# SPD V2.0

## Explanation in Detail: Surge Protection Device (SPD)

A **Surge Protection Device (SPD)** is an essential safety component designed to protect electronic equipment and systems from transient surge conditions. These surges may arise from external sources like lightning or internal sources like power switching or faulty wiring. The device absorbs the surge energy and clamps the voltage to a safe level, ensuring the longevity of the connected equipment.

**Key Features**:

- **Internal Surge Protection**: Protects against frequent, lower-magnitude surges that degrade devices over time.
- **Wide Application**: Suitable for telecom equipment, sensitive electronic devices, and low-voltage systems.

**Usage Environments**:
Primarily used in industrial environments where equipment needs protection against surges due to fluctuating power supply conditions.

## Data Sheet: SPD v2.0 (6kV)

*Table 1 Specifications*

| Parameter | Specification |
|---|---|
| **Product Name** | SPD v2.0 (6kV) |
| **Model/Identification** | ER-SPD6kV-V2.0 |
| **Dimensions** | 110"H × 62" W × 35"D (in mm) |
| **Weight** | 115grams |
| **Input Voltage Range** | 90 – 275 V AC |
| **Operating Frequency** | 50 Hz |
| **Max Load** | 1000 W |
| **Type/Class** | Type 2 + 3 / Class II + III (Socket module) |
| **Interface Ports** | 3-Pin Plug and 3-Pin Socket |
| **Power Supply** | External Adapter |
| **Wireless Features** | Not Available |
| **Maximum Operating Current** | 5A |
| **Operating Temperature** | -10 to 84 (Degree Celsius) |

## Interface Details

The SPD (Surge Protection Device) features multiple interfaces designed to ensure reliable power connectivity and easy monitoring of its operational status. These interfaces include power input/output connections and an LED indicator for status feedback. Below is a detailed overview of each interface:

*Table 2 Interface*

| Interface | Type | Cable Type | Material | Description |
|---|---|---|---|---|
| **3-Pin Plug** | Power Input | 1-core, 1.5 sqmm | Metallic | Connects to power sources |
| **3-Pin Socket** | Power Output | Not specified | Metallic | Interfaces with external systems |

## LED Indication

- **LED ON (Device Working**): When the LED is illuminated red, it signals that the device is working properly and the surge protection is active.
- **Surge Protection Active:** The surge protection mechanism within the device is functioning correctly, ensuring that any transient voltage spikes or surges (such as power fluctuations, or internal electrical inconsistency) are being safely diverted away from sensitive equipment.
- **Normal Functioning:** The device is actively protecting equipment, preventing potential damage from high-voltage events.
- **LED OFF (Device Not Working):** If the LED indicator is off, it signals that the surge protection device is no longer operational. This could happen due to an exhaustion of the surge protection capacity, internal failures or a malfunction of the internal components.
- **Device Has Stopped Protecting:** The absence of the LED signal means the device is no longer protecting the connected equipment. Without the surge protection, sensitive devices are subject to power surges, which could cause permanent damage or malfunctions.
- **Need for Replacement:** When the LED is off, it indicates that the surge protection mechanism has failed, and the device should be replaced to restore protection to the system.

**Purpose of the LED Indicator:**

- **Real-Time Monitoring:** The LED provides a quick and reliable way for users to monitor the health of the device. It eliminates the need for complicated diagnostics or tools, offering a natural and easily visible status indicator.
- **Minimizing Risk:** The LED's status ensures that users are aware of any issues before they cause damage to expensive or sensitive electronic equipment, minimizing the risk of failure and costly repairs.

## Applications

- Telecom equipment
- Industrial control systems
- Sensitive electronics in harsh environments

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## Additional Features

- **Surge Capacity**: Protects against surge events of up to 6kV.
- **Durability**: Designed for industrial-grade use.

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## Dimensions


*Figure 2*


*Figure 1*