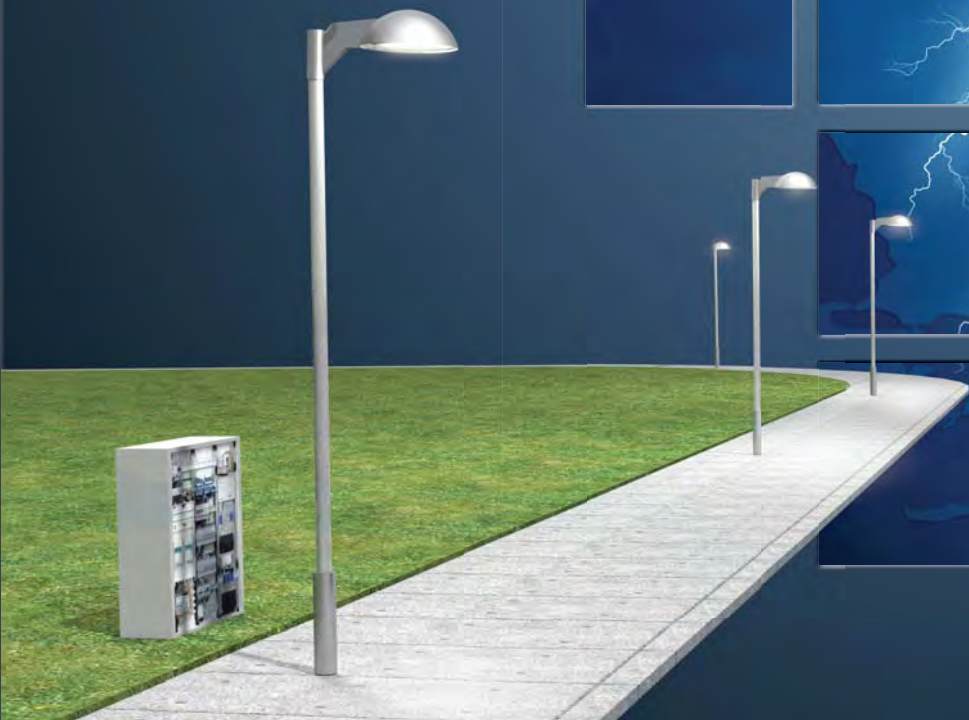




CITEL

■■■ Reliability in Surge Protection ■■■

Surge protector for LED lighting



LED Lighting Systems

Installation of Surge Protectors

MSB6



Single-Phase Compact AC Surge Protector for Architectural Outdoor Lighting

MLP



Single-Phase AC Surge Protector for Street Luminaire

DS134R-230/G



3-Phase + Neutral Type 1 AC Surge Protector for Street Cabinet

DLA



Surge Protector for Data Networks

DS240-230/G



Single-Phase Type 2 AC Surge Protector for Street Cabinet

DS98



Single-Phase AC Surge Protector for Street Lighting Pole Box

Surge Protectors for LED Lighting

In recent years, there has been an explosive growth in the deployment of LED street lights due to their greater efficiency, reduced energy costs, and increased life expectancy. However, this breakthrough in lighting technology results in an elevated sensitivity to transient over voltages caused by lightning and/or other line disturbances.

By its nature, an LED lighting system is a widely distributed and exposed application. They are much more vulnerable to induced surges that will destroy the power supply, damage LED components, or reduce the overall quality of the LED's illumination. To ensure a working lighting system in spite of surges, it is critical to use specific surge protective devices (SPD's) upstream of the LED lighting system.

CITEL provides a complete range of surge protectors to be installed at each key point along an LED lighting system including inside the luminaire, and in the street level control cabinet.

CITEL offers specially designed solutions adapted to every type of indoor or outdoor LED lighting system such as municipal, commercial, roadway, and tunnel.



[courtesy of AEC Italy]

Street Lighting



[courtesy of AEC Italy]

Tunnel Lighting



Architectural Outdoor Lighting

MLP Range



The MLP range is a comprehensive series of AC surge protective devices designed by CITEL to protect the luminaire of an outdoor LED lighting system.

The MLP range has been developed to meet the needs of a wide range of lighting applications, from the most common to the highly challenging. The MLP surge protectors are available with either Class 1 or Class 2 insulation and offer screw terminal or fixed lead connections. They protect the input of the power supply as well as the signal or control lines such as DALI, RS485, or 0-10V Dimmers.

MLP surge protectors are based on the efficient combination of thermally protected metal oxide varistor's (MOV's) and a coordinated gas discharge tube that provides a very sharp clamping voltage and a very high surge withstand capability.

The MLP offers three types of disconnection status including a visual LED indicator on all models, an in-line version that removes power to the light fixture, as well as an optional remote signal.

SPD for LED Lighting Systems

- Maximum Discharge Current 10kA 8/20 μ s
- IP 20 and IP65 versions
- For Class 1 and Class 2 insulation
- Combined AC/Data line protection
- Wire or screw terminal connection
- Very compact size
- Remote signaling (optional)
- In compliance with IEC 61643-11, EN 61643-11 and UL1449 3rd Edition



Single-Phase Compact Surge Protectors



MLP



MSB10



MSB6

CITEL range	MLP range	MSB10 range	MSB6 range
Single-phase AC network	120 V-230 V	120 V-230 V	230 V
Configuration	Single-phase	Single-phase	Single-phase
Insulation class	Class 1 - Class 2	Class 1	Class 1
Nominal discharge current	5 kA	5 kA	3 kA
Maximum discharge current	10 kA	10 kA	6 kA
Connection	Screw terminal / Wire	Screw terminal / Wire	Wire
Mounting	Plate	Plate	Terminal
Dimensions	49x70x30 mm	40x60x22 mm	36x26x12 mm
End of life	- Indicator Off - AC Network Off (option)	- Indicator Off - SPD disconnection	- Buzzer ON - SPD disconnection
Remote signaling	Yes (Optional)	No	No
Data line protection	Option: DALI, RS485, 0-10V	No	No

Din Rail Single-Phase Surge Protectors



DS240-230/G



DS98-400

CITEL range	DS240-230/G	DS98-400
Single-phase network *	230 V	230 V
SPD type	Type 2	Type 2
Nominal discharge current	20 kA	5 kA
Maximum discharge current	40 kA	10 kA
Connection	Screw terminal 10mm ² max	Screw terminal 2.5mm ² max
Mounting	DIN Rail	DIN Rail
End of life	- Indicator On - SPD disconnection	- Indicator On - AC Network Off
Remote signaling	Yes (Optional)	No
Dimensions (width)	18 mm	18 mm

* Available 120V network : DS240-120/G, DS98-120



Din Rail 3-Phase + Neutral Surge Protectors



DS134R-230/G



DS44-230/G



DS440-230/G

CITEL range	DS134R-230/G	DS44-230/G	DS440-230/G
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	-	-
Maximum discharge current	50 kA	40 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 signaling	Yes (Optional)	Yes (Option)	Yes (Option)
Dimensions (width)	72 mm	72 mm	36 mm

* Available 120 Vac network : DS134R-120/G, DS44-120/G, DS440-120/G

Data Network Surge Protectors



DLA-12D3

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



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