

Electrical Surge Protection

Preventing Equipment Damage & Business Interruption



Short electrical disturbances—such as surges, spikes, sags, and swells—can damage sensitive equipment and disrupt operations. Even split-second events can cause costly downtime. According to ESFI and NEMA:

- Power outages and quality issues cost businesses an estimated \$25 billion annually.
- 25 million lightning strikes occur each year, capable of causing dangerous voltage surges without a direct hit.
- The average building experiences 150+ power surges per month.
- 60–80% of surge events originate inside facilities, not from external sources.



Key Hazards & Controls

Transient Voltage Surges (Power Spikes):

Install layered Surge Protection Devices (SPD), also known as Transient Voltage Surge Suppressors (TVSS) at service, distribution, and point-of-use connections.

Overvoltage (Power Swells): Add overvoltage monitoring and trip settings protection.

Undervoltage (Power Sags / Brownouts):

Use undervoltage relays and trips or Uninterruptible Power Supply (UPS) systems when continuity is critical as TVSS devices are ineffective against undervoltage.

Single-Phasing or Phase Imbalance: Install phase monitoring and appropriate overcurrent protection to protect against single-phase events.

Perform grounding & bonding system

maintenance: Inspect conductors, verify bonding, test continuity, and periodically measure ground resistance.

Recommended Action Plan

- ☐ Consult with qualified electrical engineers.
- ☐ Map critical loads.
- ☐ Protect signal and communication lines.
- ☐ Install layered Surge Protection Devices (SPD).
- ☐ Add voltage and phase monitoring where appropriate.
- ☐ Maintain and test grounding.
- ☐ Replace aging Surge Protection Devices (SPD).
- ☐ Document inspections and maintenance.

Check out our [Safety Tips page](#) for more safety information.

©2026 Hastings Insurance Company

Hastings Insurance Company provides this communication for informational purposes only. The communication does not address every loss producing condition that exists currently or that may develop in the future; nor does it imply that any policy, the condition of the premises, the operations thereon, or products manufactured meet and comply with the Local, State and Federal standards/codes.