ELECTRIO
ELEKTRONIK

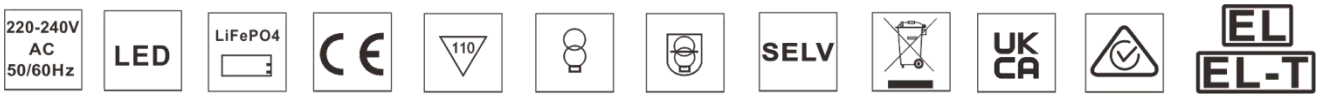
EMERGENCY LIGHTING
ELCEM19L/M/H

Features

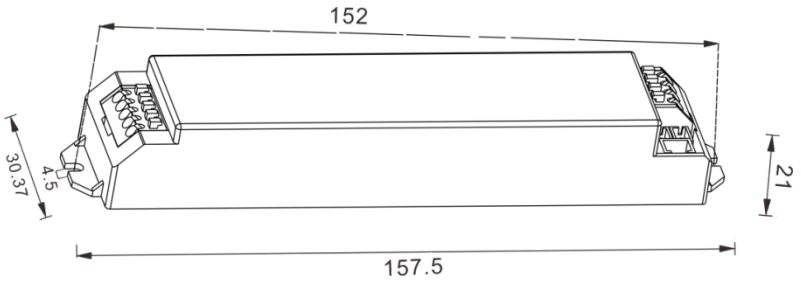
- Constant power output, output current self-adjustable
- For LED module with a forward voltage of 20-54/20-90/50-180Vdc
- Integral LiFePO4 battery pack
- Automatic shutdown of output if LED load is out of range
- ELCEM19L/M is SELV output voltage
- 5 years guarantee electronic

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



Dimensions



Unit: mm

Item Code	Carton size	QTY	Weight per pc.	Battery
19L/M/H-1.2W-3H	382*250*170	44PCS	148g	18650 1cell
19L/M/H-1.5W-2/3H				
19L/M/H-2.5W-1/1.5/2H				
19L/M/H-3W-1H				
19L/M/H-2.5W-3H	382*250*170	42PCS	191g	26650 1cell
19L/M/H-3W-2H				
19L/M/H-2.5W-3H	382*250*170	42PCS	191g	18650 2cells
19L/M/H-3W-2/3H				

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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	60V/95V/190V
U-OUT(including open-/short-circuit and double load)	60V/100V/200V
Ambient temperature ta	5-55℃
Max. Casing temperature tc	75℃
IP rating	IP20
In-rush current	1.5A
In-rush current duration	3ms
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
ELCEM19L ELCEM19M ELCEM19H ELCEM19L-ST ELCEM19M-ST ELCEM19H-ST	1.2W	4.5mA	20mA	0.5W	3W
	1.5W				
	2.5W				
	3W				

Item Code	LED module forward voltage range Min-Max	LED module forward current range Min-Max	LED module forward power range Min-Max
ELCEM19L-IOT-1.2W	20-54Vdc	12-52mA	0.5-0.85W
ELCEM19M-IOT-1.2W	20-90Vdc	7-52mA	
ELCEM19H-IOT-1.2W	50-180Vdc	2-20mA	
ELCEM19L-IOT-1.5W	20-54Vdc	15-65mA	0.7-1.2W
ELCEM19M-IOT-1.5W	20-90Vdc	9-65mA	
ELCEM19H-IOT-1.5W	50-180Vdc	3-23mA	
ELCEM19L-IOT-2.5W	20-54Vdc	25-98mA	1.2-2W
ELCEM19M-IOT-2.5W	20-90Vdc	15-98mA	
ELCEM19H-IOT-2.5W	50-180Vdc	6-39mA	
ELCEM19L-IOT-3W	20-54Vdc	28-110mA	1.5-2.2W
ELCEM19M-IOT-3W	20-90Vdc	17-110mA	
ELCEM19H-IOT-3W	50-180Vdc	7.5-45mA	

Note:

1.All specifications are typical at 25°C unless otherwise stated.
2.All specifications are typical on the 230VAC unless otherwise stated.
3.“BS” represents the normal function , “ST” represents the self test.

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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 within 5 days if the duration test be 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 temperature 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 indicat or LED will switch to GREEN.

Note:

Instructions for entering the life inspection for the first time:
1.After the first power on, continuous charging for 24 hours will enter the first inspection. If additional operations are performed during the continuous charging process, it will cause a deviation in the time to enter the first inspection.
2. When there is a deviation in the initial inspection time, the reset operation can be selected to reset (the AC switch can be turned on and off three times continuously, and the fourth power on is sufficient. The complete reset process needs to be completed within 20 seconds). After the reset is completed, continue charging for 24 hours to enter the initial inspection.
3.When the standard model is powered on and the battery temperature is above 60(±2)°C or below 0(+2)°C, the indicator status is green off.

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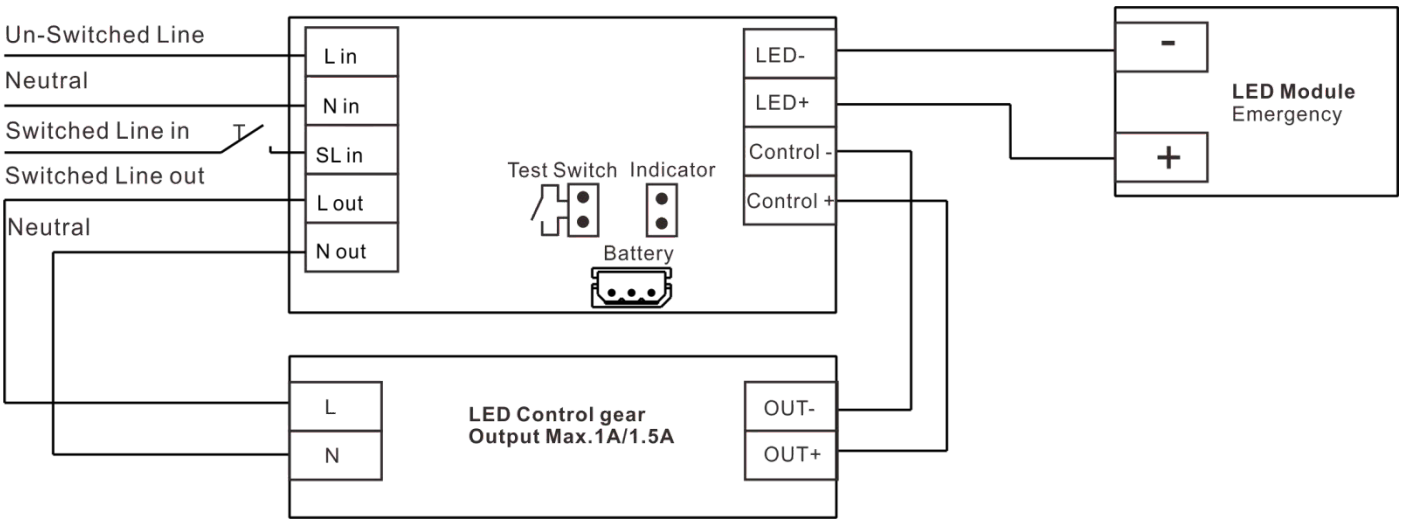
Wiring Diagram

U-OUT of the LED drive is 60V(ELCEM19L)/100V(ELCEM19M)/200V(ELCEM19H)



Notice:

With the following cases, the indicator will be off

1. Mains power off, the light goes into emergency mode
2. Battery is disconnect when mains power on
3.If used together with ELCEM19L 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.
4..If used together with ELCEM19M series, the LED driver U-OUT the shall not exceed 100V, and fulfill double/reinforced insulation between supply an output circuits, and the maximum current shall not exceed 1.5A.
5.If used together with ELCEM19H series, the LED driver U-OUT the shall not exceed 200V, and the maximum current shall not exceed 1.0A.

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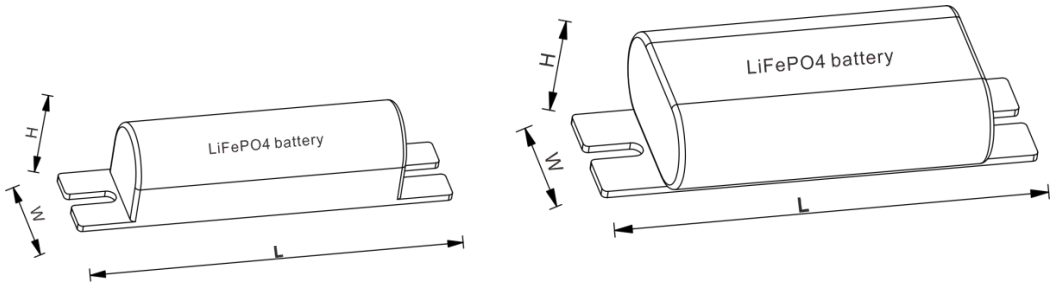
Battery Data

Emergency power	Batteries	Emergency Duration	Battery discharge current Min-Max	Battery output power Min-Max	Battery fully charged time	Charge Current	Battery discharge voltage Min-Typ-Max
1.2W	18650/3.2V/1500mAhLiFePO4	3h	300-400mA	0.9-1.3W	24h	200mA±10%	2.6-3.2-3.6V
1.5W	18650/3.2V/1500mAhLiFePO4	2h	380-520mA	1.3-1.6W			
	18650/3.2V/2000mAhLiFePO4	3h					
2.5W	18650/3.2V/1500mAhLiFePO4	1h	650-820mA	2.2-2.6W			
		1.5h					
	18650/3.2V/2000mAhLiFePO4	2h					
	18650/3.2V/3000mAhLiFePO4	3h					
	26650/3.2V/3000mAhLiFePO4						
3W	18650/3.2V/2000mAhLiFePO4	1h	850-1200mA	3-3.5W			
	18650/3.2V/3000mAhLiFePO4	2h					
	26650/3.2V/3000mAhLiFePO4						
	18650/3.2V/4000mAhLiFePO4	3h					

Note:

Automatically charge when the voltage of a single battery drops below 3.4V. When the voltage of a single battery exceeds 3.6V, 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



Item Code	L	W	H	Center hole distance
18650 1cell	90	19.8	20.3	83
26650 1cell		29	28	
18650 2cells		36.7	21	

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Capacity	1.5/2.0/3.0/4.0 Ah	Capacity	3.0Ah
International designation	IFpR 18/65	International designation	IFpR 26/65
Battery voltage/cell	3.2V	Battery voltage/cell	3.2V
Cell type	18650	Cell type	26650
Case temperature range to ensure		Case temperature range to ensure	
4 years design life	+5°Cto+55°C	4 years design life	+5°Cto+55°C
5 years design life	+5°Cto+45°C	5 years design life	+5°Cto+45°C
6 years design life	+5°Cto+35°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. short term battery case temperature (shorter than 1 month over the battery lifetime)	70°C
Max. number discharge cycles	50 cycles total	Max. number discharge cycles	50 cycles total
Max. storage time	6 months	Max. storage time	6 months

Note:

Batteries should be stored within the specified temperature range in low humidity conditions.
Optimal storage conditions are
- Temperature:-20℃ to +40℃
- 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 IEC61347-2-13
- EN IEC61347-1
- EN 61000-3-2
- EN 61000-3-3
- EN 61547
- EN 55015
- AS/NZS 61347-1
- AS/NZS 61347-2-7
- AS/NZS 61347-2-13
- AS/NZS CISPR 15
- ROHS 2.0

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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

White indicator base

For fixation status indication bi-colour LED
Opening size:19*19mm

Battery extension cable

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

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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 unit use dangerous mains voltage, it should be installed by qualified electricians only according to European safety standard or relevant nation regulations.

The emergency converter can only be used with the LED lamps and only suitable for use in indoors.Protect the electronics converter against excessive heat.

Connect the LED lamps to the emergency converter with correct polarity according to the schematic drawing.

The maximum length of the output cable to the LED lamps should not exceed 3m according to the EMC standard.

Connect the unit to AC power only after the wiring been completed between emergency converter and LED lamps.

About such situations,no ability can be taken over for possible damage:the emergency converter is used for purposes other than originally intended; connected in the wrong way.

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

The emergency function test must be performed when a battery is fully charged for 24 hours.

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.

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.

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

Test switch and indicator can only be used internally.

The controlgear relies upon the luminaire enclosure for protection against accidental contact with live parts.

The circuit is protected after a battery short circuit after the battery is restored, the charging circuit can charge normally.

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 200V; Furthermore,insulation between supply and LED circuits fulfills double insulation with a voltage above ELV (200V).

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.