



# CITEL

## Surge protector for LED lighting system Class 1

### MLP1-230L-W



Specially developed spd with combined protection for 2-phase power supply (control phase):

- Many variants available depending on application
- With screw terminals or cable wiring
- IP65 versions
- For protection class I or II application
- Developed for Uoc: 10 kV and I<sub>max</sub>: 10 kA for highest outdoor requirements according to IEEE & ANSI
- Optical error signalling



	<b>Electrical Characteristics</b>																																								
<p>V : Varistor Ft: Thermal fuse GSG: Specific gas tube LED: Status indicator t*: Thermal system disconnection</p>	<table border="1"> <tr><td>SPD type</td><td>2+3</td></tr> <tr><td>Network</td><td>220-240 V Single-phase</td></tr> <tr><td>AC system</td><td>TT-TN</td></tr> <tr><td>Nominal line voltage</td><td>U<sub>n</sub> 230-277 Vac</td></tr> <tr><td>Max. AC operating voltage</td><td>U<sub>c</sub> 305 Vac</td></tr> <tr><td>Max. frequency</td><td>f max. 10 MHz</td></tr> <tr><td>Max. load current @25°C</td><td>I<sub>L</sub> 2.5 A</td></tr> <tr><td>Temporary Over Voltage (TOV) Characteristics - 5 sec. Without disconnection</td><td>UT 335 Vac withstand</td></tr> <tr><td>Temporary Over Voltage (TOV) Characteristics - 120 mn Without disconnection or with safety disconnection</td><td>UT 440 Vac disconnection</td></tr> <tr><td>Residual Current Leakage current to Ground</td><td>I<sub>pe</sub> None</td></tr> <tr><td>Follow current</td><td>I<sub>f</sub> None</td></tr> <tr><td>Nominal discharge current 15 x 8/20 μs impulses</td><td>I<sub>n</sub> 5 kA</td></tr> <tr><td>Max. discharge current max. withstand @ 8/20 μs by pole</td><td>I<sub>max</sub> 10 kA</td></tr> <tr><td>Total Maximum discharge current max. total withstand @ 8/20 μs</td><td>I<sub>max</sub> Total 20 kA</td></tr> <tr><td>Withstand on Combination waveform IEC 61643-11 Class III test: 1.2/50μs - 8/20μs</td><td>U<sub>oc</sub> 10 kV / 5 kA</td></tr> <tr><td>Withstand on overvoltages IEEE C62.41.1</td><td>10 kV / 10 kA</td></tr> <tr><td>Protection mode(s)</td><td>Common/Differential mode</td></tr> <tr><td>Protection level L/N @ I<sub>n</sub> (8/20μs)</td><td>U<sub>p</sub> L/N 1.5 kV</td></tr> <tr><td>Protection level L/PE @ I<sub>n</sub> (8/20μs)</td><td>U<sub>p</sub> L/PE 1.5 kV</td></tr> <tr><td>Admissible short-circuit current</td><td>I<sub>sc</sub> 10 000 A</td></tr> </table>	SPD type	2+3	Network	220-240 V Single-phase	AC system	TT-TN	Nominal line voltage	U <sub>n</sub> 230-277 Vac	Max. AC operating voltage	U <sub>c</sub> 305 Vac	Max. frequency	f max. 10 MHz	Max. load current @25°C	I <sub>L</sub> 2.5 A	Temporary Over Voltage (TOV) Characteristics - 5 sec. Without disconnection	UT 335 Vac withstand	Temporary Over Voltage (TOV) Characteristics - 120 mn Without disconnection or with safety disconnection	UT 440 Vac disconnection	Residual Current Leakage current to Ground	I <sub>pe</sub> None	Follow current	I <sub>f</sub> None	Nominal discharge current 15 x 8/20 μs impulses	I <sub>n</sub> 5 kA	Max. discharge current max. withstand @ 8/20 μs by pole	I <sub>max</sub> 10 kA	Total Maximum discharge current max. total withstand @ 8/20 μs	I <sub>max</sub> Total 20 kA	Withstand on Combination waveform IEC 61643-11 Class III test: 1.2/50μs - 8/20μs	U <sub>oc</sub> 10 kV / 5 kA	Withstand on overvoltages IEEE C62.41.1	10 kV / 10 kA	Protection mode(s)	Common/Differential mode	Protection level L/N @ I <sub>n</sub> (8/20μs)	U <sub>p</sub> L/N 1.5 kV	Protection level L/PE @ I <sub>n</sub> (8/20μs)	U <sub>p</sub> L/PE 1.5 kV	Admissible short-circuit current	I <sub>sc</sub> 10 000 A
SPD type	2+3																																								
Network	220-240 V Single-phase																																								
AC system	TT-TN																																								
Nominal line voltage	U <sub>n</sub> 230-277 Vac																																								
Max. AC operating voltage	U <sub>c</sub> 305 Vac																																								
Max. frequency	f max. 10 MHz																																								
Max. load current @25°C	I <sub>L</sub> 2.5 A																																								
Temporary Over Voltage (TOV) Characteristics - 5 sec. Without disconnection	UT 335 Vac withstand																																								
Temporary Over Voltage (TOV) Characteristics - 120 mn Without disconnection or with safety disconnection	UT 440 Vac disconnection																																								
Residual Current Leakage current to Ground	I <sub>pe</sub> None																																								
Follow current	I <sub>f</sub> None																																								
Nominal discharge current 15 x 8/20 μs impulses	I <sub>n</sub> 5 kA																																								
Max. discharge current max. withstand @ 8/20 μs by pole	I <sub>max</sub> 10 kA																																								
Total Maximum discharge current max. total withstand @ 8/20 μs	I <sub>max</sub> Total 20 kA																																								
Withstand on Combination waveform IEC 61643-11 Class III test: 1.2/50μs - 8/20μs	U <sub>oc</sub> 10 kV / 5 kA																																								
Withstand on overvoltages IEEE C62.41.1	10 kV / 10 kA																																								
Protection mode(s)	Common/Differential mode																																								
Protection level L/N @ I <sub>n</sub> (8/20μs)	U <sub>p</sub> L/N 1.5 kV																																								
Protection level L/PE @ I <sub>n</sub> (8/20μs)	U <sub>p</sub> L/PE 1.5 kV																																								
Admissible short-circuit current	I <sub>sc</sub> 10 000 A																																								
	<b>Mechanical Characteristics</b>																																								
	<table border="1"> <tr><td>Technology</td><td>MOV+GDT</td></tr> <tr><td>Connection to Network</td><td>By screw terminal: 1.5mm<sup>2</sup> max.</td></tr> <tr><td>Mounting</td><td>On plate</td></tr> <tr><td>Housing material</td><td>Thermoplastic UL94 V-0</td></tr> <tr><td>Operating temperature</td><td>T<sub>u</sub> -40/+85°C</td></tr> <tr><td>Protection rating</td><td>IP65</td></tr> <tr><td>Failsafe mode</td><td>Disconnection and AC line cut-off</td></tr> <tr><td>Disconnection indicator</td><td>LED green OFF and AC network cut-off</td></tr> <tr><td>Voltage/operating indicator</td><td>Green Led ON</td></tr> <tr><td>Remote signaling of disconnection</td><td>No</td></tr> <tr><td>Dimensions</td><td>See diagram</td></tr> <tr><td>Weight</td><td>0.109 kg</td></tr> </table>	Technology	MOV+GDT	Connection to Network	By screw terminal: 1.5mm <sup>2</sup> max.	Mounting	On plate	Housing material	Thermoplastic UL94 V-0	Operating temperature	T <sub>u</sub> -40/+85°C	Protection rating	IP65	Failsafe mode	Disconnection and AC line cut-off	Disconnection indicator	LED green OFF and AC network cut-off	Voltage/operating indicator	Green Led ON	Remote signaling of disconnection	No	Dimensions	See diagram	Weight	0.109 kg																
Technology	MOV+GDT																																								
Connection to Network	By screw terminal: 1.5mm <sup>2</sup> max.																																								
Mounting	On plate																																								
Housing material	Thermoplastic UL94 V-0																																								
Operating temperature	T <sub>u</sub> -40/+85°C																																								
Protection rating	IP65																																								
Failsafe mode	Disconnection and AC line cut-off																																								
Disconnection indicator	LED green OFF and AC network cut-off																																								
Voltage/operating indicator	Green Led ON																																								
Remote signaling of disconnection	No																																								
Dimensions	See diagram																																								
Weight	0.109 kg																																								
	<b>Disconnectors</b>																																								
	<table border="1"> <tr><td>Thermal disconnector</td><td>Internal</td></tr> <tr><td>Installation ground fault breaker</td><td>Type 'S' or delayed</td></tr> </table>	Thermal disconnector	Internal	Installation ground fault breaker	Type 'S' or delayed																																				
Thermal disconnector	Internal																																								
Installation ground fault breaker	Type 'S' or delayed																																								
	<b>Standards</b>																																								
	<table border="1"> <tr><td>Standards compliance</td><td>IEC 61643-11 / EN 61643-11 / UL1449 ed.5</td></tr> </table>	Standards compliance	IEC 61643-11 / EN 61643-11 / UL1449 ed.5																																						
Standards compliance	IEC 61643-11 / EN 61643-11 / UL1449 ed.5																																								
	<b>Part number</b>																																								
	<b>711211</b>																																								

