

# Surge Protection Devices

## SPD2 2P+0 SERIES

Class II/Type 2/Type 1 CA Pluggable Multi-Pole



### Description

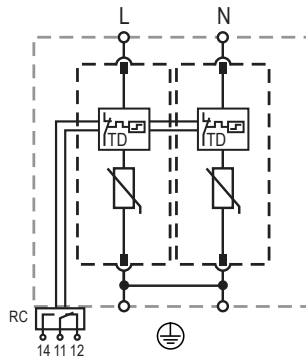
Surge protection devices (SPDs) provide equipment protection from transient overvoltage events lasting micro-seconds. By limiting the overvoltage to the equipment during these events, costly damage and downtime can be mitigated.

The surge protection devices for the 2+0 configuration are available for 120 V to 600 V nominal voltage sub-distribution board applications.

### Features & Benefits

FEATURES	BENEFITS
<b>Capability to clamp and withstand high-energy transients</b>	Ensures low-residual voltage during high-energy surge events and higher nominal discharge current to prevent disruption, downtime, and degradation or damage to equipment
<b>UL Recognized and VDE-IEC compliant in single part number</b>	One component can be utilized globally, reducing inventory needs and simplifying allocation of parts
<b>Interlocking tab mechanism</b>	Secures module to withstand vibration
<b>No additional overcurrent protection devices required in UL applications</b>	Reduces the number of components and costs required for protection
<b>Compact footprint</b>	Increases panel design flexibility
<b>Visual life indicator</b>	Quick visual determines module replacement status to avoid loss of protection
<b>Pluggable modules</b>	Fast and simple to replace, minimizing maintenance and downtime. No tools required
<b>Thermal protection</b>	Eliminates catastrophic failure
<b>IP20 protection rating</b>	Finger-safe design increases worker protection

### Internal Configuration



#### Legend

- L Line
- N Neutral
- ⊕ Protective Earth
- RC Remote Contacts
- TD Thermal Disconnection

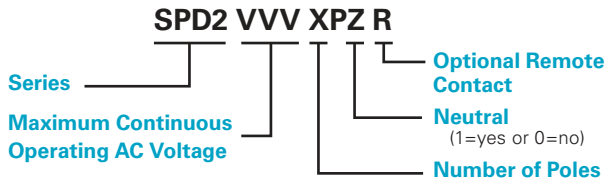
### Module & Base Ordering Information

Ordering Number	IEC Electrical							UL Electrical				Single Unit Weight	
	Nominal AC Voltage (50/60Hz) ( $U_n/U_r$ )	Maximum Continuous Operating AC Voltage ( $U_c$ )	Nominal Discharge Current (8/20 $\mu$ s) ( $I_n$ )	Maximum Discharge Current (8/20 $\mu$ s) ( $I_{max}$ )	Voltage Protection Level ( $U_p$ )	Short-Circuit AC Current Rating ( $I_{SCCR}$ )	TOV Withstand 5 s ( $U_T$ )	TOV 120 min ( $U_T$ ) / Mode	Maximum Continuous AC Operating Voltage (MCOV)	Voltage Protection Rating (VPR)	Nominal Discharge Current (8/20 $\mu$ s) ( $I_n$ )		Short-Circuit Current Rating (SCCR)
SPD2-150-2P0-R	120 V	150 V	20 kA	50 kA	1250 V	25 kA / 50 kA	229 V	229 V / Withstand	150 V	600 V	20 kA	200 kA	252 g (0.556 lb)
SPD2-300-2P0-R	240 V	300 V	20 kA	50 kA	1500 V	25 kA / 50 kA	337 V	442 V / Safe Fail	300 V	900 V	20 kA	150 kA	266 g (0.587 lb)
SPD2-350-2P0-R	277 V	350 V	20 kA	50 kA	1750 V	25 kA / 50 kA	403 V	529 V / Safe Fail	350 V	1000 V	20 kA	200 kA	276 g (0.609 lb)
SPD2-480-2P0-R	400 V	480 V	20 kA	50 kA	2300 V	25 kA / 50 kA	581 V	762 V / Safe Fail	480 V	1500 V	20 kA	200 kA	286 g (0.631 lb)
SPD2-550-2P0-R*	480 V	550 V	20 kA	50 kA	2500 V	25 kA / 50 kA	697 V	915 V / Safe Fail	550 V	2000 V	20 kA	200 kA	290 g (0.639 lb)
SPD2-750-2P0-R	600 V	750 V	20 kA	35 kA	3400 V	25 kA / 50 kA	871 V	1143 V / Safe Fail	750 V	2500 V	20 kA	200 kA	318 g (0.702 lb)

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### Module & Base Part Numbering System



### Module Only Part Numbering System



### Replacement Module Ordering Information

Ordering Number	IEC Electrical								UL Electrical				Single Unit Weight
	Nominal AC Voltage (50/60Hz) ( $U_n$ )	Maximum Continuous Operating AC Voltage ( $U_c$ )	Nominal Discharge Current (8/20 $\mu$ s) ( $I_n$ )	Maximum Discharge Current (8/20 $\mu$ s) ( $I_{max}$ )	Voltage Protection Level ( $U_p$ )	Short-Circuit AC Current Rating ( $I_{SCCR}$ )	TOV Withstand 5 s ( $U_1$ )	TOV 120 min ( $U_1$ ) / Mode	Maximum Continuous AC Operating Voltage (MCOV)	Voltage Protection Rating (VPR)	Nominal Discharge Current (8/20 $\mu$ s) ( $I_n$ )	Short-Circuit Current Rating (SCCR)	
SPD2-150-M	120 V	150 V	20 kA	50 kA	1250 V	25 kA / 50 kA	229 V	229 V / Withstand	150 V	600 V	20 kA	200 kA	54 g (0.120 lb)
SPD2-300-M	240 V	300 V	20 kA	50 kA	1500 V	25 kA / 50 kA	337 V	442 V / Safe Fail	300 V	900 V	20 kA	150 kA	61 g (0.135 lb)
SPD2-350-M	277 V	350 V	20 kA	50 kA	1750 V	25 kA / 50 kA	403 V	529 V / Safe Fail	350 V	1000 V	20 kA	200 kA	66 g (0.146 lb)
SPD2-480-M	400 V	480 V	20 kA	50 kA	2300 V	25 kA / 50 kA	581 V	762 V / Safe Fail	480 V	1500 V	20 kA	200 kA	71 g (0.157 lb)
SPD2-550-M*	480 V	550 V	20 kA	50 kA	2500 V	25 kA / 50 kA	697 V	915 V / Safe Fail	550 V	2000 V	20 kA	200 kA	74 g (0.163 lb)
SPD2-750-M	600 V	750 V	20 kA	35 kA	3400 V	25 kA / 50 kA	871 V	1143 V / Safe Fail	750 V	2500 V	20 kA	200 kA	87 g (0.192 lb)

### Specifications

<b>Network Systems</b>	IT, TN-S
<b>Mode of Protection</b>	L-PE, N-PE
<b>Nominal Discharge Current (8/20 <math>\mu</math>s) (<math>I_n</math>)</b>	20 kA
<b>Maximum Discharge Current (8/20 <math>\mu</math>s) (<math>I_{max}</math>)</b>	Up to 50 kA
<b>Protective Elements</b>	High Energy MOV
<b>Response Time (<math>t_A</math>)</b>	< 25 ns
<b>Back-Up Fuse (max)</b>	315 A / 250 A Gg
<b>Number of Ports</b>	1
<b>Mechanical &amp; Environmental</b>	
<b>Operating Temperature Range (<math>T_a</math>)</b>	-40 °C to +80 °C (-40 °F to +185 °F)
<b>Permissible Operating Humidity (RH)</b>	5% to 95%
<b>Altitude (max)</b>	4,000 m (13,123 ft)
<b>Terminal Screw Torque (<math>M_{max}</math>)</b>	4.5 Nm (39.9 lbf-in)
<b>Conductor Cross Section (max)</b>	35 mm <sup>2</sup> (2 AWG) (Solid, Stranded) / 25 mm <sup>2</sup> (4 AWG) (Flexible)
<b>Mounting</b>	35 mm DIN Rail, EN60715
<b>Degree of Protection</b>	IP20 (built-in)
<b>Housing Material</b>	Thermoplastic: Extinguishing Degree UL 94 V-0

<b>Thermal Protection</b>	Yes
<b>Operating State/Fault Indication</b>	Green Flag/No Green Flag
<b>Remote Contact Switching Capacity</b>	AC: 250 V/1 A, 125 V/1 A; DC: 48 V/0.5 A, 24 V/0.5 A, 12 V/0.5 A
<b>Remote Contact Conductor Cross Section (max)</b>	1.5 mm <sup>2</sup> (16 AWG) (Solid)
<b>Standards Passed*</b>	IEC 61643-11:2011 EN 61643-11:2012 UL 1449, 4th edition; E320116

<b>Dimensions &amp; Packaging</b>	
<b>2TE Module and Base</b>	<b>H</b> 90.0 mm (3.54"); <b>W</b> 36.0 mm (1.42"); <b>D</b> 70.0 mm (2.76")
<b>1TE Replacement Module</b>	<b>H</b> 45.0 mm (1.77"); <b>W</b> 18.0 mm (0.71"); <b>D</b> 57.2mm (2.25")
<b>Package Dimensions</b>	
<b>2TE Module and Base</b>	<b>H</b> 102.0 mm (4.01"); <b>W</b> 46.0 mm (1.81"); <b>D</b> 110.0 mm (4.33")
<b>1TE Replacement Module</b>	<b>H</b> 102.0 mm (4.01"); <b>W</b> 28.0 mm (1.10"); <b>D</b> 110.0 mm (4.33")

\*SPD2-550-2P0-R and SPD2-550-M are UL Listed only

Warranty – Visit [www.littelfuse.com/warranty](http://www.littelfuse.com/warranty) for details.

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