

## LELK

### EMERGENCY LIGHTING DRIVERS FOR LED LUMINAIRES



#### Product Description

High efficiency electronic emergency lighting driver, suitable for Power-LED applications in non-maintained mode. Can be combined with an external LED driver for maintained operation.

Each emergency lighting driver in the LELK range is designed to add emergency lighting operation to standard mains LED luminaires. LELK drivers are designed in accordance with EN61347-1, EN61347-2-7 and EN61347-2-13. For maintained operation LELK drivers must operate in conjunction with the existing drivers in mains luminaires. In normal mains operation the LED array is powered by the existing mains driver and in emergency operation by the LELK and associated battery.

- Self-contained
- 5 years warranty

#### Properties

- Non-maintained mode
- Maintained mode in combination with luminaire mains driver
- 3Hr operating time (variant upon request)
- Self-testing in accordance with EN62034
- Indicator LED
- Compatible with all dimmable and non-dimmable LED-drivers
- 3-pole technology: LED module changeover and delayed power switching for the LED-driver
- Constant power output in emergency mode
- Specific charging regime depending on the battery technology (NiCd or LiFePO<sub>4</sub>)
- Deep discharge protection
- Suitable for emergency escape lighting and open area lighting

#### Technical Specifications

Input voltage	220V - 240Vac +/- 10%
Mains input frequency	50 – 60Hz
Ambient temperature (unit and batteries) <i>ta</i>	<i>ta</i> = 0°C to + 50°C
Unit <i>max.</i> case temperature <i>tc</i>	<i>tc</i> = 65°C
Safety class	I
Battery technology	See technical data table
Battery Capacity	See technical data table
Emergency duration	3Hr
Battery recharge period	24Hr for rated duration
Regulated output power	see technical data table
LED array max. voltage	Available unit voltage types: 55V / 105V / 220V
Max. unit output voltage (with LED-array disconnected)	60V / 120V / 300V depending on unit voltage type
Approval	CENELEC (pending)
Unit case size	150 x 30 x 22mm (L x W x H)
Enclosure material	Zinc plated sheet steel
Indicator LED for standard type LELK	5mm green LED on 400mm cable with connector
Indicator LED for self-testing type LELK-S	5mm red/green LED on 400mm cable with connector

## Batteries

- LiFePO<sub>4</sub> (18650 Cells) / NiCd (D Cells)
- Charging time to achieve rated duration 24Hr
- 2 years for LiFePO<sub>4</sub> (1 year warranty NiCd)
- Battery regeneration for capacity optimisation

## Certification mark

- CENELEC certificate (pending)
- CE



## Safety

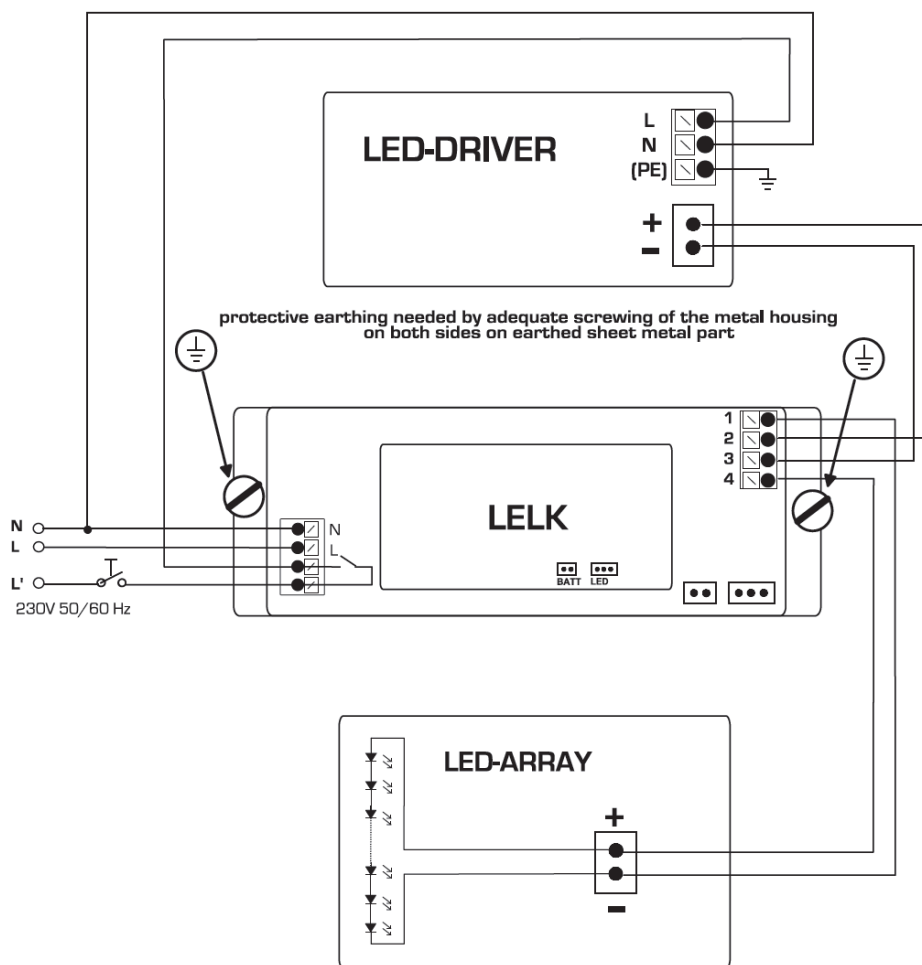
- Protection class I
- Protection type IP20

## Standards

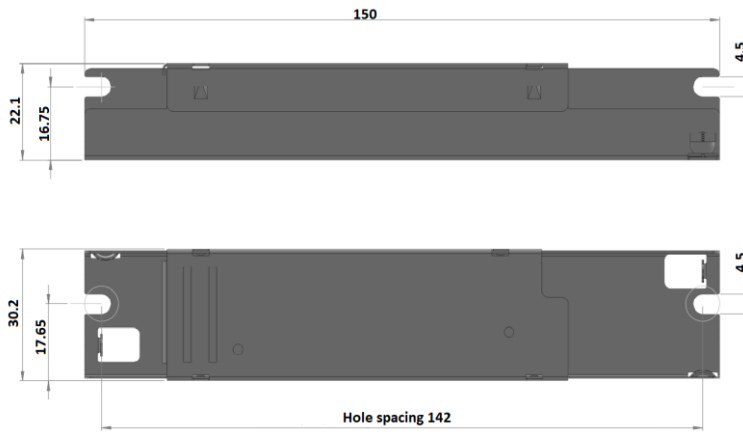
Designed to enable the manufacture of emergency lighting luminaires conforming with EN60598-2-22.

- EN 61347-1
- EN 61347-2-7
- EN 61347-2-13

## Connection diagram



## K-Case



## Technical Data

Part No	Module reference	Emergency Duration	Power output in emergency mode (variant upon request)	Light output in emergency mode (assumption: efficiency = 100 lm/W)	Battery (variant upon request)	Battery part number and description	LED array voltage
<b>TYPE BASIC</b>							
10-01-0012	LELK-G/55V-2W/2x1865/60Li	1Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 10 V / max 55 V
10-01-0013	LELK-G/55V-2W/2x1865/180Li	3Hr	1.5W	150lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 10 V / max 55 V
10-01-0036	LELK-G/55V-3W/2D/60	1Hr	2.5W	250lm	NiCd - 2.4V-4Ah	14-11-0007 - 2 Cell Pack 14-11-0008 - 2 Cell Stick	min 10 V / max 55 V
10-01-0015	LELK-G/55V-3W/3D/180	3Hr	2.5W	250lm	NiCd - 3.6V-4Ah	14-11-0009 - 3 Cell Pack 14-11-0010 - 3 Cell Stick	min 10 V / max 55 V
10-01-0031	LELK-G/55V-3W/2x1865/60Li	1Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 10 V / max 55 V
10-01-0014	LELK-G/55V-3W/3x1865/180Li	3Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-4.5Ah	14-12-0004 - 3 Cell Pack 14-12-0005 - 3 Cell Stick	min 10 V / max 55 V
10-01-0078	LELK-G/105V-2W/2x1865/60Li	1Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 20 V / max 105 V
10-01-0017	LELK-G/105V-2W/2x1865/180Li	3Hr	1.5W	150lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 20 V / max 105 V
10-01-0038	LELK-G/105V-3W/2D/60	1Hr	2.5W	250lm	NiCd - 2.4V-4Ah	14-11-0007 - 2 Cell Pack 14-11-0008 - 2 Cell Stick	min 20 V / max 105 V
10-01-0019	LELK-G/105V-3W/3D/180	3Hr	2.5W	250lm	NiCd - 3.6V-4Ah	14-11-0009 - 3 Cell Pack 14-11-0010 - 3 Cell Stick	min 20 V / max 105 V
10-01-0079	LELK-G/105V-3W/2x1865/60Li	1Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 20 V / max 105 V
10-01-0018	LELK-G/105V-3W/3x1865/180Li	3Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-4.5Ah	14-12-0004 - 3 Cell Pack 14-12-0005 - 3 Cell Stick	min 20 V / max 105 V
10-01-0080	LELK-G/220V-2W/2x1865/60Li	1Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 100 V / max 220 V
10-01-0081	LELK-G/220V-2W/2x1865/180Li	3Hr	1.5W	150lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 100 V / max 220 V
10-01-0082	LELK-G/220V-3W/2D/60	1Hr	2.5W	250lm	NiCd - 2.4V-4Ah	14-11-0007 - 2 Cell Pack 14-11-0008 - 2 Cell Stick	min 100 V / max 220 V
10-01-0023	LELK-G/220V-3W/3D/180	3Hr	2.5W	250lm	NiCd - 3.6V-4Ah	14-11-0009 - 3 Cell Pack 14-11-0010 - 3 Cell Stick	min 100 V / max 220 V
10-01-0083	LELK-G/220V-3W/2x1865/60Li	1Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 100 V / max 220 V
10-01-0022	LELK-G/220V-3W/3x1865/180Li	3Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-4.5Ah	14-12-0004 - 3 Cell Pack 14-12-0005 - 3 Cell Stick	min 100 V / max 220 V
<b>TYPE SELF-TESTING</b>							
10-02-0012	LELK-SG/55V-2W/2x1865/60Li	1Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 10 V / max 55 V
10-02-0013	LELK-SG/55V-2W/2x1865/180Li	3Hr	1.5W	150lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 10 V / max 55 V
10-02-0015	LELK-SG/55V-3W/3D/180	3Hr	2.5W	250lm	NiCd - 3.6V-4Ah	14-11-0009 - 3 Cell Pack 14-11-0010 - 3 Cell Stick	min 10 V / max 55 V
10-02-0031	LELK-SG/55V-3W/2x1865/60Li	1Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 10 V / max 55 V
10-02-0014	LELK-SG/55V-3W/3x1865/180Li	3Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-4.5Ah	14-12-0004 - 3 Cell Pack 14-12-0005 - 3 Cell Stick	min 10 V / max 55 V
10-02-0078	LELK-SG/105V-2W/2x1865/60Li	1Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 20 V / max 105 V
10-02-0017	LELK-SG/105V-2W/2x1865/180Li	3Hr	1.5W	150lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 20 V / max 105 V

10-02-0038	LELK-SG/105V-3W/2D/60	1Hr	2.5W	250lm	NiCd - 2.4V-4Ah	14-11-0007 - 2 Cell Pack 14-11-0008 - 2 Cell Stick	min 20 V / max 105 V
10-02-0019	LELK-SG/105V-3W/3D/180	3Hr	2.5W	250lm	NiCd - 3.6V-4Ah	14-11-0009 - 3 Cell Pack 14-11-0010 - 3 Cell Stick	min 20 V / max 105 V
10-02-0079	LELK-SG/105V-3W/2x1865/60Li	1Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 20 V / max 105 V
10-02-0018	LELK-SG/105V-3W/3x1865/180Li	3Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-4.5Ah	14-12-0004 - 3 Cell Pack 14-12-0005 - 3 Cell Stick	min 20 V / max 105 V
10-02-0080	LELK-SG/220V-2W/2x1865/60Li	1Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 100 V / max 220 V
10-02-0081	LELK-SG/220V-2W/2x1865/180Li	3Hr	1.5W	150lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 100 V / max 220 V
10-02-0082	LELK-SG/220V-3W/2D/60	1Hr	2.5W	250lm	NiCd - 2.4V-4Ah	14-11-0007 - 2 Cell Pack 14-11-0008 - 2 Cell Stick	min 100 V / max 220 V
10-02-0023	LELK-SG/220V-3W/3D/180	3Hr	2.5W	250lm	NiCd - 3.6V-4Ah	14-11-0009 - 3 Cell Pack 14-11-0010 - 3 Cell Stick	min 100 V / max 220 V
10-02-0083	LELK-SG/220V-3W/2x1865/60Li	1Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-3Ah	14-12-0002 - 2 Cell Pack 14-12-0003 - 2 Cell Stick	min 100 V / max 220 V
10-02-0022	LELK-SG/220V-3W/3x1865/180Li	3Hr	2.5W	250lm	LiFePO <sub>4</sub> - 3.2V-4.5Ah	14-12-0004 - 3 Cell Pack 14-12-0005 - 3 Cell Stick	min 100 V / max 220 V

## Properties

Please note, the maximum voltage which can appear on the LED-array in case of LED-array failure, can reach 60V, 120V or 300V when using 55V, 105V or 220V respectively. Compliance must be assured to the requirements of EN60598-1

The LED-array current under maintained mode and when the LED is turned <<on>> should not exceed 2,5A

## Self-testing models (part indicated in the Technical Data table with S or DALI)

- Self-test in accordance with EN62034
- Bi-coloured LED
- Status of battery

## Visual status indicator for Self-Testing and DALI addressable models



LED intermittently flashing green – commissioning/battery regeneration after initial connection.



LED green: no fault/normal state.



LED continuous red: battery fault – either insufficient battery capacity or interrupted connection. The fault indication is reset once the fault is cleared.



LED intermittently flashing red: Lamp fault. Please note that the fault is not indicated (or reset) immediately when it occurs (or is cleared), but after the next self-test.



LED off: If the LED is still off after more than 5 minutes of switching on the mains, then the mains or the unit is faulty