

Eaton SPC Series surge protection



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Powering Business Worldwide

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 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



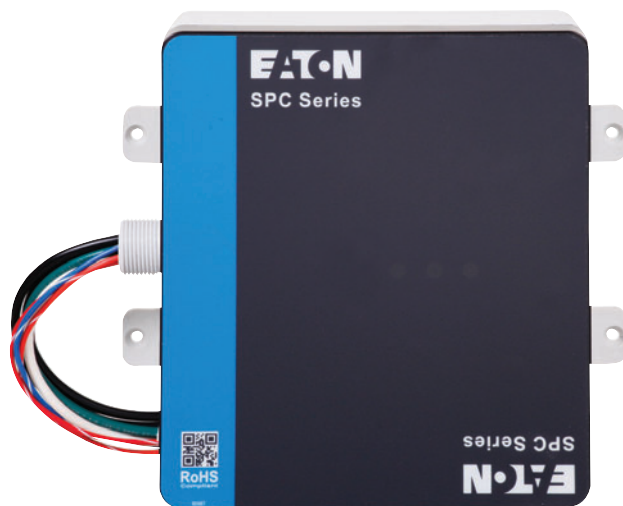
LED protection status indicators showing full protection and phase faults

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

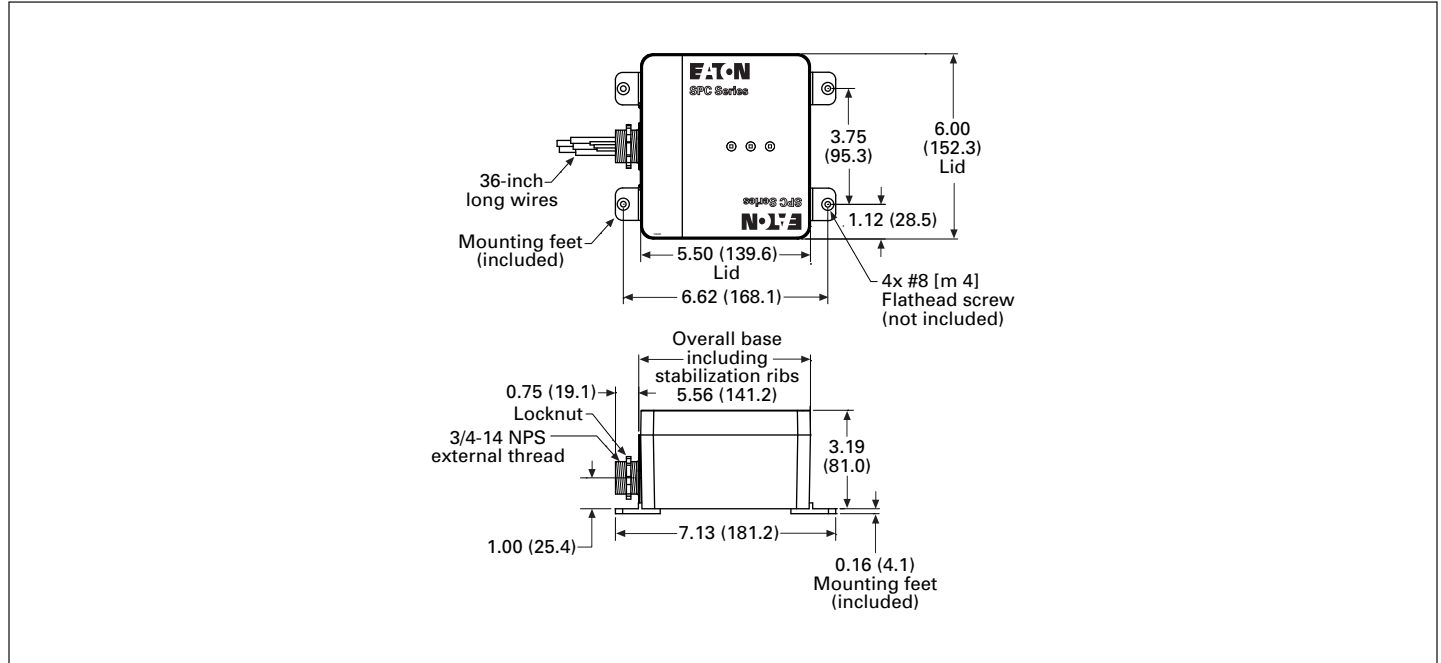


Figure 1. P1 enclosure, NEMA 4X with mounting feet dimensions, weight = 2.5 lb

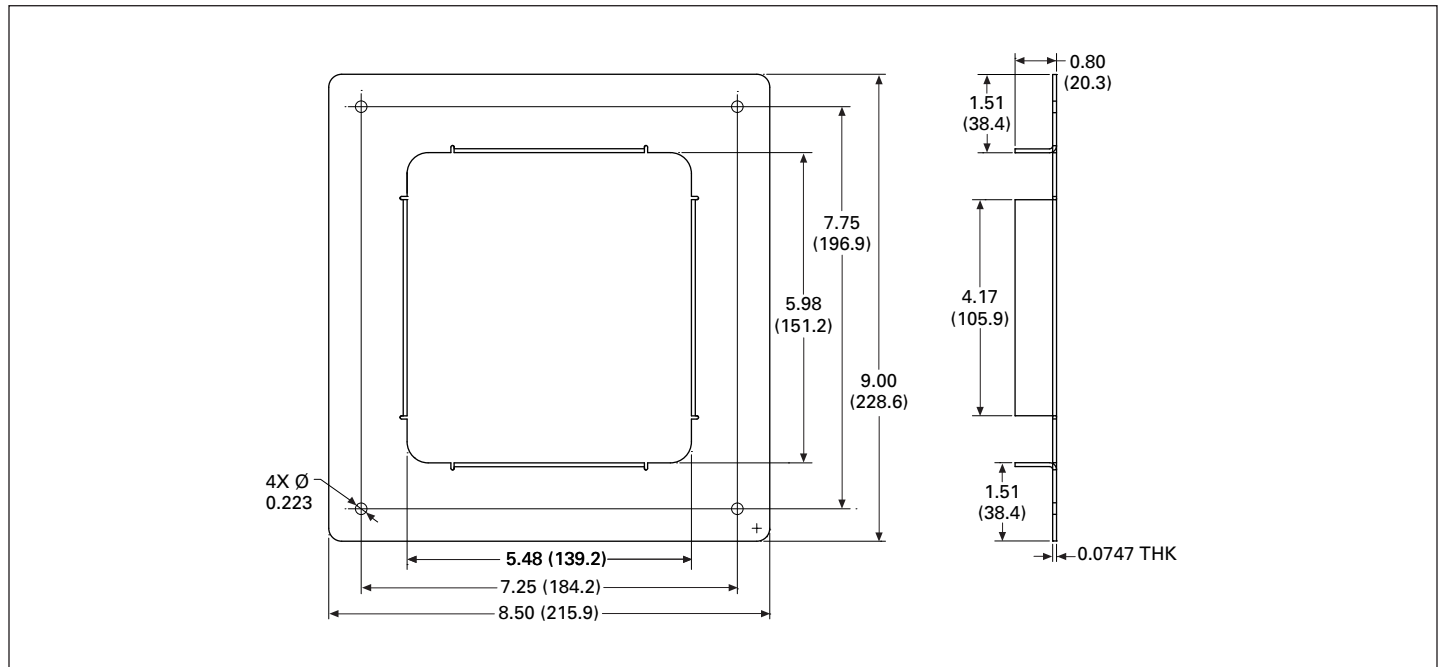


Figure 2. Optional flush-mount plate for P1 enclosure (catalog number FLUSHMNTPLATE13)

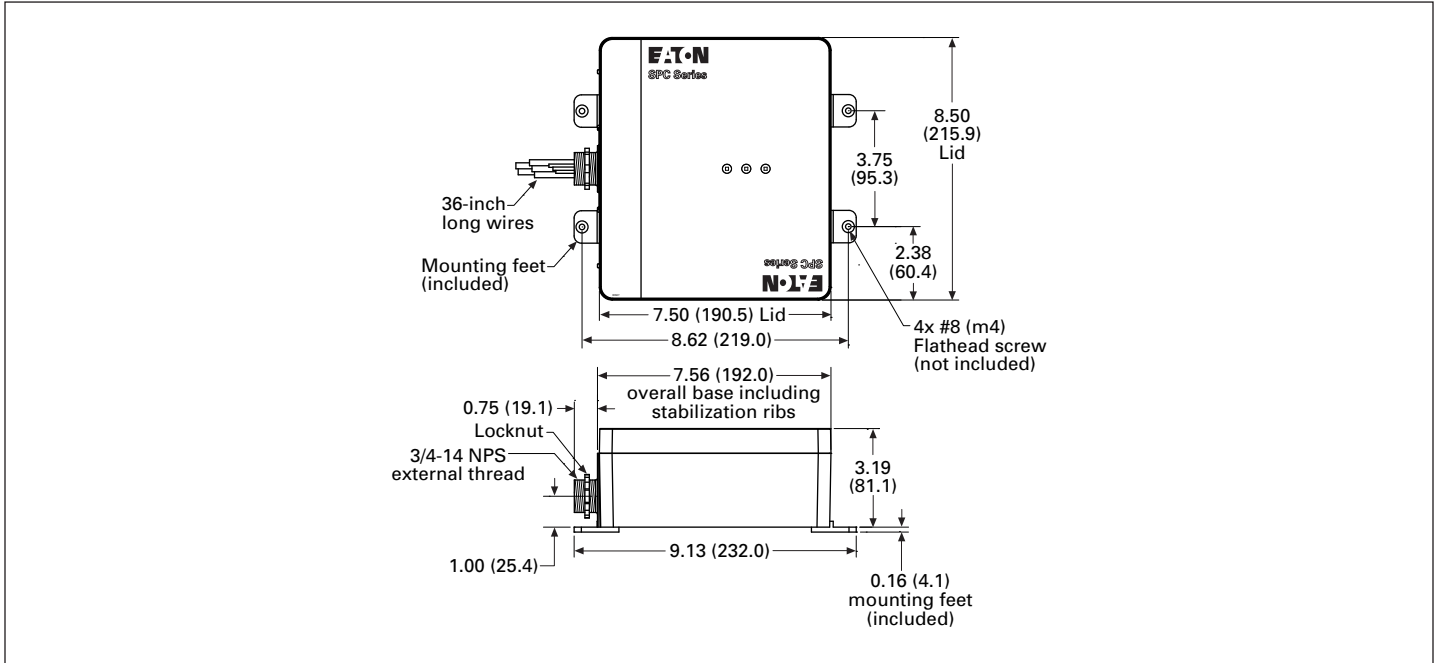


Figure 3. P2 enclosure, NEMA 4X with mounting feet dimensions, weight = 4 lb

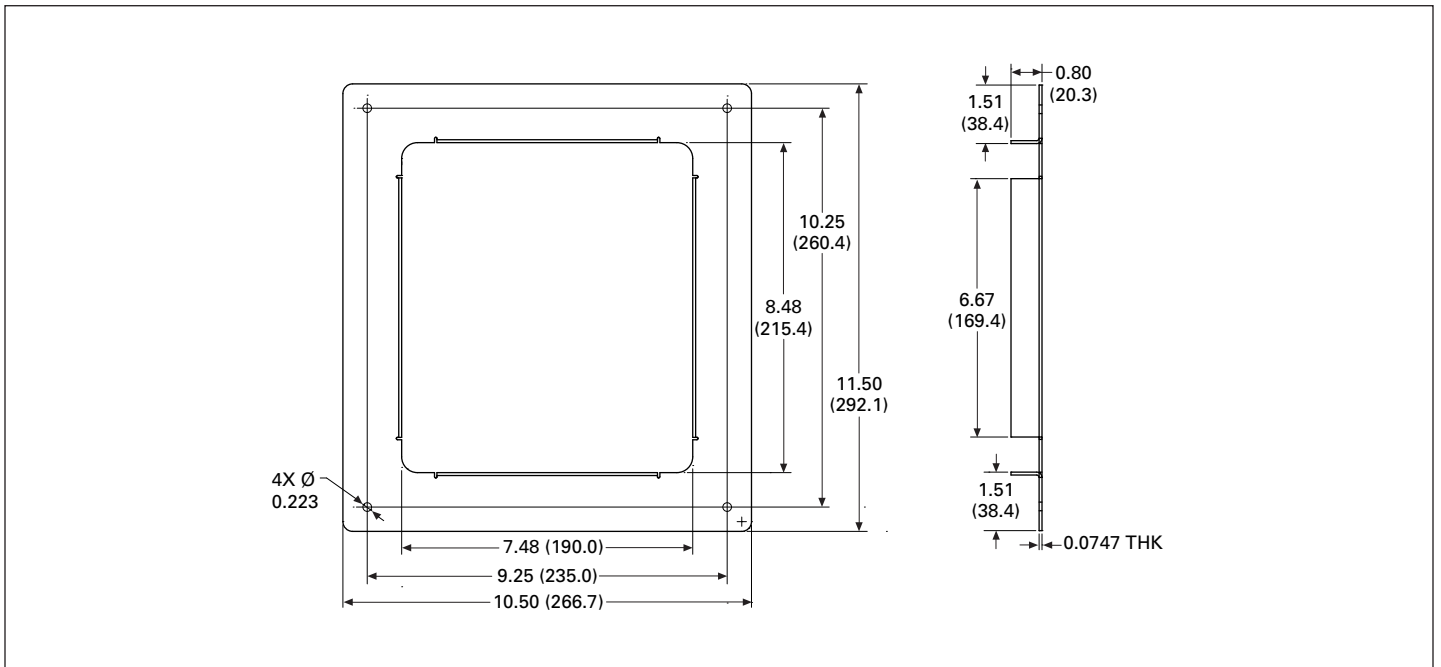


Figure 4. Optional flush-mount plate for P2 enclosure (catalog number FLUSHMNTPLATE14)

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.

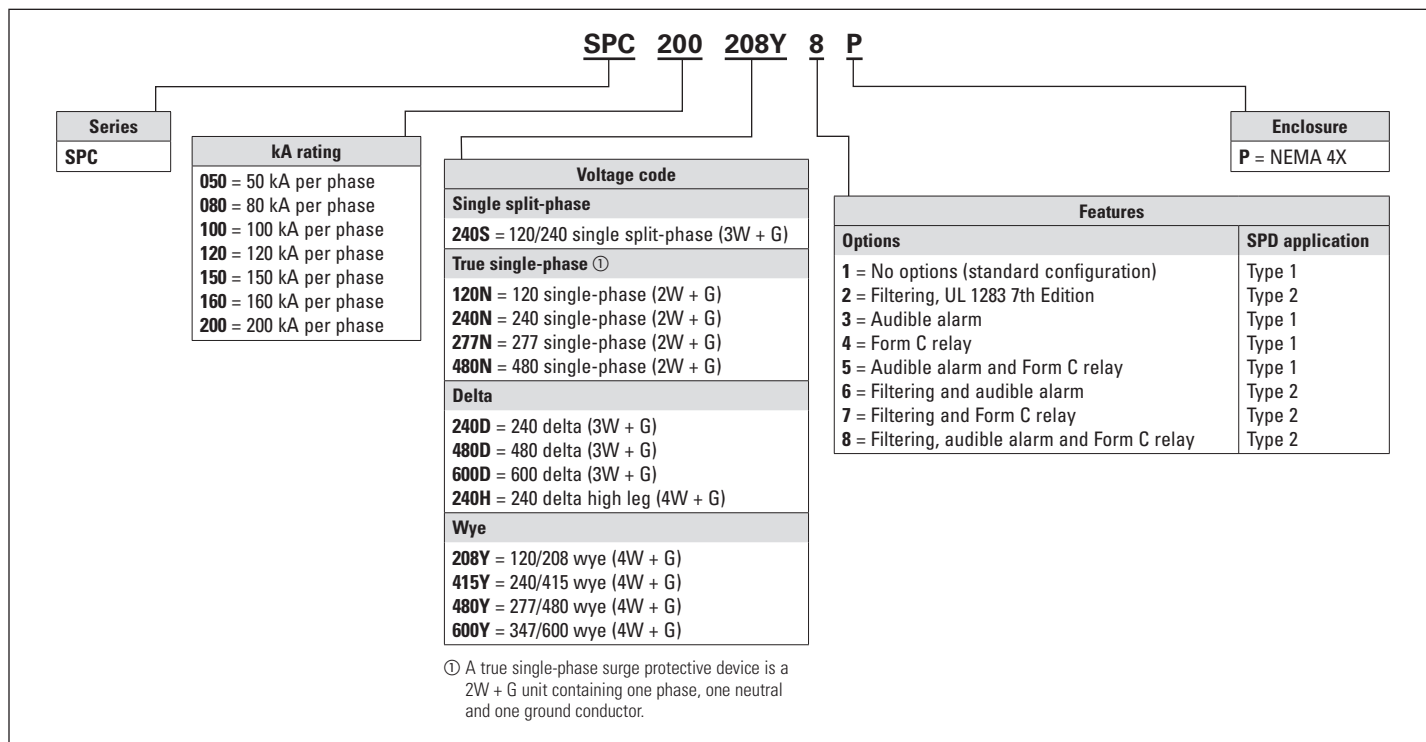
Voltage configurations per enclosure size

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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