Surge Protection Module

LED Lighting Surge Protection Module > LSP05

LSP05 Module Series

RoHS

Description

The Littelfuse LSP05 thermally protected Surge Protective Device is a self-protected device which is specially designed to be used in outdoor and commercial LED lighting fixtures for transient overvoltage protection. It is constructed with Littelfuse thermally protected varistor technology. Its built-in thermal disconnect function provides additional protection to prevent catastrophic failure and fire hazard even under the extreme circumstances of varistor end-of-life or sustaining over voltage conditions. The LSP05 SPD facilitates customer's product compliance to IEEE C62.41.2 Location Category C Low and US Dept of Energy MSSLC Model Spec.

Agency Approvals

Agency	Standard	Agency File Number
c UL us	UL1449	E320116

Applications

- Outdoor and Commercial LED Lighting
- Roadway lighting
- Traffic lighting
- Digital signage
- Wash wall lighting
- Parking garage/lot lighting
- Flood lighting
- Tunnel lighting
- Street lighting

Features

- Maximum Discharge Current, 10kA, 8/20us
- Meets ANSI C136.2 Enhanced Level 10kV/5kA and IEEE C62.41.2 Location Category C Low Exposure
- Parallel connected SPD device
- Thermally protected Varistor technology
- IP66 Water-proof and Dust-proof
- Indication wire lead options for Parallel connected modules
- UL1449 Type 4 Component Assembly Recognition
- IEC61643-11 Class II/ EN61643-11 Type 2 Compliant[1]
- Compact form factor (48x48x30mm) with mounting tabs
- 240Vac and 277Vac voltage ratings are CE compliant and available for Class I and Class II installation based on IEC luminaire protection classes

Notes:
1. Self-declared compliance.

Additional Information

Datasheet | Resources | Samples

Absolute Maximum Ratings

• For ratings of individual members of a series, see Device Ratings and Specifications chart

	LSP05 Series	Units
Continous:		
Steady State Applied Voltage:		
Max AC Voltage Range ($V_{M(AC)RMS}$)	150 to 510	V
Transient:		
Maximum Discharge Current 8/20µs Waveform (Imax)	10,000	A
Nominal Discharge Current 8/20µs Waveform (I_n)	5,000	A
Operating Ambient Temperature Range (T_A)	-45 to +85	°C
Storage Temperature Range (T_{STG})	-45 to +125	°C
Isolation Voltage Capability (When the thermal disconnect opens)	600	V
Insulation Resistance	>1,000	MΩ

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

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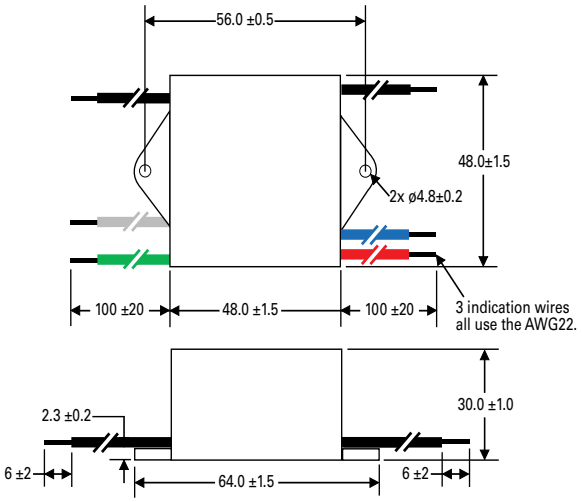
LSP05 Series Device Ratings & Specifications

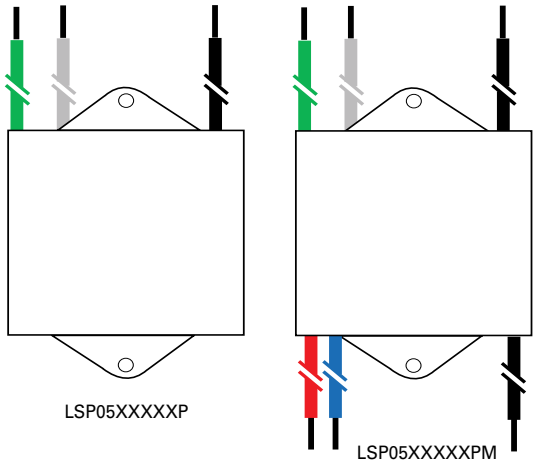
Part Number[7]	Operating Voltage (VAC)	MCOV/Uc (VAC)[5]	Maximum Discharge Current (Imax)(A)[2]	Nominal Discharge Current (In)(A)[1]	MLV (V)[3]	Up (V)[4]	Safety Compliance	
							IEC/EN 61643-11[6]	UL1449
LSP05120*	120	150	10,000	5,000	L-N:680 L-G:680 N-G:630	800		X
LSP05240*	240	275	10,000	5,000	L-N:1100 L-G:1100 N-G:1100	1200	X	X
LSP05277*	277	320	10,000	5,000	L-N:1270 L-G:1270 N-G:1220	1400	X	X
LSP05347*	347	420	10,000	5,000	L-N:1600 L-G:1600 N-G:1580	1700		X
LSP05480*	480	510	10,000	5,000	L-N:1780 L-G:1780 N-G:1730	1900		X
LSP05240LL*	L-L:240	L-L:275	10,000	5,000	L-L:1100	L-L:1200		X
	L-N/G:120	L-N/G:150			L-N/G:680	L-N/G:800		X
LSP05480LL*	L-L:480	L-L:510	10,000	5,000	L-L:1780	L-L:1900		X
	L-N/G:277	L-N/G:320			L-N/G:1270	L-N/G:1400		X

Notes:
1. Nominal Discharge Current (In)(A): The nominal discharge current is a measure of the SPDs endurance capability; 15 impulses of discharge current uses the 8/20us current waveform.
2. Maximum Discharge Current (Imax)(A): The maximum discharge current is a measure of the SPDs maximum capability; single impulse of discharge current uses the 8/20us current waveform.
3. MLV – UL1449 Measured limiting voltage; the highest value of residual voltage measurements during the application of impulses of 8/20us nominal discharge current (In); an average voltage value of 15 impulses
4. Up – IEC 61643-11 Voltage protection level; the highest value of residual voltage measurements during the application of impulses of 8/20us nominal discharge current (In); a rounding voltage value of maximum measurement.
5. MCOV/UC: Maximum Continuous Operating Voltage - maximum r.m.s. voltage that could be continuously applied to the SPD.
6. Part Numbers LSP05xxxPM Only.
7. * = - P or PM

Dimensions

Typical Dimensions (mm)





Notes:
1. Black: Line; White: Neutral; Green: Ground
   (P/N with suffix X3333/X3316: Brown: Line; Blue: Neutral; Green-Yellow stripe: Ground)
2. Black: R1; Red: R2; Blue: R3
3. Wire Gauge: AWG14 wire Line in, AWG22 Wire for indication; Wire Length: 100mm or customized

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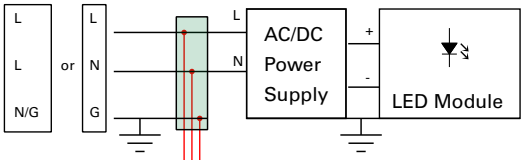
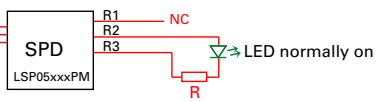
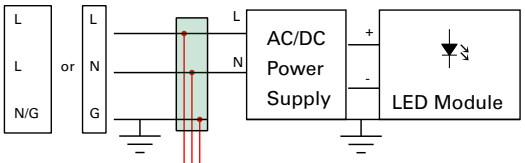
Application/Installation Schematic

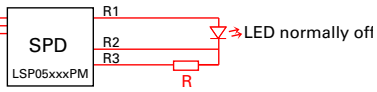


Parallel Connection
With LED indicating SPD status
- ON (green): SPD is online
- OFF: SPD needs replacement

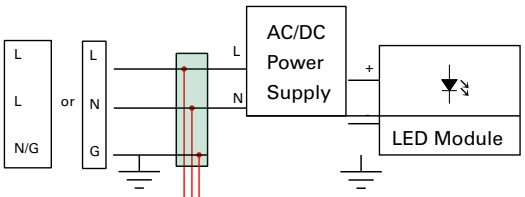




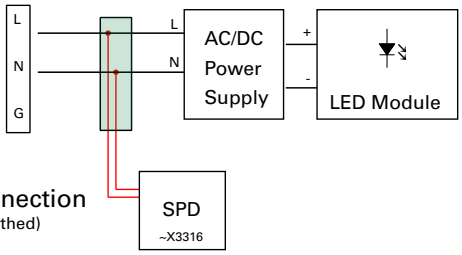
Parallel Connection
With LED indicating SPD status
- OFF: SPD is online
- ON (red): SPD needs replacement



Notes:
1. LED indicator and associated circuitry are not included in the module.
2. R1 must be capped off by wire nut when not connected (NC).
3. R1 and R2 are AC line voltage (hot); R3 is AC neutral voltage.
4. R2 voltage is cut off when SPD needs replacement.
5. R is current limiting resistor; it resistance/wattage is determined by AC line voltage and desired current driving LED. Example: AC line voltage 240V, LED: 1.6mA, resistor: 150Kohm/0.5W.



Parallel Connection



Parallel Connection
(for Class II Unearthed)

Part Numbering System

LSP 05 480LL P Xxxxx

Device Family
Littelfuse Surge Protection Module

Nominal Discharge Current (In)

Operating Voltage

Connection mode
LL: for L,L,N/G
Blank: L-N, L-G, N-G

P or PM
(P: parallel connection; PM: parallel connection and with monitor indication wire)

Other non-standard option:
X3333: with GND wire connection, available for 240Vac and 277Vac rating with CE Marking for Class I earthed installation

X3316: without GND wire connection option

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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
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Как с нами связаться

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