

PHILIPS

Outdoor SPD

SPD IP
20KV/10KA 230V
Class I Serial



Datasheet

Protect your outdoor luminaires against transients

Outdoor Surge Protector Class-I Serial

The unique solution for Outdoor lighting systems offering full protection against high surges in insulation Class I installations.

Benefits

- Maximize the lifetime of outdoor lighting systems
- Lower maintenance costs
- Easy to apply in new or existing installations
- Load disconnection when SPD reaches end of life

Features

- Suitable for insulation Class I luminaires only
- Long lifetime, robust protection against vibration and temperature
- Provides high surge protection of up to 20kV / 10 kA for all lighting technologies
- 20kA Maximum Discharge Current (Imax), 8/20us
- Optical failure indicator
- IP67 rated
- Series connected

Application

- Outdoor Road/Street/Tunnel/ Area lighting
- Industrial zones

Insulation Class	Supported grids			
	TN	TNC	TNS	TNCS
Class I	✓	✓	✓	✓

October, 2019

Logistical data

Specification item	Value
Product name	SPD IP 20kV/10kA 230V Class I Serial
European order code	
Logistic code 12NC	929002164706
Pieces per box	120

Electrical specifications

Specifications	Parameter	Value	Unit	Condition
Certifications		CE, CB(TUV)		
Designation		Type 3		Acc. EN61643-11
Classification		Class III		Acc. IEC61643-11
Protection mode		Diff. mode & Comm. mode		
Rated input voltage	U_N (L-N)	230	Vac	50 ... 60 Hz
Max. continuous operating voltage	U_C (L-N)	320	Vac	50 ... 60 Hz
Max. continuous operating voltage	U_C (L-GND)	320	Vac	50 ... 60 Hz
Max. continuous operating voltage	U_C (N-GND)	320	Vac	50 ... 60 Hz
Supported power grids		TN		Incl. all TN varieties TN-C, TN-C-S, TN-S. TT and IT grids not supported
Rated discharge current	I_N (L-N)	10	kA	8/20 μ s
Rated discharge current	I_N (L-GND)	10	kA	8/20 μ s
Rated discharge current	I_N (N-GND)	10	kA	8/20 μ s
Max. voltage protection level at I_N	U_P (L-N)	1.5	kV	See separate protection level table for other I_N values
Max. voltage protection level at I_N	U_P (L-GND)	2.5	kV	See separate protection level table for other I_N values
Max. voltage protection level at I_N	U_P (N-GND)	2.0	kV	See separate protection level table for other I_N values
Open-circuit voltage	U_{OC}	20	kV	
Backup fuse		Built-in(20A)	A	max., gG fuse
End of life indication		yes		Optical. Light ON: SPD is functional. Light OFF: SPD has reached end-of-life
Servicability		n/a		No user servicable parts inside
Max. earth leakage current at U_C		0.5	μ A	

Other specifications

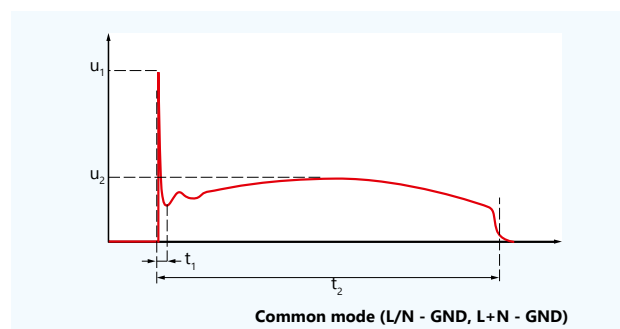
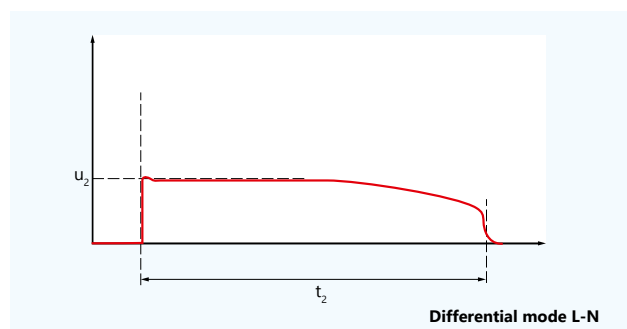
Specifications	Parameter	Value	Unit	Condition
Surge withstand capability		1	strike	Max. 20 kA, 8/20 μ s
Surge withstand capability		30	strikes	Max. 10 kA, 8/20 μ s
Surge withstand capability		50	strikes	Max. 7.5 kA, 8/20 μ s
Rated load current (max)		5	A	
Power consumption (max)		2.5	W	At U_C = 320 Vac at 5A load current
Suitable for luminaires		Insulation Class I only		Insulation Class acc. IEC60598

Protection levels U_p

Surge Protector Class-I serial

I_c 8/20 μ s	Differential mode U_2	Common mode U_1/U_2
3 kA	1150 V	2100 V / 2100 V
5 kA	1250 V	2200 V / 2200 V

I_c 8/20 μ s	Differential mode U_2	Common mode U_1/U_2
10 kA	1350 V	2400 V / 2400 V
20 kA	1600 V	3000 V / 3000 V



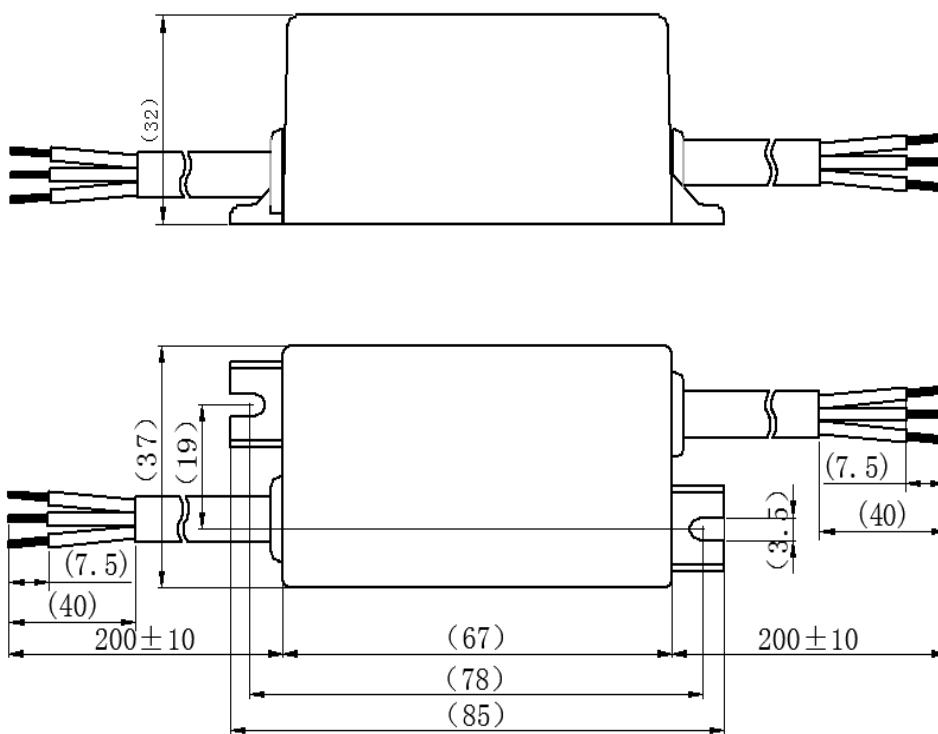
Environmental conditions

Specification item	Value	Unit	Condition
Ambient temperature	-40...85	°C	
Max. allowable surface temperature	85	°C	
Storage temperature	-40...85	°C	
Relative humidity	5...95	%	Non-condensing
Suitable for outdoor luminaires	Yes		
Ingress Protection (IP)	67		

Lifetime

Specification item	Value	Unit	Condition
Lifetime	100,000	hours	At max. surface temperature, min. 90% survival rate

Product dimensions



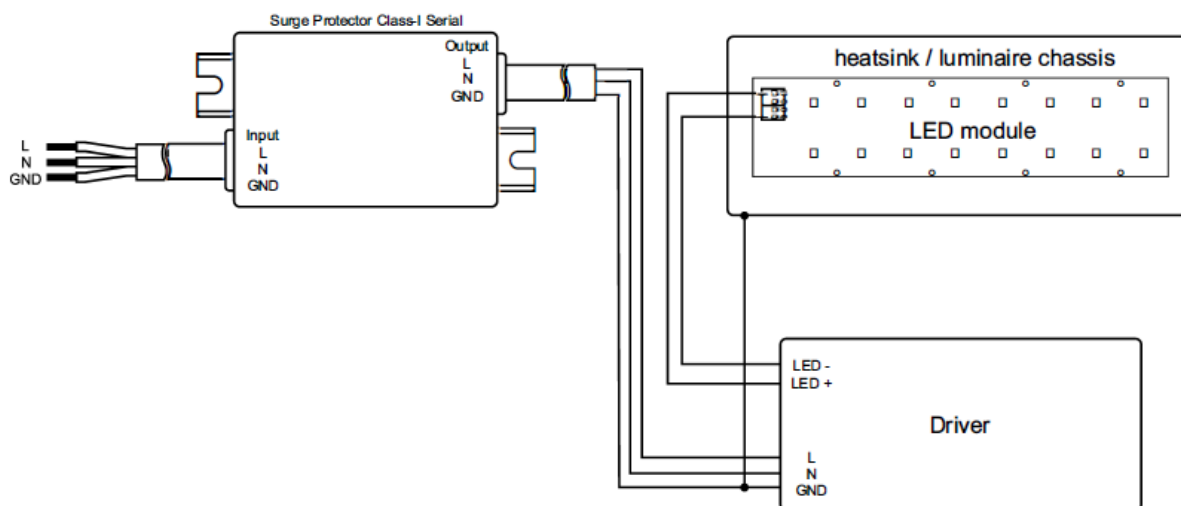
dimensions in mm

Specification item	Value	Unit
Mounting length	78/19	mm
Overall length	85	mm
Case Width	37	mm
Case Height	32	mm
Mounting screw	M3	
Max. mounting torque	0.8	Nm
Weight	165	g

Wiring

Specification item	Value	Unit	Condition
Connector type	cable		
Wire diameter	1.0	mm ²	
Wire strip length	7.5	mm	

Connection diagram and recommended wiring layout



Electrical connections

Signal	Description	Color
L input	Line input connection	Brown
L output	Line output connection	Brown
N input	Neutral input connection	Blue
N output	Neutral output connection	Blue
GND input	Protective Earth	Green/Yellow
GND output	Protective Earth	Green/Yellow



Warning:

Do **not** connect incoming mains voltage to the L output and N output cables. Always observe input and output polarity. Connect the Surge Protector output GND cable to Protective Earth only. Do **not** connect the Surge Protector output GND cable to ungrounded accessible (luminaire) parts.

System Disposal

We recommend that the Surge Protector is disposed of in an appropriate way at the end of its (economic) lifetime. The Surge Protector is in effect a normal piece of electronic equipment containing components that are currently not considered to be harmful to the environment. We therefore recommend that this part is disposed of as normal electronic waste, in accordance with local regulations.



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