

Introduction

Mersen's surge audit program is designed for facility owners, maintenance personnel and electricians to help safeguard critical equipment and reduce downtime associated with damaging voltage surge related events. 85% of surge related incidents originate from inside the facility from equipment such as electric motors, machine tools, welding equipment, elevators, HVAC equipment, switching power supplies, etc...If you have experienced faulty electronic equipment without any obvious root-cause for failure, it could be that you are experiencing voltage surges. 15% of surge related activity originate from outside the building and include lightning, utility switching and neighboring facilities. Surge protection is an inexpensive insurance policy that can save users costs associated with equipment repair, replacement and production downtime. Mersen's surge protective device portfolio is flexible and diverse making it very simple for you to find the right device for your specific application and budget.

Equipment to Consider

- Electrical Switchgear
- Distribution Panelboards
- Critical Branch Panels
- Transformers
- Datacenter
- UPS Equipment
- Automatic Transfer Switches
- Generators
- Security Cameras and Recorders
- Fire Alarm Controls
- Telecommunications Equipment
- Network Closets and Racks
- Factory automation equipment
- HVAC systems (Air Conditioners, Condensers, Coolers, Air Handlers)
- Chillers
- Variable Frequency Drives
- Any copper conductors that enter or exit the building

Factors to Consider

Facility Location: Geographical facility location plays a major role when selecting the appropriate SPD. Different parts of the country are exposed to greater frequency and levels of lightning events when compared to others. However, lightning is the source of only 15% of surge events so this factor cannot be considered in isolation.

Device/Panel Location: Is your equipment on the rooftop of a building with direct exposure to the weather or is it deep within the facility far from the service entrance and protected from lightning exposure? The answer to this question will help us select the appropriate device and price level.

Electrical System Configuration: The electrical system configuration is determined by the secondary side of the upstream transformer, not to be confused by how the load is connected. Examples include Wye, Delta, Split Phase, etc...). For additional information view [Mersen's SPD Electrical System Guide](#)

System Ampacity: A general rule of thumb is the larger the electrical system, the more exposure to surge events. Mersen categorizes different levels of surge exposure from low to high based on system

ampacities ranging from less than 600A to greater than 3000A. For additional information view Mersen's [SPD Quick Reference Guide for Specifying Engineers](#)

Equipment Criticality and Value: The importance and the value of the equipment under consideration, to you and the output of your facility, is arguably the most important factor to consider. Protecting this equipment from downtime is directly correlated to the profit of the business. Consider it an inexpensive insurance policy.

Device Options: Depending on your preference in regards to mounting options, device status indication, event monitoring and electrical safety, Mersen's portfolio allows for options including panelmount or wall mount, phase LED status indicators, remote end-of-life dry contacts, surge counters, disconnect switches and various enclosure options.

Steps to Complete SPD Audit

1. Contact your local Mersen representative to coordinate and schedule a site audit. Prepare by reading the Mersen Surge Protective Device (SPD) Facility Audit Checklist Guide
2. Prior to the audit, prepare a preliminary list of equipment (problem equipment or critical equipment) that you would like to review with the auditor and make the appropriate number of copies of the checklist
3. Perform the audit, preferably with your Mersen representative, by completing (1) checklist per pre-identified piece of equipment. Make sure to complete the entire checklist
4. When the audit is completed, scan all of the checklists and email to TechnicalServices_EP@us.mersen.com
5. Within 2-days you will receive back a recommended bill-of-materials to protect your facility from damaging voltage surge events

Mersen Product Portfolio

Mersen's Surge-Trap[®] surge protective device product line includes NEMA and DIN-Rail style products designed and manufactured by Mersen with the latest materials, layouts and components, including the industry leading TPMOV[®] Technology. All devices are suitable for ANSI/UL 1449 Type 1 and 2 applications, indoor and outdoor use, and provide UL96A lightning protection plus a variety of other features and benefits to meet clients' needs. For additional information regarding Mersen's surge protective device portfolio please visit Mersen's [Surge Solutions Homepage](#).



Customer Information (Complete once)		
Company Name: _____		
Address: _____		State: _____
Contact Name: _____		Email: _____
Complete the checklist below for each piece of equipment under consideration. Do not leave blanks		
Facility Location:		
<input type="checkbox"/> Inside Facility	<input type="checkbox"/> Outside Facility	

<input type="checkbox"/> Switchboard/Switchgear	<input type="checkbox"/> Distribution Panelboard	<input type="checkbox"/> Loadcenter
<input type="checkbox"/> Point-of-Use Equipment	<input type="checkbox"/> Automatic Transfer Switch	
Electrical System Configuration:		
<input type="checkbox"/> DELTA	<input type="checkbox"/> High-Leg DELTA	<input type="checkbox"/> Corner Ground DELTA
<input type="checkbox"/> WYE	<input type="checkbox"/> High Resistance Ground WYE	
<input type="checkbox"/> SPLIT Phase	<input type="checkbox"/> SINGLE Phase	<input type="checkbox"/> Other: _____
System Voltage:		
System Ampacity:		
<input type="checkbox"/> 600A or Less	<input type="checkbox"/> 600 to 1200A	<input type="checkbox"/> 1200 to 2000A
<input type="checkbox"/> 2000 to 3000A	<input type="checkbox"/> Greater than 3000A	
Equipment Value (at Location):		
<input type="checkbox"/> Less than \$5,000	<input type="checkbox"/> \$5,001 to \$25,000	<input type="checkbox"/> Greater than \$25,000
Equipment Criticality (at Location):		
<input type="checkbox"/> High (Ex. 24x7 Data Center)	<input type="checkbox"/> Standard	
Device Options (select all that apply):		
<input type="checkbox"/> Surge Counter	<input type="checkbox"/> Disconnect Switch	<input type="checkbox"/> Audible Alarm and Remote Dry Contacts
<input type="checkbox"/> NEMA 4X Stainless Steel		
Note: All SPDs come standard in NEMA 4 enclosures, select only if 4X stainless steel is required		