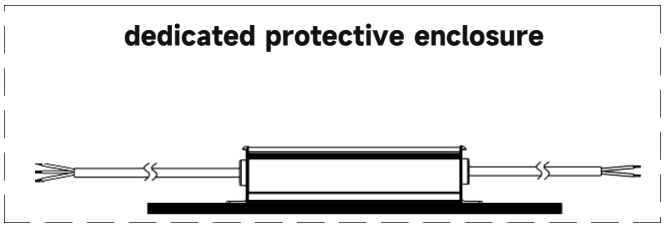
(3) Drainage design

Provide drainage holes at the lowest point of the compartment to drain condensation or accidental ingress and prevent standing water.

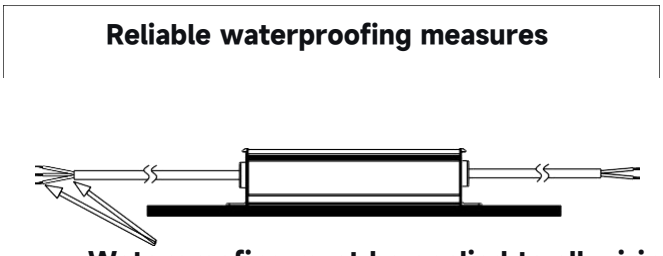
3. Installation Method Diagram

(1) Low-risk installation method

Install in a dedicated protective

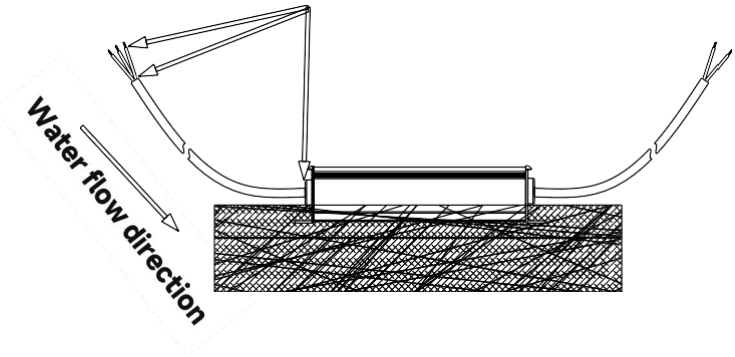


Install within reliable waterproofing

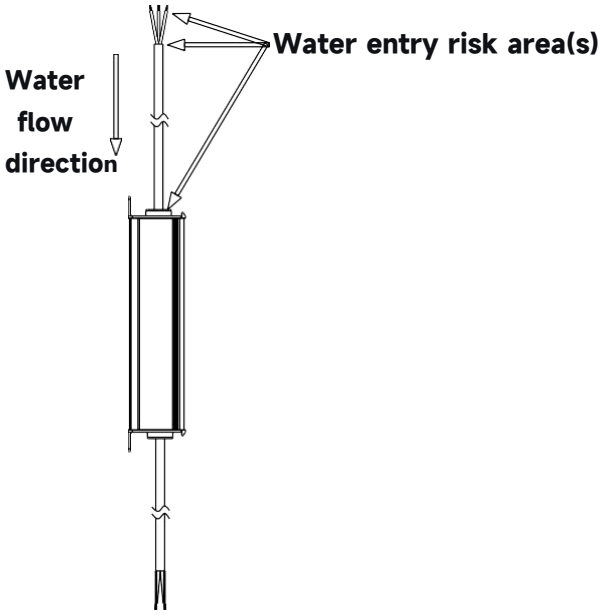


(2) High-risk installation methods

Areas vulnerable to water ingress if



Vertical/Suspension Installation



Install using low-risk methods to systematically improve waterproof reliability and bridge the gap between standard testing and real-world outdoor conditions.