

Universal Emergency Module (UEM) with DALI-2 Reporting for LED Luminaires (ATS type PERC)

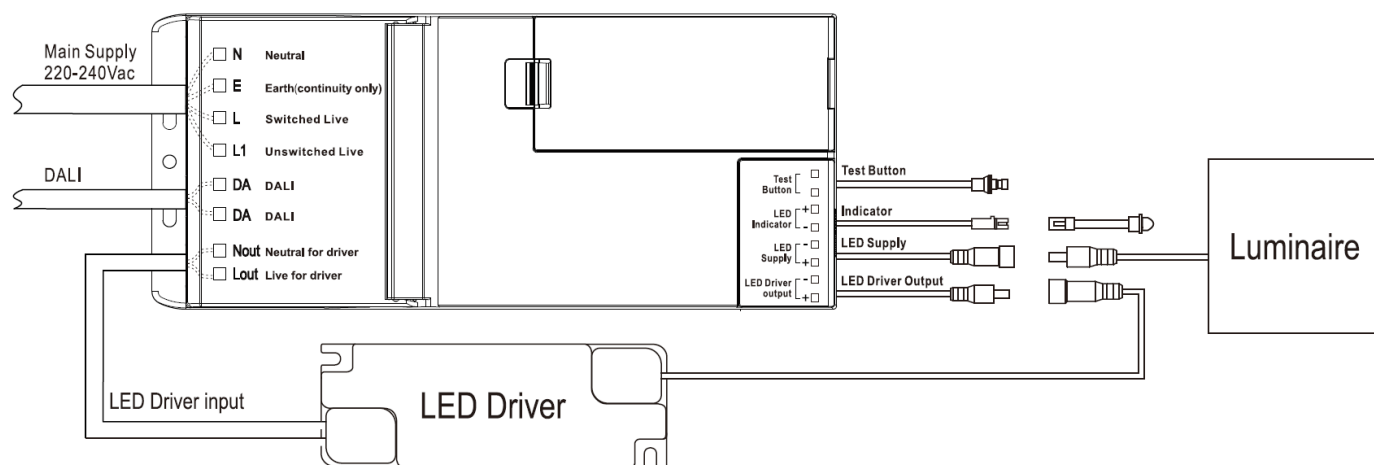
Please read these instructions thoroughly before use and retain for future reference.

- This emergency module is classified as **ATS type PERC**. This is a stand-alone self-contained emergency module, with localised reporting facilities, requiring manual recording of results.
- The UEM initiates functional test and duration tests when instructed to do so using the DALI-2 protocol. Reporting any faults detected with the battery or load (luminaire), both visually using the indicator LED and DALI-2 protocol.
- The UEM is suitable for class III luminaires with integrated LEDs and separate LED drivers. The electrical specification is given below. Compatibility with luminaires should be verified before committing to an installation.

Safety Information

- Installation must be carried out in accordance with national building and wiring regulations.
- If you are in any doubt about installing this product, please consult a qualified electrician.
- The system should be designed and installed such that only authorised personnel can make changes.
- This product is suitable for connection to a 220-240Vac 50/60Hz supply.
- This is a **class II, independent** driver not requiring an earth and is **IP20** rated for indoor use.
- Do not use this emergency module if the cable is damaged.
- Do not carry or transport the product by the output cables, damage to product may occur and any warranty will be invalid.
- Ensure appropriate protective equipment is worn where required.
- When drilling or cutting holes take care not to damage existing pipework or wires.
- Take care not to trap fingers or skin when closing wire terminal and battery compartment cover.
- This emergency module is not suitable for use on a battery supply with a trickle or intermittent re-charging circuit.
- This emergency module is not protected against supply voltage polarity reversal.
- Insulation between supply and battery circuit is double insulation.
- The recharging device will recharge the battery normally after removal of a battery short-circuit.
- Ensure battery is disposed of via appropriate waste streams at end of life.

Wiring Schematic

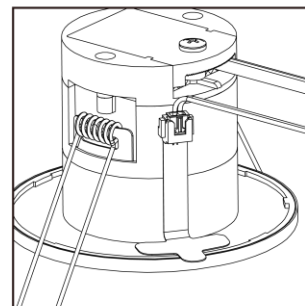
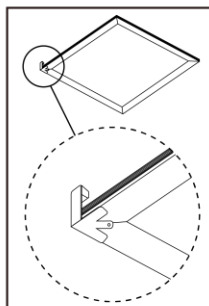
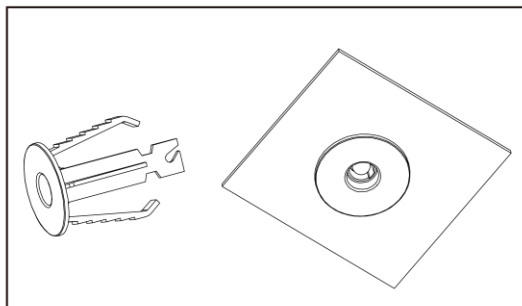


Installation Information

- The UEM provides power in the event of a cut in the supply and must be wired to the switched and unswitched supply. **There must be a permanent supply to the Unswitched Supply Live (L1) as well as the Switched Supply Live (L) for the luminaire to work in a normal maintained state.**
- Before commencing installation, turn off and isolate the circuit to be worked on by removing the fuse or switching the circuit breaker off at the distribution board.
- The switched and unswitched supply may be combined in a single cable or supplied through separate cables.
- Connect the **switched supply** to the UEM switched supply terminals as follows:
Brown = Switched Live (L), Blue = Switched Neutral (N). The optional Earth (E) is for continuity only.
- Connect the **unswitched supply** to the UEM unswitched supply terminals as follows:
Brown = Unswitched Live (L1)
- Connect the **LED Driver Input** supply wires to the **LED Driver Input** terminals **Live (Lout)** and **Neutral (Nout)**.
- Connect the **DALI** wires to the terminals **DA** and **DA**.
- The UEM is supplied with two connected leads with DC jacks. These are to connect the **LED Driver Output** to the LED Driver Output terminals and to connect the **LED Luminaire Input** to the LED Supply terminals on the UEM. The lead polarity is **Red (+), Black (-)**.
- **It is critical that the connections and polarity for LED Driver Output and LED Supply are correctly identified and connected for the UEM to power the LED luminaire.**
- In cases where the connectors are not suitable, the wires from the LED Driver Output and the LED Luminaire Input may be connected

directly into the terminals.

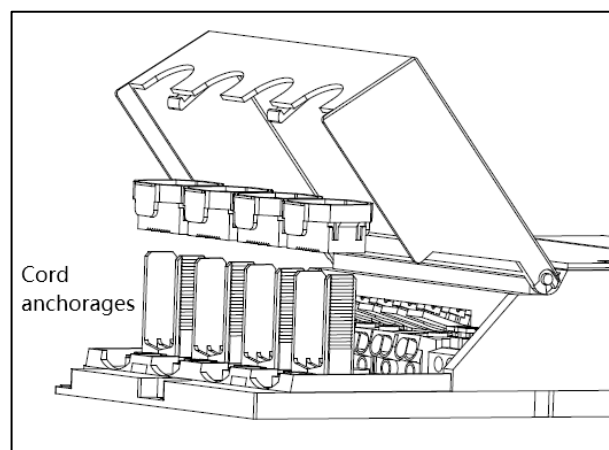
- There is a choice of shrouded or flat **LED indicators**. If used, the shroud requires a 20mm hole. The self-adhesive flat LED indicator may be stuck to a panel edge or the back of the downlight bezel such that it can be seen at the edge of the bezel when installed, as shown.



- Connect the **LED Indicator** to the LED Indicator terminals on the UEM.
- The manual **Test Button** on the UEM will be required to perform any manual tests outside of the set automatic testing cycle when, for instance, an LED module is replaced.
- Use cord anchorages supplied to secure the cables.**
- The battery is supplied disconnected.** To connect or replace the battery, disconnect the UEM from the supply, open the central battery compartment cover on the UEM and connect the battery cable.
- Write the commissioning date on the battery label.
- Stick the Maintained or Non-Maintained emergency luminaire label on the luminaire where it can be seen.
- Ensure that all electrical connections are tight with no loose strands.
- Replace the battery compartment cover and reconnect the supply.
- The battery leaves the factory in a charged state but may take up to 24 hours to fully charge for a 3-hour test. Charge for 5 minutes before performing a functional test to ensure there is some charge in the battery.
- Replace the battery when the luminaire fails to meet the 3-hour duration requirement in testing. This will force a recommission of the system.

Specifications

Product Code	UEM04/DA
Input Voltage	220-240 Vac 50/60 Hz
Input Current (max)	25 mA
Battery Output Wattage (max)	3W
Output Voltage	24-54 Vdc
Output Current	35-85 mA
Open Circuit Voltage	59 Vdc
Maximum Working Voltage	59 Vdc
Protection	IP20, Class II, Independent Driver
Input to Output Protection	Double Insulation
Battery	LiFePO4 (BAT20LFP2)
Battery Voltage	6.4 V
Battery Capacity	2000 mAh
Battery Charge Voltage	7.5 Vdc
Battery Charge Current	30-210 mA
Battery Discharge Voltage	5.8-7.0 Vdc
Battery Discharge Current	340-470 mA
Charging Time	24 h
Battery Life	4 Years
Emergency Conversion Time	1 s
Emergency Operation Time	> 3h
Test Function	Automatic and Manual
Length x Width x Depth	211 x 91 x 32 mm
Maximum Case Temperature (°C)	75 °C
Ambient Temperature Range (°C)	0 to 45 °C



The cut-out size

If the ceiling to ceiling height is greater than 205mm, the minimum cut-out is 98mm;

If the ceiling and ceiling height is less than 205mm, Please refer to the size of cut-out in the table:

Minimum ceiling void (mm)	Cut-out (mm)
120	> 160
140	> 135
160	> 115



The Waste Electrical & Electronic Equipment Regulations (WEEE) requires that products bearing this symbol must not be disposed of with household waste as they may contain substances harmful to the environment. The Local Authority can provide advice on recycling.

DALI-2 Emergency Module User Guide

Please read these instructions thoroughly before use and retain for future reference.

If you are in any doubt about using this product, please consult a qualified electrician

Commissioning

- Commissioning takes place by connecting the battery and then the un-switched supply. The battery must be connected first.
- After allowing 5 minutes for the battery to charge a function test should be done by pressing the manual test button for 1-2 seconds.
- The green LED will illuminate permanent green to indicate that the system is ok.

LED Indicator

	Green	= System Healthy		Red	= Battery Charging Fault
	Green Flash 1 x Second	= Duration Test Pending		Red Flash 2 x Second	= Battery Duration Fault
	Green Flash 2 x Second	= Duration Test Running		Red Flash 4 x Second	= Lamp or Luminaire Fault
	Green Flash 4 x Second	= Functional Test Running			

Duration Testing (3 hours)

- Duration tests will occur up to 24 hours after being instructed to do so using the DALI-2 protocol, this is to allow for battery charging.
- A duration test may be delayed by events, such as a power cut that interrupts the test or a lack of charging time, in which case the green LED will flash 1 x second to indicate there is a pending duration test that the emergency module has rescheduled.
- Any faults found in the duration testing will be reported via the LED indicator, as detailed above as well as over the DALI-2 protocol.
- A functional test will not override any fault reports from a duration test. A successful duration test is required to clear a duration fault.

Functional Testing (<2 minutes)

- A functional test will occur immediately after pressing the manual test button for 1-2 seconds, or when instructed to do so using the DALI-2 protocol.
- Any faults found in the functional test will be reported via the LED indicator, as detailed above as well as over the DALI-2 protocol.
- A functional test will not override any faults reported by a duration test. A successful duration test is required to clear a duration fault.

Manual Testing

- Manual functional test: Press the manual test button for 1-2 seconds. A manual functional test lasting <2 minutes will start immediately.
- There is no ability to manually start a duration test.

Pending Duration Tests

- A duration test may be delayed by events, such as a power cut that interrupts the test or charging period, in which case the green LED will flash to indicate there is a pending duration test and that the emergency module until is charging.

Lamp or Luminaire Fault

- Turn off the supply and replace or correct the fault with the lamp or luminaire, and then reconnect the supply.
- Press the manual test button for 1-2 seconds. A manual functional test lasting <2 minutes will start immediately.

Battery or Duration Fault

- Turn off both the un-switched and switched supply to the UEM and replace the battery, and then reconnect the supply.
 - If the battery fault was due to the battery not being connected, both the un-switched and switched supply must off when connecting the battery to clear the battery fault.
 - The UEM should then be instructed to perform a duration test using the DALI-2 protocol to test the replacement.