

Automatic Self-Test Emergency Module for LED DD Lamps (ATS type S)

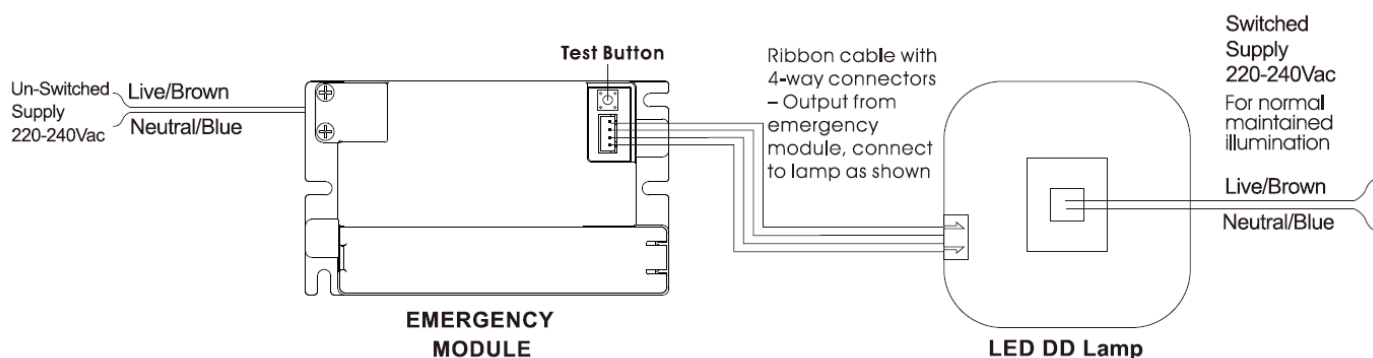
Please read these instructions thoroughly before use and retain for future reference.

- The emergency module is only compatible with the latest Kosnic LED DD lamps from 2017 onwards that carry the bi-coloured LED status indicator. The emergency module will not work correctly with earlier Kosnic LED DD lamps.
- This emergency module is classified as **ATS type S**. This is a stand-alone, self-contained emergency module with localised automatic testing and reporting facilities requiring manual inspection to record the results.
- The emergency module will perform an automatic weekly functional test and an annual full duration test at a random time during a 24 hour period, reporting any faults found with the battery or load.

Safety

- 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 **IP20** rated driver for building-in.
- Do not use this emergency module if the cable is damaged.
- 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.

Installation Diagram



Installation

- The emergency module provides power in the event of a cut in the supply and must be wired to the un-switched supply.
- 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.
- Connect the emergency module input to the un-switched permanent supply as follows:
Brown = Un-switched Live (L), Blue = Neutral (N).
- Plug the four-wired output ribbon from the emergency module into the matching socket on the LED DD lamp.
- Install the test button as required. This is used to initiate manual functional and duration tests.
- **The battery is supplied disconnected.** To connect or replace the battery, disconnect the emergency module from the supply, open the battery compartment cover on the emergency module 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 hours duration requirement in testing. This will force a recommission of the system.

Product Code	EMDD02/ST
Input Voltage	220-240 Vac 50/60 Hz
Input Current (max)	15 mA
Battery Output Wattage (max)	2W
Output Voltage	24-58 Vdc
Output Current	10-50 mA
Open Circuit Voltage	60 Vdc
Maximum Working Voltage	60 Vdc
Protection	IP20, For built-in installation
Input to Output Protection	Double Insulation
Battery	LiFePO4 BAT18LFP1
Battery Voltage	3.2 V
Battery Capacity	1800 mAh
Battery Charge Voltage	3.6 Vdc
Battery Charge Current	200 mA
Battery Discharge Voltage	2.6-3.6 Vdc
Battery Discharge Current	400-450 mA
Charging Time	24 h
Battery Life	4 Years
Emergency Conversion Time	1 s
Emergency Operation Time	>3 h
Test Function	Automatic and Manual
Length x Width x Depth	116 x 68 x 23 mm
Weight	126 g
Maximum Case Temperature (°C)	75 °C
Ambient Temperature Range (°C)	0 to 45 °C



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.

Automatic Self-Test 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.
- The green LED will immediately flash 1 x second to indicate that there is a pending duration test.
- A duration test will occur at a random point between 24 hours and 48 hours after commissioning to allow up to 24 hours for battery charging.
- Any faults found in the duration testing will be reported via the LED indicator, as detailed below.
- Disconnecting the un-switched supply and then the battery resets the emergency module's schedule, this means that a function test will be performed 7 days from the time of reset and a duration test will be performed in 52 weeks.

Note: Resetting the module will **not** clear **Battery Duration Fault and Lamp or Luminaire Fault**. The user should initiate Duration Test or Functional Test to clear these faults. Please refer to the following instructions for details.

Note: The indicator will only be illuminated when connected to a supply, and not when in emergency mode. In the case of both a fault and duration test pending, only the fault will be displayed.

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)

- An automatic duration test will occur at a random point between 24 hours and 48 hours after commissioning to allow for battery charging.
- An automatic duration test will occur annually at a random point in the 52nd week after commissioning.
- A duration test will occur after pressing the manual test button for 5-10 seconds. The battery will be allowed to fully charge for up to a maximum of 24 hours, then a duration test will occur at a random point in following 24 hours.
- A duration test may be delayed by other events, such as a power cut that interrupts the test or a lack of charging time, in which case the green LED will continue to flash 1 x second to indicate there is a pending duration test.
- Any faults found in the duration testing will be reported via the LED indicator, as detailed above.
- A functional test will not override Battery Duration Fault. A full duration test or re-commissioning is required to clear such fault.

Functional Testing (<2 minutes)

- A short automatic functional test will occur every 7 days.
- A manual functional test will start immediately after pressing the manual test button for 1-2 seconds.
- Any faults found in the functional testing will be reported via the LED indicator, as detailed above.
- A functional test will not override Battery Duration Fault. A full duration test or re-commissioning is required to clear such 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.
- Manual duration test: Press the manual test button for 5-10 seconds. A manual duration test will occur at a random point between 0 and 24 hours after pressing the manual test button for 5-10 seconds. Time will be added to allow the battery to charge if the battery has been charging less than 24 hours.

Pending Duration Testing

- A duration test may be delayed by other 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 that the emergency module has rescheduled until charging is complete.

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 to clear the fault.
- Alternatively press the manual test button for 5-10 seconds. A manual duration test will occur at a random point between 0 and 24 hours after pressing the manual test button for 5-10 seconds. Time will be added to allow the battery to charge if the battery has been charging less than 24 hours. The fault LED indication is overridden, during the pending and testing period.
- If the battery and power have been disconnected the module will re-commission and automatically test the replacement.
- A functional test will not override Battery Duration Fault. A full duration test or re-commissioning is required to clear such fault.

Battery Charging Fault & Battery Duration Fault

- Turn off the un-switched supply to the emergency module and replace the battery, and then reconnect the supply.
- If the fault was because the battery was not connected, the un-switched supply must still be turned off when connecting the battery to clear the battery charging fault.
- To clear a battery duration fault after replacing the battery a duration test will need to be successfully completed, see duration test procedure.