

# Surge Protection Device

## SPD 20/320 PL P5 G3



Surge Protection Device (SPD) is to offer comprehensive protection solution against high surges for Outdoor lighting systems.

### Benefits

- Maximize the lifetime of outdoor lighting system
- Lower maintenance costs
- Suitable for luminaries of protection class I/II
- Long lifetime & high working temperature
- High surge protection of up to 20 kV (T3) / 20 kA (T2) for all lighting applications
- Compact and thin
- IP65
- Fully comply with IEC 61643-11

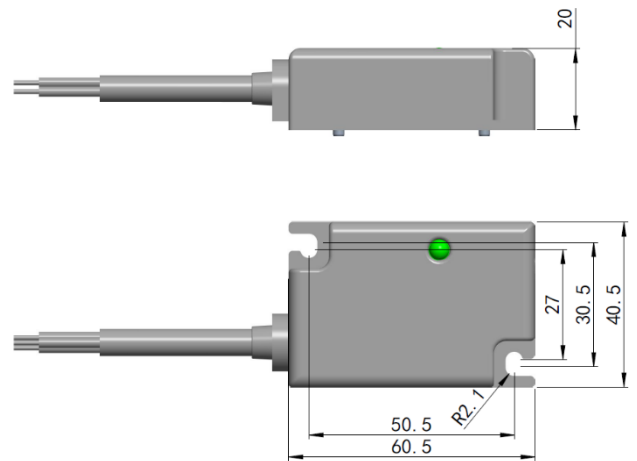
### Applications

Street, Urban and Industrial lighting

### Approval marks



In preparation, if not already printed on product label



Housing material: plastic material, dark grey

### Product Features

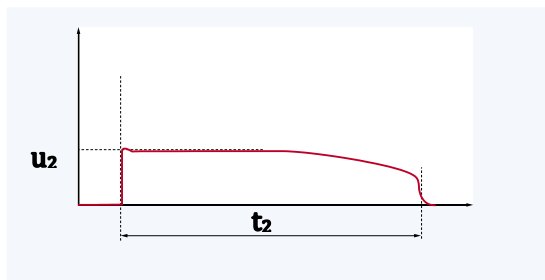
- Mains voltage to 320Vac
- Suitable for luminaries of protection class I/II
- Fully LED Driver protection by  $U_p < 2kV$
- High surge protection of up to 20 kV / 10 kA (L-N); comply with IEC 61643-11 - T3
- Maximum surge protection of up to 20 kA; comply with IEC 61643-11 - T2
- TÜV approved acc. to IEC 61643-11 – T2 & T3
- IP65

Electrical Characterization

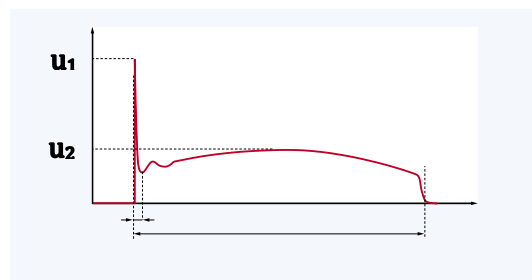
	Item	Value	Unit	Remarks, Conditions
INPUT	Max. continuous operating voltage (L-N)	320	V <sub>ac</sub>	The L N input line must be connected correctly and cannot be reversed.
	Nominal frequency	50 / 60	Hz	
	Classification	Class II + III (T2 + T3)		Acc. IEC61643-11
	Power grids	TN		Including all TN varieties TN-C, TN-C-S, TN-S
	Open-circuit voltage (U <sub>oc</sub> )	20	kV	
	Nominal current	n/a	A	
	Power losses	<0.5	W	max. at U <sub>c</sub> = 320VAC
	Protection class	I/II		Insulation Class acc. IEC60598
	Temporary overvoltage	441.7 336.6	V	LV system fault: 255 V x 1.73 at t <sub>t</sub> = 120 m, TN LV system fault: 255 V x 1.32 at t <sub>t</sub> = 5 s, TN
	Max discharge current (I <sub>max</sub> )	20	kA	L-N L-GND N-GND
	Protection mode	Different mode, Common mode		Please refer to Protection levels.
	Nominal discharge current (I <sub>n</sub> )	10 7.5 7.5	kA	L-N; @ UOC=20KV, internal resistance=2Ω L-GND; @ UOC=15KV, internal resistance=2Ω N-GND; @ UOC=15KV, internal resistance=2Ω
	Max. voltage protection level (U <sub>p</sub> )	1.8 2 2	kV	L-N; @ UOC=20KV, internal resistance=2Ω L-GND; @ UOC=15KV, internal resistance=2Ω N-GND; @ UOC=15KV, internal resistance=2Ω
	Backup fuse	16	A	Max., gG fuse
	Max earth leakage current	50	μA	Max. rms, to GND
Surge withstand capability	1 20 20 50	strike	Max. at 20kA (L-N; L/N-PE) Min. at 10kA (L-N) Min. at 7.5kA (L/N-PE) Min. at 5kA (L-N; L/N-PE)	
ENVIRONMENT	Ambient temperature range t <sub>a</sub>	-40 ... +80	°C	
	Max. case temperature at t <sub>c</sub> point	85	°C	
	Storage temperature range	-40...+85	°C	
	Relative humidity	5 ... 95	%	Not condensing
	IP rating	IP 65		Built-in only
	End of life indication (by LED light)	Yes		Optical, light ON: SPD is functional. Light OFF: SPD has reached end-of-life.
	Expected lifetime	100'000	h	t <sub>c</sub> = 85°C with max. 10% failure rate
	Dimensions (L x W x H)	60.5 x 40.5 x 20	mm	
	Weight	75	g	

Protection levels of U<sub>p</sub>

IC 8/20 μs	Differential mode U <sub>2</sub> (L-N)	IC 8/20 μs	Common mode U <sub>1</sub> /U <sub>2</sub> (L/N-PE)
10kA	≤1800 V	7.5kA	≤2000 V / 1500 V



Differential mode L-N



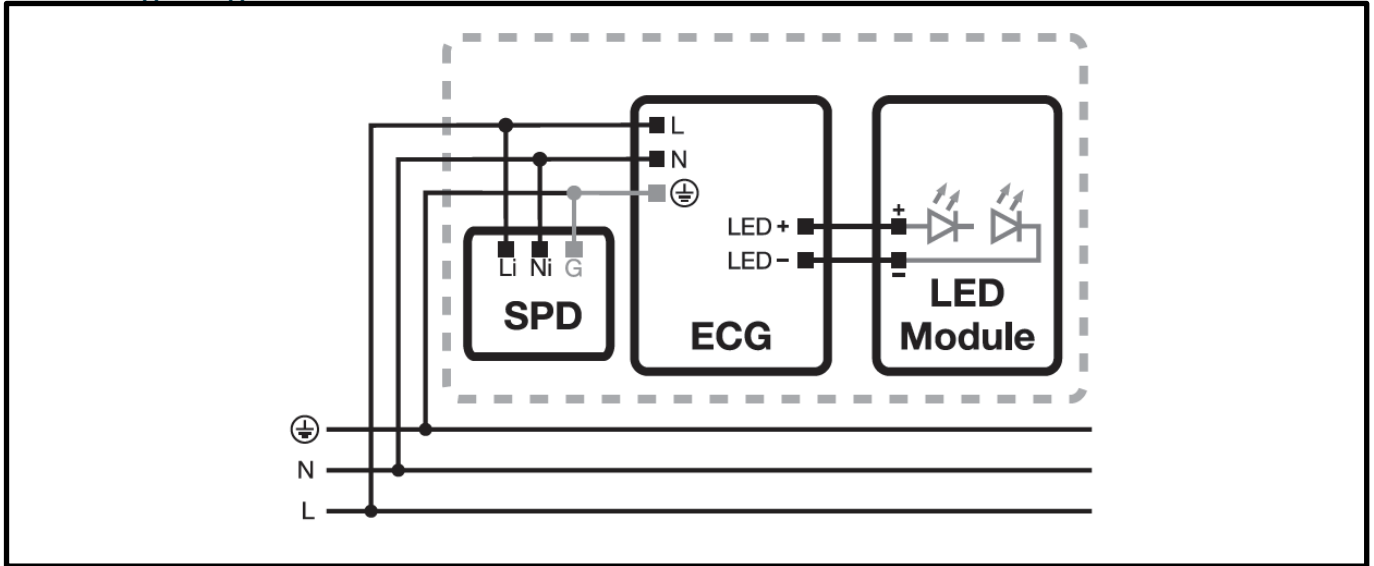
Common mode (L/N - ground, L+N - ground)

**Additional Information**

Approvals*	CE, CB, TUV
Standards	Acc. to IEC 61643-11

\*In preparation, if not already printed on product label

**Wiring Diagram**



	Item	Value	Unit	Remarks
<b>INPUT</b>	Cable cross section	3*1	mm <sup>2</sup>	Solid and stranded
	Wire preparation length	8...10	mm	
	Type of wire	Cable,		
	Lead length	230		
	Cable length from SPD to LED Driver	<3	m	

**Standards**

**ordering information**

IEC 61643-11

Product name	EAN10	EAN40	Pieces / box
SPD20/320 PL P5 G3	6977078992800	6977078992817	50

### Disclaimer

Subject to change without notice. Errors and omission accepted. Always make sure to use the most recent release. The latest release of the datasheet is available under the following link [www.inventronicsglobal.com](http://www.inventronicsglobal.com)

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