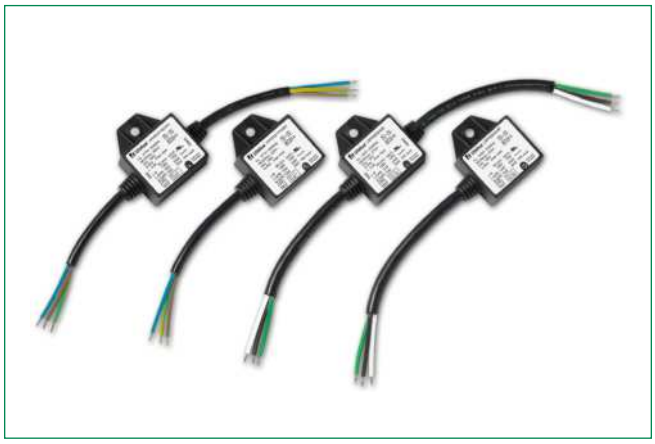
LSP05GI Module Series

LED Lighting Surge Protection Module



Additional Information

Resources | Accessories | Samples

Agency Approvals

Agency	Standard	Agency File Number
c UL us	UL 1449	E320116
	IEC 61643-11+	NL-40819
KEMA KEUR	EN 61643-11+	3177948.01

+ = For 240V and 277V

Description

Littelfuse's LSP05GI thermally protected Surge Protective Device is a self-protected device specially designed to be used in outdoor and commercial LED lighting fixtures for transient overvoltage protection. It has been developed with Littelfuse's thermally protected varistor technology. Its built-in thermal disconnect function provides additional protection to prevent catastrophic failure and fire hazard even under extreme circumstances of varistor end-of-life or sustaining over voltage conditions.

The LSP05GI features a built-in LED indicator that notifies when replacement of the module is needed.

Features & Benefits

- Build-in LED Indication, saves maintenance time by identifying replacement need
- Thermally Protected
- Suitable for use in luminaire with Class I or Class II insulation*
- 10kA Maximum Discharge Current (I_{max}), 8/20µs
- Meets ANSI C82.77-5-2015: Location C Medium
- Meets ANSI C136.2-2015: Enhanced Level
- Meets IEEE C62.41.2: Location Category C Low
- Meets US Dept. of Energy MSSSLC Model Spec.
- High line-to-earth/ground resistance
- IP66: Dust-tight and water resistant
- Parallel or Series connected options
- UL 1449 and IEC 61643-11/ EN 61643-11 recognized*

* See 'Part Numbering System' for exact details of voltages available for Class I and Class II installations, and 'Device Ratings and Specifications' table for voltage specific approvals.

Applications

- Outdoor and Commercial LED Lighting
- Roadway lighting
- Traffic lighting
- Digital signage
- Wall wash lighting
- Parking garage lighting
- Flood lighting
- Tunnel lighting
- Street lighting

© 2023 Littelfuse, Inc.
Specifications are subject to change without notice.

Revised: GD. 05/04/23

LSP05GI Module Series
LED Lighting Surge Protection Module

Absolute Maximum Ratings

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

	LSP05GI Series	Units
Continuous:		
Steady State Applied Voltage:		
Max AC Voltage Range ($V_{M(AC)RMS}$)	150 to 510	V
Continuous Current	10	A
Transient:		
Maximum Discharge Current, 8/20µs Waveform (I_{max})	10,000	A
Nominal Discharge Current, 8/20µs Waveform (I_n)	5,000	A
Operating Ambient Temperature Range (T_A)	-40 to +85	°C
Storage Temperature Range (T_{STG})	-40 to +85	°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.

LSP05GI Series Device Ratings and Specifications

Part Number	Operating Voltage (VAC)	MCOV/U_C [1] (VAC)	Maximum Discharge Current [2] I_{max} (A)	Nominal Discharge Current [3] I_n (A)	MLV [4] (V)	U_p [5] (V)	Safety Compliance	
							IEC/EN 61643-11	UL1449
LSP05GI120*	120	150	10,000	5,000	L-N:650 L-G:1280 N-G:1230	--	--	X
LSP05GI240*	240	275	10,000	5,000	L-N:1080 L-G:1230 N-G:1340	L-N: 1300 L-G/PE: 2400 N-G/PE: 2200	X	X
LSP05GI277*	277	320	10,000	5,000	L-N: 1260 L-G: 1260 N-G:1300	L-N: 1400 L-G/PE: 2400 N-G/PE: 2200	X	X
LSP05GI347*	347	420	10,000	5,000	L-N: 1600 L-G: 1800 N-G: 1520	--	--	X
LSP05GI480*	480	510	10,000	5,000	L-N: 1910 L-G: 2020 N-G: 1660	--	--	X
LSP05GI120*H†	120	150	10,000	5,000	L-N: 650 L-G: 3150 N-G: 3210	--	--	X
LSP05GI240*H†	240	275	10,000	5,000	L-N: 1080 L-G: 3170 N-G: 3430	--	--	X
LSP05GI277*H†	277	320	10,000	5,000	L-N: 1260 L-G: 3160 N-G: 3310	--	--	X
LSP05GI480*H†	480	510	10,000	5,000	L-N: 1800 L-G: 3090 N-G: 3090	--	--	--

* = S or P

† = Module with 'H' designation features 1500Vac Hi-Pot withstand capability in common mode (L-G and N-G).

Glossary:

1. MCOV/U_C: Maximum Continuous Operating Voltage - maximum r.m.s. voltage that could be continuously applied to the SPD.
2. Maximum Discharge Current I_{max} (A): The maximum discharge current is a measure of the SPDs maximum capability; single impulse of discharge current uses the 8/20µs current waveform. All Devices pass maximum discharge current with possible, safe opening of thermal disconnect.
3. Nominal Discharge Current I_n (A): The nominal discharge current is a measure of the SPDs endurance capability; 15 impulses of discharge current uses the 8/20µs current waveform.
4. MLV: UL1449 Measured limiting voltage; the highest value of residual voltage measurements during the application of impulses of 8/20µs nominal discharge current (I_n); an average voltage value of 15 impulses.
5. U_p: IEC 61643-11 Voltage protection level; the highest value of residual voltage measurements during the application of impulses of 8/20µs nominal discharge current (I_n); a rounding voltage value of maximum measurement.

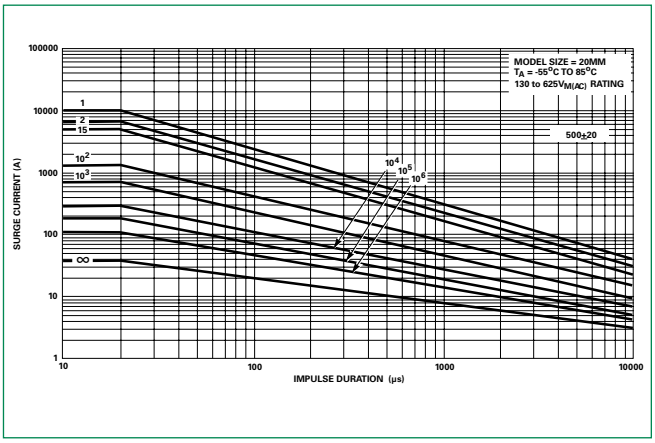
© 2023 Littelfuse, Inc.
Specifications are subject to change without notice.

Revised: GD. 05/04/23

LSP05GI Module Series
LED Lighting Surge Protection Module

Specification	Value		Condition
	240V	277V	
Temporary Overvoltage (V) TOV UT @ t_T = 5 s	337	403	LV System Fault for TN Power Grid
Temporary Overvoltage (V) TOV UT @ t_T = 120 min	442	529	LV System Fault for TN Power Grid
Power grids	TN	TN	
Backup fuse (A)	16	20	Maximum gG Fuse
End of life indication	Yes	Yes	Optical Light ON: SPD is functional Light OFF: SPD has reached end-of-life
Max earth leakage current at Uc (µA)	50	50	
IEC 61643-11 Test Classification	Test Class II and III	Test Class II and III	
EN 61643-11 Type Classification	Type 2 and 3	Type 2 and 3	
UL 1449 Type	4CA	4CA	

Repetitive Surge Capability



Pulse Rating (8x20µSec)	
Strikes	**Surge**
1	10,000A
2	7,000A
15	5,000A
100	1,500A
1,000	700A

LSP05GI Series Wire Specification

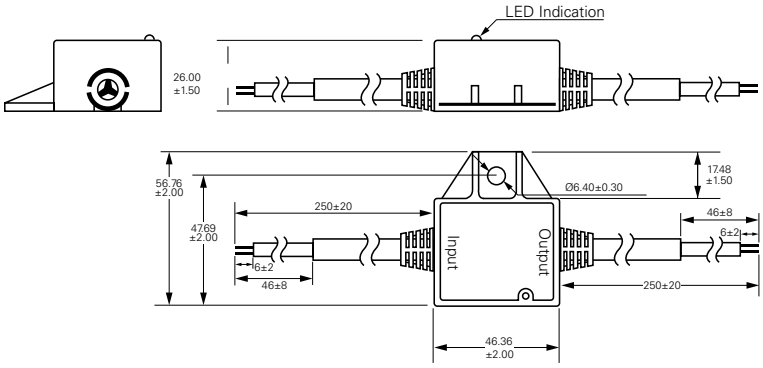
Part Number Extension	Length	Diameter	Double Insulation	Installation Class	Color
X3333	250mm ± 20mm	1mm²	Yes	I	L - Brown N - Blue G/PE - Green with Yellow stripe
X3316	250mm ± 20mm	1mm²	Yes	II	L - Brown N - Blue
None	250mm ± 20mm	16AWG	Yes	--	L - Black N- White G- Green

© 2023 Littelfuse, Inc.
Specifications are subject to change without notice.
Revised: GD. 05/04/23

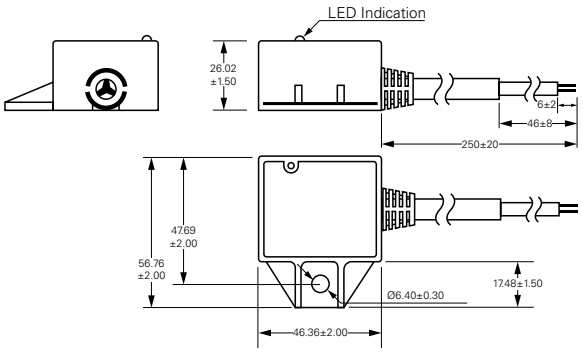
LSP05GI Module Series
LED Lighting Surge Protection Module

Dimensions

Series Version

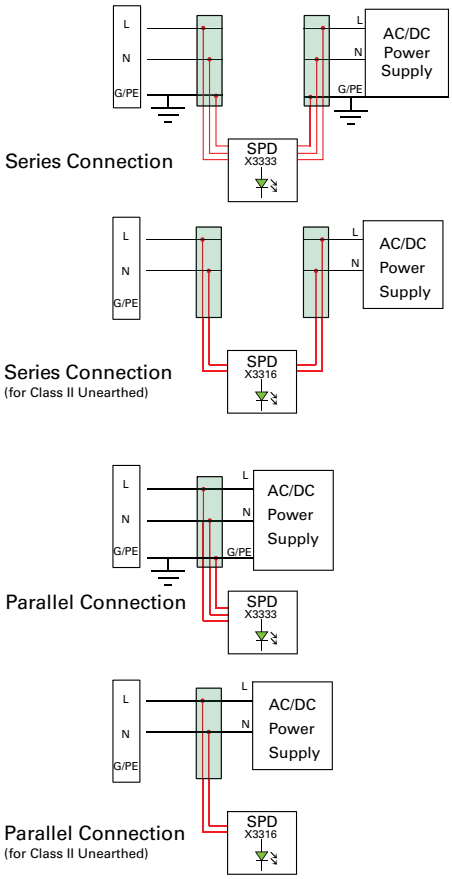


Parallel Version



Note: Dimensions are in millimeters (mm)

Application/Installation Schematic



Note:
Green LED light on: SPD is good
Green LED light off: SPD needs replacement

Part Numbering System

LSP 05G I 120 P H Xxxxx

- Littelfuse Surge Protection Module
- 5kA (Nominal Discharge Current)
- Built-in LED indication
- Operating Voltage
- P: Parallel connection
  S: Series connection
- Blank: Normal mode
  H: With 1500Vac Hi-Pot withstand capability in common mode (L-G and N-G)
- Other Options:
  X3333: with GND wire connection, available for 240Vac and 277Vac rating with CE Marking for Class I earthed luminaire installation
  Wire Color: Line: Brown, Neutral: Blue, Ground/PE: Green with yellow stripe
  X3316: without GND wire connection, available for 240Vac and 277Vac rating with CE Marking for Class II unearthed luminaire installation
  Wire Color: Line: Brown, Neutral: Blue

Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.

© 2023 Littelfuse, Inc.
Specifications are subject to change without notice.
Revised: GD. 05/04/23