CITEL

SURGE PROTECTORS
FOR
LED lighting

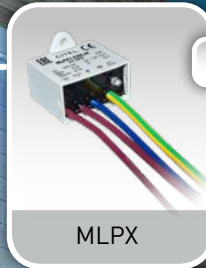# LED LIGHTING
SURGE PROTECTORS SET UP

SPD FOR ARCHITECTURAL OUTDOOR LIGHTING

MSB6

SPD FOR LED STREET LIGHT

MLPX

or

MLPC

SPD FOR STREET LIGHTING POLE BOX

DSLP1

or

DLPM1

SPD FOR DATA NETWORK

DLA

SPD FOR STREET CABINET

DAC1-13-31

or

DAC40C-11

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...

(courtesy of AEC Italy)

Street lighting

(courtesy of AEC Italy)

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.

DSLP1-230L
MLP1-230S-W/DL
MLPC1-230L-R
MLPX1-230/W

- *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 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.

The MLP range is an SPD solution with many different versions and in particular integrating AC and data (DALI, O-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.

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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

DACN10S-L11-275

DAC40CS-11-275

DLPM1-230L

DSLP1-230L

CITEL part number	DAC40CS-11-275*	DACN10S-L11-275* DS98L-230G/2L*	DSLP1-230L* 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 10mm² max	Screw terminal 1.5-10 mm² max	Screw terminal 2,5mm² 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 (DSLP) - 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, DSLP1-120L

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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 lighting current 10/350µs	12.5 kA	-	-
Maximal discharge current	50 kA	50 kA	40 kA
Connection	Screw terminal 25 mm² max	Screw terminal 25 mm² max	Screw terminal 10 mm² 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

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