



APPLICATION:

Electronic **NEXT** emergency power supply system for lighting works with fluorescent lamps in the power range from 6W to 80 W both in circuits containing magnetic ballasts as well as electronic ballasts. The **NEXT** converter detects failure of mains supply and converts battery's d.c. voltage into high-frequency high voltage supplying a fluorescent lamp. The duration of glowing in an emergency situation depends on the fluorescent lamp power and the capacity of the battery used. Technical parameters of **NEXT** Aconverter (in particular quick response after failure of 230 V / 50-60 Hz power supply and transition into the emergency operation cycle) allow using the **NEXT** converter in emergency power supply systems in facilities of high degree of basic power supply failure. Electronic **NEXT** emergency power supply system for lighting works with lighting fittings in the following operating modes:

- "non-maintained" (one-function, dark) – with one fluorescent lamp which is on only in the case of mains failure.
- "maintained" (two-function, light) – with two fluorescent lamps for mains operation and one of them, which in the case of mains failure switches to emergency supply from batteries. That means that after power supply failure one fluorescent lamp goes off and the other switches to emergency supply from batteries.

TECHNICAL DESCRIPTION:

When supplied from 230 V / 50-60 Hz the **NEXT** converter charges the delivered high-temperature NiCd battery pack with a current of appropriate value. The preset charging current depends on the converter model and on the pack of batteries included in an integral set of emergency lighting. The decline in mains voltage below a critical value or its failure results in automatic switching into emergency operation from batteries. The process of charging and the existence of 230 V / 50-60 Hz a.c. supply voltage is signalled by attached green LED. The **NEXT** converter reaches the rated parameters for the needs of emergency power supply maximum after 24 hours since the last cycle of emergency operation. Repeated failure of 230 V / 50-60 Hz power supply before passage of 24 hours would result in correct switching of the emergency system to the emergency lighting state. In this case the duration of emergency operation depends on the degree of battery pack charging. During the emergency operation an electronic monitoring system of battery pack discharging prevents total discharging of the pack, what has a beneficial influence on batteries life and capacity.

TESTING:

There is a possibility of testing a lighting fitting equipped with an electronic system of **NEXT** emergency lighting using the test button, which is lead out from the converter and should be installed in an easily accessed place of the fitting. At the moment of connecting the lighting fitting to the supply voltage a green diode goes on, signalling the voltage existence in the electronic system and thereby the battery charging. Pressing of the Test button causes an interruption in the circuit and thereby a simulation of mains voltage failure and switching by the fitting's electronic system into emergency operation. During the emergency operation the LED goes off – the lighting fitting is supplied from the battery. After the release of the Test button, the mains voltage returns and the lighting works in the mains supply mode, the process of battery charging starts (stand-by mode).

Technical data of emergency lighting:

Supply voltage: 230V/50-60Hz
 Rated input power (P): 2,2 [W]
 Fluorescent lamp power: 6 – 58 W (depending on the model)
 Type of light sources served: 4-pin
 Ambient temperature (ta): 0... +50°C
 Operating temperature (tc): 0... +70°C
 Batteries used: NiCd HT, Ni-MH HT
 Battery pack's voltage: 3,6V; 4,8V; 6V and capacity 1,5...4Ah
 Rated battery charging current 0.1 C (from 70 mA to 250 mA depending on the battery type)
 Maximum current of battery discharging: < 0.95 C (emergency operation)
 Maximum time of equalizing charge: 24 h
 Glowing time in the emergency mode: depending on the fluorescent lamp power and battery capacity (usu. 1-3 h)
 IP20 protection degree
 Protection class II
 Operating frequency: 25 kHz – 30 kHz
 Switching into the emergency operation mode: 0.2 – 0.8 second
 Cross-section of attached conductors: 0.5 – 1.5 [mm²]
 Dimensions (l x w x h): 157 x 42 x 36 [mm]

Characteristics of emergency lighting system with NEXT converters:

- ≠ Built-in system of automatic switching enables glowing of fluorescent lamps both at normal and emergency supply.
- ≠ LED signalling of normal supply existence and of battery pack charging correctness.
- ≠ Control of minimum voltage of battery discharging.
- ≠ Optimum conditions of battery charging current (acc. to battery type).
- ≠ Durable anticorrosive casing of the converter.

Principles of operation:

Storage: The **NEXT** converter is delivered with disconnected battery. Storage at negative temperatures is not recommended. During the storage an excessive discharging of the battery must not be permitted (voltage of individual battery cell should be >1.2 V). The equalizing charging may be carried out by connecting the battery to the converter and supplying the fitting from 230 V / 50-60 Hz mains during at least 24 hours. In accordance with batteries' manufacturer statement, they should be replaced every 4 years.

TO AVOID BATTERY DISCHARGING, IT SHOULD BE CONNECTED ONCE THE FLUORESCENT LAMP IS INSTALLED AND SUPPLIED FROM THE MAINS.

A trial of emergency lighting operation may be performed by pressing the test button or disconnecting the mains supply. **Batteries first start, formatting:** During the first start of emergency power supply system it is recommended to charge the battery pack during approx. 24 h and then the mains supply should be turned off to switch the system into the emergency operation. After the battery pack discharging it should be charged again during approx. 24 h by turning on the mains supply. It is recommended to carry out three times the aforementioned cycle of full charging/discharging of battery packs. The date of the first system start should be noted on the battery pack. **(The formatting cycle carried out properly increases the battery pack life).**

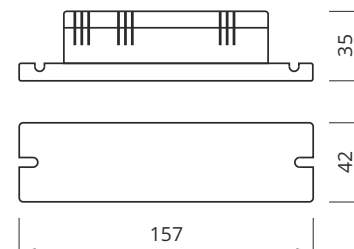
Installation designing: Lighting fittings and the emergency module in mains and after-failure fitting should be supplied from the same protective device.

A high voltage (up to 1.5 kV for open circuit) may exist on converter's terminals and on lamps and mating elements. Pay attention to the correct connection of "+" and "-" between battery and conversion kit.

Types of conversion kits and batteries

code	power	autonomy	battery
NX/36/1	6W-36W	1 h	Ni-Cd 3,6V 1,5Ah
NX/36/2	6W-36W	2 h	Ni-Cd 3,6V 2,5Ah
NX/36/3	6W-36W	3 h	Ni-Cd 3,6V 4,0Ah
NX/58/1	6W-58W	1 h	Ni-Cd 4,8V 1,5Ah
NX/58/2	6W-58W	2 h	Ni-Cd 4,8V 2,5Ah
NX/58/3	6W-58W	3 h	Ni-Cd 4,8V 4,0Ah

Dimensions of NEXT conversion kits



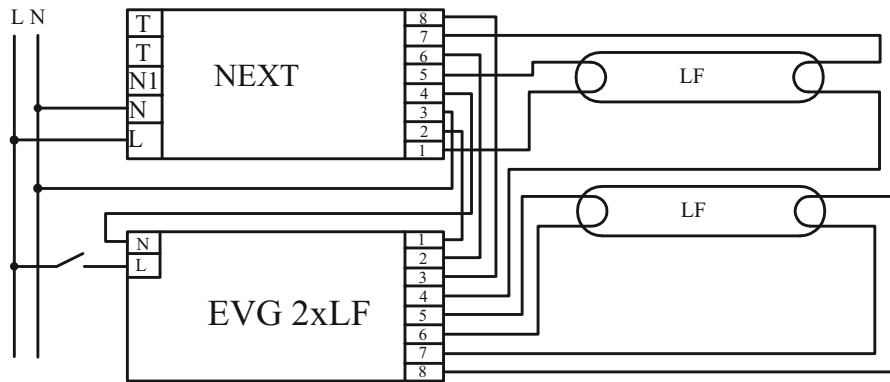


Diagram nr 1.

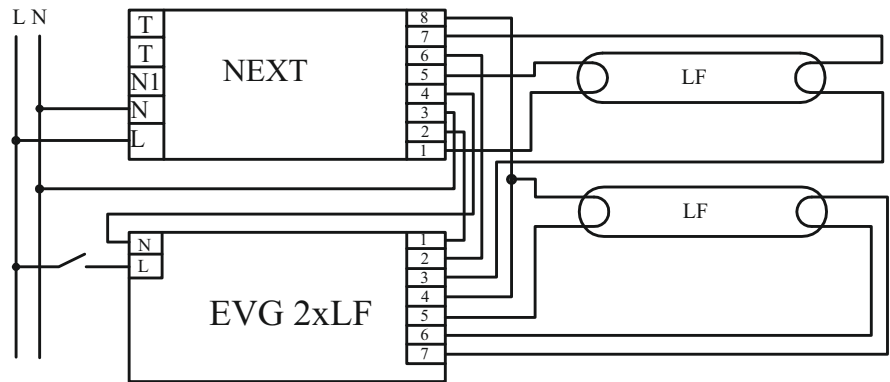


Diagram nr 2.

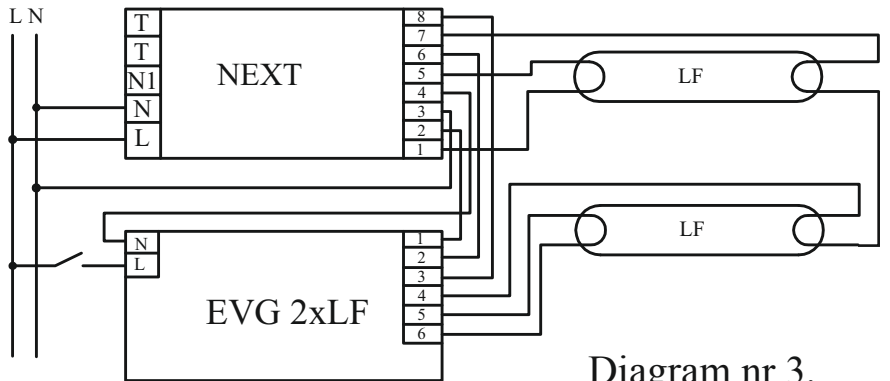


Diagram nr 3.

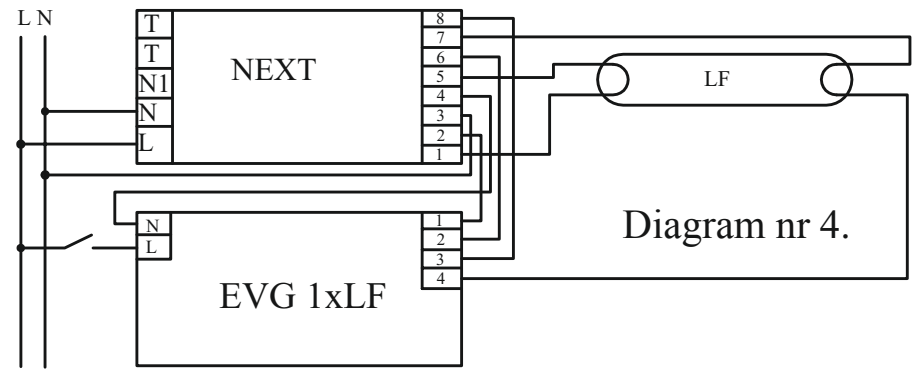


Diagram nr 4.

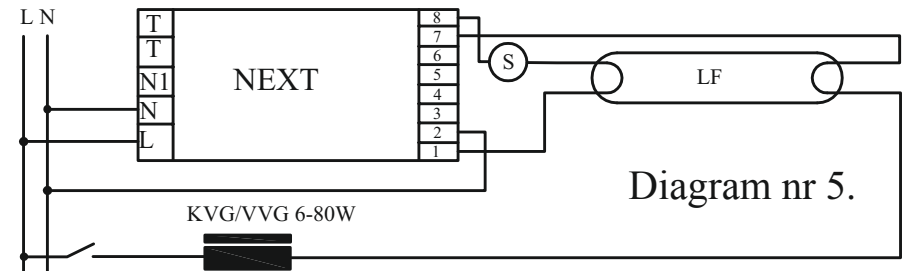


Diagram nr 5.

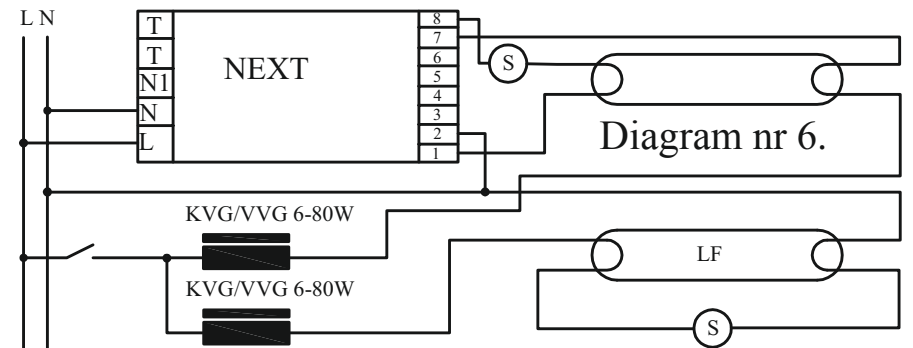


Diagram nr 6.

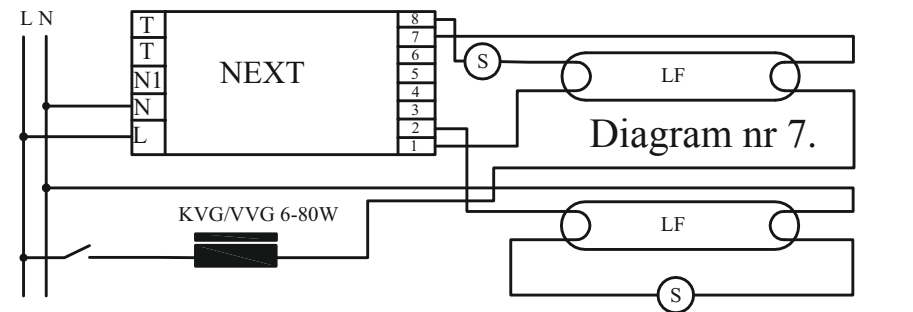


Diagram nr 7.