

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. **Note: Once the installation is complete and AC power is supplied, wait one minute before joining the battery connector. This allows for battery detection and the self testing feature to engage properly.**
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 also suitable for installation in sealed and gasketed fixture. This product is not suitable for heated air outlets and wet or hazardous locations.
6. This product contains a rechargeable LiFePO4 or Lithium-ion battery. The battery must be recycled or disposed of properly.
7. Make certain all connectors are in accordance with the National Electrical Codes 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. 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.
14. To reduce the risk of electric shock, disconnect both normal and emergency power supplies and disconnect the battery connector of the emergency driver before servicing.
15. 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.
16. Servicing should be performed by qualified service personnel only.

INSTALLATION

Caution: Once the installation is complete and AC power is supplied, wait one minute before joining the battery connector. This allows for battery detection and the self testing feature to engage properly.



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 Vf 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 LED driver does not exceed 5 Amps. This is the current into the red/blue wires. Also, if multiple AC drivers and emergency drivers are connected together, do not exceed 5 Amps of current through the black wire. Exceeding 5 Amps will damage the unit and void the warranty. Use alternate wiring (cap black wire off) or contact technical support for assistance.

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.

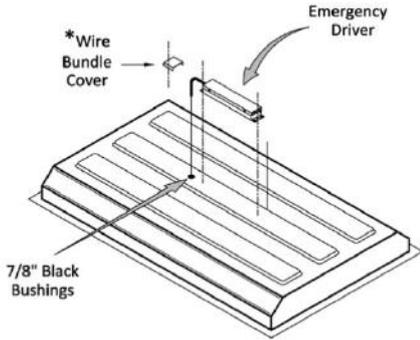
NOTE: After installation, it will be necessary to measure the egress lighting illumination level to ensure it complies with national state and local code requirement.

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:

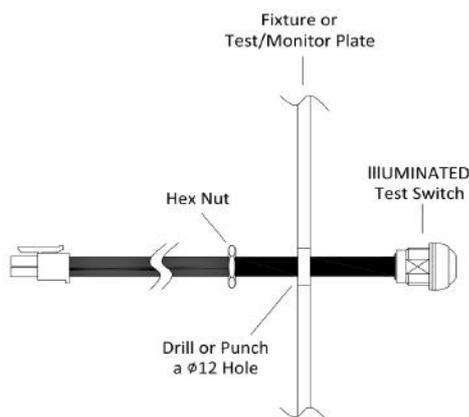
$$\text{Lumens in Emergency Mode} = \text{Lumens per Watt of Fixture} * \text{Output Power of Chosen Product}$$

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

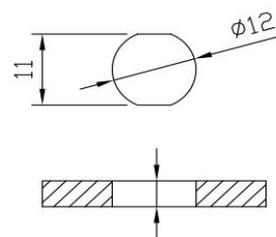
- ❖ **Remote Mounting:** The emergency LED driver may be remote mounted from the luminaire. If used in conjunction with an AC driver the allowed distance is up to half the distance the AC driver manufacturer recommends remote mounting the AC driver from the LED load. If used without an AC driver, and 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 “ON” when AC power is supplied to the fixture, and the battery switch is “ON” indicating that the emergency inverter battery is charging.



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 complete, supply AC power to the emergency driver and **wait one minute before connecting battery connector. This allows for battery detection and the self testing feature to engage properly.**

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. 24-hour charging period must be performed before conducting a long-term discharge test.

"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 charging indicator light is illuminated, which indicates that the battery is being charged. When power fails, the emergency LED driver will automatically switch 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

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

LED Indication	Condition	Failure Priority
Steady Green	Battery is Fully Charged	N/A
Flash GREEN	Battery is Charging	N/A
OFF	Emergency Mode	N/A
One Red Flash	Charging Failure	1
Two Red Flashes	Battery Failure	2
Three Red Flashes	Load Failure	3

Note:

1. The failure code occurs every 10 seconds. Only the highest priority failure is indicated.
2. One Red flash: Battery failed to fully charge in 24 hours.
3. Two Red flashes: Battery failure, improper connection or incorrect installation sequence.
4. Two Red flashes: If incorrect installation sequence, disconnect battery connector wait one (1) minute, then reconnect battery connector to eliminate sequence error code.

Manual Testing

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

Manual Test Sequence Table

Manual Test Item	Test Switch Operation	Emergency Circuit Breaker Operation
Quick Test	Press and Hold	N/A
30-Second Test	2 x Press and Release	2 x Toggles
90-Minute Test	3 x Press and Release	3 x Toggles
Cancel 90-Minute Test	1 x Press and Release	1 x Toggle

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

SYSTEM WIRING DIAGRAMS

* If AC driver input current exceeds 5A, cap black wire and connect AC driver hot directly to wall switch or switching device.

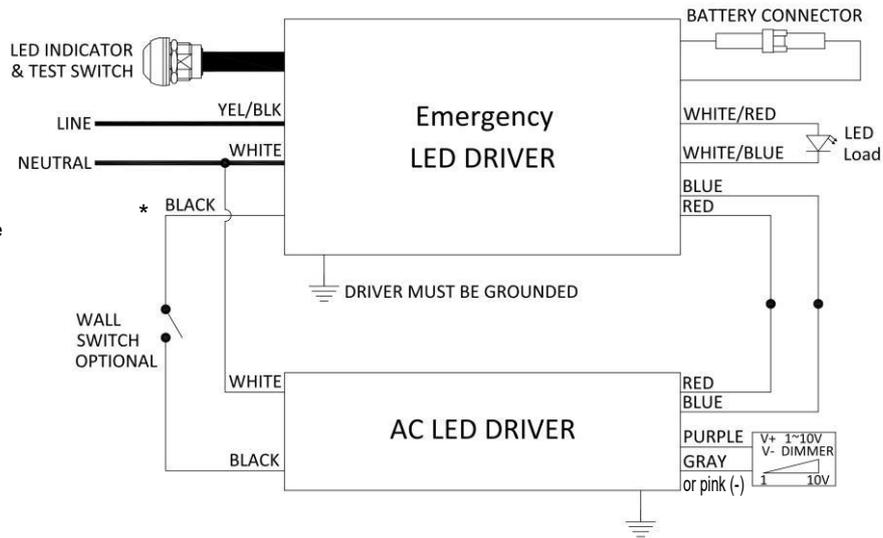


Figure A. Overall Wiring Diagram option 1.

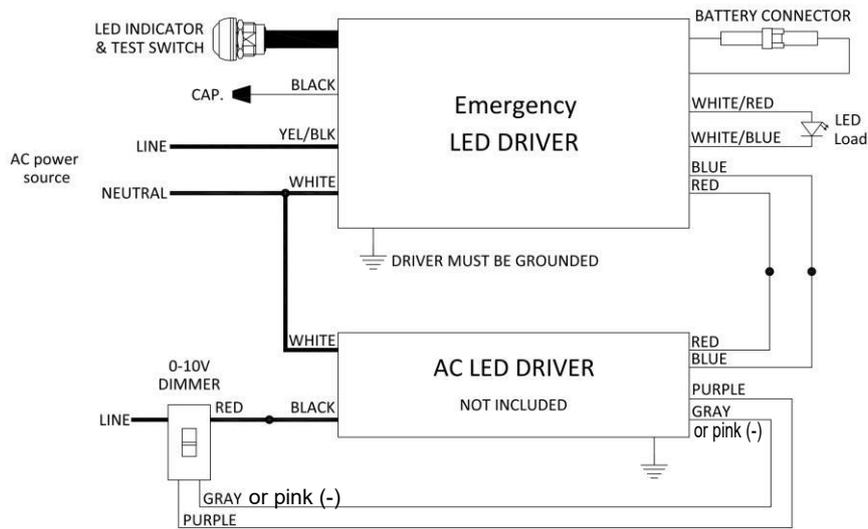


Figure B. Overall Wiring Diagram option 2.

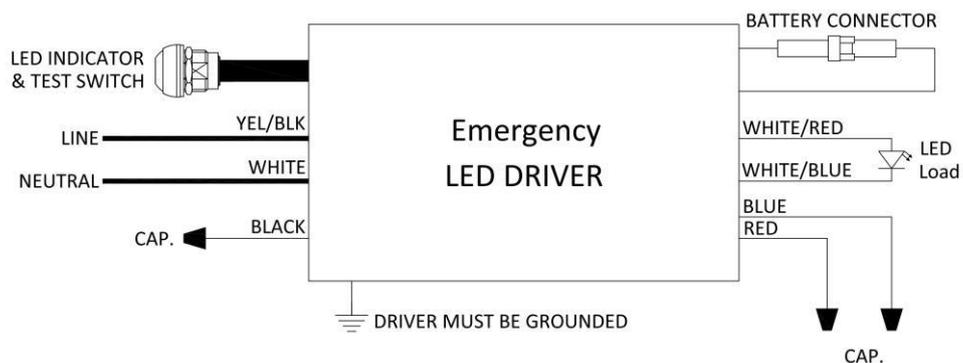


Figure C. EMERGENCY ONLY

SYSTEM WIRING DIAGRAMS

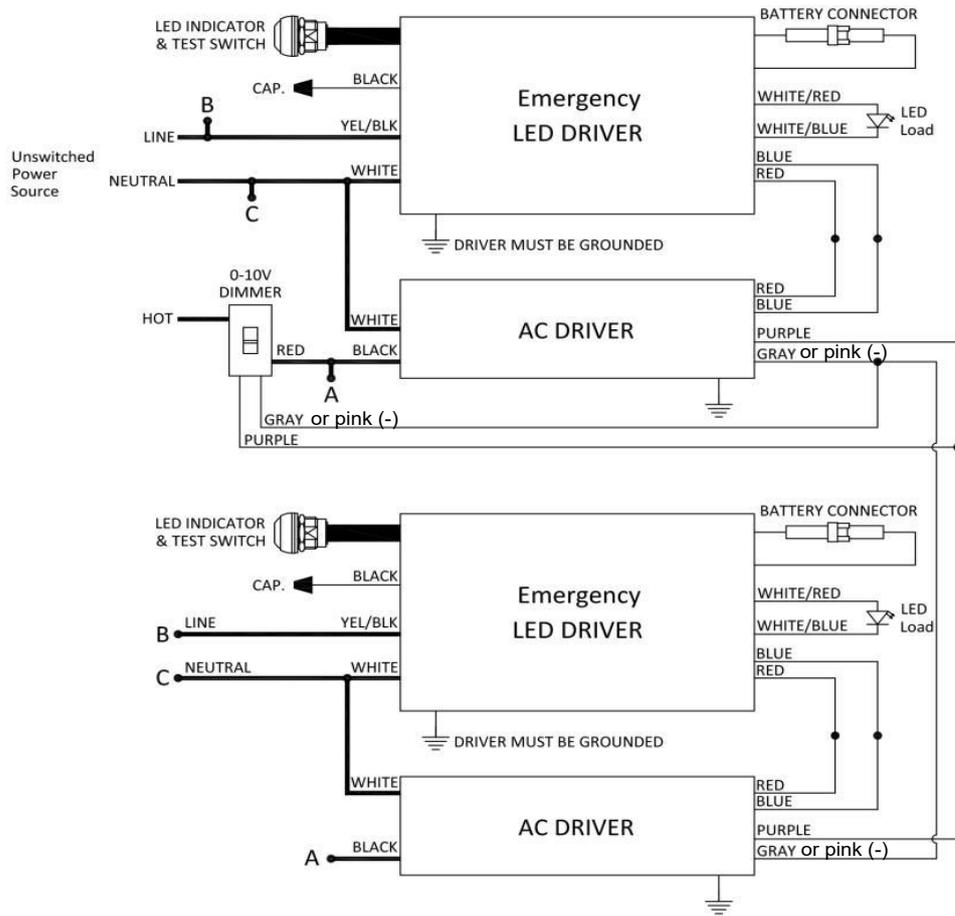
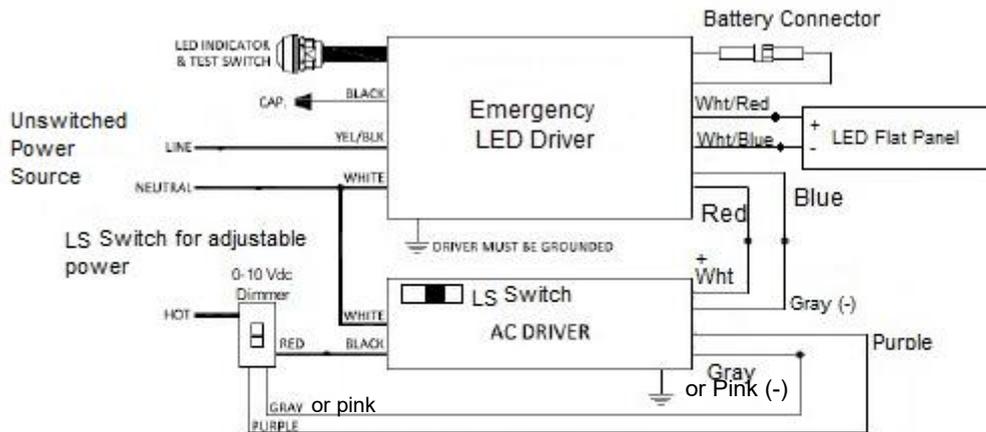


Figure D. Multiple Luminaires with Dimming Drivers

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

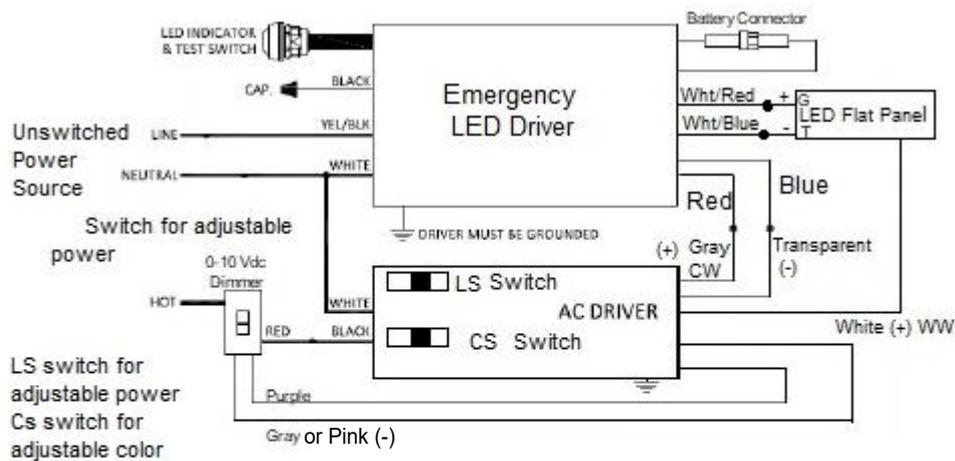
SYSTEM WIRING DIAGRAMS



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**