

# Surge Protection Devices

## SPD2 3P+0 SERIES

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



### Description

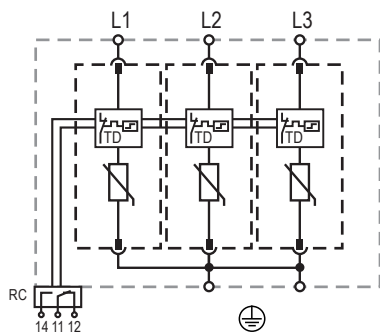
Surge protection devices (SPDs) provide equipment protection from transient overvoltage events lasting micro-seconds. By limiting the overvoltage to the equipment during these events, costly damage and downtime can be mitigated.

The surge protection devices for the 3+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) ( $U_n/U_p$ ) | 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 ( $I_{scrr}$ ) | 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) |
| SPD2-150-3P0-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             | 355 g (0.783 lb)                    |
| SPD2-300-3P0-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             | 376 g (0.829 lb)                    |
| SPD2-350-3P0-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             | 391 g (0.862 lb)                    |
| SPD2-480-3P0-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             | 406 g (0.896 lb)                    |
| SPD2-550-3P0-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             | 414 g (0.913 lb)                    |
| SPD2-750-3P0-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             | 454 g (1.001 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) ( $U_n/U_r$ ) | 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 ( $I_{scac}$ ) | 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-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, TT, TN-S   |
| <b>Mode of Protection</b>  | L-N, 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 (L-N / N-PE <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_o</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<br>EN 61643-11:2012<br>UL 1449, 4th edition; E320116         |
| <b>Product Dimensions</b>                           |  |
| <b>3TE Module and Base</b>                          | <b>H</b> 90.0 mm (3.54"); <b>W</b> 54.0 mm (2.13"); <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>3TE Module and Base</b>                          | <b>H</b> 102.0 mm (4.01"); <b>W</b> 64.0 mm (2.52"); <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") |

\*SPD2-550-3P0-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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