

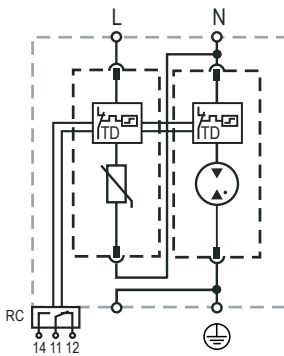
# Surge Protection Devices

## SPD2 1P+1 SERIES

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



### Internal Configuration



### Legend

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

### Description

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

The surge protection devices for the 1+1 configuration are available for 60 V to 277 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

### Module & Base Ordering Information

Ordering Number	IEC Electrical										UL Electrical				Single Unit Weight
	Nominal AC Voltage (50/60Hz) (U <sub>n</sub> /U <sub>n</sub> )	Maximum Continuous Operating AC Voltage (L-N/N-PE U <sub>c</sub> )	Nominal Discharge Current (8/20 μs) (L-N/N-PE I <sub>n</sub> )	Maximum Discharge Current (8/20 μs) (L-N/N-PE I <sub>max</sub> )	Voltage Protection Level (L-N/N-PE U <sub>p</sub> )	Follow Current Interrupt Rating (N-PE I <sub>f</sub> )	Short-Circuit AC Current Rating (L-N I <sub>scRP</sub> )	TOV Withstand 5 s (L-N U <sub>t</sub> )	TOV 120 min (L-N U <sub>t</sub> ) / Mode	TOV Withstand 200 ms (N-PE U <sub>t</sub> )	Maximum Continuous AC Operating Voltage (L-N/N-PE MCOV)	Voltage Protection Rating (L-N/N-PE VPR)	Nominal Discharge Current (8/20 μs) (L-N/N-PE I <sub>n</sub> )	Short-Circuit Current Rating (L-N SCCR)	
SPD2-075-1P1-R	60 V	75 V / 305 V	20 kA / 40 kA	50 kA / 65 kA	800 V / 1500 V	100 A <sub>RMS</sub>	25 kA / 50 kA	114 V	114 V / Withstand	1200 V	75 V / 305 V	330 V / 1000 V	20 kA / 20 kA	100 kA	124 g (0.274 lb)
SPD2-150-1P1-R	120 V	150 V / 305 V	20 kA / 40 kA	50 kA / 65 kA	1250 V / 1500 V	100 A <sub>RMS</sub>	25 kA / 50 kA	229 V	229 V / Withstand	1200 V	150 V / 305 V	600 V / 1000 V	20 kA / 20 kA	200 kA	128 g (0.283 lb)
SPD2-300-1P1-R	240 V	300 V / 305 V	20 kA / 40 kA	50 kA / 65 kA	1500 V / 1500 V	100 A <sub>RMS</sub>	25 kA / 50 kA	337 V	442 V / Safe Fail	1200 V	300 V / 305 V	900 V / 1000 V	20 kA / 20 kA	150 kA	135 g (0.298 lb)
SPD2-350-1P1-R	277 V	350 V / 305 V	20 kA / 40 kA	50 kA / 65 kA	1750 V / 1500 V	100 A <sub>RMS</sub>	25 kA / 50 kA	403 V	529 V / Safe Fail	1200 V	350 V / 305 V	1000 V / 1000 V	20 kA / 20 kA	200 kA	140 g (0.309 lb)

# Surge Protection Devices

## SPD2 1P+1 SERIES

### 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 <sub>n</sub> /U <sub>n</sub> )	Maximum Continuous Operating AC Voltage (L-N/N-PE U <sub>c</sub> )	Nominal Discharge Current (8/20 μs) (L-N/N-PE I <sub>n</sub> )	Maximum Discharge Current (8/20 μs) (L-N/N-PE I <sub>max</sub> )	Voltage Protection Level (L-N/N-PE U <sub>p</sub> )	Follow Current Interrupt Rating (N-PE I <sub>f</sub> )	Short-Circuit AC Current Rating (L-N I <sub>SCCR</sub> )	TOV Withstand 5 s (L-N U <sub>f</sub> )	TOV 120 min (L-N U <sub>f</sub> ) / Mode	TOV Withstand 200 ms (N-PE U <sub>f</sub> )	Maximum Continuous AC Operating Voltage (L-N/N-PE MCOV)	Voltage Protection Rating (L-N/N-PE VPR)	Nominal Discharge Current (8/20 μs) (L-N/N-PE I <sub>n</sub> )	Short-Circuit Current Rating (L-N SCCR)	
SPD2-040-M	0 V	40 V / 305 V	20 kA / 40 kA	50 kA / 65 kA	1500 V (N-PE)	100 A <sub>RMS</sub>	25 kA / 50 kA	N/A	N/A	1200 V	305 V (N-PE)	1000 V (N-PE)	20 kA / 20 kA	N/A	42 g (0.093 lb)
SPD2-075-M	60 V	75 V / 305 V	20 kA / 40 kA	50 kA / 65 kA	800 V / 1500 V	100 A <sub>RMS</sub>	25 kA / 50 kA	114 V	114 V / Withstand	1200 V	75 V / 305 V	330 V / 1000 V	20 kA / 20 kA	100 kA	50 g (0.111 lb)
SPD2-150-M	120 V	150 V / 305 V	20 kA / 40 kA	50 kA / 65 kA	1250 V / 1500 V	100 A <sub>RMS</sub>	25 kA / 50 kA	229 V	229 V / Withstand	1200 V	150 V / 305 V	600 V / 1000 V	20 kA / 20 kA	200 kA	54 g (0.120 lb)
SPD2-300-M	240 V	300 V / 305 V	20 kA / 40 kA	50 kA / 65 kA	1500 V / 1500 V	100 A <sub>RMS</sub>	25 kA / 50 kA	337 V	442 V / Safe Fail	1200 V	300 V / 305 V	900 V / 1000 V	20 kA / 20 kA	150 kA	61 g (0.135 lb)
SPD2-350-M	277 V	350 V / 305 V	20 kA / 40 kA	50 kA / 65 kA	1750 V / 1500 V	100 A <sub>RMS</sub>	25 kA / 50 kA	403 V	529 V / Safe Fail	1200 V	350 V / 305 V	1000 V / 1000 V	20 kA / 20 kA	200 kA	68 g (0.146 lb)

### Specifications

<b>Network Systems</b>	IT, TT, TN-S
<b>Mode of Protection</b>	L-N, N-PE
<b>Nominal Discharge Current (8/20 μs) (L-N / N-PE I<sub>n</sub>)</b>	20 kA/40 kA
<b>Maximum Discharge Current (8/20 μs) (L-N / N-PE I<sub>max</sub>)</b>	50 kA/65 kA
<b>Protective Elements</b>	High Energy MOV and GDT
<b>Response Time (L-N / N-PE t<sub>A</sub>)</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 (T<sub>a</sub>)</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 (M<sub>max</sub>)</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>Product Dimensions</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> 57.2 mm (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")

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

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