

## ELED, ELED-A EMERGENCY LIGHTING INVERTER

### ELED, ELED-A emergency lighting inverters for LED luminaire conversion

**Important note:** These mounting and installation instructions must be read carefully and kept in a safe place. By installing an ELED emergency lighting inverter (hereinafter referred to as inverter), the user implicitly accepts all recommendations in this manual.

#### 1) Application and technical data

The inverters are designed for mounting in emergency lighting installations with below possible wiring types:

- Maintained: inverter used with a mains converter (LED driver) and an LED array in an LED luminaire.
- Non maintained: inverter and an LED array in an LED luminaire.

#### Conditions:

In order to use the inverters in an LED luminaire, the following conditions have to be fulfilled:

1. It is possible to supply direct current (DC) to the LED array using only two wires. This means that no other signal or voltage are required by the LED array to emit light.
2. If the LED driver is a constant voltage source (usually 12V, 24V or 48V), the rated power supplied by the LED driver in mains operation must be higher than the power supplied by the inverter in emergency operation.
3. The LED array current during the luminaire's mains operation must not exceed 2A.

#### Technical data

Rated operating voltage range	U <sub>n</sub> = 220...240 V
Permissible mains frequencies	50 / 60 Hz
Power consumption	1h emergency: max. 3.5 VA 3h emergency: max. 4 VA
Battery technology	LiFePO <sub>4</sub> (LFP)
Ambient temperature t <sub>a</sub>	5...50 °C
Max. housing temperature t <sub>c</sub>	65 °C
Battery charging time	24h
Protection class	Built-in, double insulation
Certification	CE, ENEC



Mounting outside the luminaire: Wire lengths between the inverter and the luminaire must be kept as short as possible (max. 1 m).

#### 2) LED operating voltages and inverter type selection

Both the forward voltage of the LED array and the design of the LED luminaire must be taken into account when selecting the suitable inverter type. The LED forward voltage must be read from the LED driver's label (maximum value of the output voltage). Proceed as follows:

- For SELV luminaires with touchable LEDs (i.e. cover removeable without general or special tools), it is imperative to use the 60V variant. If the voltage displayed on the LED driver is higher than 60V, contact your luminaire manufacturer.
- For SELV luminaires that may expose LEDs with the help of a (special) tool, the 120V version may be used. If the voltage displayed on the LED driver is higher than 120V, contact your luminaire manufacturer.
- For NOT-SELV luminaires with U<sub>out</sub> > 120V with not accessible LEDs parts, the 350V version may be used. Please be always referred to the max. U<sub>out</sub> displayed on a LED driver (max. 350V).

Operating voltage U	ELED type
U < 60 VDC	12 - 55V
U < 120 VDC	20 - 105V
U < 350 VDC	100 - 220V

#### 3) Mounting

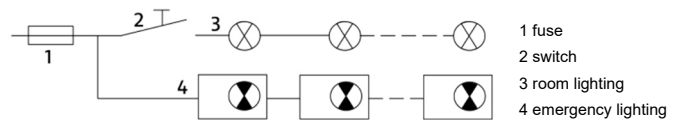
When placing the inverter in a luminaire, the following criteria must be taken into account:

- The cable lengths should be kept as short as possible to meet EMC requirements.
- The battery, LED and status indicator LED cables should be kept separate from mains wiring.
- The battery should be mounted in the coolest spot in the luminaire in order to achieve the longest possible battery life. The battery's ambient temperature must not exceed 50 °C.
- The inverter must not be mounted on surfaces that decompose, melt or otherwise change due to thermal effects.
- The inverter is not suitable for use in potentially explosive atmospheres unless appropriate preventive measures are taken on the part of the luminaire.
- When mounting outside the luminaire, the inverter and battery must be mounted in an additional housing with strain relief. Floating wiring is not permissible.

#### 4) Electrical wiring

Electrical wiring must be carried out by qualified personnel only, and according to local rules and regulations for electrical installations and emergency lighting. Ensure that the inverter's rated operating voltage equals that of the emergency luminaire. The terminals are designed for 0.5 to 1.5 mm<sup>2</sup> wires, stripped insulation 8.5...9.5 mm.

The inverter must be powered from a non-switched phase at **L** and connected to the same group fuse as normal room lighting to ensure mains monitoring and permanent battery charging.



#### 5) Post-installation check

In the case of inverters without automatic self-testing (ELED), the green light-emitting diode (LED) shows that the battery is properly charged. If the LED is off for more than 5 minutes, the battery is not charged due to mains failure, missing battery or faulty charger. In the case of inverters with automatic self-testing, be referred to "section 10: "Status indication for self-testing inverters".

#### 6) Maintenance

Local rules and regulations for maintenance and inspection of emergency lighting apply. Prior to performing any maintenance work, carry out the following procedure:

1. Disconnect emergency lighting from mains.
  2. Remove covers.
  3. Disconnect the battery from the inverter (unplug).
- Inverters must undergo visual inspections in regular intervals.

#### 7) Battery regeneration

Immediately after initial power-on (and thus after each battery change or after a cleared charging fault), the inverters automatically regenerate the battery in order to optimise its capacity, which may have suffered as a result of excessively long storage times. Only self-testing inverters carry out automatic battery regeneration:

Three cycles are executed with each cycle consisting of a 24 h battery charge followed by a full discharge. No capacity measurement is made during these regeneration cycles.

**Note:** The battery regeneration process will not be performed after any battery discharge, even leading up to battery deep discharge protection, nor after a capacity test procedure of the self-testing inverters. Battery discharge is performed via the connected luminaire which operates in emergency mode during battery regeneration.



