

# The surge breakdown

Surges are high-energy, short-duration voltage events. Also referred to as transients, impulses or spikes, these electrical disturbances can damage or destroy sensitive microprocessor-based equipment. While seemingly innocent, these events can wreak serious havoc on inadequately protected facilities.

**20%**  
come from  
**EXTERNAL**  
sources

**80%**  
of surges are  
**INTERNALLY**  
generated



The most common source is internal devices powering on and off. These devices include:

- Motors
- Photocopiers
- Transformers
- Light dimmers
- Fluorescent lighting ballasts
- Variable frequency drives...and more

They can also be generated externally by events like lightning, grid switching or electrical equipment in adjacent buildings.



The Eaton surge protection family

For more information, visit  
**Eaton.com/SPD**

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**EATON**  
Powering Business Worldwide

Surge protection

You think  
you know  
**SURGE**  
Is your panel protected?

**EATON**

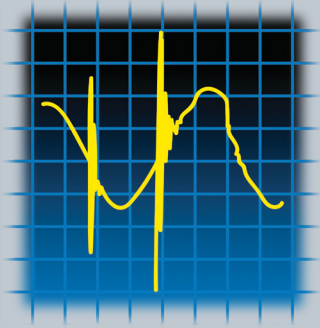
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# Surge protection

## Protect your equipment resources and investments

### What is surge?

- A high rising voltage condition on one or more phases lasting 2 milliseconds or less



### Why do you need surge protection?

- The 2017 NEC® requires surge protection in seven different sections (see SA158003EN for more information)
- Protect against catastrophic equipment damage caused by high-energy surges
- Protect microprocessors found in almost every piece of equipment from surge damage
- Lower maintenance costs by extending the life of power supplies, lighting ballasts and other components that are degraded over time by surges
- Stop premature aging of critical equipment due to the cumulative damage caused by low-level surges
- Surge devices are self-sacrificing devices that act as a pressure relief valve by shunting high voltages directly to ground
- Having a strategy to protect against the damage caused by surges isn't a luxury—it's a necessity

### Why use an RSPF on your panelboard or switchboard?

- Easy to install RSPF during regular maintenance
- RSPF solution makes proactive equipment protection simple
- Minimal labor makes RSPF cost-effective
- Reduce your facility maintenance costs
- Listed to UL® 1449 4th edition safety standard

### Superior performance, meeting stringent industry standards

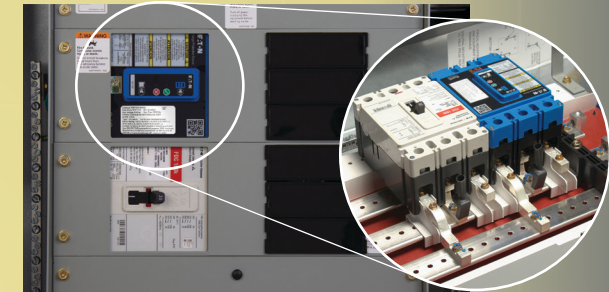
- Low let-through voltage protects connected equipment
- Rugged design can withstand repeated high-current surge events
- High short-circuit current rating allows unit to be installed in any system
- Voltage-specific ratings to match RSPD to your system



RSPF retrofit surge protection

### Integrated surge protective devices provide superior retrofit surge protection

RSP Series unit installed in a panelboard, provides optimum surge protection without the need for an additional enclosure.



Easy to install (same as MCCB).

Mounting a surge device directly to the panelboard's bus bars provides the best possible protection by minimizing the let-through voltage.

### Only integrated, retrofit product on the market

- Includes known benefits of integrated surge
- 40% improvement in performance over side mount or hardwired devices
- Integrated device alleviates potential for installation error that can negatively effect performance
- The RSPF can be installed in any Eaton, Cutler-Hammer brand or Westinghouse panel that has space for three-pole FD frame circuit breaker