

Eaton SPC Series surge protection



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Introduction

Eaton's SPC Series surge protective devices are UL® 1449 4th Edition-certified surge protectors. Application of SPC Series units throughout a facility will ensure that equipment is protected with the safest and most reliable surge protective devices available. The compact design and NEMA® 4X enclosure of the SPC Series allows for installation external to an electrical assembly in a variety of environments.

Applications

SPC Series units are available in all common voltages and configurations, and in a variety of peak surge current capacity ratings from 50 through 200 kA per phase. Several feature package options, including filtering, audible alarm and Form C contacts, are available to choose from. A range of configurable options is available to customize the SPC Series features for most commercial and light industrial applications, including service entrances, distribution panelboards and point-of-use applications. The SPC Series belongs to Eaton's complete family of surge protection solutions, providing coverage for any application.



SPC Series surge protective device



Panelboard with side-mount SPC Series surge protective device

Features

- Uses thermally-protected metal oxide varistor (MOV) technology
- Proprietary tri-colored LED protection status indicators showing results of continuous self-diagnostic testing, including neutral-ground mode
- 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
- Five-year warranty can be extended to 10-year with product registration at Eaton.com/spc

Standards and certifications

- UL 1449 4th Edition Type 1 and Type 2
- UL 1283 7th Edition
- Can be used for UL 96A compliance
- Can be used for NFPA 780 compliance
- Canadian Standards Association (CSA®) Type 1 and Type 2
- 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

Configurable design

The SPC Series allows for selecting and combining the options shown in **Table 1**. These are a combination of three features: filtering, audible alarm and Form C relay contacts. The SPC Series offers maximum flexibility through its configurable design.

Table 1. Configurable features

| 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 the 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 ① | | ■ |

① Available on Type 2 SPD units only.

Proprietary tri-colored LED protection status indicators

Tri-colored protection status indicators show results of continuous self-diagnostic testing, including neutral-ground mode. The LED protection status indicators on the device have three LED color states, as shown in photos:

- Green—Fully protected
- Yellow—Loss of neutral-to-ground protection
- Red—Loss of protection



LED protection status indicators showing full protection and phase faults

Enclosure ratings, options, dimensions, and weights

The SPC Series enclosure is NEMA 4X with the supplied mounting feet, which lends itself to installation in a variety of environments. There are two enclosure sizes, P1 and P2, dependent on the voltage code and surge rating configuration.

Table 2. Available optional equipment

| Available option | Catalog number |
|------------------------------------|-----------------|
| Flush-mount plate for P1 enclosure | FLUSHMNTPLATE13 |
| Flush-mount plate for P2 enclosure | FLUSHMNTPLATE14 |



SPC with mounting feet

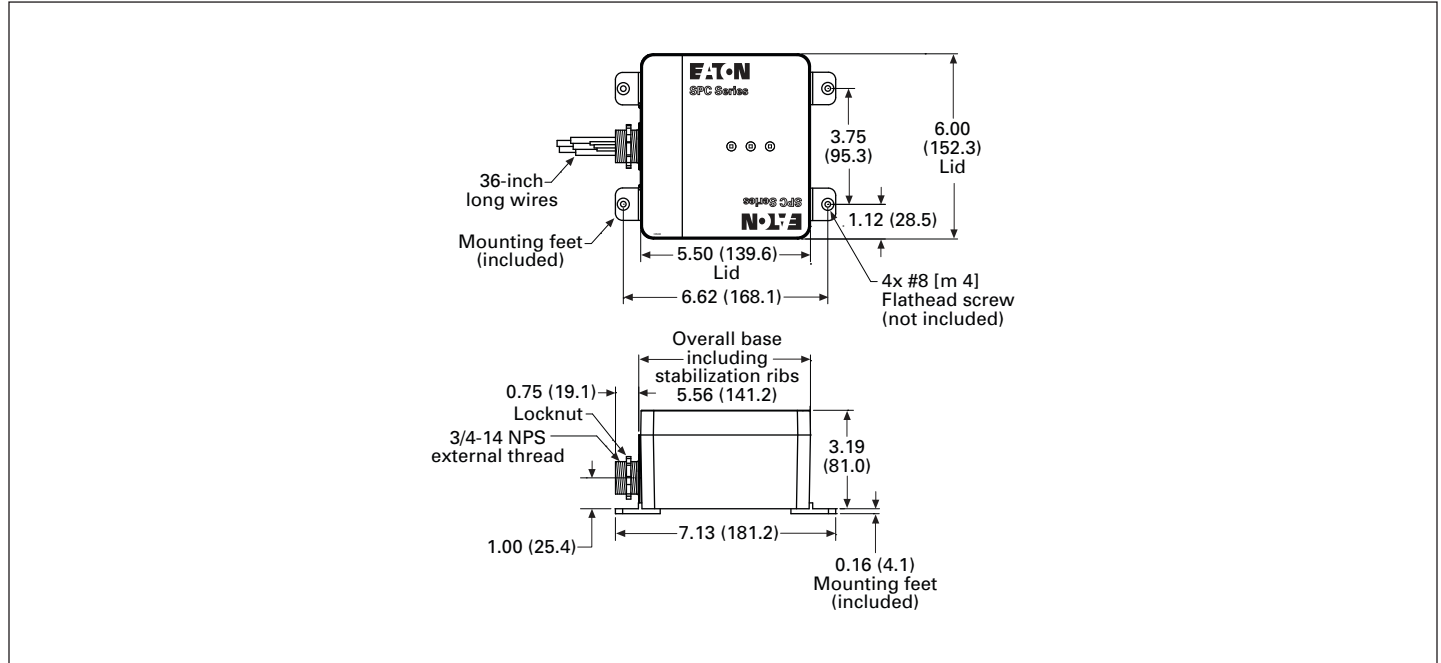


Figure 1. P1 enclosure, NEMA 4X with mounting feet dimensions, weight = 2.5 lb

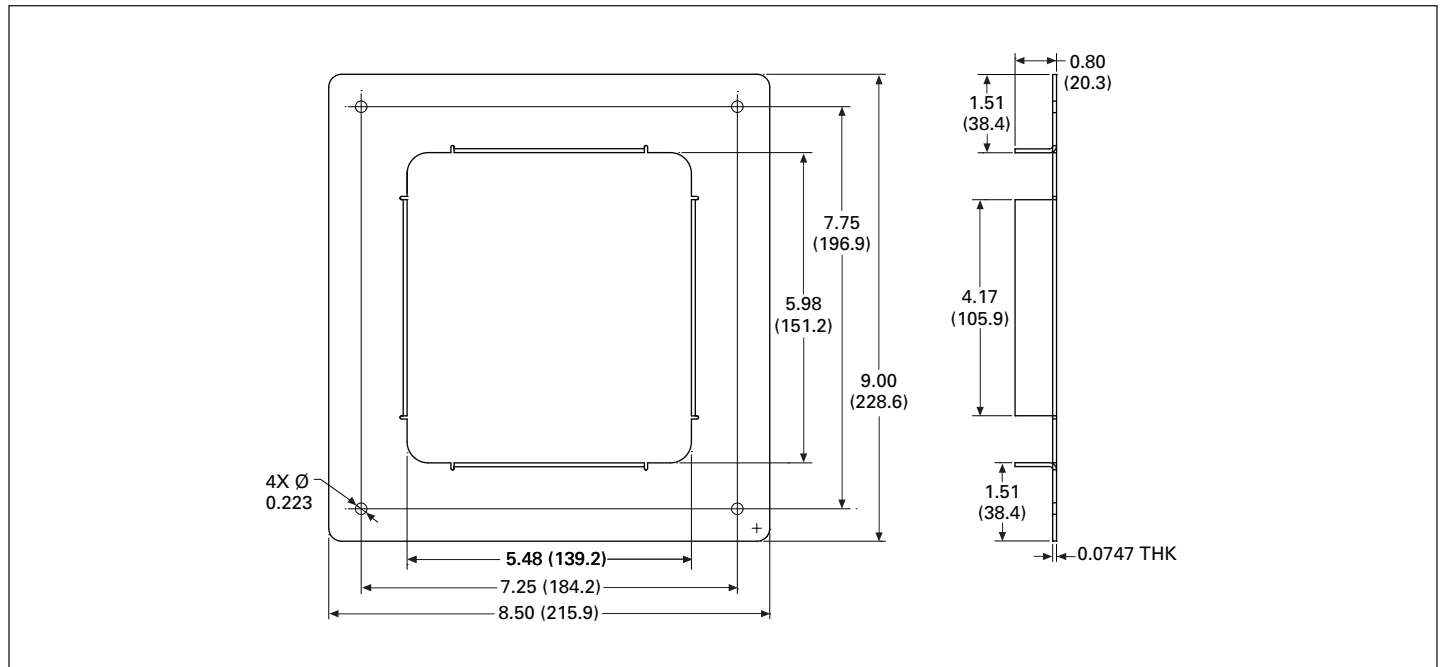


Figure 2. Optional flush-mount plate for P1 enclosure (catalog number FLUSHMNTPLATE13)

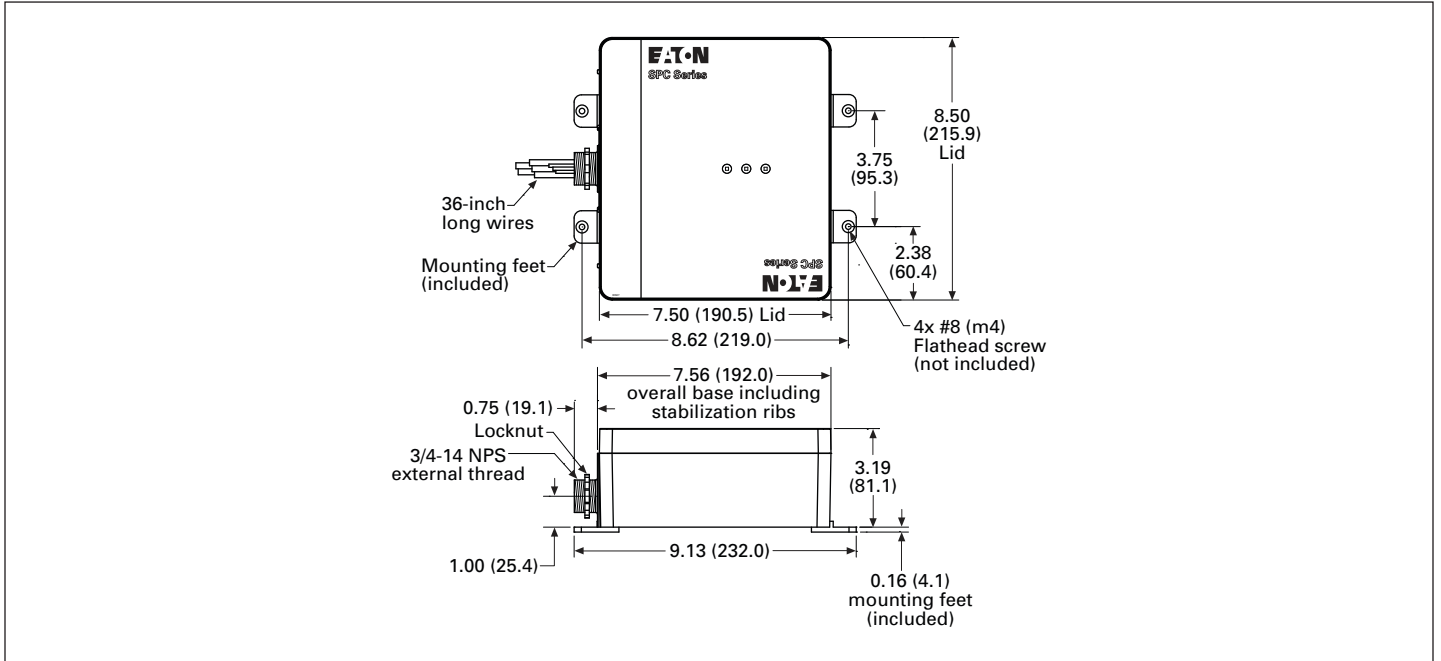


Figure 3. P2 enclosure, NEMA 4X with mounting feet dimensions, weight = 4 lb

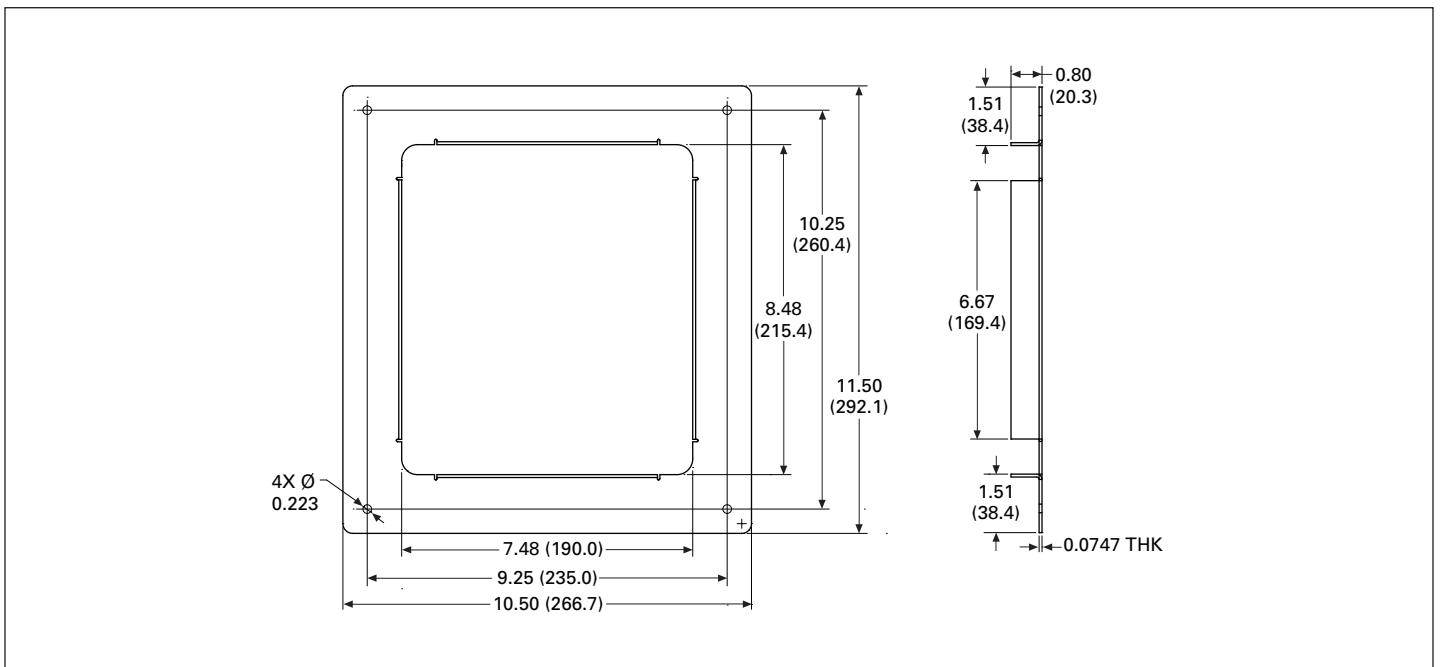


Figure 4. Optional flush-mount plate for P2 enclosure (catalog number FLUSHMNTPLATE14)

VPR performance data

Table 3. ANSI/UL 1449 4th Edition voltage protection ratings (VPR)

| Voltage code | Protection mode | | | |
|----------------------------|-----------------|------|------|------|
| | L-N | L-G | N-G | L-L |
| 120-200 kA unit VPR | | | | |
| 120N | 700 | 700 | 700 | N/A |
| 240N | 1000 | 1200 | 1000 | N/A |
| 277N | 1200 | 1200 | 1200 | N/A |
| 480N | 1800 | 1800 | 1800 | N/A |
| 240S | 700 | 700 | 700 | 1200 |
| 208Y | 700 | 700 | 700 | 1200 |
| 415Y | 1200 | 1200 | 1200 | 2000 |
| 480Y | 1200 | 1200 | 1200 | 2000 |
| 600Y | 1500 | 1500 | 1500 | 2500 |
| 240D | N/A | 1000 | N/A | 1000 |
| 480D | N/A | 1800 | N/A | 2000 |
| 600D | N/A | 2500 | N/A | 2500 |
| 240H ① | 700 | 700 | 700 | 1200 |
| 80-100 kA unit VPR | | | | |
| 120N | 600 | 600 | 600 | N/A |
| 240N | 1200 | 1200 | 1200 | N/A |
| 277N | 1200 | 1200 | 1200 | N/A |
| 480N | 1800 | 1800 | 1800 | N/A |
| 240S | 600 | 600 | 600 | 1000 |
| 208Y | 600 | 600 | 600 | 1000 |
| 415Y | 1200 | 1200 | 1200 | 2000 |
| 480Y | 1200 | 1200 | 1200 | 2000 |
| 600Y | 1500 | 1500 | 1500 | 2500 |
| 240D | N/A | 1000 | N/A | 1000 |
| 480D | N/A | 2000 | N/A | 2500 |
| 600D | N/A | 2500 | N/A | 2500 |
| 240H ① | 600 | 600 | 600 | 1000 |
| 50 kA unit VPR | | | | |
| 120N | 700 | 1200 | 700 | N/A |
| 240N | 1200 | 2000 | 1500 | N/A |
| 277N | 1200 | 2000 | 1500 | N/A |
| 480N | 1800 | 1800 | 1800 | N/A |
| 240S | 700 | 1200 | 700 | 1200 |
| 208Y | 700 | 1200 | 700 | 1200 |
| 415Y | 1200 | 2000 | 1500 | 2000 |
| 480Y | 1200 | 2000 | 1500 | 2000 |
| 600Y | 1500 | 1500 | 1500 | 2500 |
| 240D | N/A | 1000 | N/A | 1000 |
| 480D | N/A | 2000 | N/A | 2500 |
| 600D | N/A | 2500 | N/A | 2500 |
| 240H ② | 700 | 1200 | 700 | 1200 |

① Additional 240H VPRs: 2000 H-L, 1200 H-N, 1200 H-G

② Additional 240H VPRs: 2000 H-L, 1200 H-N, 2000 H-G



SPC device mounted to an Eaton panelboard

Specifications

Table 4. SPC Series specifications

| Description | Specification |
|--|---|
| Peak surge current capacity ratings available | 50, 80, 100, 120, 150, 160, 200 kA per phase |
| Nominal discharge current (In) | 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 |
| Maximum continuous operating voltage (MCOV): | |
| 120N | 150 L–N, 150 L–G, 150 N–G |
| 240N, 277N | 320 L–N, 320 L–G, 320 N–G |
| 480N | 550 L–N, 550 L–G, 550 N–G |
| 240S, 208Y | 150 L–N, 150 L–G, 150 N–G, 300 L–L |
| 240H | 150 L–N, 150 L–G, 150 N–G, 300 L–L, 470 H–L, 320 H–N, 320 H–G |
| 415Y, 480Y | 320 L–N, 320 L–G, 320 N–G, 640 L–L |
| 600Y | 420 L–N, 420 L–G, 420 N–G, 840 L–L |
| 240D | 320 L–G, 300 L–L |
| 480D | 550 L–G, 640 L–L |
| 600D | 840 L–G, 840 L–L |
| Ports | 1 |
| Operating temperature | –40 °F to +140 °F (–40 °C to +60 °C) |
| Storage 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 | Passed 12,000 strikes to ANSI/IEEE® C62.41 (20 kV, 10 kA) Category C waveform |
| SPD type | UL 1449 4th Edition and CSA Type 1 and Type 2 SPD (dependent on feature options) |
| Enclosure dimensions and weights | Refer to Figure 1 and Figure 3 for enclosure dimensions and weights |
| Enclosure rating | NEMA 4X enclosure ① |
| Form C relay contact ratings | 2 A at 30 Vdc or 250 Vac |
| Form C relay contact logic | Power ON, normal state—NO contact = open, NC contact = closed Power OFF or fault state—NO contact = closed, NC contact = open |
| EMI/RFI filtering attenuation | Up to 40 dB from 10 kHz to 100 MHz |
| RoHS compliant | Yes |
| Warranty | 5 years standard, 10 years with product registration on www.eaton.com/spc |

① Mounting feet required to achieve NEMA 4X rating.

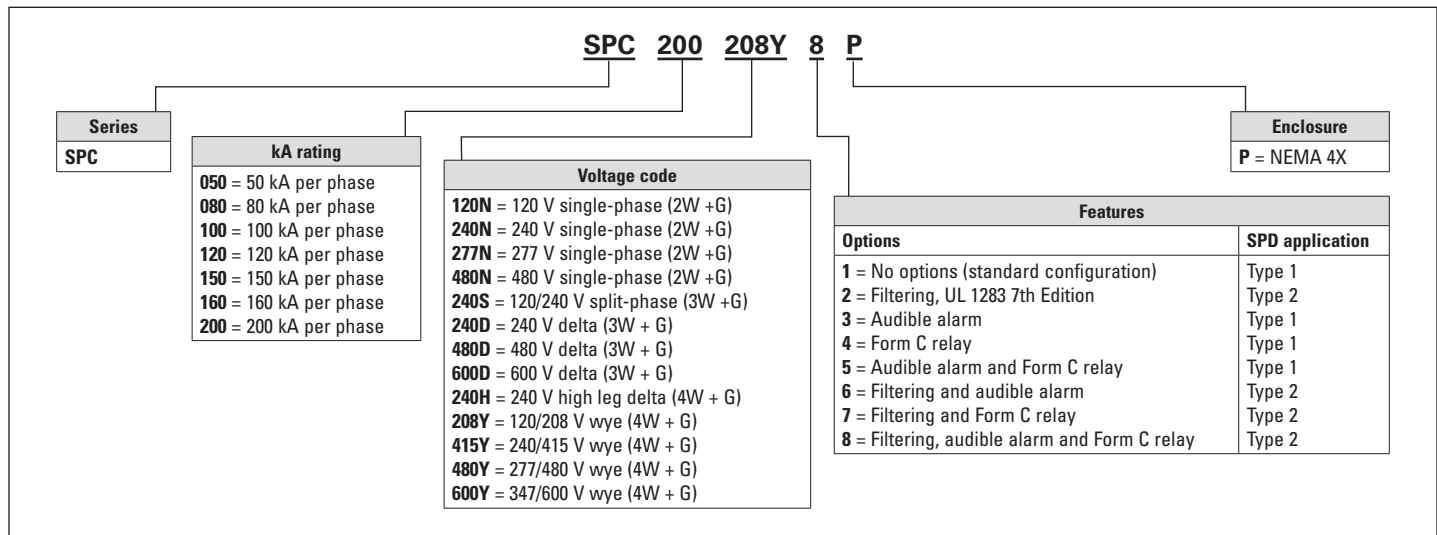
Voltage configurations per enclosure size

Table 5. SPC voltage configurations per enclosure size

| P1 enclosure | | P2 enclosure | |
|---------------------|-----------|---------------------|------------|
| 120N/240N/277N/480N | 50–200 kA | 240S | 120–200 kA |
| 240S | 50–100 kA | 208Y/415Y/480Y/600Y | 120–200 kA |
| 208Y/415Y/480Y/600Y | 50–100 kA | 240D/480D | 120–200 kA |
| 240D/480D | 50–100 kA | 600D | 50–200 kA |
| 240H | 50–100 kA | 240H | 120–200 kA |

Catalog number selection

Table 6. SPC Series catalog number configuration



Technical support information

If you have any questions or need additional information, please contact the Eaton Technical Resource Center at **1-800-809-2772**, option 4, option 2.

You may submit inquiries via email to spd@eaton.com and you can find more information at Eaton.com/spc

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