



# Surge Protection Devices



**“Surge Protection Solution for Optimal Equipment Safety and Longevity”**



+91 44 71018125  
+91 44 71018121



sales@capeindia.net  
www.capeelectric.in



A41B, SIPCOT, Oragadam,  
Kanchipuram District  
Tamilnadu - 602105

## SURGE PROTECTION DEVICES

Electrical and electronic systems are highly vulnerable to transient surges caused by lightning strikes or electrical switching. Such surges can lead to equipment failures, compromising both operational efficiency and safety. To protect your valuable assets, CAPE provides robust surge protection solutions with its VDE-approved Power Line SPDs and Data Line SPDs, ensuring the reliable and effective protection of your devices from these destructive surges.

### Why Surge Protection is Essential

A transient surge occurs when there is a sudden increase in electrical voltage, typically due to external factors like lightning strikes or electrical switching. To safeguard your equipment, it's critical that the surge protection device (SPD) is properly selected and installed.

- **Rated Impulse Withstand Voltage (Uw):** The protection level of your equipment is determined by its rated impulse withstand voltage (Uw). This is the maximum surge voltage that your equipment can withstand. The surge overvoltage from an external source must not exceed this
- **Coordinated SPD Installation:** To effectively manage surge overvoltage, SPDs should be installed at multiple points within the electrical system, creating a coordinated defence mechanism against conducted surges. This helps to dissipate the energy and prevent
- **Shielding, Routing, Bonding, and Earthing:** To effectively manage surge overvoltage, SPDs should be installed at multiple points within the electrical system, creating a coordinated defence mechanism against conducted surges. This helps to dissipate the energy and prevent

### Tested as per

- IEC 61643 - 11 : 2011 & IS 16463 - 11 - Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems - Requirements and test methods

### In compliance to design requirements as per

- IEC 61643 - 12 : 2020 & IS 16463 - 12 - Low-voltage surge protective devices - Part 12: Surge protective devices connected to low-voltage power systems - Selection and application principles
- NBC 2016 - National Building Code of India 2016
- IS 732 - Code of practice for electrical wiring installations
- NEC Of India 2023 - National Electrical Code Of India 2023
- IEC 60364: Low voltage electrical installations
- IS/IEC 62305: Protection against lightning



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## TYPES OF CAPE SPD'S BASED ON EXPECTED SURGE AND LOCATION OF INSTALLATION

- **Class 1 SPD's** – These type of SPD's are installed in the main incomer panel of the building where the Lightning Surges i.e 10/350 $\mu$ s Surges ( as shown in below figure ) are expected. These SPDs must be tested with minimum of 12.5 KA of 10/350 $\mu$ s Impulse Current as per NBC 2016
- **Class 2 SPD's** – These type of SPD's are installed at the distribution boards which are installed very close to the equipment which need to be protected. These SPDs are Tested with 8/20 $\mu$ s Switching Surges.
- **Class 3 SPD's** - These type of SPD's are installed to protect our electronics equipment from getting damaged due to surges, with increase in use to electronics, use of type 3 SPDs have become utmost priority

## Comprehensive Protection for Your Equipment

CAPE's surge protection solutions focus on the entire surge protection ecosystem, providing complete safeguarding from LEMP and other surge threats. Our solutions include:

### Power Line SPD's

CAPE Power Line SPD's shield your equipment from power line surges, ensuring safety and reliability. Ideal for industrial, commercial, and residential applications, they prevent electrical overvoltage's from damaging AC-powered systems, safeguarding your valuable assets. These devices are engineered for high performance and reliability, preventing equipment failures caused by electrical surges.



**Bus Bar Mounted SPD**



**Type 1 SPD**



**Type 2 SPD**



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## Data Line SPD's

CAPE's Surge Protection for data and signal line systems offers unparalleled protection for data and signal applications. Designed to meet the diverse needs of industrial and other signal protection environments, these products are available in various operating voltages and configurations. With adherence to the latest industry standards and certifications, CAPE's SPD ensures reliable and continuous protection for your sensitive communication systems.



**Data and Signal line SPD**



**LAN SPD**



**Analog, Coaxial, RF Systems**

## End-to-End Support for Optimal Protection

At CAPE, we don't just provide SPDs; we offer a full range of services to ensure your equipment is properly protected:

- Initial Analysis:** Our experts assess your system to identify the key surge protection requirements based on your specific setup and environment.
- Expert Guidance:** We offer personalized advice on the optimal SPD selection and installation, ensuring the most effective protection for your electrical and electronic equipment.
- Seamless Installation:** Our team provides complete installation support, ensuring that the SPDs are properly integrated with your system and operate at peak performance.

## Comprehensive Protection for Your Systems

By implementing coordinated surge protection measures, including SPDs, shielding, routing of power and data lines, bonding, and earthing, you can effectively mitigate the risk of surge-related damage to your equipment. CAPE's solutions provide reliable and long-lasting protection against the destructive effects of surges, ensuring the safety and longevity of your electrical and electronic systems.



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