



# CITEL

## AC surge protector for LED Lighting system Class 1

### MLPC1-230L-V/2L



- ▶ Type 2 (or 3) surge protector for Class I LED Lighting
- ▶ AC surge protection for 2-Phase + Neutral network
- ▶ Compact dimensions
- ▶ Screw connection
- ▶ Max. discharge current 10 kA
- ▶ Certified IEC 61643-11



|  |  |  |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
|--|--|--|----------|--|----------|---------|--|-------------------|-----------|--|-------|---------------------------|----|---------|-------------------------|----|-----|---|----|-------------------|--|----|-----------------------|--|-----|------|---|----|------|---|------------------|-------|--|-----|--------------|--------------------|--|---------------------|------------------------------------|--------|--------|-------------------------------------|---------|--------|----------------------------------|-----------------|----------|
|  | <b>Electrical Characteristics</b>  |  |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| <p>G: Gas tube 2-pole<br/>G3: Gas tube 3-pole<br/>D: Clamping diode network<br/>V: Varistor<br/>LED: Status indicator<br/>Ft: Thermal fuse</p> | <table border="1"> <tr><td>SPD type</td><td></td><td>2 (or 3)</td></tr> <tr><td>Network</td><td></td><td>2-phase + N 230 V</td></tr> <tr><td>AC system</td><td></td><td>TT-TN</td></tr> <tr><td>Max. AC operating voltage</td><td>Uc</td><td>320 Vac</td></tr> <tr><td>Max. load current @25°C</td><td>IL</td><td>5 A</td></tr> <tr><td>Temporary Over Voltage (TOV) Characteristics - 5 sec. Without disconnection</td><td>UT</td><td>335 Vac withstand</td></tr> <tr><td>Temporary Over Voltage (TOV) Characteristics - 120 mn Without disconnection or with safety disconnection</td><td>UT</td><td>440 Vac disconnection</td></tr> <tr><td>Residual Current Leakage current to Ground</td><td>Ipe</td><td>None</td></tr> <tr><td>Nominal discharge current 15 x 8/20 μs impulses</td><td>In</td><td>5 kA</td></tr> <tr><td>Max. discharge current max. withstand @ 8/20 μs by pole</td><td>I<sub>max</sub></td><td>10 kA</td></tr> <tr><td>Withstand on Combination waveform IEC 61643-11 Class III test: 1.2/50μs - 8/20μs</td><td>Uoc</td><td>10 kV / 5 kA</td></tr> <tr><td>Protection mode(s)</td><td></td><td>L1/N, L2/N and N/PE</td></tr> <tr><td>Protection level L/N @ In (8/20μs)</td><td>Up L/N</td><td>1.5 kV</td></tr> <tr><td>Protection level N/PE @ In (8/20μs)</td><td>Up N/PE</td><td>1.5 kV</td></tr> <tr><td>Admissible short-circuit current</td><td>I<sub>sc</sub></td><td>10 000 A</td></tr> </table> |  | SPD type |  | 2 (or 3) | Network |  | 2-phase + N 230 V | AC system |  | TT-TN | Max. AC operating voltage | Uc | 320 Vac | Max. load current @25°C | IL | 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 | Ipe | None | Nominal discharge current 15 x 8/20 μs impulses | In | 5 kA | Max. discharge current max. withstand @ 8/20 μs by pole | I <sub>max</sub> | 10 kA | Withstand on Combination waveform IEC 61643-11 Class III test: 1.2/50μs - 8/20μs | Uoc | 10 kV / 5 kA | Protection mode(s) |  | L1/N, L2/N and N/PE | Protection level L/N @ In (8/20μs) | Up L/N | 1.5 kV | Protection level N/PE @ In (8/20μs) | Up N/PE | 1.5 kV | Admissible short-circuit current | I <sub>sc</sub> | 10 000 A |
| SPD type   |  | 2 (or 3)                                       |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Network  |  | 2-phase + N 230 V                              |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| AC system  |  | TT-TN  |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Max. AC operating voltage  | Uc   | 320 Vac  |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Max. load current @25°C  | IL   | 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   | Ipe  | None   |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Nominal discharge current 15 x 8/20 μs impulses  | In   | 5 kA   |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Max. discharge current max. withstand @ 8/20 μs by pole  | I <sub>max</sub>   | 10 kA  |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Withstand on Combination waveform IEC 61643-11 Class III test: 1.2/50μs - 8/20μs   | Uoc  | 10 kV / 5 kA                                   |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Protection mode(s)   |  | L1/N, L2/N and N/PE                            |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Protection level L/N @ In (8/20μs)   | Up L/N   | 1.5 kV   |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Protection level N/PE @ In (8/20μs)  | Up N/PE  | 1.5 kV   |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Admissible short-circuit current   | I <sub>sc</sub>  | 10 000 A                                       |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| <b>Mechanical Characteristics</b>  |  |  |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Connection to Network  |  | By screw terminal: 1.5mm <sup>2</sup> max.     |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Mounting   |  | On plate                                       |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Housing material   |  | Thermoplastic UL94 V-0                         |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Operating temperature  |  | Tu -40/+85°C                                   |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Protection rating  |  | IP20   |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Failsafe mode  |  | Disconnection, Green Led OFF and power cut off |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Disconnection indicator  |  | LED green OFF and AC network cut-off           |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Voltage/operating indicator  |  | Green Led ON                                   |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Dimensions   |  | See diagram                                    |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Weight   |  | 0.057 kg                                       |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| <b>Disconnectors</b>   |  |  |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Thermal disconnector   |  | Internal                                       |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| <b>Standards</b>   |  |  |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Standards compliance   |  | IEC 61643-11 / EN 61643-11                     |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Certification  |  | KEMA   |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |
| Part number  |  | 831225   |          |  |          |         |  |                   |           |  |       |                           |    |         |                         |    |     |   |    |                   |  |    |                       |  |     |      |   |    |      |   |                  |       |  |     |              |                    |  |                     |                                    |        |        |                                     |         |        |                                  |                 |          |

