

# EMERGENCY LIGHTING

## ELCEM300/L DALI-2

### Features

- Constant power output emergency power supply
- For LED module with a forward voltage of 10-54Vdc/10-300Vdc
- The product can be installed internally or externally
- Changeable built-in battery structure
- Compatible with all dimmable and non-dimmable constant current LED driver
- Self-contained emergency lighting LED driver with DALI-2 interface and automatic test function
- Automatic shutdown of output if LED load is out of range
- Constant power output, output current self-adjustable
- 5 years guarantee for electronic part

### Functions

- DALI-2 Function
- Maintained/Non-maintained operation
- Electronic charge system
- Deep discharge protection
- Short-circuit-proof battery connection
- Open-circuit-proof
- Polarity reversal protection for battery



220-240V  
AC  
50/60Hz

LED

LiFePO4

CE

110

Light bulb icon

Light fixture icon

No fire icon

SELV

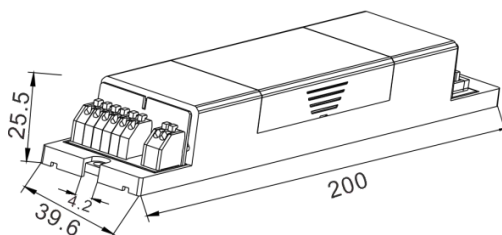
EL-T

EL

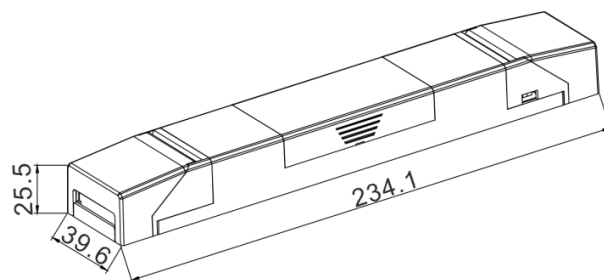
Checkmark icon

### Dimensions

Built-in product size



External product size



#### Notice:

Built-in product size

- 1.Product installation aperture size: 4.2 ± 0.2mm
- 2.Recommended screw model size: M4

Unit: mm

	Item Code	Carton size	QTY	Weight per pc.	Battery
Built-in product size	300/L-1.2W-3H	380*250*170	40PCS	156g	18650 1cell
	300/L-2.5W-1H				
	300/L-2.5W-3H	380*250*170	40PCS	196g	18650 2cells
	300/L-3.5W-2H				
	300/L-5W-1H				
External product size	300/L-1.2W-3H	380*250*170	30PCS	191g	18650 1cell
	300/L-2.5W-1H				
	300/L-2.5W-3H	380*250*170	30PCS	176g	18650 2cells
	300/L-3.5W-2H				
	300/L-5W-1H				

# EMERGENCY LIGHTING

## ELCEM300/L DALI-2

### Technical Data

Rated supply voltage	220-240VAC
AC voltage range	144-187VAC
Mains frequency	50/60Hz
Power factor	≥0.55
Starting time	1s
Output overvoltage protection	57/340V
U-OUT(including open-/short-circuit and double load)	60/350V
Ambient temperature $t_a$	5-50°C
Max. Casing temperature $t_c$	70°C
IP rating	IP20
In-rush current	1.5A
In-rush current duration	4ms
Mains surge capability (between L – N)	1KV
Maximum withstand voltage	2KV+4U
Withstand time	60s

Item Code	Typical output emergency power	Mains input current, min	Mains input current, max	Input power in mains operation, min	Input power in mains operation, max
ELCEM300-DL ELCEM300L-DL	1.2W	4.5mA	20mA	0.5W	3W
	2.5W				
	3.5W				
	5W				

Item Code	LED module forward current range Min-Max	LED module forward power range Min-Typ-Max	LED module forward voltage range Min-Max
ELCEM300-1.2W	2-100mA	0.6-0.8-1W	10-300Vdc
ELCEM300-2.5W	4-170mA	1.3-1.7-2W	
ELCEM300-3.5W	5-240mA	1.9-2.4-2.6W	
ELCEM300-5W	8-330mA	2.6-3.5-3.8W	
ELCEM300L-1.2W	11-100mA	0.6-0.8-1W	10-54Vdc
ELCEM300L-2.5W	25-170mA	1.3-1.7-2W	
ELCEM300L-3.5W	35-240mA	1.9-2.4-2.6W	
ELCEM300L-5W	45-330mA	2.6-3.4-3.8W	

### Note:

- 1.All specifications are typical at 25°C unless otherwise stated.
2. All specifications are typical on the 230VAC unless otherwise stated.
3. "ST" represents the self test.

# EMERGENCY LIGHTING

## ELCEM300/L DALI-2

### 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 ELCEM300/L 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 ELCEM300/L does not revert to self-testing mode.

#### Addressing:

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 LEDs will be switched off and the indication LED will flash the 6 bit binary address preceded by a 3 second start indication period.

#### 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 ELCEM300/L is in emergency operation. The inhibit command has to be sent while the ELCEM300/L is supplied by mains. After a mains reset the ELCEM300/L exits the Rest Mode. Rest Mode and Inhibit Mode can both be disabled by sending the RE-LIGHT/RESET inhibit command.

LED Indication	Status	Description
Permanent Green	Standby ,System OK	Mains Operation ,battery is charged
Fast flashing Green (0.25s on 0.25s off)	Function test underway	Function test underway
Slow flashing Green (1s on 1s off)	Duration test underway	Duration test underway
Permanent Red	Lamp failure	Open Circuit or Short circuit or LED failure
Fast flashing Red (0.25s on 0.25s off)	Battery capacity failure	Battery failed duration test
Slow flashing Red (1s on 1s off)	Battery fault	Incorrect battery voltage or Short circuit or Open Circuit
Green and Red off	Battery Operation	Emergency mode:Mains disconnected or Mains failure
Slow flashing Red (1s on 3s off)	Battery temperature error	When power on and battery temperature is above 60(±2)°C or below 0(+2) °C

#### Notice

##### Fault status:

If an error is detected, the indicator LED will switch to RED. If the error has been corrected please re-connecting the battery after the mains power off, the indicator LED immediately will switch back to GREEN when mainspower on.

#### Notice

##### Battery failed duration test:

After an exchange of the battery and holding down the button (>10S) reset the timer, the indicator LED will switch to GREEN.

#### Note:

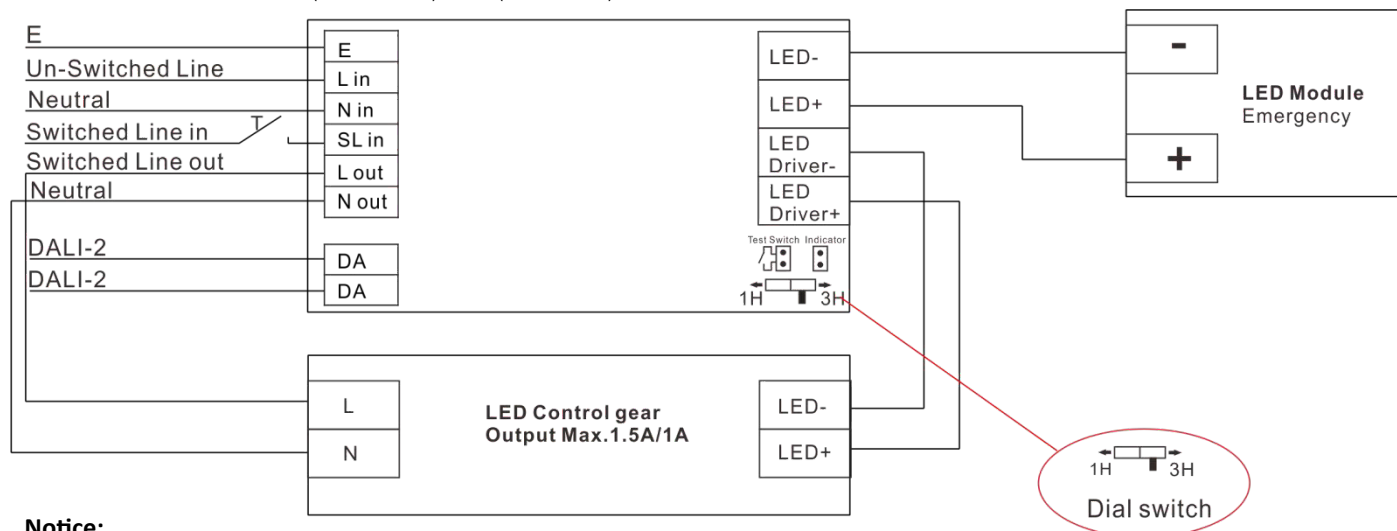
1.After the first power-on, continuous charging for 24 hours to enter the first inspection, if additional operations are carried out during the continuous charging process, the time of entering the first inspection will be deviated.

# EMERGENCY LIGHTING

## ELCEM300/L DALI-2

### Wiring Diagram

U-OUT of the LED drive is 60V(ELCEM300L)/350V(ELCEM300)



### Notice:

The indicator light will turn off under the following conditions:

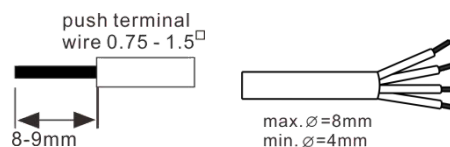
1. When the power is off, the light enters the emergency mode

Requirements for LED Control gear:

- 1.If used together with ELCEM300L series, the LED driver U-OUT the shall not exceed 60V, and fulfill double/reinforced insulation between supply an output circuits, and the maximum current shall not exceed 1.5A.
- 2.If used together with ELCEM300 series, the LED driver U-OUT the shall not exceed 350V, and the maximum current shall not exceed 1A.
3. When the SLin is connected, the LED is in the maintenance state.  
When the SLin is disconnected, the LED is in the no maintenance state.

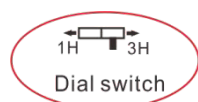
Requirements for wiring wires:

- 1.Wire diameter range: E, Lin, Nin, SLin, L out, N out, DA, LED-, LED+, LED Driver-, LED Driver+ cables 0.75-1.5 square millimeters,
- 2.Crimping buckle can be fastened, wire diameter range: maximum 8mm, minimum 4mm.



Function switching:

- Step 1: According to the diagram, switch the 1H/3H function by the dial switch.
- Step 2: Turn to the left and switch the function to standard version (1H).
- Step 3: Turn to the right and switch the function to self-test version (3H).



Note:

- 1.Please noted that duration time switching by dial switch would only be available when all the wiring is disconnected, including the AC input, DC output and the battery.
- 2.Checking battery capacity before doing switch.
- 3.Please note that when the 2.5W power supply product is switched through the dial switch, you need to check the battery capacity before switching, and replace the corresponding battery according to the actual needs.
- 4.Please note that the 3.5W/5W does not have a dial switch switching function.

# EMERGENCY LIGHTING

## ELCEM300/L DALI-2

### Battery Data

Emergency power	Batteries	Emergency Duration	Battery discharge current Min-Max	Battery output power Min-Typ-Max	Battery fully charged time	Charge Current	Battery discharge voltage
1.2W	18650/3.2V/1500mAhLiFePO4	3h	300-350-420mA	0.9-1.1-1.3W	16h	200mA±10%	2.5-3.2-3.6V
2.5W	18650/3.2V/1500mAhLiFePO4	1h	650-740-840mA	1.9-2.4-2.7W			
	18650/3.2V/3000mAhLiFePO4	3h					
3.5W	18650/3.2V/3000mAhLiFePO4	2h	950-1050-1200mA	2.9-3.4-3.9W			
5W	18650/3.2V/3000mAhLiFePO4	1h	1400-1550-1800mA	4.2-4.9-5.5W			

#### Note:

Automatically charge when the voltage of a single battery drops below 3.4V. When the voltage of a single battery exceeds 3.6 V, the charger turns off (0mA).

If the battery temperature is above 60 (±2°C) or below 0 (+2°C), the battery will stop charging.

The emergency lighting LED driver will recharge the battery normally after running the test of 61347-2-7 CL22.3 (abnormal operating conditions).

When the voltage of a single battery is below min 2.0 V, the battery will not enter an emergency state.

The minimum charging environment temperature of the battery is 5°C, to ensure that the battery can be charged

Capacity	1.5/3.0 Ah
International designation	IFpR 18/65
Battery voltage/cell	3.2V
Cell type	18650
Case temperature range to ensure	
4 years design life	+5°Cto+55°C
5 years design life	+5°Cto+45°C
6 years design life	+5°Cto+35°C
Max. short term battery case temperature (shorter than 1 month over the battery lifetime)	70°C
Max. number discharge cycles	50 cycles total
Max. storage time	6 months

#### Notice: Storage condition

Batteries should be stored within the specified temperature range in low humidity conditions.

Optimal storage conditions are

- Temperature: -20°C to +40°C

- Humidity: 45%- 85%

Avoid atmosphere with corrosive gas

It is recommended to disconnect the battery before storage or delivery

Battery should be charged every three months in order to keep it's initial performance.

### Standard

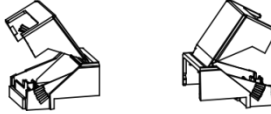
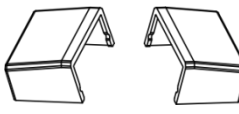
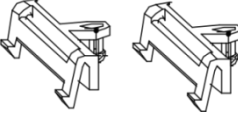
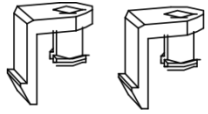
This product meets the following standards:

- EN IEC61347-2-7
- EN 61000-3-2
- ROHS 2.0
- EN IEC61347-1
- EN 61000-3-3
- DALI standard EN 62386-202
- EN 61547
- EN 55015

# EMERGENCY LIGHTING

## ELCEM300/L DALI-2

### Mounting Accessories

Item Code	External left and right end caps	Built-in left and right end caps	Double claw buckle	Single claw buckle
Accessories' Images				

**Notice:** After using this accessory, the built-in products can be converted to external products



#### Status indication bi-colour LED

Two-colour status display LED  
Green:system OK,Red:fault  
Plug connection  
Opening size:6\*6mm  
Line length:12cm/23cm/50cm/1m/2m



#### Test switch

For connection to the emergency lighting unit  
For checking the device function  
Plug connection  
Dielectric strength:500V AC for 60 seconds  
Opening size:7.5\*7.5mm  
Line length:12cm/23cm/50cm/1m/2m



#### Test switch

For connection to the emergency lighting unit  
For checking the device function  
Plug connection  
Dielectric strength:1KV AC for 60 seconds  
Opening size:7.5\*7.5mm  
Line length:12cm/23cm/50cm/1m/2m



#### Test switch

For connection to the emergency lighting unit  
For checking the device function  
Plug connection  
Dielectric strength:500V AC for 60 seconds  
Opening size:12\*12mm  
Line length:12cm/23cm/50cm/1m/2m



#### Integrated waterproof button indicator light

For connection to the emergency lighting unit  
For checking the device function  
Plug connection  
Dielectric strength:1000V AC for 60 seconds  
Two-colour status display LED  
Green:system OK,Red:fault  
Opening size:12\*12mm  
Line length:12cm/23cm/50cm/1m/2m

#### Battery extension cable

Cable length:  
60mm/150mm/200mm/350mm  
3-pole plug connection

# EMERGENCY LIGHTING

## ELCEM300/L DALI-2

### ■ Service Life

Average life-time 50,000 hours under rated conditions with a failure rate of less than 10% for the emergency converter as rated power. Average failure rate of 0.2% per 1000 operating hours.

### ■ Important

The electric source for safety service is not a user serviceable item and shall only be replaced by the manufacturer service agent or a similar qualified person.

The company accept no responsibility for incorrect installation, incorrect operation or improper maintenance.

After installation of the fitting, the battery must be charged for 16 hours for duration test.

The controlgear is not intended for use in luminaries for high-risk task area lighting.

The recharging device will recharge the battery ESSS normally after removal the short circuit link and reconnecting the ESSS.

Double or reinforce insulation between supply and battery/ESS circuits and based on a working voltage of 250V, Meanwhile, insulation between battery circuits/test circuits and LED circuits fulfills basic insulation and based on a working voltage of 350 V; Furthermore, insulation between supply and LED circuits fulfills double insulation with a voltage above ELV (350V). Additional, Insulation between battery circuits / indicator circuits / MT (ATS) circuits and normal supply fulfills reinforced insulation. If a LED driver is used with these control gears, The LED driver shall be in compliance with IEC/EN 61347-2-13 and shall provide double or reinforce insulation between input circuits and output circuits.

For built-in convertors: rely upon the luminaire enclosure for protection against electric shock .

Test switch and indicator can only be used internally.