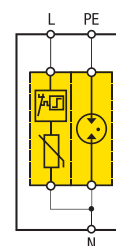
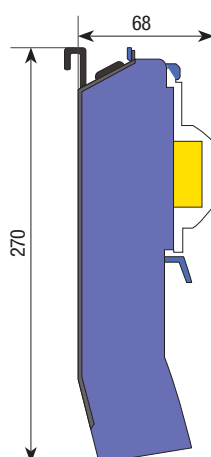




Surge Protection Device: ZOTUP SPD for public LED luminaire



LLP 7/30 230 ff 1+1

LLP (Led Lighting Protection) protection systems are surge protection devices SPD with the following applications, features and benefits.

Typical locations: for public illumination Led systems protection. It's used in extra-urban areas to protect against indirect lightning strikes.

- **Impulse test classification: class I and II test** (according to IEC 61643-11 Ed. 1.0 2011-03);
- **Easy wiring inside of the slots at the poles base with size 186x45 mm (minimum diameter of the pole 101 mm);**
- The SPD is housed inside a terminal with protection degree of IP 54. The terminal is equipped with a transparent viewing window that allows viewing the status indicator 3 coloured levels with performance's indication;
- The special case allows to match the Pollution Degree 3.

Type LLP 7/30...

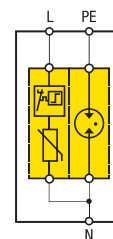
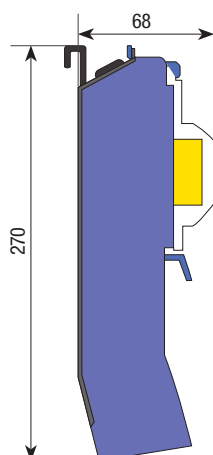
230 ff 1+1

CODE		242 191	
Nominal ac Voltage	U_N	230/400 V ac	
Number of poles		1+1	
Max Continuous Operating Voltage	U_c	335 V ac / 420 V dc	
Test Class (acc. to IEC 61643-11 Ed. 1.0 2011-03)		I e II	
Type (acc. to CEI EN 61643-11 2012-10)		T1 e T2	
Impulse discharge current (10/350 μ s) (L-N)	I_{imp}	7 kA	
Impulse discharge current (10/350 μ s) (N-PE)	I_{imp}	50 kA	
Nominal discharge current (8/20 μ s) (L-N)	I_n	25 kA	
Nominal discharge current (8/20 μ s) (N-PE)	I_n	50 kA	
Max. discharge current (8/20 μ s)	I_{max}	20 kA	
Voltage protection level with I:	1 kA U_p	$\leq 1,00$ kV	
	5 kA U_p	$\leq 1,15$ kV	
	15 kA U_p	$\leq 1,45$ kV	
	25 kA U_p	$\leq 1,65$ kV	
	30 kA U_{res}	$\leq 1,85$ kV	
Voltage protection level (L-N) (N-PE)	t_a	≤ 25 ns / ≤ 100 ns	
Short circuit current withstand		OCFM	
Short Circuit Current withstand with max overcurrent protection fuse (L)	I_{scrr}	100 kA rms	
Max- mains-side (L) overcurrent protection for I_{scrr}	$\leq 4,5$ kA eff	Not required	
	≤ 100 kA eff	125 A gG	
Block follow up current circulation		NFC No Follow Current®	
Status indicator		3 coloured levels with performance's indication	
Operating temperature range		-40 ... +80 °C	
Terminal-Conductor size		4-25 mm ² stranded	
Clamp per Connecting bus bar		connector busbar 16 mm ²	
Mounting		indoor, 35 mm top hat DIN rail	
Case material / flammability grade		BMC / V-0 in accordance with UL 94	
Pollution degree		3	
Degree of protection	IP	54	
Approximate weight		300 g	
Dimensions width		68x270x44 mm	
Certification		CTI	

TECHNICAL DATA



Surge Protection Device: ZOTUP SPD for public LED luminaire



LLP 2/10 230 ff 1+1

LLP (Led Lighting Protection) protection systems are surge protection devices SPD with the following applications, features and benefits.

Typical locations: for public illumination Led systems protection. It's used in extra-urban areas to protect against indirect lightning strikes.

- **Impulse test classification: class II test** (according to IEC 61643-11 Ed. 1.0 2011-03);
- **Easy wiring inside of the slots at the poles base with size 186x45 mm (minimum diameter of the pole 101 mm);**
- The SPD is housed inside a terminal with protection degree of IP 54. The terminal is equipped with a transparent viewing window that allows viewing the status indicator 3 coloured levels with performance's indication;
- The special case allows to match the Pollution Degree 3.

Type LLP 2/10...

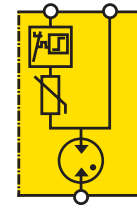
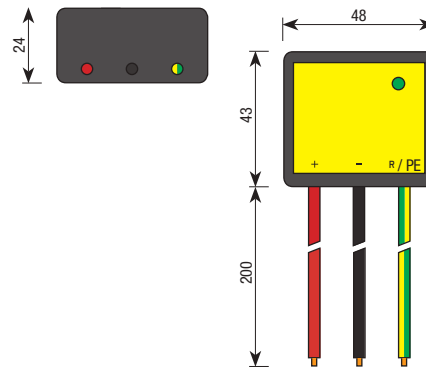
230 ff 1+1

CODE		242 190
Nominal ac Voltage	U _N	230/400 V ac
Number of poles		1+1
Max Continuous Operating Voltage (L-N)	U _C	335 V ac / 420 V dc
Max Continuous Operating Voltage (N-PE)	U _C	255 V ac
Test Class (acc. to IEC 61643-11 Ed. 1.0 2011-03)		II
Type (acc. to CEI EN 61643-11 2012-10)		T2
Impulse discharge current (10/350)	I _{imp}	2 kA
Nominal discharge current (8/20 μs)	I _n	10 kA
Max. discharge current (8/20 μs)	I _{max}	20 kA
Voltage protection level with I (L-N):	1 kA U _p 5 kA U _p 10 kA U _p	≤ 1,25 kV ≤ 1,35 kV ≤ 1,45 kV
Voltage protection level with I (N-PE)	U _p	≤ 1,50 kV
Reaction time (L-N /N-PE)	t _a	≤ 25 ns / ≤ 100 ns
Short circuit current withstand		OCFM
Short Circuit Current withstand with max overcurrent protection fuse (L)	I _{scrr}	50 kA rms
Max- mains-side (L) overcurrent protection for I _{scrr}	≤ 4,5 kA eff ≤ 50 kA eff	Not required 63 A gG
Block follow up current circulation (L-N)		NFC No Follow Current®
Follow current extinguishing capability (N-PE)	I _{fi}	100 A rms
Status indicator		3 coloured levels with performance's indication
Operating temperature range		-40 ... +80 °C
Terminal-Conductor size		4-25 mm ² stranded
Clamp per Connecting bus bar		connector busbar 16 mm ²
Mounting		indoor, 35 mm top hat DIN rail
Case material / flammability grade		BMC / V-0 in accordance with UL 94
Pollution degree		3
Degree of protection	IP	54
Approximate weight		260 g
Dimensions width		68x270x44 mm
Certification		CTI

TECHNICAL DATA



Surge Protection Device: ZOTUP SPD for public LED luminaire



IL 1/10 2P LED

IL 1/10 2P LED is a multi-poles surge protection devices SPD with the following applications, features and benefits.
Typical locations: LED driver output current and lighting towers also close to the LED panel.

- Allows the use of LED lighting systems in outdoor applications with a high level of exposure to surges;
- It reduces maintenance costs and extends the lifetime of the lighting system;
- Applicable to lighting systems in isolation class I and II;
- The connection wires allow quick installation in both new and existing installations;
- Optical local operating status;
- It is suitable for installation in interfaces $O_B - 1$ and higher, according to the principle of the protection areas;
- it is a surge protector Class II test (acc. To IEC 61643-1 + A1) and Type 2 (sec. EN 61643-11 / A11).

Type IL 1/10 2P LED ...

		230	320	440
CODE		242 101	242 102	242 103
Max. voltage in c.c.	U_c	300 V	385 V	565 V
Test Class (acc. to IEC 61643-1 + A1 (2001))			II	
Type (acc. to CEI EN 61643-11/A11)			T2	
Total impulse discharge current 8/20 μ s	I_{total}		20 kA	
Impulse nominal discharge current 8/20 μ s (+/-) PE	I_n		10 kA	
Max. impulse discharge current 8/20 μ s (+/-) PE	I_{max}		25 kA	
Protection level (+/-) con I_n 10 kA	U_p	≤ 1500 V	≤ 1700 V	≤ 2100 V
Protection level (+/-) PE con I_n 10 kA	U_p	≤ 1500 V	≤ 1700 V	≤ 2100 V
Reaction time (+/-)	t_a		≤ 25 ns	
Reaction time (+/-) PE	t_a		≤ 100 ns	
Doord number			1	
Calvic isolation PE (isolation class II)			yes	
Status indicator			green LED	
Surge protection device if it doesn't be installed			16 A gG / C 16 A	
Operating temperature range			- 40 ... + 60 °C	
Connection wires			1,5 mm ² ; l = 200 mm	
Casing			thermoplastic	
Degree of protection	IP		20	
Approximate weight			60 g	
Dimensions width			b48 x h43 x p24	

TECHNICAL DATA