Emergency Lighting Power Pack for Mains Voltage LED Lamps

LTEM40

The product package contains the following:
- Emergency Light Unit
- 4000mAh 11.1V Li-Ion Battery
- Pre-wired Status LED/Self-test Button
- Instruction Manual

Please read this Manual prior to the installation and commissioning of the LTEM40.
The LTEM40 emergency pack is suitable for 5-20W LED lamps with internal Integrated Circuit (IC) driver (This device CANNOT be used for LED lights with Resistive Circuit (RC) driver).

The LTEM40 emergency pack includes housing, PCB, battery and self-check test button with 3 colour LED indicator. The battery is a Li-ion battery with a long lifespan; the PCB uses IC control design in charging/discharging and power supply. The PCB circuit has built in protection for over-charging/discharging, output short-circuit, open circuit or input/output reverse connection.

Operating principle:

The LTEM40 emergency pack charges when AC power is present. When fully charged, the circuit will protect the battery from over-charging and the emergency pack will enter stand-by mode. As soon as the AC power fails the battery will supply power to the LED lights.

Technical Specifications:

Working Voltage	AC176-265V	**Battery Type**	18650 Li-Ion 11.1V 4000mAh	**Dimensions**	L158*W42*H25mm
Emergency Output Voltage/Current	DC 230V 0.03A-0.15A	**Battery Cycle Use Times**	≥500 times	**Battery Dimensions**	L200*W36*H20mm
Emergency Switching Time	≤5sec.	**Emergency Time**	≥180 minutes	**Working Temperature**	-5°C - +45°C
Suitable for Lamps Power (W)	5-20W	**IP Rating**	IP30	**Storage Temperature**	-5°C - +45°C
Lamp Type	LED Lamps	**Luminous Flux**	up to 1000 lumens	**Warranty**	3 years
Charging Time	24h	**Weight**	0.39kg	**Body Material**	Fire Resistant PC

Installation Standards:

- The installation of the LTEM40 must be done by a certified electrician according to the EN60598 part 1 and 2-22 as well as additional local standards (see basic wiring instructions on Page 2).
- The LTEM40 has no internal adjustments or serviceable parts and therefore the main cover should never be removed.
- For installation in combination with a LED Driver, the wiring instructions in this manual must be followed or the LTEM40 may not function as expected.
- The Status LED/Test Button should be positioned in such a way as to be easily visible under all circumstances to ensure quick and convenient functionality check.
- The LTEM40 should be installed indoors (stairs, corridor, ceiling, etc.) and it is not for outdoor use.

Self-check function:

- Monthly inspection: The system simulates a power outage every 30 days for 35 seconds. It will quit and return to the mains power state automatically if there is no fault.
- Annual inspection: The system simulates a power outage every 365 days and for 3 hours or until the battery power is dissipated. It will quit and return to the mains power state automatically if there is no fault.

Battery Maintenance:

- Initial battery charge must be for a minimum of 24 hours before testing.
- To achieve best performance the LTEM40 must be properly maintained. The LTEM40 should be tested fully by switching into emergency mode regularly in accordance with local testing regulations to check emergency operation time (according to battery capacity). Any warranty claim must be accompanied by documentation which records the dates of this maintenance procedure and signed by maintenance personnel.

Dimensions:

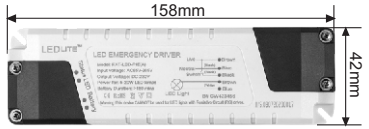

Fig. 1 Inverter Dimensions

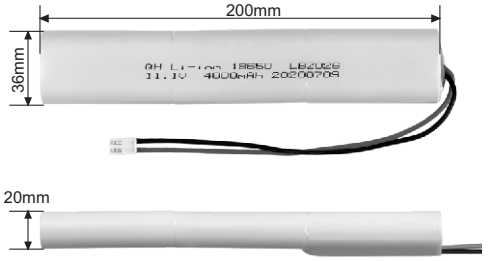

Fig. 2 Battery Dimensions

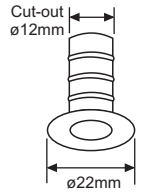

Fig. 3 Status LED Self-test Button Dimensions

Installation and Wiring Instructions:

1.The LTEM40 emergency pack can be mounted on surfaces using the two installation holes. First mark the hole positions and then use 4mm tapping screws to mount it on the surface. The product is safe to fit on materials combustible above 200°C.
2.Connect according to the wiring diagrams below observing the correct polarity where applicable.

WIRING DIAGRAMS

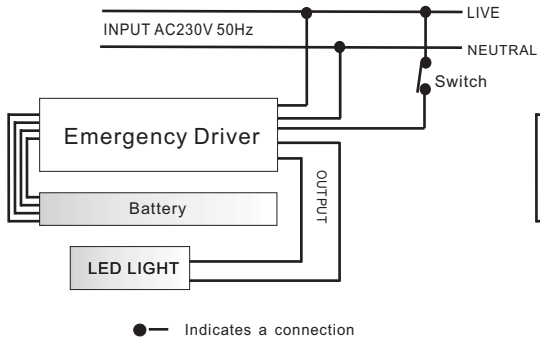

Fig. 4 - Wiring for LED Lights with **Internal Driver**

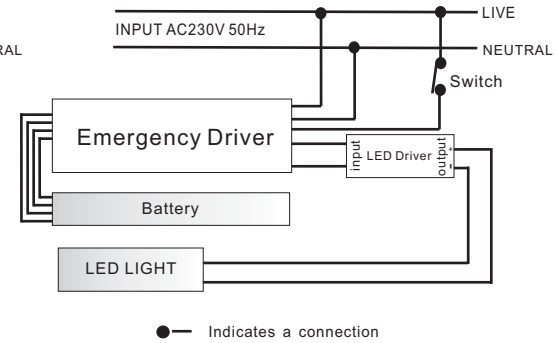

Fig. 5 - Wiring for LED Lights with **External Driver**

3. When first connecting to AC power check if the LED lights work normally - the RED indicator light is ON until the battery is fully charged.
4. Once the battery is charged the Green indicator light will be ON.
5. Turn the switch to the LED lights ON and OFF to check the correct function of the lights (if a switch is present).
6. Test the emergency mode:
   a. Press the test button (status LED acts as the test button also) for 1 second and the emergency pack will switch into power failure simulation mode (emergency mode). The indicator light for main power (Green) or for charging (Red) will be OFF. Once the button is released it will return to normal AC power mode.
   b. Cut off the emergency pack AC power - the LED lamp will be in emergency mode and the Green/Red indicator light will be OFF.

After testing all the above steps the installation is finished.

Keep a record of maintenance and maintain the emergency pack and LED lamp regularly. Check regularly to ensure its lifespan and usage.

Indicator Light and Test Button Functions:

Indicator Light Function	RED	When battery is charging: LED ON. Full charged or emergency status: LED OFF.
	GREEN	Main power: LED ON; emergency status: LED OFF. Monthly inspection status: fast flashing. Annual inspection status: slowly flashing.
	RED & GREEN	Battery fault: fast flashing. Light source fault: slowly flashing. Self-test status if battery not charged: long bright flashing.
Test Button Function	Manual Test	Press the button for 1 second and release. The buzzer will ring simulating emergency status.
	Manual Monthly Inspection	Long press the button for 3-5 seconds. At the short buzzer ring release the button to start monthly inspection; press once again to quit monthly inspection.
	Manual Annual Inspection	Long press the button for 5-7 seconds. At the long buzzer ring release the button to start annual inspection; press once again to quit annual inspection.
	Emergency Shutdown	In emergency state long press for more than 7 seconds or quickly press 2 times for emergency shutdown.
	Fault Removal	After a fault is removed press the button once and the system enters normal state.
Self-Test Function	Monthly Inspection	Every 30 days after installation the system will automatically switch to the monthly inspection state. The duration is 35 seconds. If there is no fault it will automatically exit and return to AC mains state.
	Annual Inspection	Every 365 days after installation the system will automatically switch to the annual inspection state. The duration is 3 hours . If there is no fault it will automatically exit and return to AC mains state.
Fault Detection	Battery Disconnected	1. Battery open-circuit in Mains power status: Red and Green light fast flashing, buzzer does not report failure. Will be auto restored after troubleshooting. 2. Battery open-circuit in Self-test status: Red and Green light fast flashing, buzzer reported fault. Press test button to recover after troubleshooting.
	Short-circuit of charging circuit	1. Short-circuit in Mains power status: Red and Green light fast flashing, buzzer does not report failure. Will be auto restored after troubleshooting. 2. Short-circuit in Self-test status: Red and Green light fast flashing, buzzer reported fault. Press test button to recover after troubleshooting.
	Light Source Disconnected	1. Light source open-circuit in Mains power status: no failure reported. 2. Light source open-circuit in Self-test status: Red and Green light slowly flashing, buzzer reported fault. Press test button to recover after troubleshooting.
	Light Source Short-circuit	1. Light source short-circuit in Mains power status: no failure reported. 2. Light source short-circuit in Self-test status: Red and Green light slowly flashing, buzzer reported fault. Press test button to recover after troubleshooting.
	Insufficient Discharge Time	1. Monthly inspection status discharge time less than 35 seconds: Red and Green light long bright flashing, buzzer reported fault. 2. The discharge time is less than 3 hours in the annual inspection status: Red and Green light long bright flashing, buzzer reported fault.

If the indicator lights are not working as expected or if the LED light does not work after turning the switch ON, the AC power should be cut off immediately and the emergency driver should be checked.

Troubleshooting:

Most failures experienced are not due to the LTEM40 itself and are caused by improper installation or connection of the unit. Please check that:

- Wires are properly clamped into terminals.
- Installation is done according to the wiring diagram.
- Proper polarities are observed.
- Proper LED load maximums are observed.
- The LED load has an IC driver (not RC).

In case of electromagnetic interference:

- Do not cross-wire the power input line and the light connection output line.
- When parallel wiring, a distance between 5 and 10 cm should be observed.
- Shorten the distance between the power supply input line and the device.
- When running in parallel, the connection between the power input line and the lamp should be as short as possible.

Luminaire Ref/Location

In Case of difficulty, contact the Installation Engineer:

Tel:

Full Recharge Time 24 Hours

Duration 3 Hours

Lamp Type - LED

ROUTINE TEST RECORD

	Year 1		Year 2		Year 3		Year 4		Year 5	
	Signed	Date	Signed	Date	Signed	Date	Signed	Date	Signed	Date
Monthly Test										
Functional										
Functional										
Functional										
Functional										
Functional										
Functional										
Functional										
Functional										
Functional										
Functional										
Functional										
Three Hour										