

## Surge Protection Quiz #2

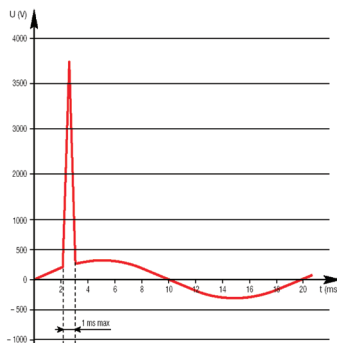
### Introduction

In today's industrial environment, expensive equipment is relied on every day to meet customer's needs. Down-time on machines cost time, money and resources to bring back on line.

Most surge related events originate from within a customer's own facility. And, nearly 80% of all surge problems are attributed to power disturbances from the facility's own equipment.

### What does a voltage surge look like?

A voltage surge is voltage level that is short in duration and can be several times greater than the system's normal operating AC RMS or DC voltage level.



Any facility with motors stopping and starting, light load panels frequently being turned on and off, and other potential power disturbances, is at risk for damage caused by a surge spike.

With a minimal investment sensitive control equipment, or an entire facility, can be protected from surge events.

### Question 1: What does SPD stand for?

- A. Surge Power Disconnect
- B. Solar Polarity Device, or
- C. **Surge Protection Device**

Surge Protective Device is a device that contains at least one nonlinear component and is listed to limit surge voltages and divert surge current.

### Question 2: A UL approved Type 1 Surge Protection device is:

- A. A permanently connected SPD
- B. Can be installed between the secondary service transformer and the line side of the service equipment overcurrent device, as well as the load side, including watt-hour meter socket enclosures
- C. Intended to be installed without an external overcurrent protective device, or
- D. **All of the above**

The Surge-Trap® Type 1 X-Series is Mersen's newest line of UL 1449 3rd edition approved surge protection devices. Extending Mersen's Type 1 line, the X-Series provides surge protection options for all locations in a facility in the smallest footprints available. All of the X-Series SPDs meet the requirements for UL 1449 3rd and feature Mersen's industry-leading patented TPMOV technology inside. A true "no-fuse" device, they do not require additional fuse components or overcurrent protection.



Surge-Trap Type 1 X-Series SPDs feature a NEMA 4X enclosure and can be installed line-side or load-side of the main disconnect. They have a 20kA nominal discharge current and 200kA SCCR rating (most models) and are suited for system voltages from 120V to 600V.

Mersen's STT2 Type 1 SPD feature a NEMA 2 enclosure for all indoor application needs, featuring the same TPMOV® Technology inside with UL1449 3rd edition approval.



### Question 3: Is it possible to use Surge Protection Devices to protect solar installations? Is the answer:

- A. **Yes**, or B. No?

Solar installations benefit significantly from dedicated SPD protection as the fault current depends on the sun's position, the number of strings, and the panel design. With many SPD's, if the rating of the device is too low, the system is at risk of the SPD disconnecting prematurely. Alternatively, if the rating of the SPD is too high, the SPD may not disconnect at all.

An advantage of Mersen's Surge-Trap PV products is they feature TPMOV technology inside. This technology allows the surge protection device to protect the system independently from the short circuit current. This is because TPMOV technology protection incorporates thermal protection of the MOV. Once the MOV meets a specific thermal temperature, the device disconnects before the short circuit appears. As a result, there is are selectivity issues with upstream overcurrent protection within the installation.

To help our customers gain more in-depth knowledge of our products, Mersen offers annual educational and collaborative product training programs with an opportunity for hands-on experience. To find out when the next training program will be, email us at [info.nby@mersen.com](mailto:info.nby@mersen.com).