

PHILIPS

Outdoor SPD

Xtreme
Surge Protector I



Datasheet

Protect your outdoor luminaires against damaging spikes and transients

Outdoor SPD - Xtreme Surge Protector 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
- Supporting all common power grid varieties

Features

- Xtreme standard: long lifetime, robust protection against vibration and temperature
- Provides high surge protection of up to 10kV / 10kA for all lighting technologies
- Optical failure indicator

Application

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

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

Logistical data

Specification item	Value
Product name	Xtreme Surge Protector I
Logistic code 12NC	9290 008 86906
EOC	871829175031400
EAN1	8718291750314
EAN3	8718291750321
Pieces per box	20

Electrical specifications

Specifications	Parameter	Value	Unit	Condition
Certifications		CE, Kema Keur, UA, EAC		
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: 1200V + 255V, at $t_t = 200$ ms, TT and IT power grid
Temporary overvoltage TOV	U_T	337	V	LV system fault: 255V x 1.32 at $t_t = 120$ m, TT and IT power grid
Temporary overvoltage TOV	U_T	442	V	LV system fault: 255V x $\sqrt{3}$ at $t_t = 5$ s, TT and IT power grid
Supported power grids		TN, TT, IT		Incl. all TN varieties TNC, TNCS, TNS
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; replacement required
Servicability		n/a		No user servicable parts inside
Max earth leakage current at U_c	I	50	μ A	

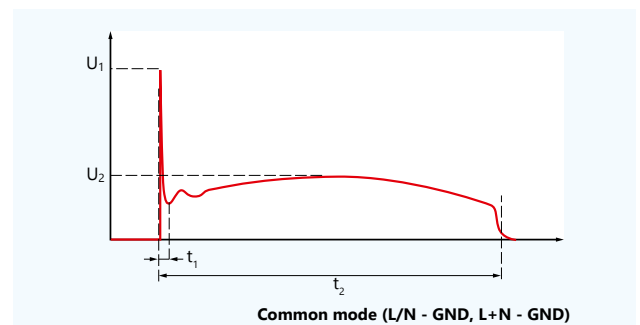
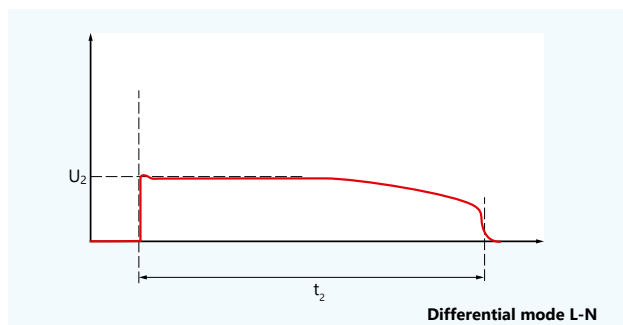
Other specifications

Specifications	Parameter	Value	Unit	Condition
Surge withstand capability		1	strike	Max. 10kA, 8/20 μ s
Surge withstand capability		50	strikes	Max. 5kA, 8/20 μ s
Surge withstand capability		100	strikes	Max. 3kA, 8/20 μ s
Rated load current (max)	I	4	A	Loophrough current
Power consumption (max)	P	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

Xtreme Surge Protector I

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
1kA	1100V	1100V / 1050V	5kA	1350V	1800V / 1450V
3kA	1250V	1700V / 1300V	10kA	1500V	1900V / 1850V



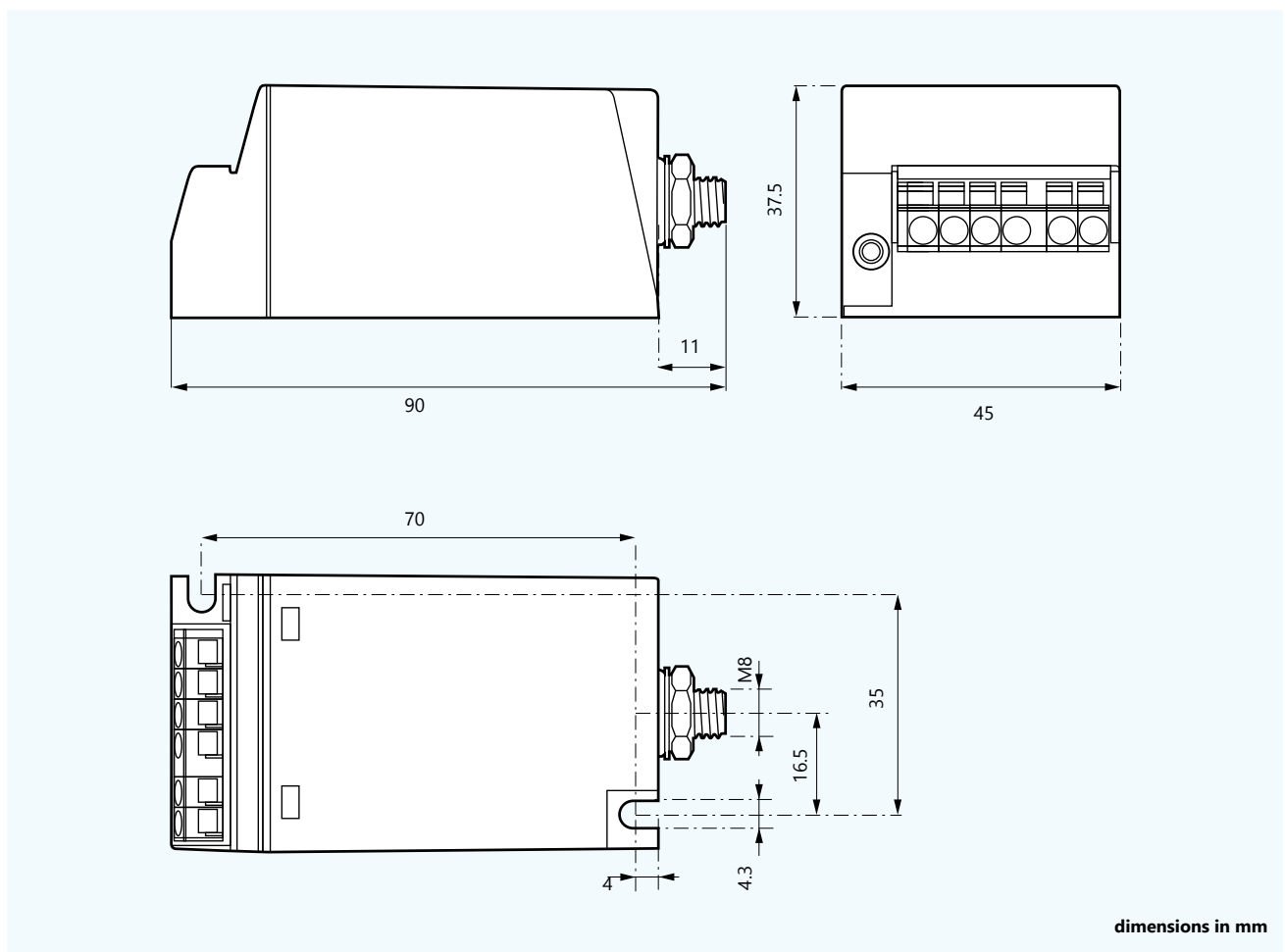
Environmental conditions

Specification item	Value	Unit	Condition
Ambient temperature	-40...80	°C	
Max. allowable surface temperature	80	°C	To be measured at any place on the top surface
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

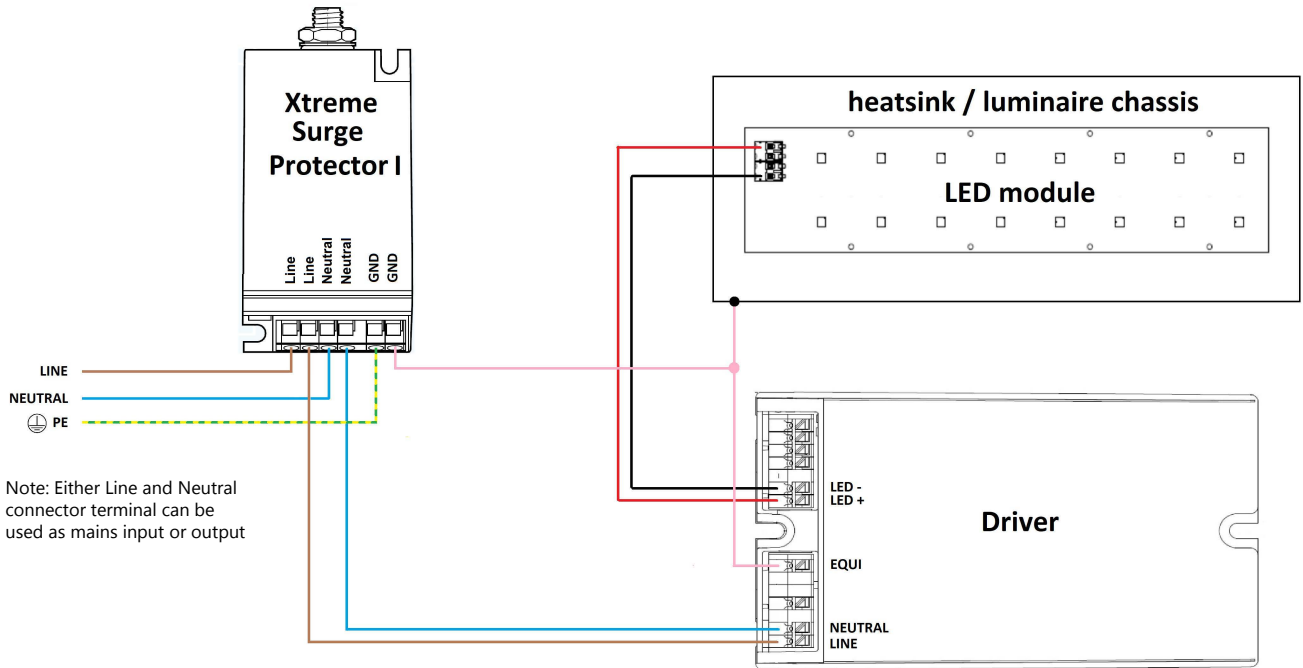


Specification item	Value	Unit
Mounting length	70	mm
Overall length	90	mm
Case Width	45	mm
Case Height	37.5	mm
Mounting screw	M4	
Mounting stud	M8	
Mounting torque M4 screw/M8 stud (max)	0.8	Nm
Weight	71	gr

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 input or output connection	Black
Line	Line input or output connection	Black
Neutral	Neutral input or output connection	White
Neutral	Neutral input or output connection	White
GND	Protective Earth connection	Green
GND	Protective Earth connection	Green



Warning:

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