Maximum Surge Protection for Outdoor LED Lighting

The Littelfuse Surge Protection Modules are self-protected devices that can be used in outdoor and commercial LED lighting fixtures for transient overvoltage protection. They are constructed with Littelfuse thermally protected varistor technology and provide high line-to-earth/ground resistance.

The built-in thermal disconnect provides additional protection against catastrophic failure/fire hazard under varistor end-of-life or sustained overvoltage conditions. The LSP05G product series facilitates surge immunity compliance to IEEE C62.41.2 Location Category C Low Exposure, ANSI C136.2, and US Dept of Energy MSSLC Model Spec.

Applications
- Digital Signage
- Flood Lighting
- Parking Garage Lighting
- Roadway Lighting
- Street Lighting
- Traffic Lighting
- Tunnel Lighting
- Wall Wash Lighting
Surge Protection Module - Self-protected device designed for transient overvoltage protection of outdoor/commercial LED lighting fixtures

Features

- Thermally protected varistor technology
- Parallel-connected and series-connected options
- Recognized to UL 1449¹ and complies with EN/IEC 61643-11 Class II²
- High line-to-earth/ground resistance

Benefits

- Optimized surge immunity solution to protect the outdoor LED fixture investment
- Internal varistors thermally protected to prevent failure due to end-of-life or continuous overvoltage faults
- Series Connection – clear indication for SPD module replacement by turning luminaire off when the thermal fail-safe protection is activated
- Parallel Connection – for high-reliability lighting applications, SPD disconnects itself at end-of-life and keeps luminaire powered
- Enables worldwide marketing of lighting fixtures
- Facilitates faster production line Insulation Resistance testing

Surge Protection Module Key Characteristics

<table>
<thead>
<tr>
<th>LSP05G</th>
<th>Connection Type</th>
<th>Parallel</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication for SPD Replacement</td>
<td>None</td>
<td>Luminaire turned off</td>
<td></td>
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<tr>
<td>Thermal Protection</td>
<td>MOV thermal disconnection when overheated</td>
<td></td>
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<tr>
<td>Recognition/Compliance</td>
<td>MSSLC Roadway Enhanced ANSI C136.2 Enhanced UL1449 Type 4 CA (120V/240V) EN/IEC 61643-11 Class II²</td>
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<tr>
<td>Operating voltage</td>
<td>120/240/277/347/480 VAC</td>
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<tr>
<td>Iₘₐₓ (max. surge current, 1-hit)</td>
<td>10kA</td>
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<td></td>
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<tr>
<td>Iₙ (nominal surge current, 15-hit)</td>
<td>5kA (10kV open-circuit voltage)</td>
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<tr>
<td>Luminaire Insulation Class</td>
<td>Class I earthed/Class II unearthed</td>
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<tr>
<td>Ingress Protection Rating</td>
<td>IP66</td>
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<tr>
<td>Dimensions</td>
<td>46.6 x 28.6 x 26 mm</td>
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<td>Regional Markets</td>
<td>Asia, Australia, and Africa</td>
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Notes:

1. 120Vac and 240Vac voltage ratings.
2. Self-declared compliance.

LED Street Light Protection Scheme

Parallel Connection and Series Connection

Parallel Connection
- Thermal protection prevents MOV fire hazard caused by unstable line voltage and end-of-life failure.

Series Connection
- Thermal protection prevents MOV fire hazard caused by unstable line voltage and end-of-life failure.
- Series-connected SPD cuts luminaire power off to provide a clearly visible indication that SPD replacement is required.

1. Fuse and inline fuse holder at pole base – overcurrent protection for wiring in the pole to the luminaire (may or may not be installed)
2. Thermal protection inside surge protection module (SPD)
3. Fuse inside power supply – overcurrent protection for power supply circuitry