

PHILIPS

Outdoor SPD

Surge Protector
Class-I



Datasheet

Protect your outdoor luminaires against damaging spikes and transients

Outdoor SPD - Surge Protector Class-I

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 applications
- Lower maintenance costs
- Easy to apply in new or existing installations

Features

- Suitable for insulation Class I luminaires only
- Long lifetime, robust protection against vibration and temperature
- Provides high surge protection of up to 10 kV / 10 kA for all lighting technologies
- Optical failure indicator

Applications

- Highways
- Rural roads
- Industrial zones
- Open space parking areas

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

March 2019

Logistical data

Specification item	Value
Product name	Surge Protector Class-I
European order code	871869677278200
Logistic code 12NC	9290 016 07006
Pieces per box	20

Electrical specifications

Specifications	Parameter	Value	Unit	Condition
Certifications		CE, Kema Keur		
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. +10%
Max. continuous operating voltage	U_c (L-N)	255	VAC	50 ... 60 Hz
Max. continuous operating voltage	U_c (L-GND)	255	VAC	50 ... 60 Hz
Max. continuous operating voltage	U_c (N-GND)	255	VAC	50 ... 60 Hz
Temporary overvoltage TOV	U_T	1455	V	MV system fault: 1200 V + 255 V, at $t_t = 200$ ms, TT power grid
Temporary overvoltage TOV	U_T	337	V	LV system fault: 255 V x 1.32 at $t_t = 120$ m, TT power grid
Temporary overvoltage TOV	U_T	442	V	LV system fault: 255 V x $\sqrt{3}$ at $t_t = 5$ s, TT power grid
Supported power grids		TN, TT		Incl. all TN varieties TN-C, TN-C-S, TN-S. IT grid not supported
Rated discharge current	I_n (L-N)	5	kA	8/20 μ s
Rated discharge current	I_n (L-GND)	5	kA	8/20 μ s
Rated discharge current	I_n (N-GND)	5	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	kV	See separate protection level table for other I_n values
Max. voltage protection level at I_n	U_p (N-GND)	2	kV	See separate protection level table for other I_n values
Open-circuit voltage	U_{oc}	10	kV	
Backup fuse		20	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		50	μ A	

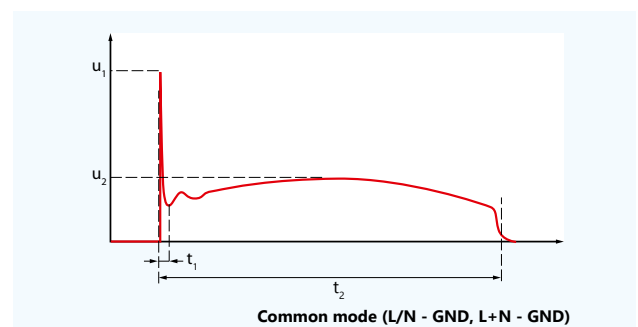
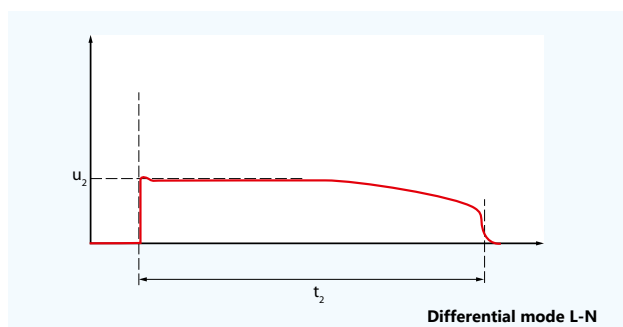
Other specifications

Specifications	Parameter	Value	Unit	Condition
Surge withstand capability		1	strike	Max. 10 kA, 8/20 μ s
Surge withstand capability		50	strikes	Max. 5 kA, 8/20 μ s
Surge withstand capability		100	strikes	Max. 3 kA, 8/20 μ s
Rated load current (max)		4	A	
Power consumption (max)		0.01	W	At $U_c = 255$ VAC at 4A load current
Suitable for luminaires		Insulation Class I only		Insulation Class acc. IEC60598

Protection levels U_p

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I_C 8/20 μ s	Differential mode U_2	Common mode U_1/U_2	I_C 8/20 μ s	Differential mode U_2	Common mode U_1/U_2
1 kA	1100 V	1100 V / 1050 V	5 kA	1350 V	1800 V / 1450 V
3 kA	1250 V	1700 V / 1300 V	10 kA	1500 V	1900 V / 1850 V



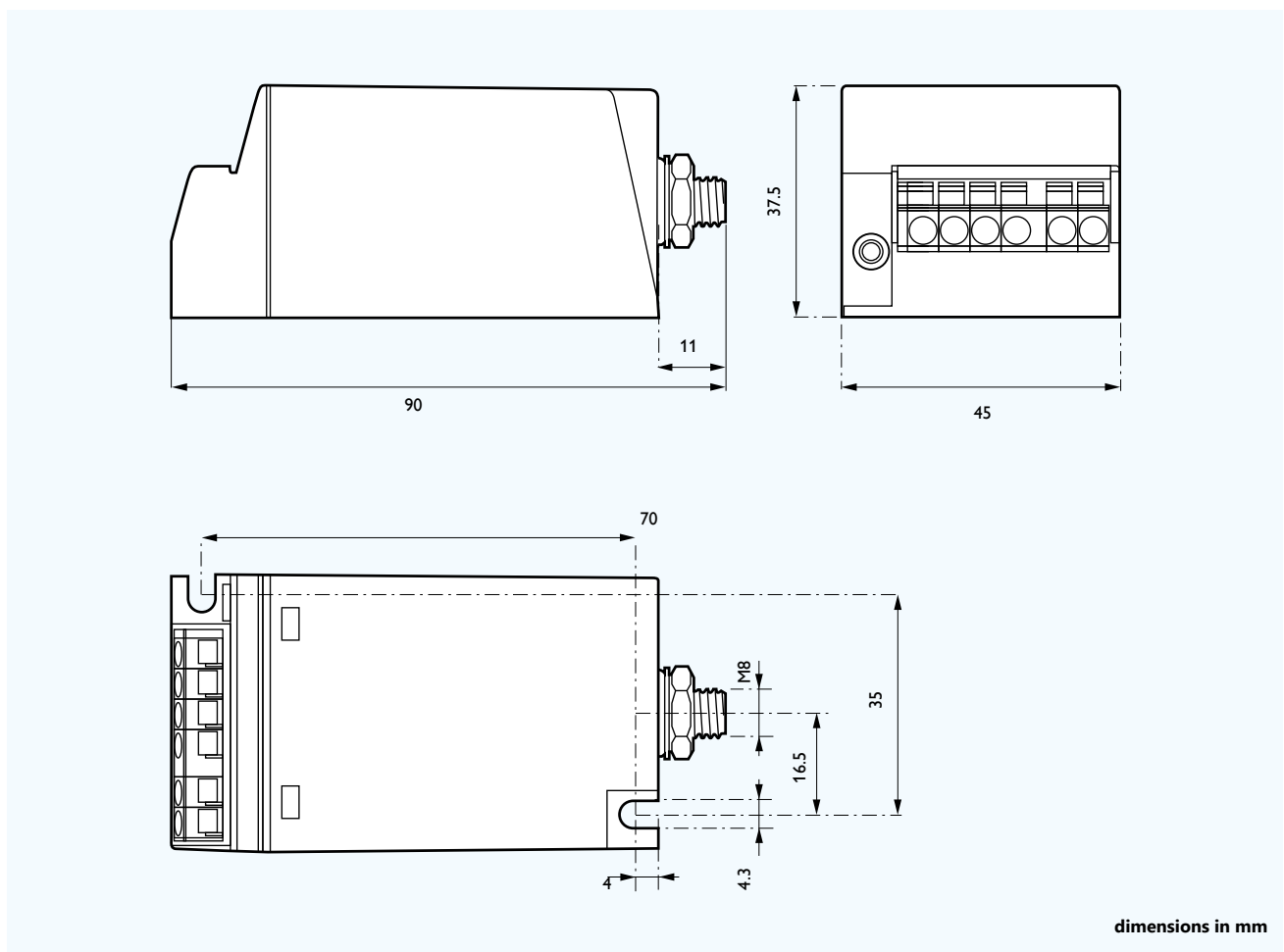
Environmental conditions

Specification item	Value	Unit	Condition
Ambient temperature	-40...70	°C	
Max. allowable surface temperature	80	°C	
Storage temperature	-40...85	°C	
Relative humidity	5...95	%	Non-condensing
Suitable for outdoor luminaires	Yes		Built-in only

Lifetime

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

Product dimensions

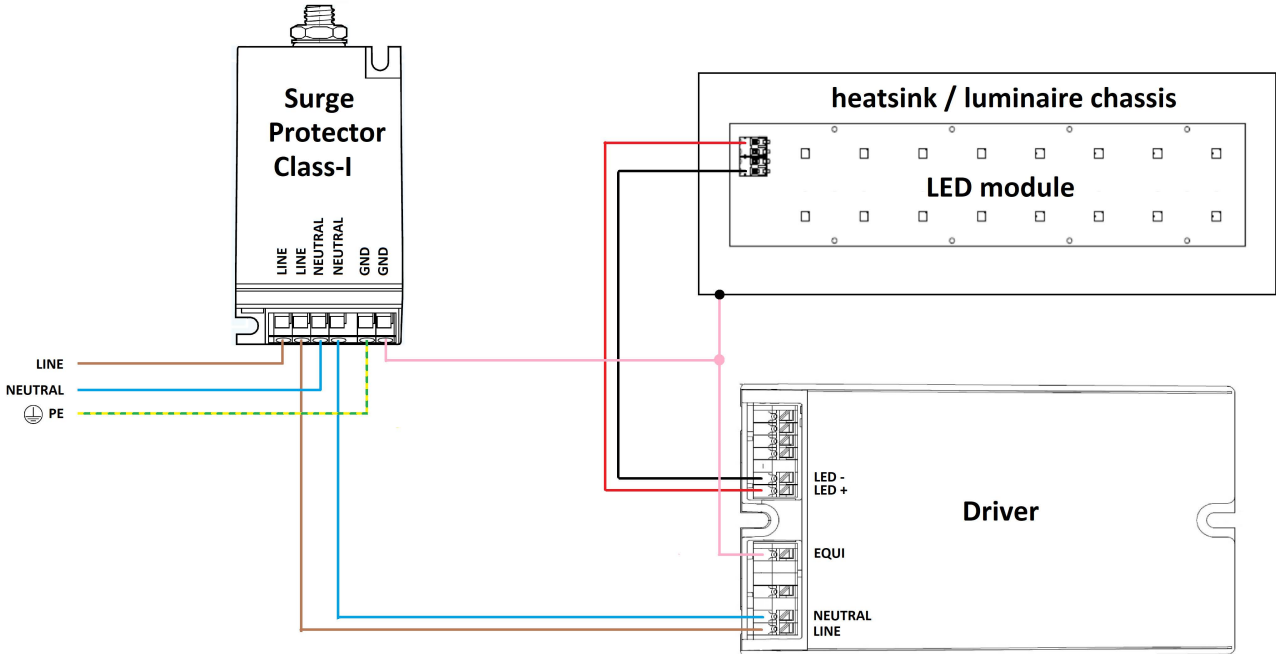


Specification item	Value	Unit
Mounting length	70	mm
Overall length	90	mm
Case Width	45	mm
Case Height	37.5	mm
Mounting screw	M4	
Mounting stud	M8	
Mounting torque M4 screw/M8 stud (max)	0.8	Nm
Weight	70	gr

Wiring

Specification item	Value	Unit	Condition
Connector type	Push-in		Single wire only
Wire diameter	0.5...2.5	mm ²	Solid and stranded
Wire strip length	10...11	mm	

Connection diagram and recommended wiring layout



Electrical connections

Signal	Description	Color
LINE	Line connection	Black
LINE	Line connection	Black
NEUTRAL	Neutral connection	White
NEUTRAL	Neutral connection	White
GND	Ground connection	Green
GND	Ground connection	Green



Warning:

Connect the Surge Protector GND connector to Protective Earth only. Do **not** connect the Surge Protector GND connector 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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