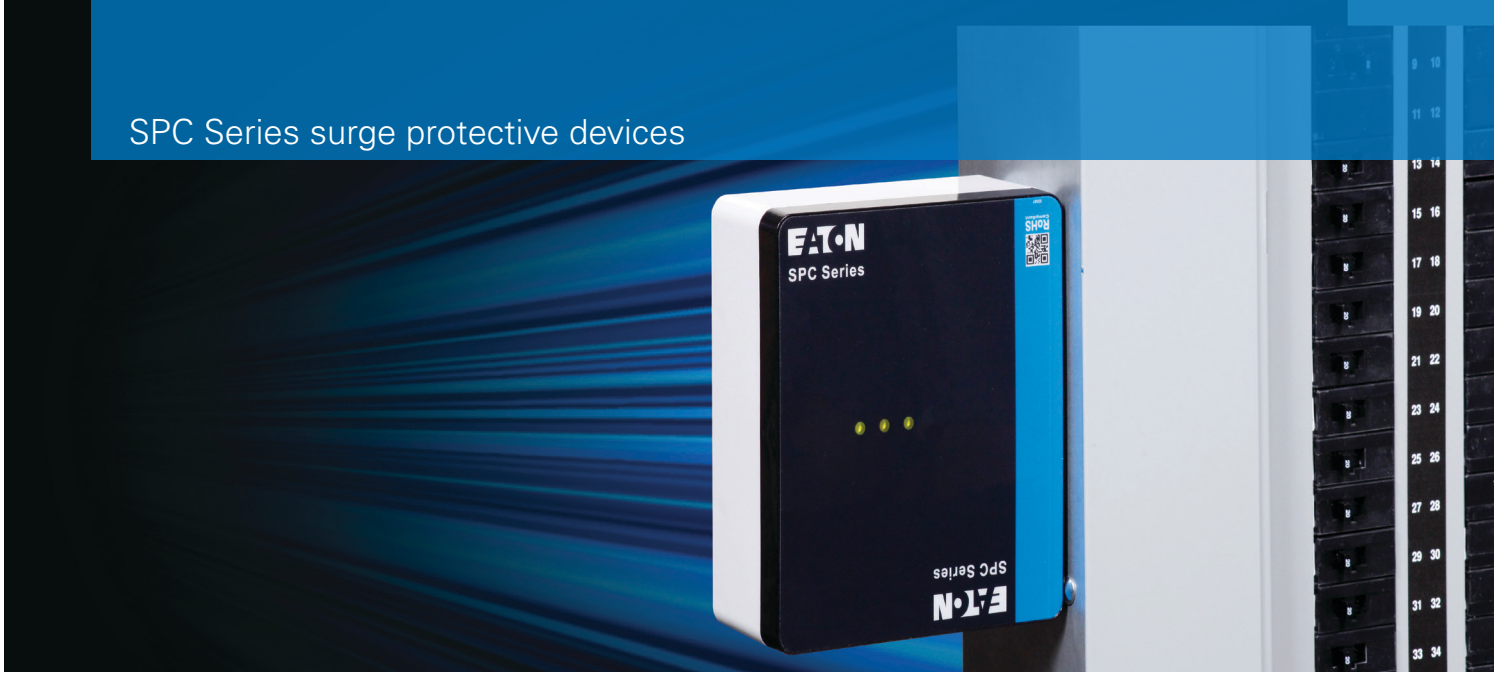


Facility-wide surge protection

A necessity for business continuity

Surge events—short-term transients in voltage threatening critical downstream equipment—happen for many reasons. The most common source, however, is internal devices powering on and off: motors, transformers, photocopiers, fluorescent lighting ballasts, light dimmers and more. Surges can also be generated externally by events like lightning, grid switching or electrical equipment in adjacent buildings.

While seemingly innocent, surge events can wreak serious havoc on unprotected and inadequately protected facilities. They can disrupt, damage or destroy sensitive microprocessor-based devices (computers, programmable logic controls, etc.), resulting in premature aging of equipment, process interruptions and catastrophic failures.

The best way to prevent downtime from an electrical surge is through facility-wide cascaded surge protection at all stages of the electrical distribution system. When properly installed, surge protective devices can mitigate problems with susceptible equipment, keeping it and its related processes running reliably without surge-related disruptions.

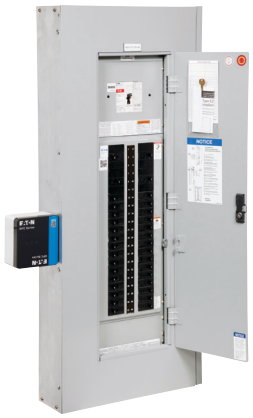
Eaton's SPC Series surge protective device is a key component to your cascaded protection strategy. It's compact, flexible and configurable to protect most electrical applications, including service entrances, distribution panelboards and point-of-use applications.

EATON
Powering Business Worldwide

Eaton SPC Series: Robust protection in a compact design

The SPC Series is a commercial grade and light industrial surge protective device that combines standard surge suppression components with the options of EMI/RFI filtering, Form C contacts and an audible alarm providing effective protection for sensitive electronic loads. Installing SPC Series units throughout a facility will ensure equipment is protected with the safest, most reliable and compact NEMA® 4X surge protective devices available.

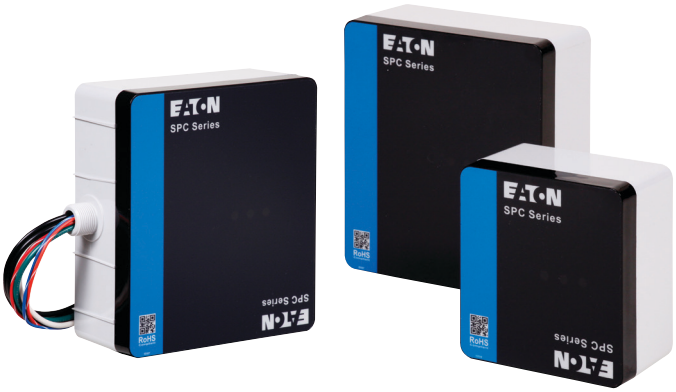
Units are available in all common voltages and a variety of surge current capacity ratings. Configurable options are also available to customize the SPC Series, including filtering, audible alarms and Form C contacts.



Features

- Thermally protected metal oxide varistor (MOV) technology
- Tri-colored LED protection status indicators
- 20 kA nominal discharge current (I_n) rating (maximum rating in the UL® 1449 4th Edition standard)
- 50 through 200 kA per phase peak surge current capacity ratings
- Configure-to-order with eight custom feature combinations
- Corrosion-resistant NEMA 4X enclosure with mounting feet
- 200 kA short-circuit current rating (SCCR)
- Factory prewired with 36 inches of 10 AWG wire
- No user-serviceable parts or items requiring periodic maintenance
- Can be used for UL® 96A compliance
- Can be used for NFPA 780 compliance
- Five-year warranty that can be extended to 10 years with product registration at Eaton.com/spc

Designed for maximum safety



The SPC Series employs safety and design features, making surge protection safer than ever

The SPC shunts high-energy surges and other transient disturbances away from the equipment being protected, providing a low impedance surge path in nanoseconds through its thermally protected MOVs.

These thermally protected MOVs are the device's core suppression component and operate in a safe manner, even when subjected to abnormal conditions (e.g., temporary over-voltages or high fault current conditions). When one of these conditions exists, the MOVs are removed from the circuit before a potentially unsafe condition can occur, all without discharge, smoke or ionized gases. In addition, these surge devices use self-testing technology to continuously verify the health of the unit, so there is no need for additional external testing or equipment.

Standards and certifications

- UL 1449 4th Edition Type 1 and Type 2
- UL 1283 7th Edition (Feature packages: 2, 6, 7 and 8)
- Canadian Standards Association (CSA®) Type 1 and Type 2

Tri-colored LED protection status indicators

Each SPC Series unit includes proprietary tri-colored protection status LEDs that indicate the results of continuous self-diagnostic testing for all phases and neutral to ground mode. This ensures accurate status information about the protection the SPC Series is supplying on the phase, not the status of the power applied to the phase. Because the thermally protected MOVs are continuously self-monitoring, the SPC is able to indicate true protection status without user intervention.

Green—fully protected

Yellow—loss of neutral to ground protection

Red—loss of phase protection

Factory-sealed enclosure

The SPC Series is factory-sealed and contains no parts that require periodic maintenance. This eliminates potential arc flash and shock hazards, as there's no chance of coming into contact with energized electrical components within the unit.

Also, unlike many surge devices that allow contact with potentially energized components such as single-mode surge modules, fuses, backup batteries or wire lugs that require periodic retightening and maintenance, SPC Series units don't have any user-replaceable or serviceable items. They're designed to self-protect in an open circuit condition, should an internal fault occur. This eliminates the need for fuses to clear a short circuit from a surge unit fault and promotes maximum electrical system uptime.

Prewired

SPC Series units are prewired at the factory with 36 inches of 10 AWG wire and contain a factory-installed conduit interface and stabilization ribs, making installation easy and secure. Simply mount the unit, perform any required conduit runs and land all required wires to the electrical assembly. No internal wiring connections or access to the inside of the unit is required.

Compact size

The SPC Series' compact size takes up minimal space in the electrical room, allowing for installation as close as possible to the equipment being protected. This is especially important as shorter conductor lead length equals lower impedance and let-through voltage, which increases the performance and effectiveness of the surge protective device.

20 kA nominal discharge current rating

The SPC Series has a nominal discharge current rating (I_n) of 20 kA, the highest achievable rating for surge protective devices in the UL 1449 4th Edition standard. This rating provides an indication of the surge device's design robustness and ability to handle a number of large-magnitude surges over a short period of time, while remaining fully operational within tested parameters. Choosing a surge device with an I_n of 20 kA ensures equipment is protected, even after being subjected to multiple high-magnitude, potentially damaging surges.

200 kA short-circuit current rating (SCCR)

The SPC Series has a short-circuit current rating of 200 kA, which means these devices can be safely installed on any system having an available fault current of 200 kA or less. Choosing a surge device with a higher SCCR, such as 200 kA, ensures that the device can be subjected to a large amount of current in a short circuit situation without imparting collateral damage or resulting in unsafe conditions.

The SPC Series is part of Eaton's family of surge protection solutions. Devices are available in all common voltages and configurations, in surge current capacity ratings up to 800 kA and with a variety of optional features. The breadth of options and configurations ensures there's a solution that will work for your unique electrical application.

Get maximum flexibility

The standard feature package is ideal for applications where value-oriented, safe and reliable surge protection is required. Rather than sacrifice performance or safety due to cost, SPC Series units with the standard feature package provide high-performing surge protection. All SPC Series units, standard or configured with additional features, are designed with thermally protected MOVs and contain tri-colored protection status LED indicators that show results of continuous self-diagnostic testing.

Three additional features are available based on the requirements of your application or specification.

- **EMI/RFI filtering:** Provides up to 40 dB of noise attenuation over the range of 10 kHz through 100 MHz while improving performance, lowering voltage protection ratings (VPRs) and reducing zero crossings.
- **Audible alam:** Sounds when any loss of protection is detected.
- **Form C relay contact:** Changes state when any loss of protection is detected or a loss of power occurs, allowing interconnection with a building management system, power meter or programmable logic controller.

Configure your device

Feature	Standard	Available option
Surge protection using thermally protected MOV technology	■	
Tri-colored LED protection status indicators for each phase	■	
Tri-colored LED protection status indicators for neutral-ground protection mode	■	
Audible alarm		■
Form C relay contact		■
EMI/RFI filtering, providing up to 40 dB of noise attenuation from 10 kHz to 100 MHz ❶		■

❶ Available on Type 2 units only.

Technical specifications

Description	Specification
Peak	50, 80, 100, 120, 150, 160, 200 kA per phase
Nominal discharge current (I_n)	20 kA
Short-circuit current rating (SCCR)	200 kA
Single-phase voltages available (2W + G)	120, 240, 277, 480
Split-phase voltages available (3W + G)	120/240
Three-phase wye system voltages available (4W + G)	120/208, 240/415, 277/480, 347/600
Three-phase delta system voltages available (3W + G)	240, 480, 600
Three-phase high leg delta system voltage available (4W + G)	240
Input power frequency	50/60 Hz
Protection modes	Single-phase L-N, N-G, L-G Split-phase L-N, N-G, L-G, L-L Wye L-N, N-G, L-G, L-L Delta L-G, L-L
Operating temperature	–40 °F to +140 °F (–40 °C to +60 °C)
Operating humidity	5% through 95%, noncondensing
Operating altitude	Up to 2000 m (6561 ft)
Agency certification/listing	UL 1449 4th Edition, UL 1283 7th Edition, CSA C22.2 No. 269.1-14 for Type 1 SPD, CSA C22.2 No. 269.2-13 for Type 2 SPD, CSA C22.2 no. 8-13 for EMI filter
Durability repetitive strike test	15,000 strikes to ANSI/IEEE® C62.41 (20 kV, 10 kA) Category C waveform
Surge protective device type	UL 1449 4th Edition and CSA Type 1 and Type 2 (dependent on feature options)
Form C relay contact ratings	2 A at 30 Vdc or 250 Vac
EMI/RFI filtering attenuation	Up to 40 dB from 10 kHz to 100 MHz
RoHS compliant	Yes
Enclosure rating	NEMA 4X enclosure ❶
Warranty	5 years standard, 10 years with product registration at Eaton.com/spc

❶ Mounting feet required to achieve NEMA 4X rating.

SPC Series catalog number configuration

SPC 200 20BY 8 P

Series
SPC

kA rating
050 = 50 kA per phase
080 = 80 kA per phase
100 = 100 kA per phase
120 = 120 kA per phase
150 = 150 kA per phase
160 = 160 kA per phase
200 = 200 kA per phase

Voltage code
120N = 120 single-phase (2W + G)
240N = 240 single-phase (2W + G)
277N = 277 single-phase (2W + G)
480N = 480 single-phase (2W + G)
240S = 120/240 split-phase (3W + G)
240D = 240 delta (3W + G)
480D = 480 delta (3W + G)
600D = 600 delta (3W + G)
240H = 240 delta high leg (4W + G)
208Y = 120/208 wye (4W + G)
415Y = 240/415 wye (4W + G)
480Y = 277/480 wye (4W + G)
600Y = 347/600 wye (4W + G)

Feature package	SPD application
1 = No options (standard configuration)	Type 1
2 = Filtering, UL 1283 7th Edition	Type 2
3 = Audible alarm	Type 1
4 = Form C relay	Type 1
5 = Audible alarm and Form C relay	Type 1
6 = Filtering and audible alarm	Type 2
7 = Filtering and Form C relay	Type 2
8 = Filtering, audible alarm and Form C relay	Type 2

Available optional equipment	Catalog number
Flush-mount plate for P1 enclosure	FLUSHMNTPLATE13
Flush-mount plate for P2 enclosure	FLUSHMNTPLATE14

Enclosure
P = NEMA 4X

For questions or technical assistance with surge applications, contact the Eaton Technical Resource Center:
1-800-809-2772, option 4, option 2
spd@eaton.com
Eaton.com/spc

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