



CITEL

SURGE PROTECTORS

FOR

LED lighting



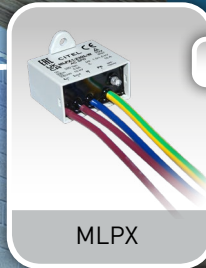
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LED LIGHTING SURGE PROTECTORS SET UP

SPD FOR ARCHITECTURAL
OUTDOOR LIGHTING



SPD FOR LED STREET LIGHT



or



SPD FOR STREET
LIGHTING POLE BOX



or



SPD FOR DATA NETWORK



SPD FOR STREET CABINET



or



SURGE PROTECTORS FOR LED OUTDOOR LIGHTING

LED street lighting is now widely used for its efficiency, its energy cost savings and its life expectancy. Nevertheless this attractive technology has an important weakness: its sensitivity to transient voltages created by lightning or by power switch operations on AC network.

Due to its scattered and over-exposed location, LED lighting system will face induced surges which will create failure of its power supply, damage LED components or loss of the lighting efficiency. For these reasons, the use of relevant surge protectors located

upstream the LED lighting systems is highly recommended. CITEL provides a complete of surge protectors to be installed at different locations of the outdoor lighting network, such as the luminaires, the street lighting pole box and the street cabinets.

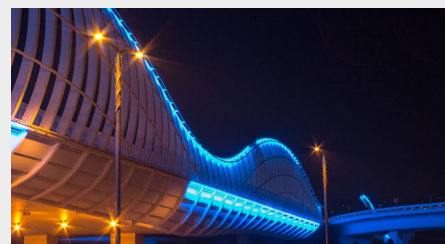
CITEL offers solutions adapted to every type of outdoor LED lighting systems : urban, architectural, tunnels etc...



Street lighting



Tunnel lighting



Architectural outdoor lighting

CITEL RANGE

CITEL proposes a complete range of AC surge protectors specifically designed for the protection of LED lighting systems in the lantern or connection boxes.

Many versions have been proposed to meet the various existing configurations : surge protection devices are available in different isolation classes (Class 1, Class 2) and connection type (wire or screw terminal). Some versions are equipped with protection data line option (RS485, DALI, 0-10V) to provide a complete solution for LED systems with control lines.

Surge protectors are based on an effective combination of varistors and gas discharge tubes, to protect without failure, the LED systems against surge overvoltages, even at very high amplitude phenomena.

In cases of extreme aggression, the surge protector will be in a state of retirement security : according to the different versions available, an indication of the failure of the surge protector is performed by the extinction of an indicator, a AC power supply disconnection and / or through a remote signalisation.

The MLPC range is a compact solution surge protectors to be installed in small spaces. These devices are available in 2 types of connectors (screw terminal or spring terminal) and in two orientations wiring (input / output opposite or input / output on the same side).

The MLPX range is a very compact surge protectors solution to be installed in very small spaces, in the lantern. Output by wires and IP65.



- *Surge protectors range for LED lighting systems*
- *Configurations Class I and Class II*
- *Compact dimensions*
- *IP20 and IP65 versions*
- *Combined Version AC / Data*
- *Connection wire or screw*
- *Maximal discharge current 10 kA*
- *Remote signalling (option)*
- *Complies with IEC 61643-11 and EN 61643-11*

The MLP range is an SPD solution with many different versions and in particular integrating AC and data (DALI, 0-10V, DMX) surge protection into a single housing.

The DSLP range is designed for mounting in connection boxes. Low profile and mounting on DIN rail. The **DLPM version**, with the same format and performance, is equipped with a mechanical end-of-life indicator.

SINGLE-PHASE COMPACT SURGE PROTECTORS



MLPC



MLPX



MLP



MSB6

| CITEL part number | MLPC range | MLPX range | MLP range | MSB6 range |
|---------------------------|------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------|
| AC network | 120 V or 230 V | 120 V or 230 V | 120 V or 230 V | 230 V |
| Configuration | Single-Phase | Single-Phase | Single-Phase | Single-Phase |
| Insulation class | Class 1 Class 2 | Class 1 Class 2 | Class 1 Class 2 | Class 1 |
| Nominal discharge current | 5 kA | 5 kA | 5 kA | 3 kA |
| Maximal discharge current | 10 kA | 10 kA | 10 kA | 6 kA |
| Connection | Screw terminal - spring contact | Wires | Screw terminal - Wires | Wires |
| Mounting | Plate | Plate | Plate | Terminal |
| Dimensions | 40x69x17 mm | 37x30x20 mm | 49x70x30 mm | 36x26x12 mm |
| End of life | - Indicator Off - AC network Off - SPD disconnection | - Indicator Off - AC network Off - SPD disconnection | - Indicator Off - AC network Off (option) - SPD disconnection - Remote signal (option) | - Buzzer ON - SPD disconnection |
| Protection rating | IP20 | IP67 or IP20 | IP65 or IP20 | IP20 |
| Remote signalling | No | No | Option | No |
| Data line protection | No | No | Option : DALI, RS485, 0-10V | No |

DIN RAIL SINGLE-PHASE SURGE PROTECTORS



DAC40CS-11-275

DACN10S-L11-275



DLPM1-230L



DSLPL1-230L

| CITEL part number | DAC40CS-11-275* | DACN10S-L11-275* DS98L-230G/2L* | DSLPL1-230L* DLPM1-230L |
|----------------------------------------------|--------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------|
| AC network | 230 V single-phase | 230 V single-phase 230 V 2-phase+N | 230 V single-phase |
| SPD type | Type 2 | Type 2+3 | Type 2 |
| Nominal discharge current | 20 kA | 5 kA | 5 kA |
| Maximal discharge current | 40 kA | 10 kA | 10 kA |
| Connection | Screw terminal 10mm ² max | Screw terminal 1.5-10 mm ² max | Screw terminal 2,5mm ² max |
| Mounting | DIN Rail | DIN Rail | DIN Rail |
| End of life indicator (SPD disconnection) | - Red mechanical indicator | - Green indicator OFF - AC network OFF | - Green light indicator OFF (DSLPL) - Red mechanical indicator (DLMP) - AC network OFF |
| Remote signalling | Yes | YES | No |
| Dimensions (width/height) | 18 mm/58 mm | 18 mm/73.5 mm | 18 mm/38 mm |

* Available for 120V network : DAC40C-11-150, DACN10S-L11-150, DSLPL1-120L

DIN RAIL 3-PHASE + NEUTRAL SURGE PROTECTORS



DAC1-13S-31-275



DAC50-31-275



DAC40CS-31-275

| CITEL part number | DAC1-13S-31-275* | DAC50S-31-275* | DAC40CS-31-275* |
|------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| 3-phase + Neutral Network | 230/400 V | 230/400 V | 230/400 V |
| SPD type | Type 1 | Type 2 | Type 2 |
| Nominal discharge current | 20 kA | 20 kA | 20 kA |
| Maximum lightning current 10/350µs | 12.5 kA | - | - |
| Maximal discharge current | 50 kA | 50 kA | 40 kA |
| Connection | Screw terminal 25 mm ² max | Screw terminal 25 mm ² max | Screw terminal 10 mm ² max |
| Mounting | DIN Rail | DIN Rail | DIN Rail |
| End of life | - Indicator On - SPD disconnection | - Indicator On - SPD disconnection | - Indicator On - SPD disconnection |
| Remote signalling | Yes | Yes | Yes |
| Dimensions (width) | 72 mm | 72 mm | 36 mm |

* Available 120 Vac network : DAC1-13S-31-150, DAC50S-31-150, DAC40CS-31-275

DATA NETWORK SURGE PROTECTORS



DLA-12D3

| CITEL part number | DLA range |
|---------------------------|--------------------------|
| Typical application | DALI, RS485, 0-10 V, DMX |
| Configuration | 1 pair + shield |
| Nominal line voltage | 12 V, 24 V |
| Max. line current | 300 mA |
| Nominal discharge current | 5 kA |
| Maximal discharge current | 20 kA |
| Mounting | Rail DIN |



France

Head Office

Paris

Tél. : +33 1 41 23 50 23

e-mail : export@citel.fr

Web : www.citel.fr

Factory

Reims

Tél. : +33 3 26 85 74 00

Germany

Bochum

Tél. : +49 234 54 72 10

e-mail : info@citel.de

Web : www.citel.de

USA

Miramar

Tel : (954) 430 6310

e-mail : info@citel.us

Web site : www.citel.us

China

Shanghai

Tél. : +86 21 58 12 25 25 (sales department)

Tél. : +86 21 58 12 80 67 (factory)

e-mail : info@citelsh.com

Web : www.citel.cn

India

New Delhi

Tél. : +91 11 2626 12 38

e-mail : indiacitel@gmail.com

Web : www.citel.in

Thailand

Bangkok

Tél. : +66 (0) 2 104 9214

Web : www.citel.fr

UAE

Dubai

e-mail : info@citel.ae

Web : www.citel.fr

Colombia

Bogota

Web: www.citel.fr

