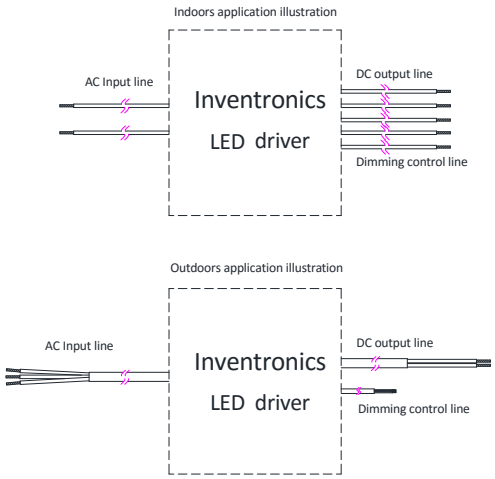
Installation and Operation Manual of LED Driver

I. For a description of LED Driver features, please refer to the datasheet. Use the following table as a reference for the LED Driver wire leads:

Input Wire Type	Color	Polarity
American Safety Standard: UL level	Black	L（Live）
	White	N（Neutral）
	Green	GND (Safety ground)
European Safety Standard: VDE CCC level	Brown	L（Live）
	Blue	N（Neutral）
	Yellow/Green	GND (Safety ground)
Indian Version PVC BIS level	Red	L（Live）
	Black	N（Neutral）
	Yellow/Green	GND (Safety ground)



Output Wire Type	Color	Polarity
American Safety Standard: UL level	Red	+
	Black (Blue)	-
European Safety Standard: VDE CCC level	Brown	+
	Blue	-
Indian Version PVC BIS level	Red	+
	Black	-
Dimming control line	See nameplate	See nameplate

Attention: Different driver profiles are judged based on the entity. The polarities of the LED Drivers should be checked based on the relevant identifications of LED Drivers' nameplate.

II. Installation Instructions:

1. Power supplies must be installed by a qualified electrician who is familiar with the installation and operation manual.
2. Ensure the installation of the power supply, either indoor or outdoor, properly complies with the driver s' specifications. Drivers should not be exposed to corrosive gas or liquids.
3. Ensure drivers following the installation guideline for enhancing waterproof reliability in outdoor application, and refer to details from below link.
   "Installation Guideline- Prevention of Moisture Ingress"
4. Ensure the drivers are used with the proper LED, LEP, or other specified electrical loads, temperature and other spec (with reference to the drivers' datasheet).
5. Installation procedures:

1）Determine the L(Live) and N (neutral) wires of the main power using a multimeter or other instrument. Verify the impedance and voltage of the ground connection as normal, then disconnect the input power grid.

2）Install the drivers firmly onto the lamp bracket with matching screws.

3）Connected the positive '+' output of the driver to the DC positive '+' input of the lighting fixture. Connect the negative '-' output of the driver to the DC negative '-' input of the luminaire.

4）Connect the GND (Green, Green/Yellow) wire on the input side of the LED driver securely to ground.

5）Connect the L (Live) wire of the power main to the L (Live) wire of the driver. Connect the N (neutral) wire of the power main to the N (neutral) wire of the driver.

6）Ensure that all driver wire connections are correct after the product is installed and that heat dissipation is properly addressed within the fixture. Ensure the wiring connections are airtight and waterproof. Only after these requirements are sufficiently met can the driver be operated.

7）If any phenomenon occurs such as tripping or irregular operation, disconnect the power main and the connection to the luminaire before investigating the problem. If the driver is found to be defective, please replace it or contact the appropriate Inventronics' sales group for resolution.

III. Attention to Safety

1. Please handle the drivers carefully. Do not lift or move the driver using the input or output wires to avoid personal injury and/or product damage.
2. A ground connection should be provided to the driver. The drivers' safety ground connection should be verified.
3. Do not disassemble the driver in any way. The length of the input AC wire must exceed 152mm or 6 inches, which is required by Inventronics' Safety Department.
4. Reverse connections, wire crosses, and short circuits are strictly prohibited on the input, output, and dimming wires. The dimming control wires cannot come into contact with voltages greater than 24VDC or be subject to reverse polarity connections without risk of damage to the driver.
5. Leakage current protection measurement is recommended between the power main and the LED driver. Please limit the number of the drivers used when the end-user operates them with only one leakage circuit-breaker. Sufficient margin needs to be considered when an earth leakage circuit-breaker is chosen. It is recommended that no more than five drivers share one leakage circuit-breaker with a 30mA rating. If the drivers are tripped during operation, please consult a qualified professional to investigate whether there is other possible leakage. Leakage current measurements should be taken after the cause of failure is confirmed.

IV. Warranty Instructions

1. Under normal circumstances, the driver warranty begins from the date of delivery from Inventronics. If a product has any failure during the warranty period, Inventronics will repair or replace the driver after the failure is confirmed as a true defect and do action through normal RMA process.
2. Warranty is considered out-of-scope when one or more of the following situations occur:

1）The driver suffers damage by not following the instruction manual;

2）The driver suffers damage because of improper operation or improper assembly;

3）Improper application or integration with luminaire;

4）Disassembly of driver by the end-user;

5）Severe damage or deformation of the driver's appearance;

6）Damage to the driver's input or output wires;

7）Driver's identification codes or serial numbers erased, altered or damaged;

8）Damage to the driver caused by natural disasters.

Remarks: The final interpretation of this manual rests with Inventronics (Hangzhou), Inc. Please consult the appropriate personnel within Inventronics for assistance in understanding this manual.

INVENTRONICS

Installation Guidelines–Prevention of Moisture Ingress for Outdoor Applications

Inventronics "IP67 rated" drivers are designed to take on the additional electrical, thermal, and moisture related challenges of the outdoor world. The IP67 design standard conforms to IEC-60529 for moisture ingress protection.

Per this standard, IP67 rated drivers must withstand immersion in 1 meter of water for 30 minutes. All Inventronics IP67 rated drivers meet this standard. However, meeting IP67 is not sufficient to withstand all environmental applications. IEC-60529 does not account for the effects of humidity, thermal cycling, airborne pollutants, or UV damage. In summary, real world applications are frequently more demanding than IP67.

The long-term reliability of the driver is dependent on the installation method used.

Best

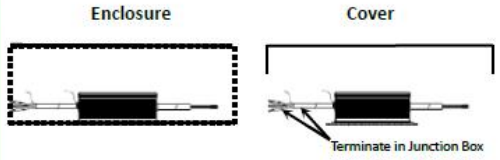


Figure 1. Best Practice – Protective Enclosure or Cover

Best Practice

- Mount driver in waterproof enclosure or at least beneath a cover to prevent direct exposure to rain or moving water
- Properly terminate wire leads and cable jacket:
  - In a waterproof junction box
  - With waterproof connectors
- Keep cables straight or at least provide adequate strain relief to prevent gaps between the cables and grommet
- Provide a drainage system with holes or at least a path to move water away from the driver

Note: Consider thermal performance for every design and application.

Acceptable

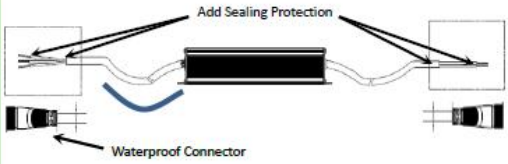


Figure 2. Acceptable Alternative – Dip Cable Lower than Driver

Acceptable Alternative Method

- Mount driver horizontally
- Route cable to dip or loop lower than driver to prevent water from flowing to junction areas

Avoid

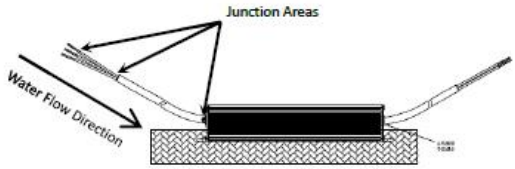


Figure 3. Not Recommended – Exposed + Cable Above Driver

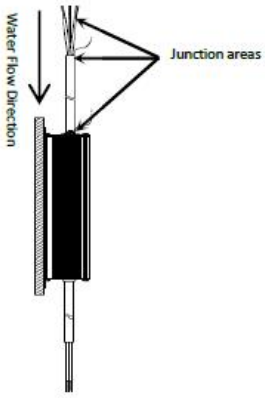


Figure 4. Not Recommended – Exposed + Vertical Mounting

Things to Avoid

- Direct exposure to rain or moving water
- Cables bent or looped above driver
- Wire leads or end of cable jacket directly exposed to moisture, enabling moisture to eventually wick into driver
- Moisture build up, or pooling, around driver
- Vertical mounting, enabling water to collect at junction areas

Inventronics is committed to concurrent engineering with our customers to develop the world's most reliable drivers for the toughest applications. Please contact us with any comments, questions, or concerns at: https://www.inventronics-co.com/technical-support/.