

EPE-ED1

DALI LED Control Gear For Emergency Lighting



- Emergency lighting LED Driver with DALI interface and automatic test function
- For self-contained emergency lighting
- SELV for output voltage < 60 V DC
- Low profile casing (31 x 22 mm cross-section)
- 5-year guarantee

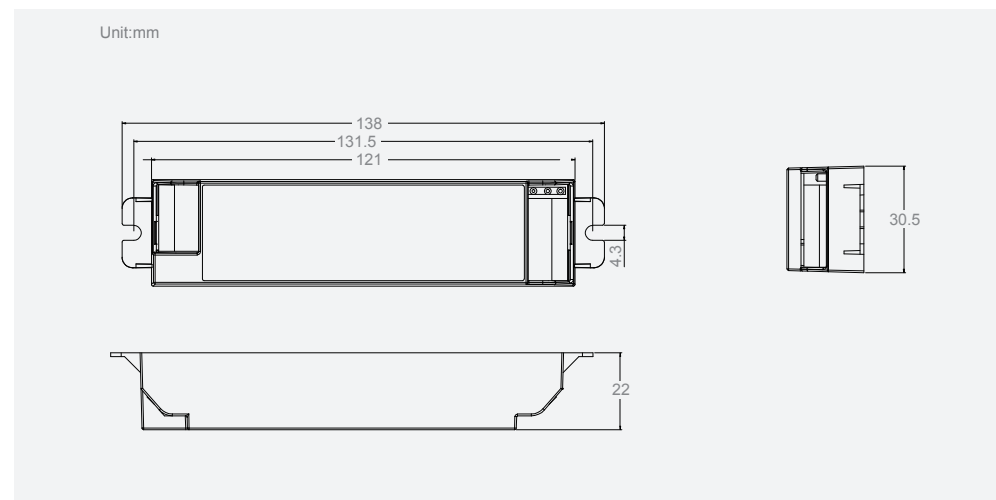
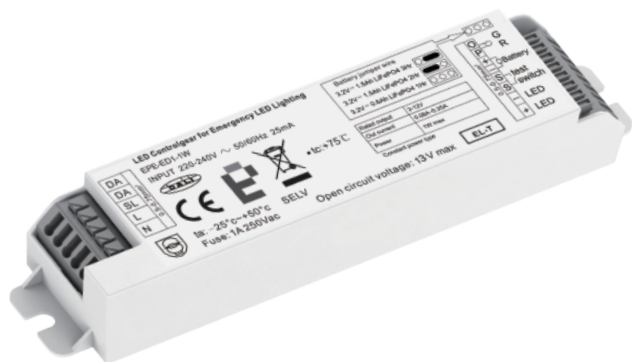


PROPERTIES

- Mains and emergency operation
- DALI interface for controlled testing and monitoring
- DALI switchable in mains operation(on/off) the switched phase SL must be switched on
- Constant power mode
- With screw fastening
- 1, 2 or 3 h rated duration
- Selectable operating time (jumper)
- Output power limitation
- Two-colour status display LED
- Electronic multi-level charge system
- SELV (outputs powerLED, battery, status LED, test switch)
- Polarity reversal protection for battery
- Deep discharge protection
- Very low energy consumption from the battery after activation of the deep discharge protection
- Short-circuit-proof battery connection
- Emergency lighting LEDs available

BATTERIES

- LiFePO4 batteries
- 4-year design life
- 3-year guarantee



Model List

Model	Input Voltage	Output Voltage	Output Current	Output Power	Charge / Discharge	Battery	Test Mode
EPE-ED1-1W-DA-3H	220-240VAC	3-12VDC	0.08Ah-0.35Ah	1W	24H/3H	LiFePO4 6.4V 1500mAh / LiFePO4 3.2V 3200mAh	DALI
EPE-ED1-2W-DA-3H	220-240VAC	3-12VDC	0.15Ah-0.65Ah	2W	24H/3H	LiFePO4 9.6V 1500mAh / LiFePO4 6.4V 3200mAh	DALI
EPE-ED1-4W-DA-3H	220-240VAC	3-12VDC	0.3Ah-1.35Ah	4W	24H/3H	LiFePO4 6.4V 4500mAh	DALI

Technical Data

Rated Supply Voltage	220-240V	Max.Casing Temperature Tc	70°
Mains Frequency	50-60HZ	Ambient Temperature Ta	-25...+50 °C
Max.Open Circuit Voltage	13V	Type Of Protection	IP20
Overvoltage Protection	305V(for 1h)	Mains Voltage Changeover Threshold	Accoring to EN 60598-2-22

Testing

DALI Control

A DALI command from a suitable control unit can be used to initiate function and duration tests at individually selected times. Status flags are set for report back and data logging of results.

When a DALI bus has not been connected or when a DALI bus is connected but the DALI default DELAY and INTERVAL times have not been re-set by sending appropriate DALI commands, then the EPE-ED1 will conduct self-tests in accordance with the default times set within the EEPROM. These default times are factory pre-set, in accordance with the DALI standard EN 62386-202, to conduct an automatic function test every 7 days and a duration test every 52 weeks. Since the DELAY time is factory pre-set to Zero, all units are tested at the same time. Test times can be changed with a command over the DALI bus.

The DELAY and INTERVAL time values must be re-set when the emergency system test times are to be scheduled by a DALI control and monitoring system.

Note that once the default values have been set to Zero, tests will only be conducted following a command from the control system. If the DALI bus is disconnected the EPE-ED1 does not revert to self-testing mode.

Addressing

The EPE-ED1 includes the new EZ easy addressing system which allow addressing and identification by using the bi-colour LED. Binary address codes given by the LED can be simply converted to the DALI addresses 0 to 63. For single handed addressing using this method it is necessary to send a broadcast ident command every 3 to 9 seconds. During this command the main fluorescent lamp will be switched off and the LED will flash the 6 bit binary address preceded by a 3 second start indication period.

Commissioning

After installation of the luminaire and initial connection of the mains supply and battery supply to the EPE-ED1 the unit will commence charging the batteries for 20 hours (initial charge). Afterwards the module will conduct a commissioning test for the full duration. The 20 hours recharge occurs also if a new battery is connected or the module exits the rest mode condition. The following connected or the module

exits the rest mode condition. The following automatic commissioning duration test is only performed when a battery is replaced and fully charged (after 20 hrs) and the interval time is not set to zero, otherwise the system is expected to perform the testing.

Functional Test

The time of day and frequency of the 5 seconds function test can be set by the DALI controller. The default setting is a 5 seconds test on a weekly basis.

Duration Test

The time of day and frequency of the duration test can be set by the DALI controller. The default setting is a duration test conducted every 52 weeks.

Prolong Time

Prolong time can be set by the DALI controller. This is the delay time between return of the mains supply and the end of the emergency operation. The default prolong time is set as 0 minutes as specified within the DALI standard.

Indicator LED will stay off for the duration of the prolong time.

Rest Mode / Inhibit Mode

Emergency operation is automatically started when the mains supply is switched off. If the Rest Mode is activated, the discharging of the battery will be minimized by switching off the LED output. If the Inhibit Mode has been activated before the mains supply is switched off, Rest Mode will be automatically switched on if the mains supply is switched off within 15 minutes. Rest Mode and Inhibit Mode can be initiated by the DALI controller. The REST command has to be sent after the mains supply has been disconnected and whilst the EPE-ED1 is in emergency operation. The INHIBIT command has to be sent while the EPE-ED1 is supplied by mains.

Test Switch

An optional test switch can be wired to each EPE-ED1. This can be used to initiate a 5 seconds function test by a short press < 1 second.

DALI Controller

Average life-time 50,000 hours under rated conditions with a failure rate of less than 10 Average failure rate of 0.2

Life-time

Average life-time 50,000 hours under rated conditions with a failure rate of less than 10 Average failure rate of 0.2



Status indication

System status is indicated by a bi-colour LED and by a DALI status flag.

LED indication	Status	Commentary
Permanent green	System OK	
Fast flashing green (0.1sec on-0.1 sec off)	Function test underway	
Slow flashing green (1sec on-1 sec off)	Duration test underway	
Red LED on	Load failure	Open circuit / Short circuit / LED failure 1
Slow flashing red (1sec on-1 sec off)	Battery failure	Battery failed the duration test or function / Battery is defect / Incorrect battery voltage
Fast flashing red (0.1sec on-0.1 sec off)	Charging failure	Incorrect charging current
Double pulsing green	Inhibit mode	Switching into inhibit mode via controller
Binary transmission of address via green/red LED	Address identification	During address identification mode
Green and red off	DC mode	Battery operation (emergency mode)

If the EPE-ED1 is operated in non-maintained mode and an LED fault is detected, the red indicator LED will be illuminated and the output will be stopped. The unswitched mains supply must be switched off before the LED is changed in order that the new LED can be detected. A function or duration test will not reset the fault indication.

Mechanical Details

Case manufactured from polycarbonate.

Glow-wire test according to EN 61347-1 with increased temperature of 850°C passed.

LED bi-colour status indicator

- Green/red
- Mounting hole 6.5 mm diameter, 1 – 1.6 mm thickness.
- Lead length 500mm.
- Insulation rating: 80 °C



Test Switch

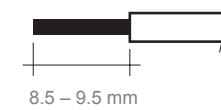
- Mounting hole 7.0 mm diameter
- Lead length 500mm



Wiring type and cross section

Wiring

mains (SL, N, L)
LED (LED +, LED -)



0.5 – 1 mm² solid or fine-stranded
0.5 – 1.0 mm² fine-stranded with ferrule

Use one wire for each terminal connector only.

Max. lead insulation diameter

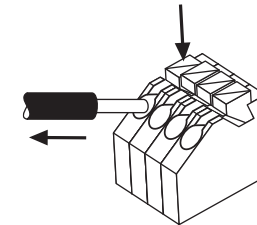
Test switch	2.1mm	-
Indicator LED	2.1mm	-

Maximum lead length

LED	3 m
status indication LED	1 m

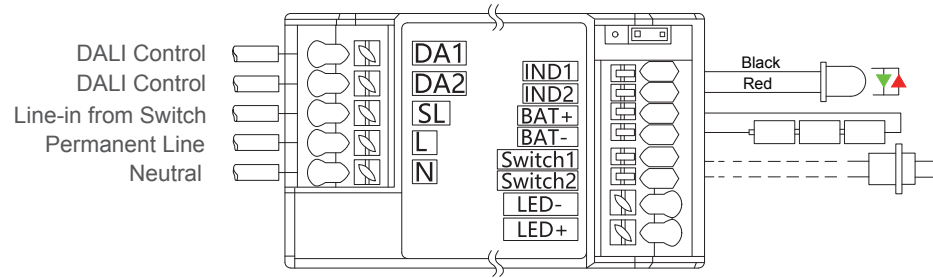
Release of the wiring

Press down the "push button" and remove the cable from front.

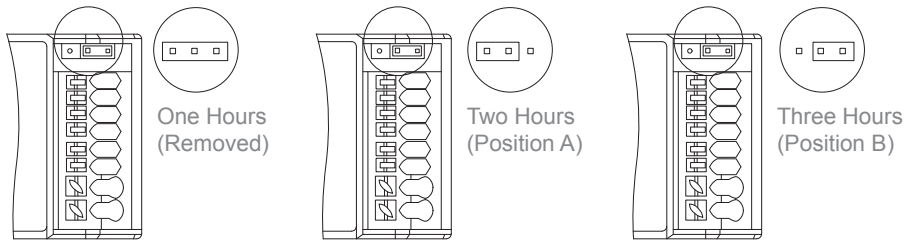


Wiring Diagram

Wiring diagram of SmartPower for LEDs in series



Instructions for choosing emergency hours





▼ www.epowerem.com info@epowertech.cn TEL: +86-755 85272094 ▼

Add: 302, 6th Building, Hesheng Industrial park, FuHai Sub-district, Bao'an, Shenzhen, PRC