SINCE 1945 KEYSTONE | SMART//SAFE LED EMERGENCY BACK-UP

KT-EMRG-LED-20SD-2000-EN /DF

INSTALLATION AND OPERATING INSTRUCTIONS

BC

Product includes the following components:

Parts	Quantity
LED Emergency Driver	1
Instruction Sheet	1
Luminaire Modification Label	1
Test Button	1
Switch Plate Cover	1

Note: Install requires application of the Luminaire Modification Label provided in your Kit, as per UL.

This label includes the statement:

"This equipment has more than one power supply connection point."

This label must be applied to the fixture housing during installation.

IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed including:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

WARNING: Risk of fire or electric shock. Luminaire wiring and electrical parts may be damaged when drilling for installation of LED emergency backup. Check for enclosed wiring and components.

WARNING: Risk of fire or electric shock. This LED emergency backup installation requires knowledge of luminaires electrical systems. If not qualified, do not attempt installation. Contact a qualified electrician.

WARNING: Risk of fire or electric shock. LED emergency backup is only for use in surface-mount or recessed Type IC or Non-IC luminaires listed to UL Standards. Suitable for use in damp locations and plenum spaces. Not for use in heated air outlets or hazardous locations.

WARNING: Risk of fire or electric shock. Do not alter, relocate, or remove wiring, lampholders, power supply, or any other electrical component.

WARNING: To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects.

WARNING: Do not make or alter any open holes of the wiring enclosure or electrical component enclosure during installation. Only those open holes indicated in the instructions and/or drawings may be added or altered as a result of LED emergency backup installation. Do not leave any other open holes in the wiring enclosure or electrical component enclosure during installation.

CAUTION: Before installing, make certain the AC power to the fixture is off.

CAUTION: The electrical rating of this product is 120–277V. Installer must confirm that there is 120–277V at the fixture before installation.

CAUTION: To prevent electrical shock, only mate unit connector after installation is complete and before the AC power to the fixture is back on.

CAUTION: This fixture provides more than one power supply output source. To prevent electrical shock, disconnect both normal and emergency sources by turning off the AC branch circuit and disconnecting the unit connector.

CAUTION: This is a sealed unit. Components are not replaceable. Replace the entire LED emergency backup unit when necessary.

- Do not use outdoors.
- This LED emergency backup unit requires an unswitched AC power source of 120–277V, 50/60 Hz. The AC driver MUST be on the same branch circuit as the LED emergency backup unit.
- Do not let power supply cords touch hot surfaces.
- Do not mount near gas or electric heaters.
- Install in accordance with the National Electrical Code and local regulations.
- Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
- Do not use this equipment for other than intended use.
- Use with grounded, UL Listed, damp location rated fixtures. Case should also be grounded.
- The equipment is intended for ordinary locations and for permanent installation into one or more listed emergency luminaires.

SAVE THESE INSTRUCTIONS

INSTALLATION

1. **Read and understand all warning and notes stated above, before proceeding with installation.**
2. Fixture compatibility and applications:

   The KT-EMRG-LED-20SD-2000-EN /DF emergency packs can be used with most LED loads that have a forward voltage requirement between 20–60Vdc. Verify AC driver in the fixture is Class 2 compliant per driver manufacturer specifications. Verify LED load has a forward voltage requirement between 20–60Vdc. Confirm that the emergency pack selected does not exceed the power delivered to the LED load under normal operation from the AC driver.

   These emergency packs have been evaluated to and found compliant to UL 924. The emergency pack assembly is accepted as a component of a luminaire where the suitability of the combination shall be determined by UL or authorities having jurisdiction. The as-installed performance of the system must meet or exceed all federal, state, and local code requirements.

PRODUCT SPECIFICATIONS

Catalog Number	Rated Output Power	Nominal Lumen Output
KT-EMRG-LED-20SD-2000-EN /DF	20W (Constant)	2000 Lumens

   a. Multiply lm/W by rated output power of emergency pack to determine lumen output of fixture during emergency operation. To calculate actual minimum lumen output of fixture under emergency operation:

      1. Determine the fixture efficacy under normal AC operation, based on fixture manufacturer published data, in lumens per watt (lm/W).
      2. Reference DLC QPL (www.designlights.org) for rated data on fixture efficacy. If fixture is not found on DLC QPL, contact fixture manufacturer.

   b. Multiply fixture lm/W by rated output power of emergency pack. (Example: 104 lm/W × 20W = 2080 lumens.)

3. Determining adequacy of means-of-egress lighting levels:

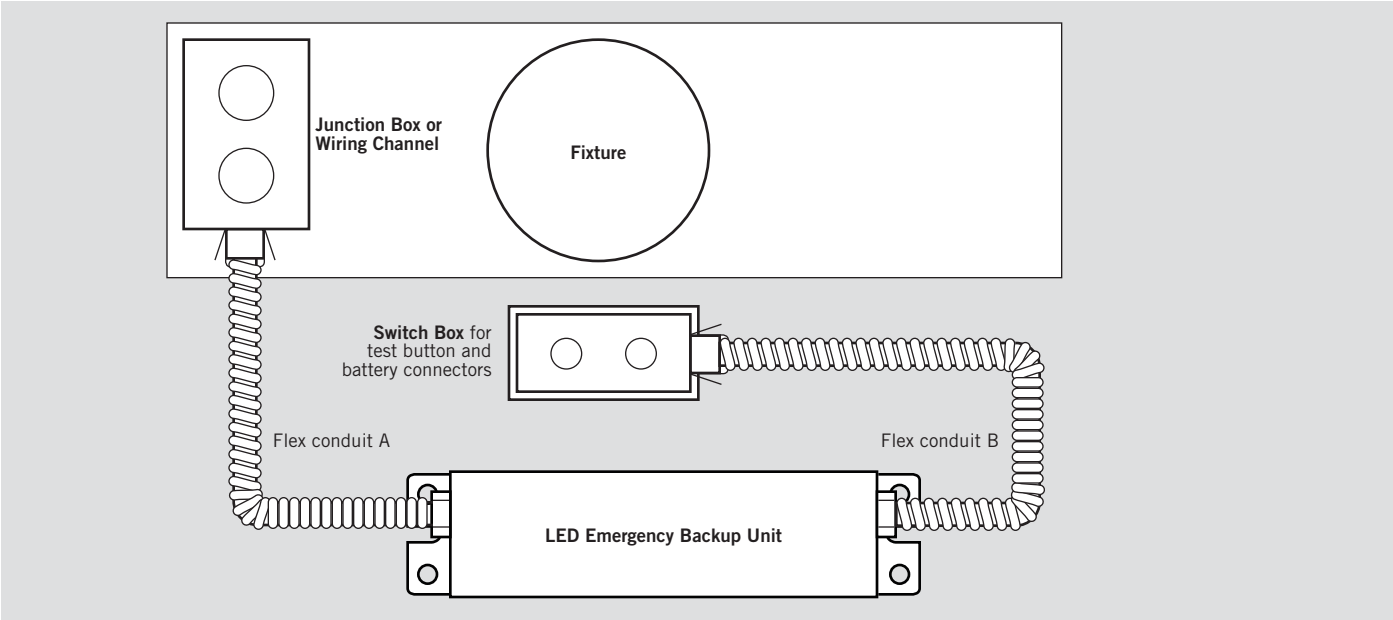
   Follow industry standards by utilizing available .ies files and lighting design software for your dedicated emergency luminaires, with the above calculated emergency lumens, and validate your as-installed plans in accordance with the applicable life safety codes governing your project.

   While these products are compliant with the requirements of UL Standard 924, it is ultimately the responsibility of the designer/specifier to assure the as-installed system delivers code compliant path of egress illumination in accordance with federal, state, or local municipal requirements.

4. Mounting:

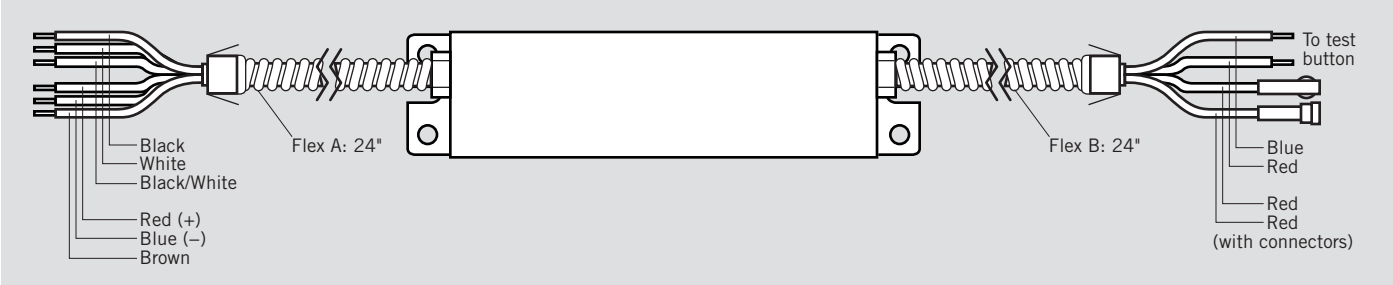
   a. Mount the LED emergency backup unit on or adjacent to the existing fixture in a position that does not interfere with the fixture, its components, or any other hardware. Extend the flex conduit A (see below) to the junction box or wire-way channel using the existing knockout (or punch hole as needed). Feed the wires and flex connector through the knockout and secure in place.

      Consult Keystone's customer service (800-464-2680) for the maximum allowable distance between the battery pack and the load when the battery pack is being remotely mounted.

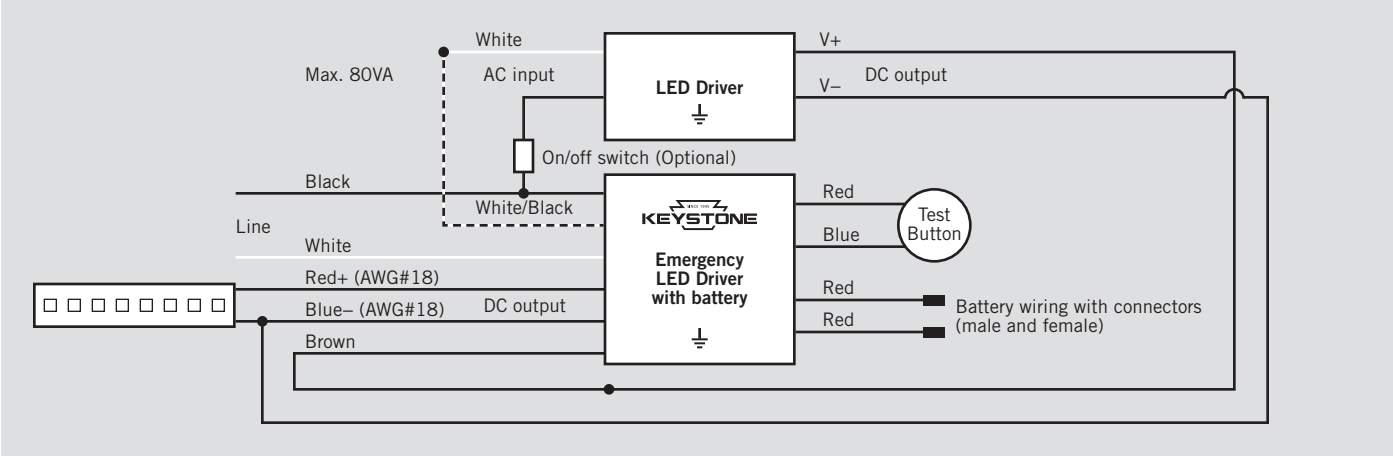


b. To install the test button, cut a single gang switch box into the ceiling tile adjacent to the fixture within reach of flex conduit B. After mounting the switch box, connect flex conduit B to the box and route all leads inside the box. This box will also contain the battery pack connectors. Do not connect until install is complete and AC power is restored. Refer to previous illustration for typical mounting. For proper operation, use only the accessory components provided with the unit.

5. Wiring and labeling:



a. Complete wiring as shown below. Install in accordance with National Electric Code. Emergency pack and AC driver must be on the same branch circuit. Ensure hot/live lead going to the black wire on the emergency LED driver is unswitched. When used with switched fixtures, the emergency pack must be wired ahead of the switch. (See below.)



b. Adhere luminiare modification label to the fixture on the ballast cover where it is easily visible to anyone servicing the fixture in the future.

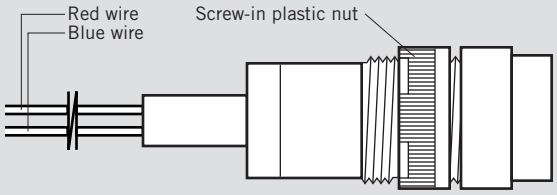
6. Completing installation:

When the installation is complete, verify all necessary connections have been made. Switch the AC power on and join the battery pack connector.

(Continued on page 4)

7. Operation:

TEST SWITCH (2-WIRE) SPECIFICATIONS



Test switch light indication
- Green color flashing: Charging battery (battery connector in contact)
- Green color light: Standby or in emergency mode
- Red color flashing 1 time: Cannot charge up battery
- Red color flashing 2 times: Battery voltage too low
- Red color flashing 3 times: Loading voltage too low (less than 20V)

Manual test sequences
- Quick discharge test: Press 1 time and hold; LED load will light up for a second
- 30-second test: Press 2 times and hold; LED load will light up for 30 seconds
- 90-minute test: Press 3 times and hold; LED load will light up for 90 minutes

Notes:

- To maintain good battery lifespan during storage, recharge emergency driver annually.
- For operation, wiring, installation, regular check, and maintenance, please refer to installation instruction and Life Safety Code.
- Automatic monthly and annual testing: Automatically conduct a 30-second test every month and a 90-minute test every year. The test button will flash RED if an issue is detected.
- Once conducted, the quick discharge test mode requires 2 hours to recharge battery before performing other tests.
- Once entering emergency mode or after conducting other test modes, 24 hours are required to recharge battery before performing other tests.
- The internal timer of the emergency driver starts once power is applied to the unswitched hot lead. The internal timer will not reset due to power loss as long as there is enough battery power to maintain the emergency driver's internal memory.
- The internal timer of the emergency driver resets after 12 automatic tests. The 12th test conducted is a 90-minute test, which occurs every 377 days. The first 11 tests conducted are 30-second tests and occur once every 30 days (if the 90-minute test occurs within the 30-day time period, the duration will increase to 31 days).
- If the emergency driver has a manual test (test button pushed) during the time of the auto-test, the auto-test will delay for 24 hours.
- Regardless if the switched hot is on or off (if applicable), automatic tests will still occur and will power the LED load at 20W.
- If a power outage were to occur during the time of an automatic test, the emergency driver will continue the automatic test until completed. After the test is done, it will continue to operate the load in emergency mode until power is restored.