ELECTRIO
ELEKTRONIK

EMERGENCY LIGHTING
ELCEM300A/LA

Features

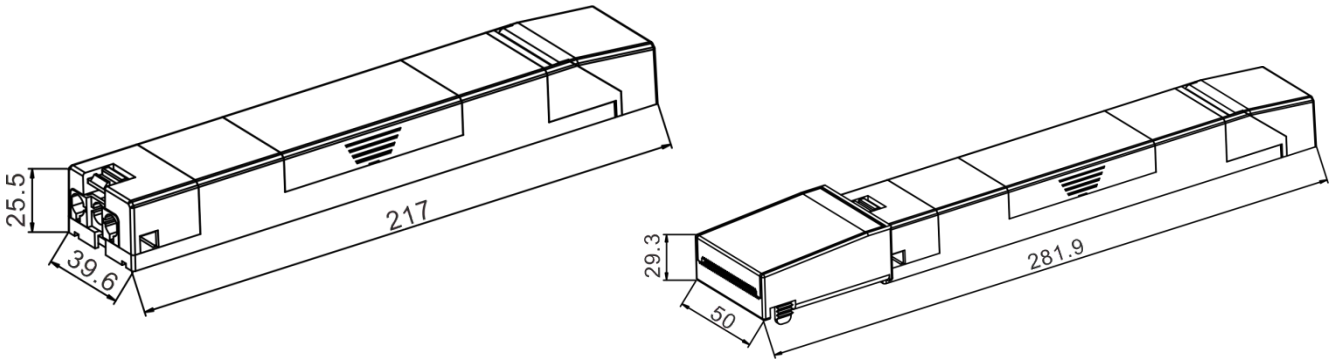
- Constant power output emergency power supply
- For LED module with a forward voltage of 10-54Vdc/10-300Vdc
- The product can be installed internally or externally
- Changeable built-in battery structure
- Compatible with all dimmable and non-dimmable constant current LED driver
- Self testing products can switch the self testing,standard function through the dial switch
- 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

- Normal Function/Self Test
- 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 | SELV | EL-T | EL

Dimensions



Unit: mm

Item Code	Carton size	QTY	Weight per pc.	Battery
300A/LA	314*335*175	30PCS	140g	18650 1cell
			179g	18650 2cells
300A/LA AC quick plug in connector		25PCS	182g	18650 1cell
			221g	18650 2cells

ELECTRIO
ELEKTRONIK

EMERGENCY LIGHTING
ELCEM300A/LA

Technical Data

Rated supply voltage	220-240VAC
AC voltage range	140-180VAC
Mains frequency	50/60HZ
Power factor	≥0.55
Starting time	1S
Output overvoltage protection	57V/340V
U-OUT(including open-/short-circuit and double load)	60V/350V
Ambient temperature ta	5-50℃
Max. Casing temperature tc	70℃
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
ELCEM300A ELCEM300LA ELCEM300A-ST ELCEM300LA-ST	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
ELCEM300A-1.2W	2-100mA	0.6-0.8-1W	10-300Vdc
ELCEM300A-2.5W	4-170mA	1.3-1.7-2W	
ELCEM300A-3.5W	5-240mA	1.9-2.4-2.6W	
ELCEM300A-5W	8-330mA	2.6-3.5-3.8W	
ELCEM300LA-1.2W	11-100mA	0.6-0.8-1W	10-54Vdc
ELCEM300LA-2.5W	25-170mA	1.3-1.7-2W	
ELCEM300LA-3.5W	35-240mA	1.9-2.4-2.6W	
ELCEM300LA-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.

ELECTRIO
ELEKTRONIK

EMERGENCY LIGHTING
ELCEM300A/LA

Functionality of the test button

1) A short press (>1s) on the button start a function test lasting 5 seconds (The battery's capacity should be more than 5%=charging 30mins
2)Holding down the button(>10s) resets the timer(System-reset)

Function test

The 5 second long, each 7 days' function test serves to check the functionality of the emergency unit, the batteries and LED module.

Duration test(Europe)

-First test: After 24 hours of AC mains power input, the emergency lighting unit will enter into a 3-hour duration test.
-Half year duration test: Conduct 3-hour duration test every 180-182 days to check the battery capacity.

Duration test(Australia)

-First time test: After 16 hours of AC mains power input, the emergency lighting unit will enter into a 2-hour duration test.
-Half year duration test: The test will be carried out on each 180-182days to check the capacity of batteries. The 2-hour duration test will be carried out at the first time; 1.5-hour duration test will be carried out in the following duration tests.

Notice.
-A function test&duration test shall only be started when the battery supply is fully charge if a mains supply failure occurs while a function test&duration test is in progress, the test shall be postponed and the system shall enter emergency operation. Following restoration of the mains supply , a postponed duration test shall re-commence automatically when the battery supply is fully re-charge,function test bettery≥3V,duration test bettery ≥3.55V
-The indicator will be slow flashing Green for 5 days if the duration test is carried out successfully.

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 temperture error	When power on and battery temperature is above 60(±2)℃ or below 0(+2) ℃

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.

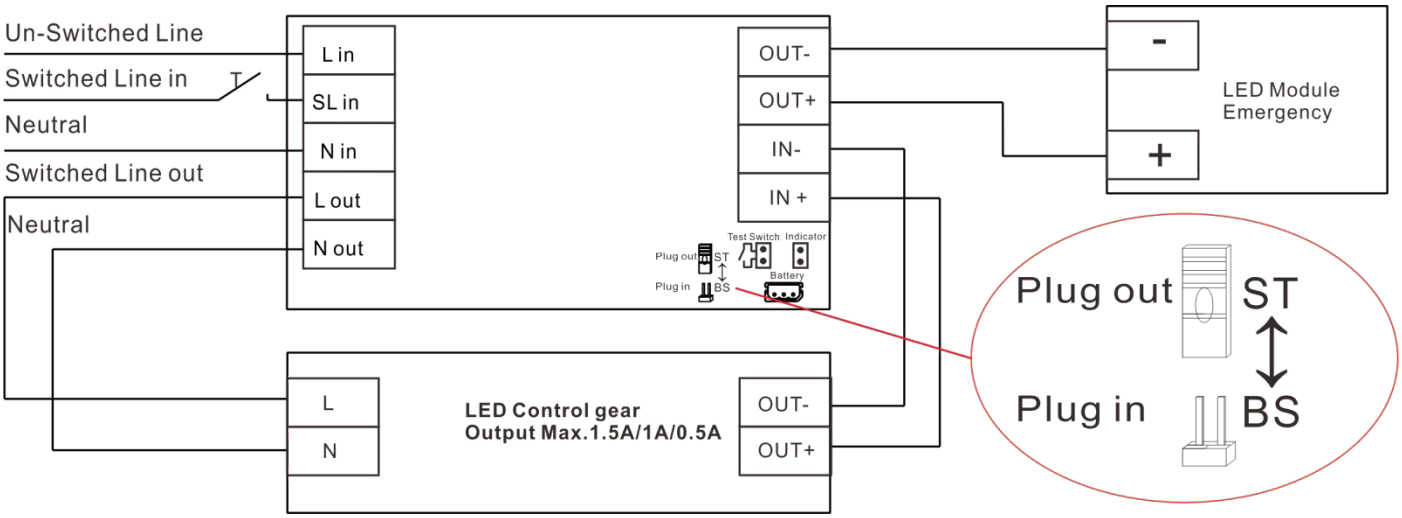
NOTICE:

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
ELCEM300A/LA

Wiring Diagram

U-OUT of the LED drive is 60V(ELCEM300LA)/350V(ELCEM300A)



Notice:

The indicator light will turn off under the following conditions:

1. When the power is off, the light enters the emergency mode
2. Normal Function: When the power is on, the battery is disconnected
3. After the power is connected, disconnect the power and reconnect the battery

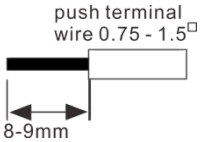
(Note: in this case, please reset the AC power supply)

Requirements for LED Control gear:

If used together with ELCEM300LA 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 ELCEM300A 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:

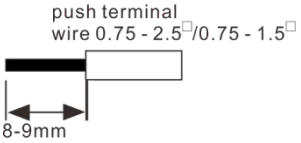
1.Wire diameter range: Lin、SLin、Nin、E cables 0.75-2.5 square millimeters,LED-、LED+、LED Driver-、LED Driver+ cables 0.75-1.5 Square millimeters.

Function switching:

Step 1: According to the diagram, switch the BS/ST function by the dial switch.

Step 2: Turn to the left and switch the function to standard version (BS).

Step 3: Turn to the right and switch the function to self-test version (ST).



Note:

1.Please noted that only the self-test version product can switch functions by the dial switch, which is not available for the standard version.

2.Please noted that functions switching by dial switch would only be available when all the wiring is disconnected, including the AC input, DC output and the battery.

ELECTRIO
ELEKTRONIK

EMERGENCY LIGHTING
ELCEM300A/LA

Battery Data

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

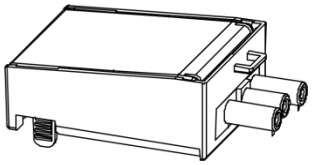
Standard

This product meets the following standards:

- EN IEC61347-2-7
- EN IEC61347-1
- EN 61547
- EN 61000-3-2
- EN 61000-3-3
- EN 55015
- AS/NZS CISPR 15
- AS/NZS 61347-1
- AS/NZS 61347-2-7
- ROHS 2.0

EMERGENCY LIGHTING
ELCEM300A/LA

Mounting Accessories

Item Code	AC quick plug in connector
Accessories' Images	

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

ELECTRIO
ELEKTRONIK

EMERGENCY LIGHTING
ELCEM300A/LA

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.