

**EXTEND THE  
LIFETIME**  
OF YOUR LED LIGHTING WITH  
RELIABLE SURGE PROTECTION



## 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.

The built-in thermal disconnect provides additional protection against catastrophic failure/fire hazard under varistor end-of-life or sustained overvoltage conditions. The LSP product series facilitates surge immunity compliance to IEEE C62.41.2 Location Category C High 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



**ACE AWARDS** EDN  
2015 Finalist EE Times

**Global Award Winner:**  
2014 High-Performance Component Award (EDN/EE Times/ESM - China)  
2015 ACE Award: Ultimate Product - LED Lighting (EDN & EE Times)

## Surge Protection Module - Self-protected device designed for transient overvoltage protection of outdoor/commercial LED lighting fixtures



Parallel Version



Series Version

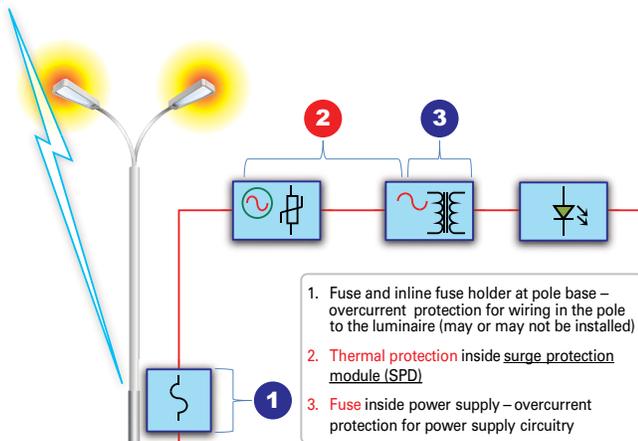
### Features

- Maximum lightning surge current 20kA
- Thermally protected varistor technology
- Parallel-connected and series-connected options
- Complies with UL1449/IEC61643-11<sup>1</sup>
- Ingress protection IP66
- Wide operation voltage 120Vac~480Vac

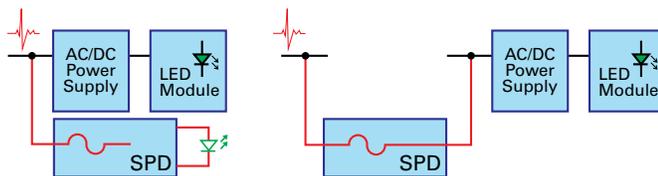
### Benefits

- Optimized surge immunity solution to protect the outdoor LED fixture investment to get the long term reduction in maintenance costs and energy savings. Without surge protection, the value proposition of LED lighting is at risk
- Thermal fail-safe protection to prevent a hazard to the light or facility due to 'end-of-life' or extreme failure conditions of internal components
- **Series Version** – Clear indication for SPD module replacement by turning luminaire off when the thermal fail-safe protection is activated
- **Parallel Version** – External wire option for LED indication or adaptive lighting circuit
- Confidence in the quality and integrity of specifications will be met since it is subjected to regular, independent 3rd party analysis
- Surge protector is less susceptible to damage from water or environment
- Flexibility to select optimal protection for each lighting installation input voltage

### 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.
- LED indicator shows when to replace the SPD

#### 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.

### Surge Protection Module Portfolio

Model	LSP10	LSP05
<b>Connection Type</b>	Parallel/Series	Parallel
<b>Indication for SPD Replacement</b>	External LED indicator/ Luminaire turned off	External LED indicator
<b>Thermal Protection</b>	MOV thermal disconnection when overheated	MOV thermal disconnection when overheated
<b>Recognition/Compliance</b>	MSSLC Roadway Elevated ANSI C136.2 Extreme UL1449 Type 4 CA EN/IEC 61643-11 Class II <sup>1</sup>	MSSLC Roadway Enhanced ANSI C136.2 Enhanced UL1449 Type 4 CA EN/IEC 61643-11 Class II <sup>1</sup>
<b>Un (nominal operating voltage)</b>	120/240/277/347/480 VAC	120/240/277/347/480 VAC
<b>I<sub>max</sub> (max. surge current, 1-hit)</b>	20kA	10kA
<b>I<sub>n</sub> (normal surge current, 15-hit)</b>	10kA (20kV OCV)	5kA (10kV OCV)
<b>Luminaire Insulation Class</b>	Class I earthed/ Class II unearthed	Class I earthed/ Class II unearthed
<b>Water-proof and Dust-proof</b>	IP66	IP66
<b>Dimensions</b>	48 x 48 x 30 mm	48 x 48 x 30 mm
<b>Applicable Markets</b>	America/Africa/India/SEA	Europe/Asia/Australia

Note:  
1. Self-declared compliance.