

## Summary

The Empower Electronic Ballast is designed using high quality components and a thermally conductive system. This allows for an operational ambient temperature between -30°C and +55°C and a maximum case temperature of 90°C. Integral to the Empower ballast is a switching power supply that provides input voltage across a wide range.

Safety features of the Empower ballast include protection if:

- The lamp fails to light.
- The lamp's end of life is reached.
- A short circuit, open circuit or output to ground is encountered.
- The input has a surge, lag, or fast transient.
- The unit overheats.

## Installation Requirements

Use the following checklist to confirm that the operating environment is suitable, the electronic ballast mounting provides sufficient heat conduction, wiring is properly attached and the installation passes a final test.

**WARNING: If the Electronic Ballast requirements for installation are not followed properly, ballast life could be reduced and may present unsafe or hazardous conditions to the installer or others nearby.**

### A. Operating Environment

1. Use only lamps that Empower Electronics has approved. Visit [www.empowerelec.com](http://www.empowerelec.com) or contact Empower Customer Support at (858)536-8711.
2. In areas of high humidity, isolate terminals against condensation or keep the terminal blocks in a junction box.
3. Install the ballast as far as possible from any sources of heat.
4. In a lighting fixture, install the Empower Digital Ballast as far from the lamp reflector as possible.
5. The connection between the lamp and the Electronic Ballast must not exceed 2 meters (6 feet).
6. Ensure that line voltage regulation fluctuation is not greater than +/- 10% of desired voltage. If in doubt, monitor the quality of the site's power feed for at least one week, using a power analyzer.

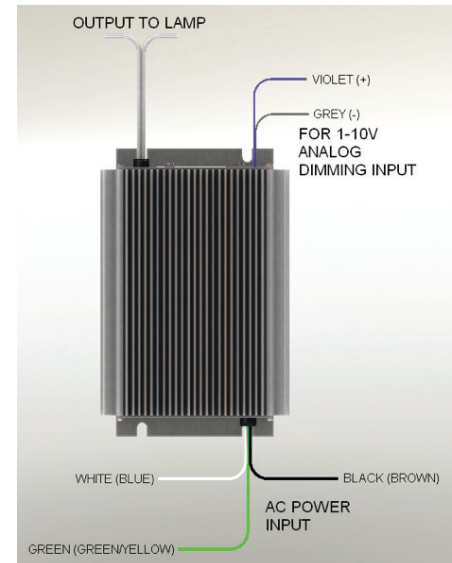
### B. Mounting the Electronic Ballast

1. Mount the Electronic Ballast on a metallic surface with good heat conduction.
2. Use a metal mounting plate that extends past the ballast by at least 3 cm on every side.
3. Mount the Electronic Ballast tight and flush to a flat surface.

4. Never attach the Empower Electronic Ballast with adhesive tape, double-sided glue tape, epoxy, or any other material that prevents heat conduction and contact between the ballast and heat conducting surface. Use mounting hardware such as bolts or screws with sufficient strength to hold ballast in place.
5. When installing multiple Electronic Ballasts together in one area, each must be mounted on a separate mounting plate. If not possible, mount all the ballasts on one plate with at least 3 cm spacing between each ballast.

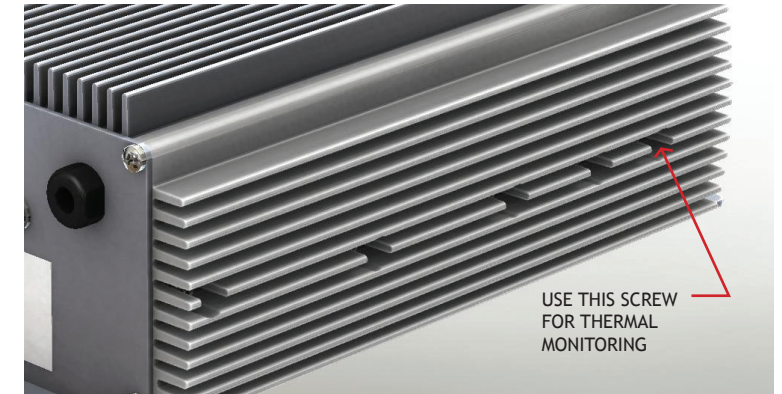
### C. Wiring Attachments

1. Check the Electronic Ballast's label to ensure that the ballast type is suitable for the local power supply.
2. Connect the Electronic Ballast case and the lighting fixture to Ground, using a dedicated Ground lead. Do not use the Ground wire within the power cable for this purpose.
3. Never connect the ballast's output wires to Neutral or Common. Do not short the ballast's output wires to Ground or to the case.
4. All sockets must be pulse-rated to at least 4KV.
5. Connect the Electronic Ballast to the lamp with isolated 018AWG conductors with 5KV minimum rating.
6. Use double insulated conductors or isolated conductors to connect the Electronic Ballast to an MH or HPS lamp.
7. When removing the outer isolation of a conductor, insert an extra isolation layer in its place. Check the conductor isolation has not been broken where the conductors are attached to metal parts.
8. Keep power and ground conductors separated from each other by at least 1 cm at all times.
9. Although there is a label showing polarity of lamp connection leads, this label is used only for manufacturing test of your ballast. *It is not necessary to consider polarity of leads in making ballast-to-lamp connections.*



### D. Final Installed Ballast Test

1. After installing the Electronic Ballast, it is recommended that you monitor its operating temperature at the case mounting point for at least 24 hours. The case mounting points that are acceptable for monitoring temperature are shown below.
2. This temperature at any time during the 24 hours must remain below 90°C. It should stabilize within 2 hours unless ambient conditions are changing.



THERMAL TEST POINT LOCATION

## Maintenance

Always follow these safety rules when working with your lighting fixtures:

- Disconnect the Electronic Ballast from main power before checking the lamp.
- To reset the Electronic Ballast, disconnect it from main power for at least 10 seconds.
- Do not try to open the Electronic Ballast. It contains no user-serviceable parts. Doing so will void the manufacturer's warranty.
- Ballast service must be performed only by an authorized Empower Electronics Technician.

## Questions or Need Assistance?

If you have questions or require assistance, contact Empower Electronics' Customer Assistance at (858)536-8711 between the hours of 8 AM - 5 PM PST, Monday through Friday, except on holidays.

## PRODUCT WARRANTY

Empower Electronics Electronic HID Ballasts are warranted to be free from defect in workmanship and materials under normal conditions for a total period of five (5) years from the date of manufacture for case temperatures less than 75C or (3) years from the date of manufacture for case temperatures less than 85C. During said warranty period, Empower Electronics agrees and shall be obligated to limit the refund of the purchase price of the ballast or, at the option of Empower Electronics, replacement of defective ballasts due to the nature of the defect.

This warranty is not applicable and is voided to any product manufactured by Empower Electronics which is not stored, installed, operated and maintained in accordance with:

- Operation with a lamp listed on the Empower website
- Operation with a listed lamp to within dimming limits as listed on the Empower website
- National Electronics Manufacturers Association (NEMA) Standards
- National Electric Code (NEC)
- Standards for Safety of Underwriters Laboratories, Inc. (UL)
- Standards for the American National Standards Institute (ANSI)
- Any local or national government standards, rules or regulations
- Specific Instructions Provided by Empower Electronics for the Installation of the Product(s)
- Operation in a temperature environment of 55C or less in the installed fixture or surrounding environment of ballast.
- Other Accepted industry practices.

Moreover, this limited warranty is null and void if the damage or defect has resulted from improper customer installation, failure by the customer to follow applicable instructions, improper product modifications, negligent or improper operation, accidents, abuse or misapplication, cannibalization of parts, catastrophic failure conditions, severe environmental exposure, misapplication, operation exceeding the rated operating temperature of 55C, contamination, improper calibration, storage, or handling by the customer, or unauthorized maintenance or repair, and all acts either natural or induced by man, including but not solely limited to: fires, floods, tornadoes, earthquakes, thunderstorms, lightning strikes, power-surges, and insect, animal infestations or if the warranty label has been removed or altered in any manner. Under these specified circumstances Empower Electronics shall not be held liable, either directly or indirectly, for any incurred loss to the customer. Any Ballasts returned to Empower Electronics pursuant to this warranty must be returned with all freight prepaid, no freight collect packages will be accepted.

Before returning an item for warranty considerations, please see the following:

1. Before sending the item, contact Empower Electronics to determine whether the item is within the warranty period and to alert Empower of your warranty claim.
2. An RMA (Return Merchandise Authorization) number must be obtained from Empower prior to returning the item(s). This RMA number must be marked on each item being returned to ensure proper credit and attention.
3. To obtain an RMA number, write [customer@empowerelectronics.com](mailto:customer@empowerelectronics.com) or Fax 858-536-4168.
4. We will arrange to evaluate your item for warranty consideration upon receipt and proceed as appropriate. Upon written approval from Customer Service, you may ship your warranty item(s) to:

**Empower Electronics**  
Attn: Customer Service Department  
9685 Via Excelencia  
San Diego, CA 92126

**NO OTHER WARRANTIES.** The limited above warranty is exclusive and in lieu of all other conditions or warranties whether express, implied, statutory, or otherwise. Any claims arising from third party manufacturer's warranties shall be the sole responsibility of the manufacturer and not of Empower Electronics.

In no case shall Empower Electronics be obligated or liable for any indirect, consequential, or incidental damages for breach of this or any other warranty, expressed or implied, whatsoever This warranty is valid only within the contiguous United States and only applies to the original purchaser and does not extend to subsequent owners of the product.

**LIMITATION OF LIABILITY.** In no event shall you be entitled to recover from us, nor shall we be liable for, any incidental, special or consequential damages for breach of any warranty, expressed or implied, directly or indirectly arising out of Empower Electronics sale of Ballasts, or arising out of customer's installation or use, whether proper or improper, of the Ballasts, separately or in combination with other equipment, or from any other cause, including but not limited to damages arising from or related to loss of customer's business, business interruption, business information, expenses, loss of profit, savings, loss of goodwill, injury, or reputation, overhead, downtime, or any other debits from you or any of your customers and not limited to, any special, direct, indirect, incidental, exemplary, or consequential damages, or any other damages arising out of any manufactured goods, repair services or remanufactured goods.



## Empower Electronic Ballast Installation Guidelines



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