

184700/1/2/3-1/2/3 (18470X-X)

INSTRUCTION MANUAL

LED EMERGENCY LIGHTING EQUIPMENT
UNIVERSAL INPUT
CLASS 2 OUTPUT



IMPORTANT SAFEGUARDS

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

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. To prevent electric shock, switch off the mains power supply until installation is complete and AC power is supplied to this product.
2. This product requires an unswitched AC power supply of 120-277V, 50/60Hz.
3. Make sure all connections are in accordance with the National or Canadian Electrical code and any local regulations.
4. To reduce the risk of electrical shock, disconnect both normal and emergency power supplies and connector of this product before servicing.
5. This product is for use with an emergency LED lighting load with a maximum rated voltage of 60 VDC and a maximum rated current of 1 A. It can provide minimum 90 minutes illumination under the emergency mode.
6. The 184700/1/2/3-1 are UL Component Recognized for factory installation, the 184700/1/2/3-2/3 are UL Listed for both factory and field installation. For field installation, please see the instruction on page 6.
7. This product is suitable for use in dry or damp locations. Do not mount it near gas, heaters, air outlets or other hazardous locations.
8. Use this product in 0°C minimum, 50°C maximum ambient temperatures.
9. Do not attempt to service the batteries. A sealed, non-maintenance battery is used that is not field replaceable. Contact the manufacturer for information or service.
10. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition and void warranty.
11. Do not use this product for other than intended use.
12. Installation and service should be performed by qualified service personnel.
13. This product should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.



Ni-MH

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

INSTALLATION



CAUTION: MAKE CERTAIN THE AC POWER IS OFF UNTIL THE INSTALLATION IS COMPLETE.

1. SPECIFICATION OF 18470X-X SERIES MODEL

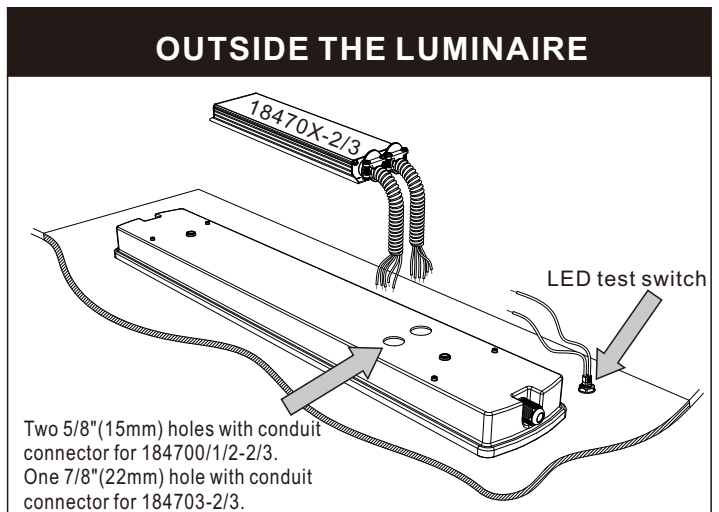
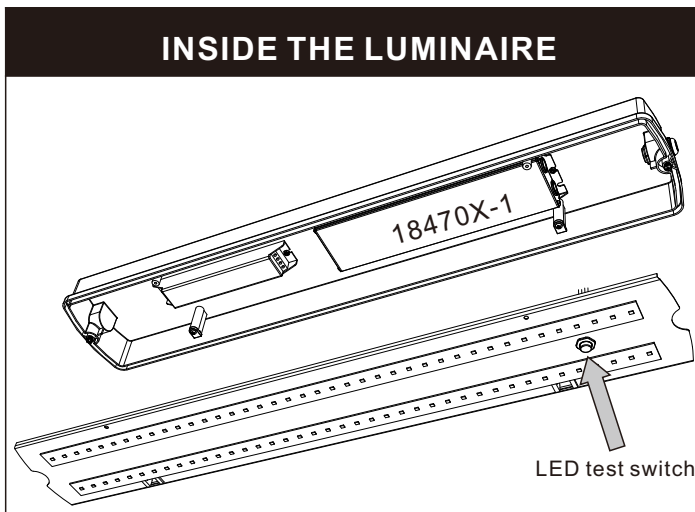
See the 18470X-X MODEL SPECIFICATION below for the model selected.

18470X-X MODEL SPECIFICATION

MODEL	VOLTAGE OUTPUT	EMERGENCY OUTPUT(CONSTANT)
184700-1/2/3	13-60 VDC	5 WATTS
184701-1/2/3	14-60 VDC	9 WATTS
184702-1/2/3	15-60 VDC	15 WATTS
184703-1/2/3	25-60 VDC	25 WATTS

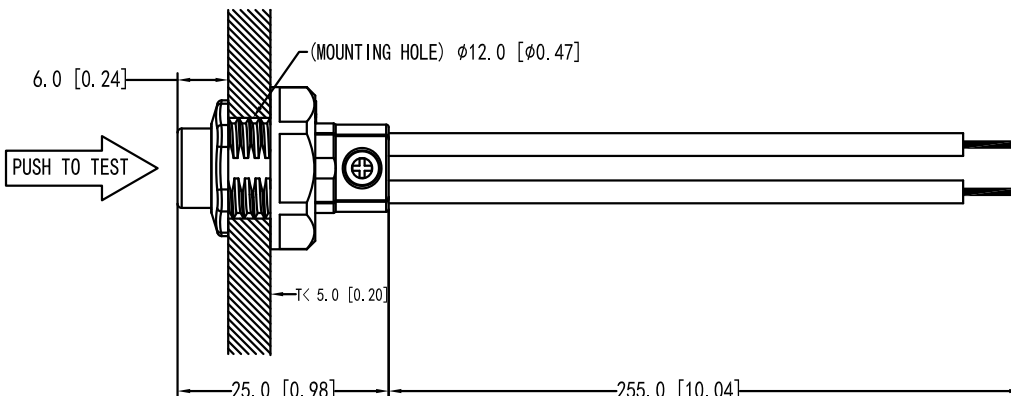
2. INSTALLING THE 18470X-X

The 184700/1/2/3-1 should be mounted inside the luminaire by the luminaire manufactory.
The 184700/1/2/3-2/3 can be mounted inside or outside (nearby or on top of) the luminaire.



3. INSTALLING THE LED TEST SWITCH(LTS)

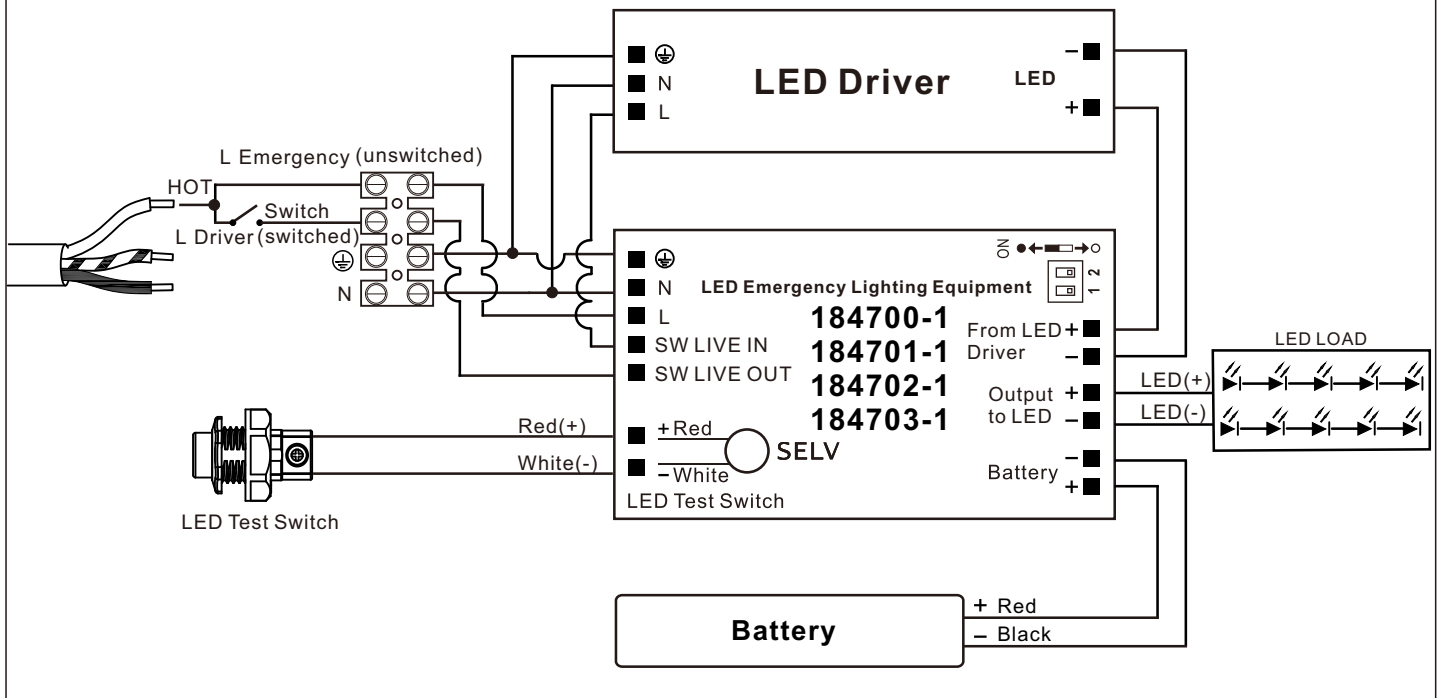
Select a convenient location for the LTS so that it can be seen after installation.
Drill a 1/2" (12 mm) hole for mounting the LTS. Connect the wires from LTS to the 18470X-X model according to the wiring diagram on page 3.



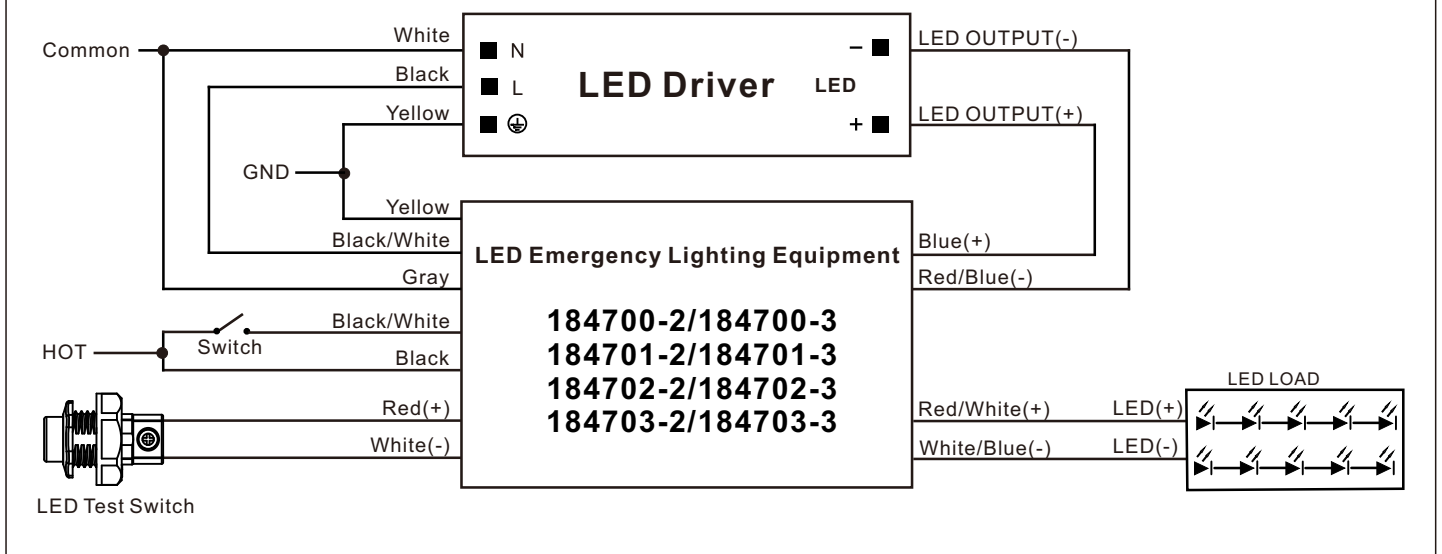
WIRING

1. The 18470X-X requires an unswitched AC power supply of 120-277 volt, 50/60Hz.
2. The 18470X-X and AC driver must be on the same branch circuit. Ensure the output current of the AC driver does not exceed 5A.
3. Refer the wiring diagrams below for wiring. Consult the factory for other wiring diagram.

WIRING DIAGRAM FOR 184700/1/2/3-1



WIRING DIAGRAM FOR 184700/1/2/3-2/3

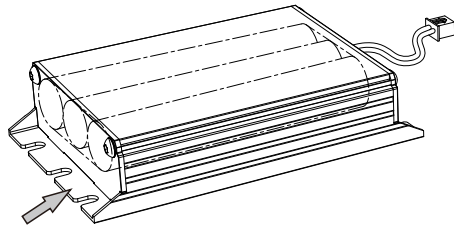


WIRING CONFIGURATION

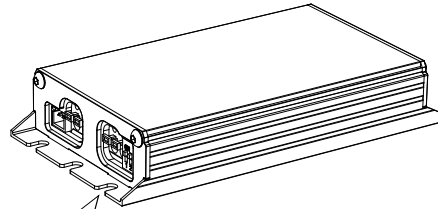
The 18470X-X series have different wiring configurations as below.

184700/1/2/3-1

Terminal block with external battery pack, choosing the different combination of the DIP switches and the corresponding battery pack to have different 18470X-X model with different emergency power output.



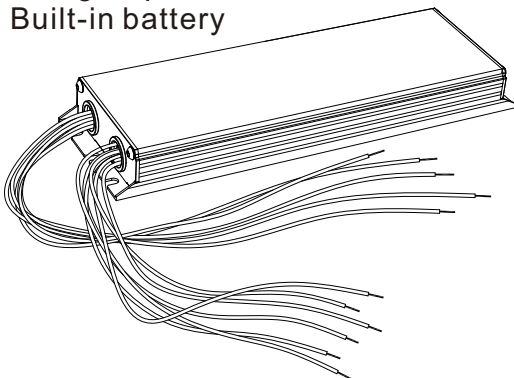
Battery mounting box(optional)



1	2	Model	Power	Battery
○	○	184700-1	5W	9.6V 1.5AH
●	○	184701-1	9W	10.8V 2.1AH
○	●	184702-1	15W	10.8V 3.8AH
●	●	184703-1	25W	14.4V 4.5AH

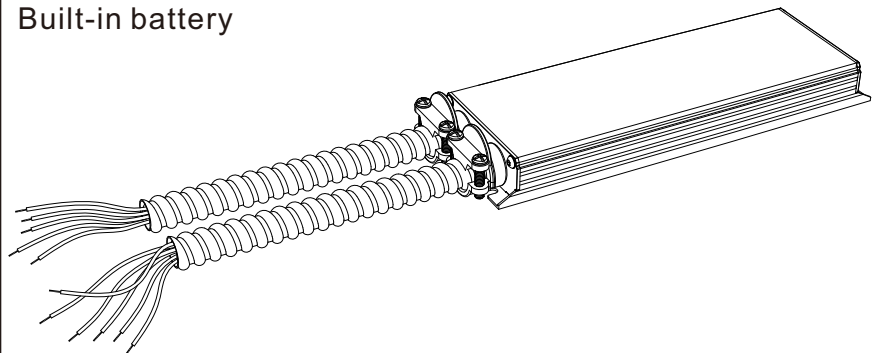
184700/1/2-2

Two group lead wires
Built-in battery



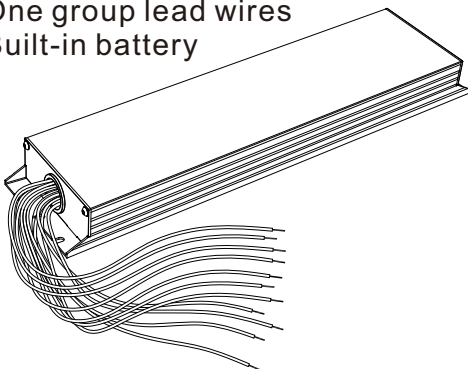
184700/1/2-3

Dual 3/8' flexible conduit
Built-in battery



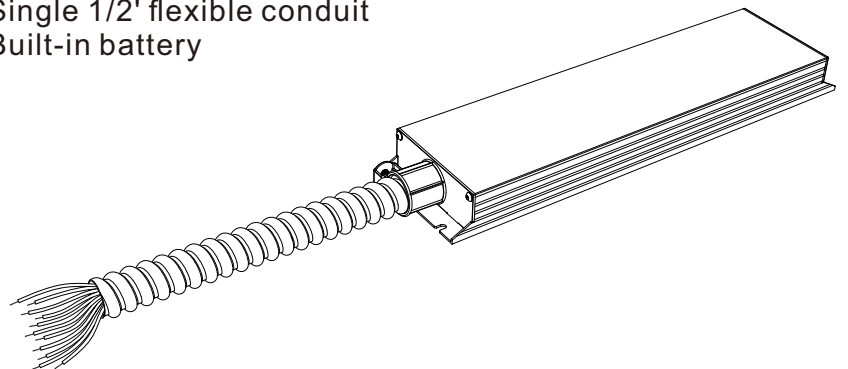
184703-2

One group lead wires
Built-in battery



184703-3

Single 1/2' flexible conduit
Built-in battery



OPERATION / TESTING / MAINTENANCE

OPERATION

When AC power is applied, the LED test switch is illuminated, indicating that the batteries are being charged. When AC power fails, the 18470X-X automatically switches to emergency power, operating the LED loads at rated power. The LED test switch is switched off. When the AC power is restored the emergency module switches the system back to normal mode and resumes battery charging. The minimum emergency operation time is 90 minutes. The charging time for the full discharged battery is 24 Hours.

TESTING AND MAINTENANCE

Following periodical tests are recommended to ensure the system is working well:

1. Visually inspect the LED test switch(LTS) monthly. It should be illuminated when AC power is applied.
2. Conduct a 30 seconds discharge test by switching off the mains power every month. The LTS is switched off and LED loads should operate at reduced illumination.
3. Conduct a 90 minutes discharge test once a year. The LED loads should operate at reduced illumination for at least 90 minutes.

AUTO TEST

The 18470X-X series has Auto Test function which save the cost of manually maintenance.

1. Instant Auto Test

When the system is connected well and powered on, the 18470X-X model will Auto Test if the load and battery pack are connected well and if the battery is being charged normally. If there is any abnormal situation, the LTS is flickering. When the abnormality is removed, the LTS indicates normally.

2. Preprogrammed scheduled Auto Test

1) Carry out first monthly Auto Test after Initial power on from 24 hours to 7 days, afterwards, carry out a monthly Auto Test every 30 days.

2) Carry out an annual Auto Test every 52 weeks after first powered on.

3) Monthly Auto Test

Monthly Auto Test should be executed every 30 days and to test:

If the switchover of normal and emergency mode is normal;

If the emergency function and battery's charging and discharging condition is normal;

Auto Test time is about 30 seconds.

4) Annual Auto Test

Annual Auto Test will be executed every 52 weeks after 24 hours full charging and to test:

If the battery's voltage is equal or higher than the limit after 24 hours full charging;

If the emergency operation time is over 90 minutes;

If the battery voltage after 90 minutes emergency operation is equal or higher than 87.5% of the initial voltage.

5) During the Auto Test, in case a power failure happens and the power cannot be on till the Auto Test completes, then the Auto Test will be executed again 24 hours later after the power is on.

6) If the emergency mode makes the battery discharged completely under the power off condition, then the preprogrammed scheduled Auto Test will resume the first time when the power is connected.

MANUAL TEST

- Press LTS one time, then go into emergency mode.

- Press LTS 2 times continuously within 5 seconds, then go into monthly test. After finish, the next monthly test will count from this date.

- Press LTS 3 times continuously within 5 seconds, then go into annual test, after finish, the next annual test will count from this date.

- During the manual test, press LTS above 3 seconds, then the manual test can be terminated (The preprogrammed scheduled Auto Test time will not change).

LED test switch(LTS) INDICATION

- LTS slow flash: In charging

- LTS on: Battery full charged in normal operation

- LTS off: Power failure

- LTS gradual change: In testing

- LTS quick flickering: Abnormal

GUIDELINE FOR FIELD INSTALLATION

The 18470X-2/3 series model is suitable for field installation with suitable LED loads including LED luminaires, LED lamps and others. Follow below 3 steps to determine if your luminaire is eligible for field installation.

1) Determine Electrical Compatibility

- A) Verify that the LED Driver for normal operation is Class 2 compliant.
- B) Verify that the emergency driver (18470X-2/3 series) selected does not exceed the power delivered to the LED loads (both voltage and current) of the normal LED driver.

2) Calculate Lumen Output in Emergency Mode

- A) Access luminaire data from Designlights Consortium website (www.designlights.org).
- B) Select "Search the DLC Qualified Product List" on the DLC homepage.
- C) Enter luminaire manufacturer name and part number in the "search by keyword" text window.
- D) Select "Search" tab to open the "Qualified Products List".
- E) Determine luminaire Lumens per Watt efficacy in "Rated Data" specifications.
- F) Multiply luminaire Lumens per Watt by Emergency rated output of the 18470X-2/3 series model (Refer to below "18470X-2/3 MODEL SPECIFICATION").

18470X-2/3 MODEL SPECIFICATION

MODEL	EMERGENCY OUTPUT(CONSTANT)
184700-2/3	5 WATTS
184701-2/3	9 WATTS
184702-2/3	15 WATTS
184703-2/3	25 WATTS

3) Determine Suitability of Means of Egress Lighting Levels

- A) Using industry standard lighting design software with the IES files for the emergency luminaires, verify that the above calculated emergency lumens are sufficient to meet Code-compliant path of egress illumination levels.

While the 18470X-2/3 series has been found 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 national, state and local code requirements.