BSL310C/BSL310M

Installation Instructions

EMERGENCY LED DRIVER

CLASS 2 OUTPUT

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! IMPORTANT SAFEGUARDS !

WHEN USING ELECTRICAL EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. Do not join converter connector until installation is complete and AC power is supplied to the emergency driver.
2. This product is for use with an emergency LED lighting load and supplies nominal 10.0 W of power and a maximum voltage of 50 VDC in emergency mode for a minimum of 90 minutes.
3. Make sure all connections are in accordance with the National Electrical Code or Canadian Electrical Code and any local regulations.
4. To reduce the risk of electric shock, disconnect both normal and emergency power supplies and converter connector of the emergency driver before servicing.
5. This emergency driver is suitable for both factory or field installation. For field installation, please see the instructions on page 2.
6. This product is suitable for use in damp locations where the ambient temperature is 0°C minimum, +55°C maximum. Product is also suitable for installation in sealed and gasketed fixtures. Product is not suitable for heated air outlets and wet or hazardous locations. Maximum allowable case temp is 65°C. See Page 4 for measurement location.
7. An unswitched AC power source is required (120-277 VAC, 50/60 Hz).
8. Do not install near gas or electric heaters.
9. Do not attempt to service the battery. A sealed, no-maintenance battery is used that is not field replaceable. Contact the manufacturer for information on service.
10. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
11. Do not use this product for other than intended use.
12. Servicing should be performed by qualified service personnel.
13. Equipment should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.
14. For Canadian application the output terminals should be in compliance with the accessibility requirement of the Canadian Electric Code.
15. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference that may cause undesired operation.
16. This product chassis must be grounded.

SAVE THESE INSTRUCTIONS

Ni - Cd

THIS PRODUCT CONTAINS A RECHARGEABLE NICKEL-CADMIUM BATTERY.
THE BATTERY MUST BE RECYCLED OR DISPOSED OF PROPERLY.

03/05/18

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INSTALLATION

CAUTION: DO NOT JOIN CONVERTER CONNECTOR UNTIL INSTALLATION IS COMPLETE AND AC POWER IS SUPPLIED TO THE EMERGENCY DRIVER.

NOTE: Make sure the necessary branch circuit wiring is available. An unswitched source of power is required. The emergency driver must be fed from the same branch circuit as the AC driver.

This product is suitable for field installation with suitable LED loads including LED luminaires, DC voltage driven LED replacements for fluorescent lamps and others. There are four (4) checks to determine if your luminaire is eligible for field installation.

1. Ensure the LED load's rated power is greater than or equal to the power output of this emergency LED driver. This is to ensure that this emergency product will not produce more power than the LED load can handle, thus ensuring that the LED load will not be damaged when the system is in the emergency mode.

2. Verify that the forward voltage of the luminaire's LED array is within the limits of this emergency LED driver. The forward voltage of the LED array is commonly designated as Vf and should be found on the luminaire markings, in the luminaire specifications, or imprinted directly on the LED arrays. If multiple LED arrays are to be driven, verify that the total forward voltage is within the limits of this product. Using a voltage meter, it may be possible to directly measure the voltage across the LED arrays when operating from the AC driver.

3. Ensure the output current of the LED driver does not exceed 3.0 Amps. This is the current into the blue wire.

4. Ensure there will be sufficient light output in the end application. Estimate the egress lighting illumination levels by doing the following:

    a. Find the efficacy of the LED load. This can be provided by the luminaire manufacture. This number will be given in lumens per watt (lm/w). It is the installer's responsibility to validate the luminaire manufacturer's efficacy data. This can be accomplished by direct measurement, by review of independent 3rd party test data (UL, ETL, etc.), accessing a public database of 3rd party data (such as Design Lights Consortium, www.designlights.org), or other comparable means.
    b. Lumens can be calculated by multiplying the output power of the emergency LED driver by the efficacy of the LED load. In many cases the actual lumen output in emergency mode will be greater than this calculation gives, however it will provide a good estimate for beginning the lighting design of the system.

Lumens In Emergency Mode = Lumens per Watt of Fixture * Output Power of Chosen Product

_____ (Lumens) = _____ (lm/W) * _____ *10* W

    c. Using the results of this calculation and industry standard lighting design tools, calculate the anticipated illumination levels in the path of egress.

NOTE: This product has been designed to reliably interface with a wide selection of LED loads and is electrically compatible with every simple LED array that meets criteria 1 and 2 above. However, compatibility cannot be guaranteed with all current and future LED systems. Compatibility testing of the end-use system is suggested. Please contact the factory with any questions.

NOTE: After installation, it will be necessary to measure the egress lighting illumination levels to ensure it complies with national, state, and local code requirements.

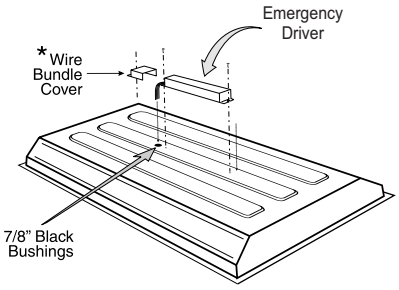
Installation of this emergency LED driver will vary based on the luminaire type, however, generally follow these steps.

STEP #1 ▶ INSTALLING THE EMERGENCY DRIVER

> Disconnect AC power from the LED luminaire.

> Mount the emergency LED driver by the mounting tabs using the supplied screws. The luminaire's installation instructions may provide guidance on the recommended mounting location.

NOTE: Considerations must be made to protect the wires of the BSL310M if installed outside of the luminaire.



If the application requires the BSL310M to be mounted on top of the luminare please use Model BSL310C instead or wire bundle cover kit (RMC-60). Please note, the RMC-60 kit contains enough parts to install two products.

> **Mounting Height:** This product meets or exceeds the NFPA minimum light requirements with all loads, down to the smallest rated lamp load, at heights up to 7.17ft (2.2m). Many factors influence emergency illumination levels, such as the lamp load selected, luminare design, and environmental factors therefore end use verification is necessary. For field installations, when the attached luminaire is mounted at heights greater than 7.17ft (2.2m), the level of illumination must be measured in the end application to ensure the requirements of NFPA 101 and local codes are satisfied.

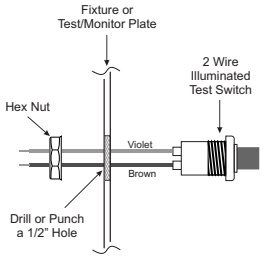
> **Remote Mounting:** The emergency LED driver may be remote mounted from the luminaire. If used in conjunction with an AC driver the allowed distance is up to half the distance the AC driver manufacturer recommends remote mounting the AC driver from the LED load. If used without an AC driver, and remote mounting more than 5 feet from the luminaire, please consult the factory to determine the necessary wire gauge. **CAUTION:** Remote mounting can result in reduced power output.

STEP #2 ▶ INSTALLING THE 2W-ITS ON FIXTURE SURFACE

> Mount the supplied 2W-ITS (2-wire illuminated test switch) in a location that is visible and accessible by maintenance personnel. The 2W-ITS mounts through a ½" hole which may need to be made in the luminaire or could come pre-punched by the luminaire supplier.

> Wire the test switch per wiring diagrams provided on these instructions.

> If wired correctly, the 2W-ITS indicator light should be ON when AC power is supplied to the fixture, and the convertor connector is closed indicating that the emergency inverter battery is charging. After installing, mark with the "PUSH TO TEST" and "CHARGING INDICATOR LIGHT" labels.



STEP #3 ▶ WIRING THE EMERGENCY DRIVER

> Select the appropriate wiring diagram to connect the emergency driver to the AC driver and LED load. Make sure all connections are in accordance with the National Electrical Code and any local regulations.

> After installation is complete, supply AC power to the emergency driver and join the converter connector.

> At this point, power should be connected to both the AC driver and the emergency driver, and the Charging Indicator Light should illuminate indicating the battery is charging.

> A short-term discharge test may be conducted after the emergency driver has been charged for one hour. Charge for 24 hours before conducting a long-term discharge test. Refer to OPERATION.

> In a readily visible location, attach the label **"CAUTION - This Unit Has More Than One Power Connection Point. To Reduce The Risk Of Electric Shock, Disconnect Both The Branch Circuit-Breakers Or Fuses And Emergency Power Supplies Before Servicing."**

OPERATION

During normal operation AC power is applied, the charging indicator light is illuminated, indicating that the battery is being charged. When power fails, the emergency LED driver automatically switches to emergency power (internal battery), operating the LED load for a minimum of 90 minutes. When AC power is restored, the emergency driver returns to the charging mode.

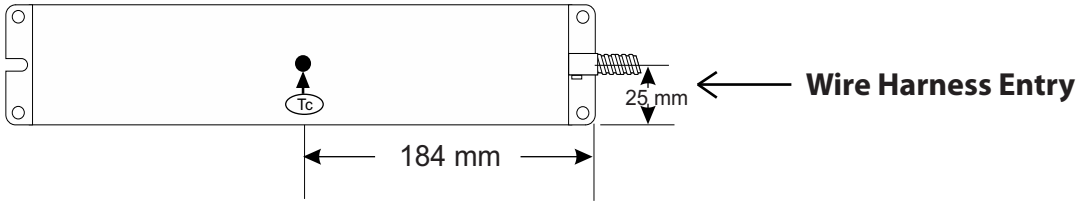
MAINTENANCE

Although no routine maintenance is required to keep the emergency driver functional, it should be checked periodically to ensure that it is working. The following schedule is recommended:

1. Visually inspect the charging indicator light monthly. It should be illuminated. If the charging indicator is flashing. Contact tech support.
2. Test the emergency operation of the fixture at 30-day intervals for a minimum of 30 seconds. The LED load should operate at reduced illumination.
3. Conduct a 90-minute discharge test once a year. The LED load should operate at reduced illumination for at least 90 minutes.

! REFER ANY SERVICING INDICATED BY THESE CHECKS TO QUALIFIED PERSONNEL !

TCASE TEST POINT LOCATION



EMERGENCY DRIVER AND AC DRIVER MUST BE FED FROM THE SAME BRANCH CIRCUIT

TYPICAL SCHEMATICS ONLY. MAY BE USED WITH OTHER DRIVERS. CONSULT THE FACTORY FOR OTHER WIRING DIAGRAM.

WIRING DIAGRAM

FIG A TWO (2) WIRE INTEGRATED TEST SWITCH

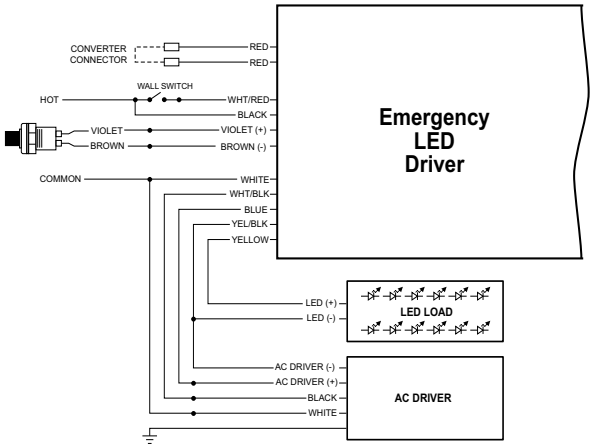
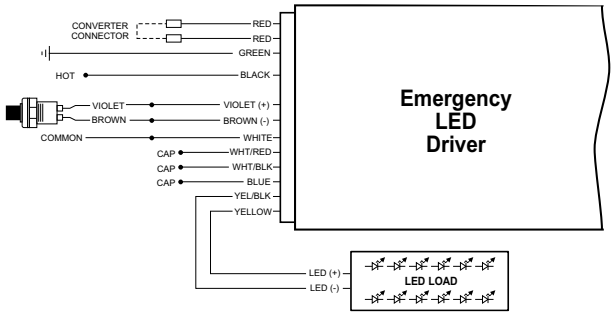


FIG B EMERGENCY ONLY



NOTE: For short-term testing of the emergency function, the battery must be charged for at least one hour. The emergency driver must be charged for at least 24 hours before conducting a long-term test.