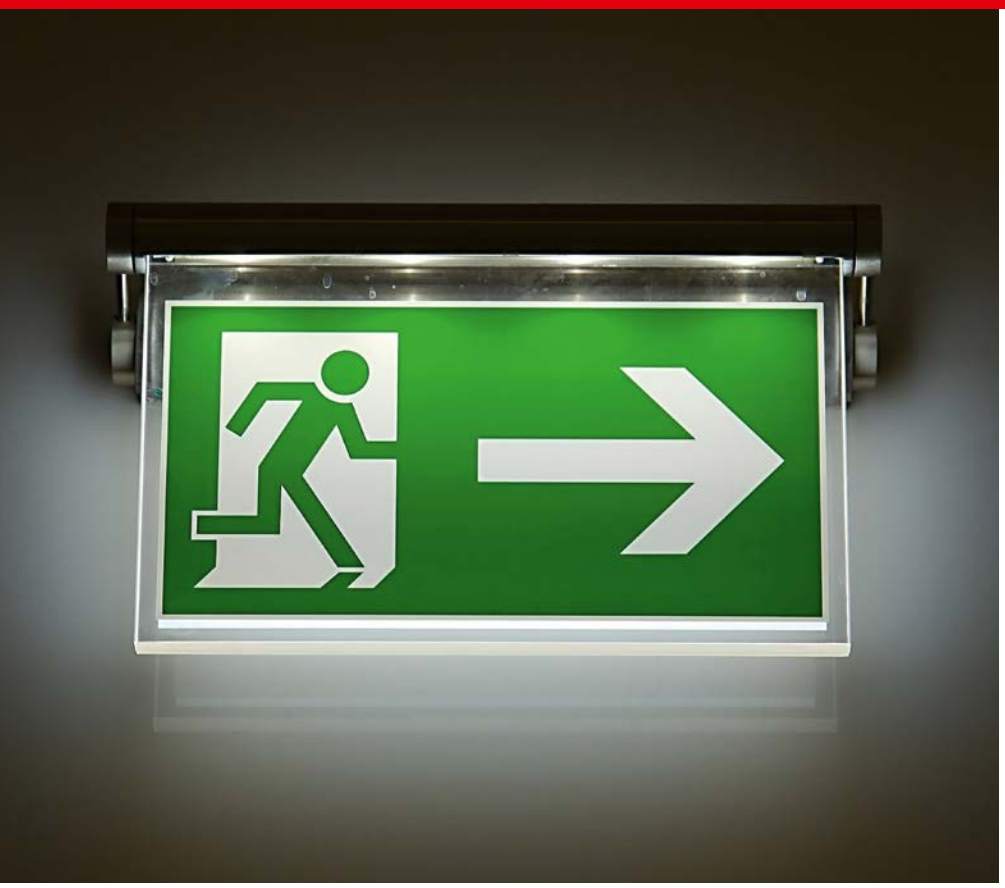
SALTEK®

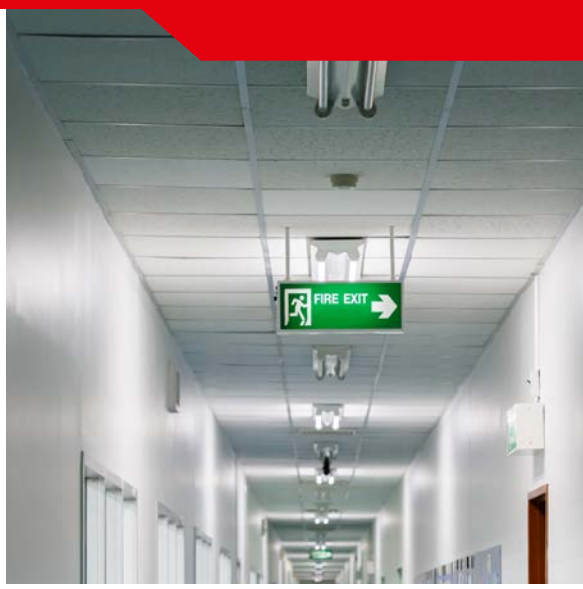
Overvoltage controlled. ANYWHERE.

SOLUTION

Emergency lights / Evacuation routes

Surge protection of safety systems





Why to Protect?

Emergency lights for the emergency escape routes is a mandatory part of the commercial buildings, and higher demands are placed on its proper operation for protection of human lives. The market offers various solutions to the emergency lights that may be divided into two basic groups – with central battery power supply or with autonomous battery power supply.

For the first group, the emergency light system's topology uses a battery room from where the emergency lights of the emergency escape routes are powered in case of active emergency signal. In the course of normal operation the batteries in the battery room are regularly and automatically charged from the main charging network. Different interface types can be used for transfer of the activation alarm signal and remote monitoring of the battery status, e.g. RS485, Ethernet, binary signal, and more. To secure maximum reliability and function of the emergency light system, it is recommended that the SPD elements be used for protection against surge by the concept of the zone protection according to EN 62305-4. Below is an example of potential arrangement of the emergency light system with recommended location of the SPD protections.

For the other group the primary objective is the reliable function of the emergency light alone that is provided with an independent emergency battery power. The emergency light is powered from it in case of a fire alarm when the grid power supply is terminated. A SPD module with additional assembly to the lamps can be used for protection of the lamps – **DA-320-LED**, SPD type 3 for LED lighting with symmetric internal L/N, N/L, PE arrangement.

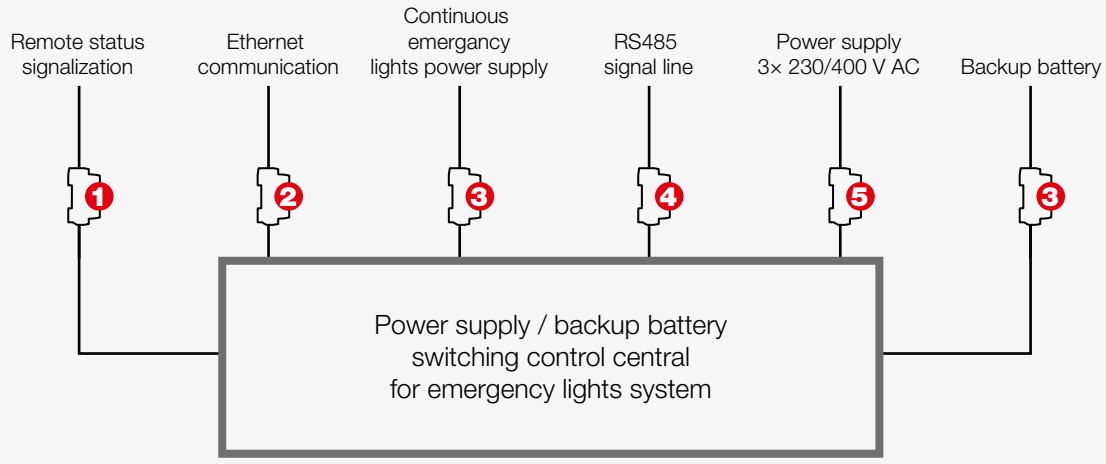
For both groups, comprehensiveness of the surge protection needs to be taken into account. This is associated with the need for placing of SPD type 1+2 (**FLP-B+C MAXI V/3** for TN-C or V/4 for TN-S main input power) or SPD type 2 (**SLP-275 V/4** for power supply protection of the emergency system of the emergency lights).

What to Protect?

- Battery and power supply lines
- Remote fault singalling to main control panel of ESS/EFS
- Ethernet or other communication lines

An example of installation of SPDs in the emergency lights system

Power and signal lines protection diagram in emergency lights system



Recommended SPDs for safety systems

BDM-024-V/4-JR1 ❶

Two-stage surge protection of 4 single-core signal lines for protection of the signalling circuits.

Location	Number of lines	U_c	I_L	I_{imp} (D1)	I_n (C2)	U_p (C3) core-PE/GND	Floating	Ordering number
ST 1+2+3	4	36 V DC	1 A	2.5 kA	10 kA	46 V	No	8595090564232

DL-Cat.6 ❷

Surge protection for Ethernet Cat.6 communication line.

Location	Number of lines	U_c	I_L	I_n (C2) (8/20 µs)	U_p (C3) core-core	U_p (C3) core-PE	Ordering number
ST 3	1	8.5 V DC	0.5 A	1.6 kA	65 V	350 V	8595090536031

SLP-275 V/2 ❸

Battery power supply line and power output protection from the switching control room for the emergency lights.

Connection	Suitable networks	U_c	I_n (8/20 µs)	I_{max} (8/20 µs)	Remote signalling	Ordering number
2+0	TN-S	275 V AC	20 kA	40 kA	No	8595090516194

BDM-006-V/1-R1 ❹

RS485 control line protection.

Location	Number of lines	U_c	I_L	I_{imp} (D1)	I_n (C2)	U_p (C3) core-core	Floating	Ordering number
ST 1+2+3	1	8.5 V DC	1 A	2.5 kA	10 kA	12 V	No	8595090554240

SLP-275 V/4 ❺

Main system power supply protection.

Connection	Suitable networks	U_c	I_n (8/20 µs)	I_{max} (8/20 µs)	Remote signalling	Ordering number
4+0	TN-S	275 V AC	20 kA	40 kA	No	8595090517221

FLP-B+C MAXI V/3

Powerful lightning current and surge arrester, SPD type 1 and 2, for basic AC power supply protection in the main distribution board.

Connection	Suitable networks	U_c	I_{imp} (10/350 µs)	I_n (8/20 µs)	I_{max} (8/20 µs)	Remote signalling	Ordering number
3+0	TN-C	275 V AC	25 kA	30 kA	60 kA	No	8595090550938

DA-320-LED

Module of surge protection for additional mounting directly into the emergency light units.

SPD Type	Location	U_c	I_L	I_n (8/20 µs)	U_{oc} (L+N-PE)	Fault signalling	Ordering number
3	C low	320 V AC	5 A	3 kA	6 kV	Interruption	8595090558767

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