

L10 Self Diagnostic Series - SD
L14 Self Diagnostic Series - SD
L20 Self Diagnostic Series – SD

Emergency LED Driver

Installation Instructions

Class 2 Output (Only for nominal voltage series 15-55V)



READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. When installing the emergency system, once the overall installation steps are completed, the last step is to apply AC power source. If everything is correct after AC power source is applied, the LED indicator should indicate "Flash Green" when charging or "Steady Green" when battery fully charged.
2. This product is intended for use with an emergency LED lighting load and supplies nominal of power and a maximum voltage in emergency mode for a minimum of 90 minutes.
3. An unswitched AC power source is required (120-277 VAC, 50/60 Hz) to power these units.
4. This product's chassis must be grounded.
5. This product is suitable for use in damp locations where the ambient temperature is 0°C minimum, to 55°C maximum. This product is not suitable for heated air outlets and wet or hazardous locations.
6. This product contains a rechargeable LiFePO4 or Lithium-506473ion battery. The battery must be recycled or disposed of properly.
7. Make certain all connectors are in accordance with the National Electrical Codes or Canadian Electrical Code and any local regulations.
8. This emergency LED driver is suitable for both factory or field installation. For field installation, please see the instructions section.
9. Do not install near gas or electric heaters.
10. The use of accessory equipment is not recommended by the manufacturer may cause an unsafe condition.
11. Do not use this product for applications other than the intended use.
12. Equipment should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.
13. For Canadian applications, the output terminal should be in compliance with the accessibility requirement of the Canadian Electrical Code.
14. This device complies with part 15 of the FCC Rules. Operation is suitable 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.
15. To reduce the risk of electric shock, disconnect both normal and emergency power supplies and operate "Battery Disconnection" of the emergency driver before servicing.
16. Do not attempt to service the battery. It is a sealed, no-maintenance battery is used that is not field replaceable. Contact the manufacturer for information on service.
17. Servicing should be performed by qualified service personnel only.

INSTALLATION

CAUTION: WHEN INSTALLING THE EMERGENCY SYSTEM, ONCE THE OVERALL INSTALLATION IS COMPLETED, THE LAST STEP IS TO APPLY AC POWER.



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. There are Three (3) 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 V_f and should be found on the luminaire, 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 AC LED driver does not exceed 5 Amps. This is the current into the red/blue output wire at normal mode.

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 systems is suggested . Please contact the factory with any questions.

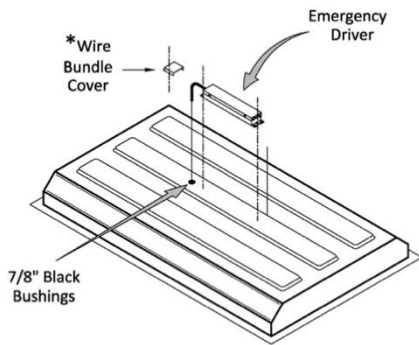
NOTE: After installation, it will be necessary to measure the egress lighting illumination level to ensure it complies with national state and local code requirement.

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 appropriate screws(not provided). The luminaire's installation instructions may provide guidance on the recommended mounting location.

NOTE: Considerations must be made to protect the wires on the models have no flexible conduit if installed outside of the luminaire.



Note:

If the application requires the emergency LED driver to be mounted on top of the luminaire, please use the models which provide metal flexible conduit instead of bare wire.

- **Mounting Height:** Many factors influence emergency illumination levels, such as the lamp load selected, luminaire design, and environmental factors. Therefore end-use verification is necessary. For field installations, the mounting height of illumination must be measured in the end application to ensure the minimum lumens requirements on national, state, and local codes are satisfied.

Lumens can be calculated by the following formula:

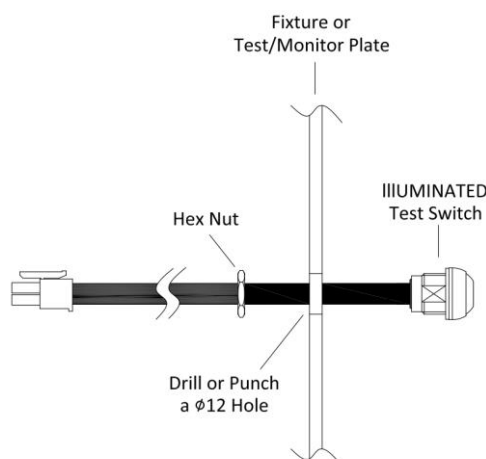
$$\text{Lumens in Emergency Mode} = \text{Lumens per Watt of Fixture} * \text{Output Power of Chosen Product}$$

$$\text{_____ (Lumens)} = \text{_____ (lm/W)} * \text{_____ (W)}$$

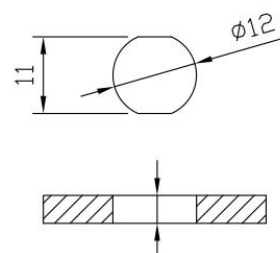
- **Remote Mounting:** The emergency LED driver may be remote mounted from the luminaire. If used in conjunction with an AC driver the allowed distance is up to half the distance the AC driver manufacturer recommends remote mounting the AC driver from the LED load. If used without an AC driver, and remote mounting more than 18 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 4-WIRE TEST SWITCH ON FIXTURE SURFACE

- Mount the supplied 4-wire illuminated test switch in a location that is visible and accessible by maintenance personnel. The switch mounts through a hole which may need to be added to 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 test switch indicator light should be either "Flash Green" or "Steady Green" depending on battery fully charged or not. When AC power is supplied to the fixture, the test switch indicating "Flash Green" when battery charging, or "Steady Green" when battery fully charged.



Mounting hole for test switch



Panel thickness 4mm Max.

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 completed, supply AC power to the emergency driver. 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 or fully charged.

A short-term discharge test may be conducted after the emergency driver has been charged for one hour. A 24-hour charging period must be performed before conducting a long-term (90 minutes) discharge test.

The installed fixture can remain in sleep mode by press and hold during emergency mode to disconnect the internal battery circuit. Apply AC power source to activate the EMB again when needed.

"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 to the driver, and the indicator light is "Flash Green", which indicates that the battery is being charged. When power fails, the emergency LED driver will automatically switch to emergency mode, operating the LED load for a minimum of 90 minutes if the battery is fully charged. When AC power is restored, the emergency driver returns to the charging mode.

MAINTENANCE

The emergency driver with self-diagnostic function is designed to automatically operate a 30 seconds short-term test each month, and a 90 minutes duration test every 12 months.

The emergency unit will perform the condition via bi-color LED indicator, please refer to the self-diagnostic code table as below:

Self-Diagnostic Code Table

EMB Status	LED Indication	Condition	Failure Priority
Normal Mode	Steady GREEN	Battery is Fully Charged	N/A
	Flash GREEN	Battery is Charging	N/A
Emergency Mode	One RED Flash	Charging Failure	1
	Two RED Flashes	Battery Failure	2
	Three RED Flashes	Load Failure	3

Note:

1. The failure code occur every 10 seconds. Only highest priority failure is indicated.
2. One Red flash: Battery fail to fully charge in 24 hours.
3. Two Red flash: Battery complete dead or bad battery connection.

Manual Testing

Manual testing can be performed by pressing the test switch. The failure code will be the same as Self-Diagnostic Code Table above. Please follow the Manual Test Sequence Table in below:

Manual Test Sequence Table

EMB Status	Manual Test Item	Test Switch Operation
Normal Mode	Quick Test	Press and Hold
	30-Second Test	2 x Press and Release
	90-Minute Test	3 x Press and Release
	Cancel 90-Minute Test	1 x Press and Release
Emergency Mode	Sleep Mode	Press and Hold

Note:

*This unit incorporates **Power Engage Technology** which eliminates the need for the traditional “Battery Connector”. For the factory installation, please set the emergency unit into “Sleep Mode” to disconnect Emergency Power. This will avoid unnecessary battery loss during the transportation and disengages the emergency operation.*

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



RE-CHARGE BATTERY for 24HRS/48HRS BEFORE 1YR Anniversary Date of Manufacture.

EMERGENCY DRIVER AND AC DRIVER MUST BE FED FROM THE SAME BRANCH CIRCUIT TYPICALLY. IT MAY BE USED WITH OTHER DRIVERS. CONSULT THE FACTORY FOR OTHER WIRING DIAGRAM.

SYSTEM WIRING DIAGRAM

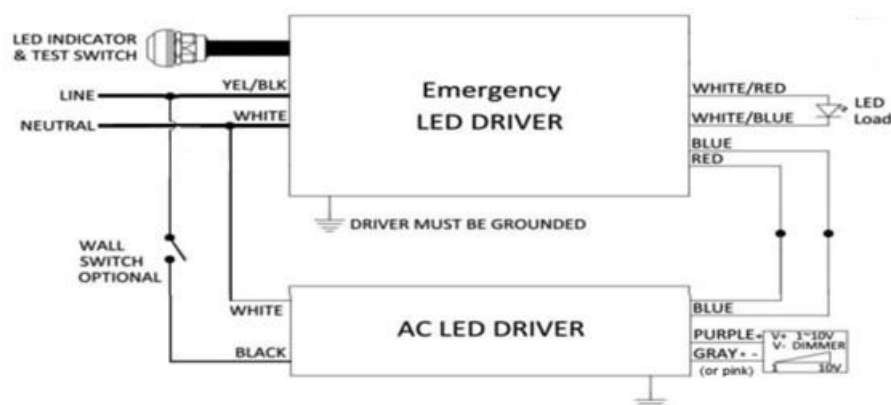


Figure A. Overall Wiring Diagram option 1.

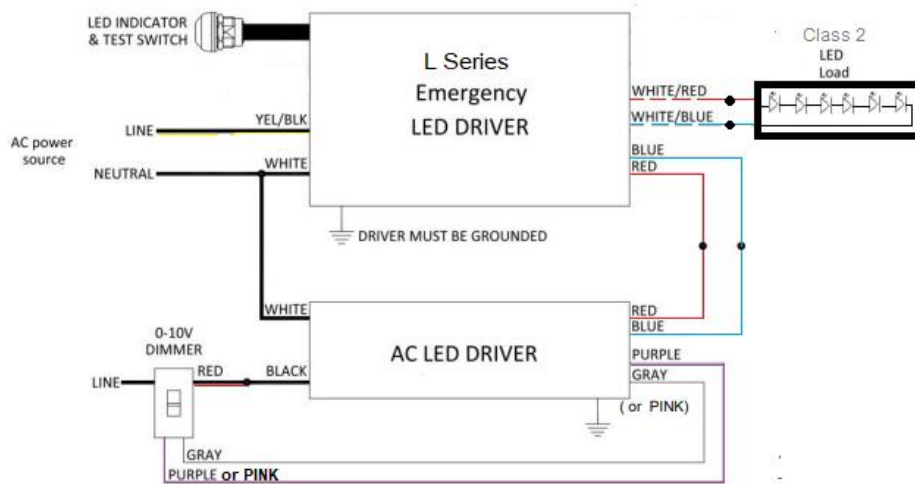


Figure B

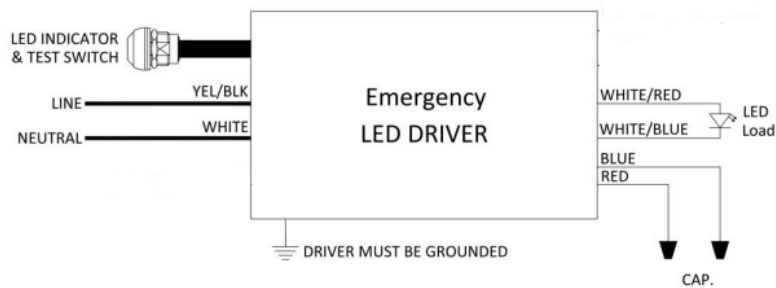
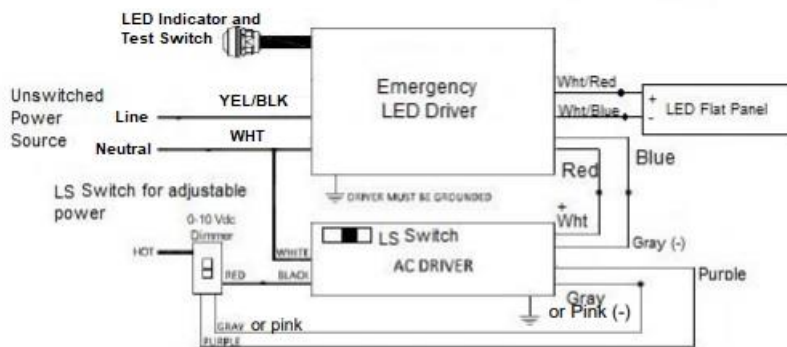


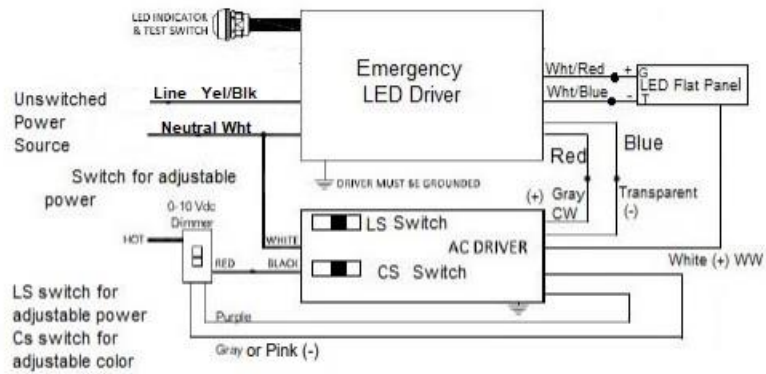
Figure C. EMERGENCY ONLY



Note: Some Flat Panel LED Lighting systems use AC Drivers with White (+) and Gray (-) output wires. The leads from the AC driver to the array will need to be cut and wired as shown. Adjustable power/ lumens diagram shown.

Figure F.

Note: 2022 Codes changing 0-10Vdc Dimming wires from Gray (-) to Pink (-).



Note: Some adjustable Lumen & Color Flat Panel LED Lighting systems use AC drivers with Gray CW (+), Transparent (-) and White WW output wires. The proper leads from the AC driver will need to be cut and wired as shown. White output wire in this diagram is not cut. Adjustable Lumens & Color system diagram shown.

Figure G.

**Contact Technical Support
for additional wiring diagrams or assistance.
Toll Free: 1-877-774-4775**

NOTE:

A short-term discharge test may be conducted after the emergency driver has been charged for one hour. 24-hour charging period must be performed before conducting a long-term discharge test.