

Eaton's SPD Series



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Powering Business Worldwide

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Introduction

Eaton's SPD Series surge protective devices

Eaton's SPD Series surge protective devices are the latest and most advanced UL® 1449 3rd Edition certified surge protectors. Units are available in all common voltages and configurations and also in a variety of surge current capacity ratings from 50 through 400 kA. Three feature package options are also available to choose from. The breadth of the SPD Series' features, options and configurations ensures that the correct unit is available for all electrical applications. Application of SPD Series units throughout a facility will ensure that equipment is protected with the safest and most reliable surge protective devices available.

Features

- Uses thermally protected metal oxide varistor (MOV) technology
- 20 kA nominal discharge current (I_n) rating (maximum rating assigned by UL)
- 50 through 400 kA surge current capacity ratings
- Three feature package options
- 200 kA short-circuit current rating (SCCR)
- 10-year warranty

Standards and certifications



- UL 1449 3rd Edition listed device
- Canadian Standards Association (CSA)



SPD Series unit

Feature package options

The SPD Series provides users with the option of selecting between three feature packages. These feature packages are the basic, standard and standard with surge counter. The proper feature package can be selected based on the requirements of the application or specification.

Table 1. Feature Package Comparison

Feature	Basic	Standard	Standard with Surge Counter
Surge protection using thermally protected MOV technology	✓	✓	✓
Dual-colored protection status indicators for each phase	✓	✓	✓
Dual-colored protection status indicators for the neutral-ground protection mode	✓	✓	✓
Audible alarm with silence button		✓	✓
Form C relay contact		✓	✓
EMI/RFI filtering, providing up to 50 dB of noise attenuation from 10 kHz to 100 MHz		✓	✓
Surge counter with reset button			✓

Enclosure options, dimensions and weights

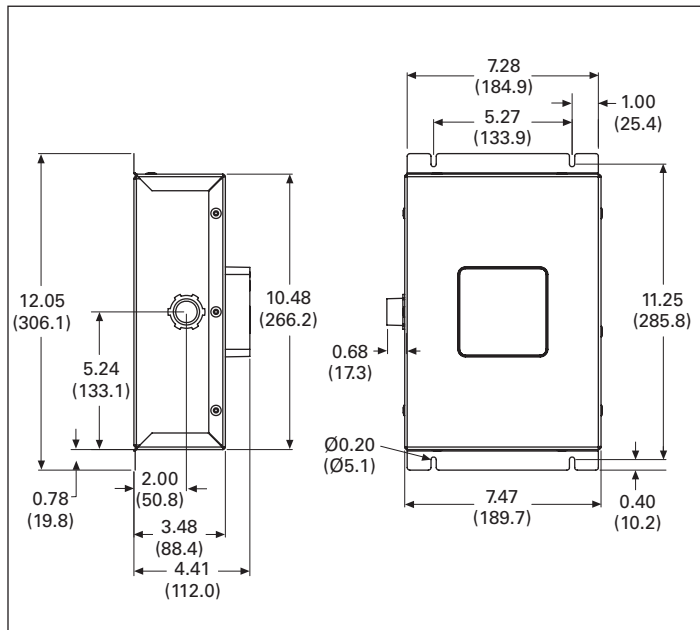


Figure 1. 50–200 kA Units in a NEMA 1 Rated Enclosure, Weight = 6.8 lbs

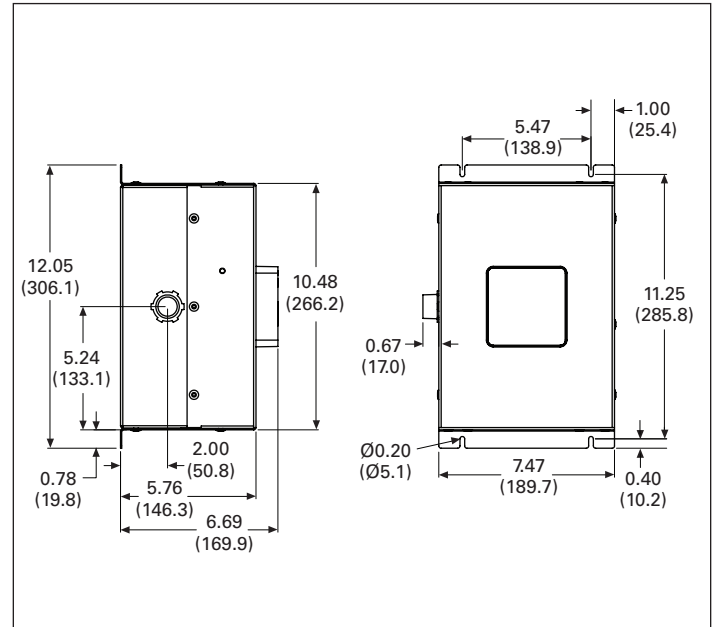


Figure 2. 250–400 kA Units in a NEMA 1 Rated Enclosure, Weight = 13.5 lbs

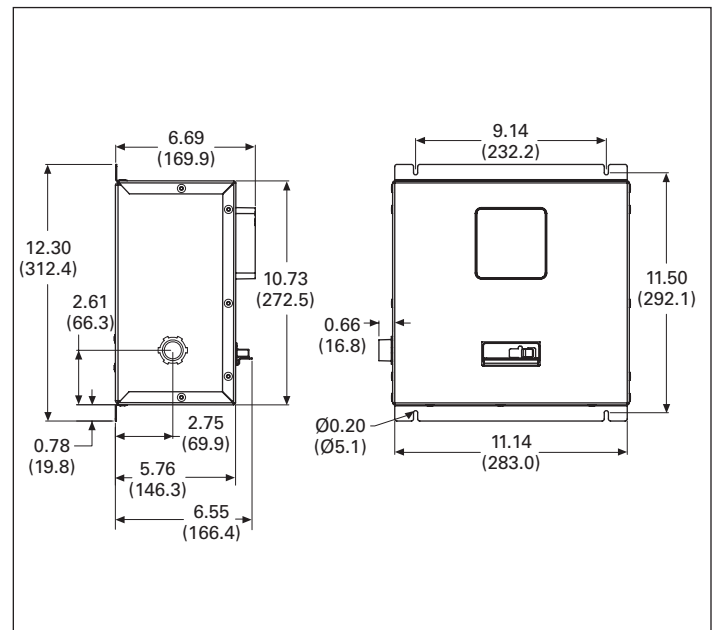


Figure 3. 50–400 kA Units in a NEMA 1 Rated Enclosure with Internal Disconnect, Weight = 14.7 lbs

Performance data

ANSI/UL 1449 3rd Edition voltage protection ratings

In the tables on the following pages, voltage protection rating (VPR) data is included for all units, but varies based upon the feature package and enclosure option. VPR values for units containing the basic feature package are found on the left-hand side of each page. Tables on the right-hand side of the page contain VPR values for units containing the standard or standard with surge counter feature package.

VPR data for units in a NEMA 1 enclosure without an internal disconnect (catalog number ends with K):

Table 2. 50 kA Unit VPR (catalog number ends with 1K)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	1200	700	1200
208Y	700	1200	700	1200
400Y and 480Y	1200	2000	1200	2000
240D	N/A	1000	N/A	1000
480D	N/A	2000	N/A	2500

Table 7. 50 kA Unit VPR (catalog number ends with 2K or 3K)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	1200	700	1200
208Y	700	1200	700	1200
400Y and 480Y	1200	2000	1200	2500
240D	N/A	1000	N/A	1000
480D	N/A	2500	N/A	2500

Table 3. 80–100 kA Unit VPR (catalog number ends with 1K)

Type 1K and L Units 80–100 kA

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	700	700	1200
208Y	700	700	700	1200
400Y and 480Y	1200	1200	1200	2000
240D	N/A	1000	N/A	1000
480D	N/A	2000	N/A	2500

Table 8. 80–100 kA Unit VPR (catalog number ends with 2K or 3K)

Type 2K and L Units 80–100 kA

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	800	700	1200
208Y	700	800	700	1200
400Y and 480Y	1200	1200	1200	2500
240D	N/A	1000	N/A	1000
480D	N/A	2500	N/A	2500

Table 4. 120–200 kA Unit VPR (catalog number ends with 1K)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	700	700	1200
208Y	700	700	700	1200
400Y and 480Y	1200	1200	1200	2000
240D	N/A	1000	N/A	1000
480D	N/A	2000	N/A	2500

Table 9. 120–200 kA Unit VPR (catalog number ends with 2K or 3K)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	600	800	600	1000
208Y	600	800	600	1000
400Y and 480Y	1200	1200	1200	1800
240D	N/A	1000	N/A	1000
480D	N/A	2500	N/A	2500

Table 5. 250–300 kA Unit VPR (catalog number ends with 1K)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	700	700	1000
208Y	700	700	700	1000
400Y and 480Y	1200	1200	1200	1800
240D	N/A	1000	N/A	1000
480D	N/A	1800	N/A	2000

Table 10. 250–300 kA Unit VPR (catalog number ends with 2K or 3K)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	600	800	600	1000
208Y	600	800	600	1000
400Y and 480Y	1000	1200	1000	1800
240D	N/A	1000	N/A	1000
480D	N/A	1800	N/A	2000

Table 6. 400 kA Unit VPR (catalog number ends with 1K)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	700	700	1000
208Y	700	700	700	1000
400Y and 480Y	1200	1200	1200	1800
240D	N/A	1000	N/A	1000
480D	N/A	1800	N/A	2000

Table 11. 400 kA Unit VPR (catalog number ends with 2K or 3K)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	600	700	600	1000
208Y	600	700	600	1000
400Y and 480Y	1000	1200	1000	1800
240D	N/A	1000	N/A	1000
480D	N/A	1800	N/A	2000

VPR data for units in a NEMA 1 enclosure with an internal disconnect (catalog number ends with M):**Table 12. 50 kA Unit VPR (catalog number ends with 1M)**

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	800	1200	700	1500
208Y	800	1200	700	1500
400Y and 480Y	1500	2500	1200	2500
240D	N/A	1000	N/A	1000
480D	N/A	2000	N/A	2500

Table 13. 80–100 kA Unit VPR (catalog number ends with 1M)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	800	800	700	1500
208Y	800	800	700	1500
400Y and 480Y	1500	1500	1200	2500
240D	N/A	1000	N/A	1000
480D	N/A	2000	N/A	2500

Table 14. 120–200 kA Unit VPR (catalog number ends with 1M)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	800	800	700	1500
208Y	800	800	700	1500
400Y and 480Y	1500	1500	1200	2500
240D	N/A	1000	N/A	1000
480D	N/A	2000	N/A	2500

Table 15. 250–300 kA Unit VPR (catalog number ends with 1M)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	800	800	700	1500
208Y	800	800	700	1500
400Y and 480Y	1200	1200	1200	2000
240D	N/A	1000	N/A	1000
480D	N/A	1800	N/A	2000

Table 16. 400 kA Unit VPR (catalog number ends with 1M)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	800	800	700	1500
208Y	800	800	700	1500
400Y and 480Y	1200	1200	1200	2000
240D	N/A	1000	N/A	1000
480D	N/A	1800	N/A	2000

Table 17. 50 kA Unit VPR (catalog number ends with 2M or 3M)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	800	1200	700	1500
208Y	800	1200	700	1500
400Y and 480Y	1200	2000	1200	2500
240D	N/A	1000	N/A	1000
480D	N/A	2500	N/A	2500

Table 18. 80–100 kA Unit VPR (catalog number ends with 2M or 3M)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	800	900	700	1200
208Y	800	900	700	1200
400Y and 480Y	1200	1200	1200	2500
240D	N/A	1000	N/A	1000
480D	N/A	2500	N/A	2500

Table 19. 120–200 kA Unit VPR (catalog number ends with 2M or 3M)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	800	900	700	1200
208Y	800	900	700	1200
400Y and 480Y	1200	1200	1200	2500
240D	N/A	1000	N/A	1000
480D	N/A	2500	N/A	2500

Table 20. 250–300 kA Unit VPR (catalog number ends with 2M or 3M)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	900	700	1200
208Y	700	900	700	1200
400Y and 480Y	1200	1200	1000	2000
240D	N/A	1000	N/A	1000
480D	N/A	1800	N/A	2000

Table 21. 400 kA Unit VPR (catalog number ends with 2M or 3M)

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	900	700	1200
208Y	700	900	700	1200
400Y and 480Y	1200	1200	1000	2000
240D	N/A	1000	N/A	1000
480D	N/A	1800	N/A	2000

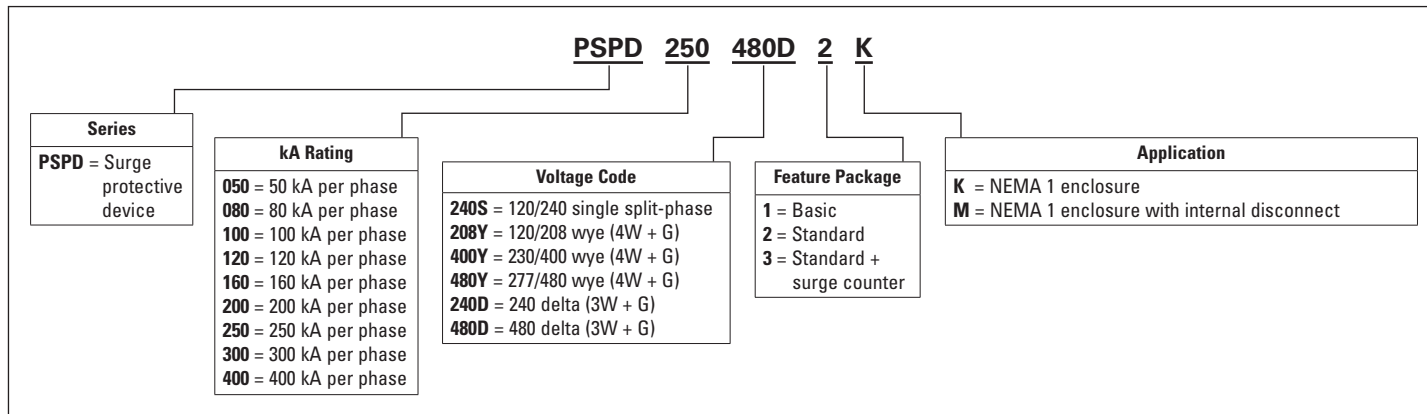
Specifications

Table 22. SPD Series Specifications

Description	Specification
Surge capacity ratings available	50, 80, 100, 120, 160, 200, 250, 300, 400 kA per phase
Nominal discharge current (I _n)	20 kA
Short circuit current rating (SCCR)	200 kA
SPD type	Basic feature package = Type 1 (can also be used in Type 2 applications) Standard and Standard with Surge Counter feature packages = Type 2
Single split phase voltages available	120/240
Three-phase wye system voltages available	120/208, 230/400, 277/480
Three-phase delta system voltages available	240, 480
Input power frequency	50/60 Hz
Power consumption (basic units): 208Y, 240S and 240D voltage codes 400Y, 480Y and 480D voltage codes	0.5W 1.1W
Power consumption (standard and standard with surge counter units): 208Y, 240S and 240D voltage codes 400Y, 480Y and 480D voltage codes	0.6W 1.7W
Protection modes	Single split phase L-N, L-G, N-G, L-L Three-phase wye L-N, L-G, N-G, L-L Three-phase delta L-G, L-L
Maximum continuous operating voltage (MCOV): 240S, 208Y and MCOV 400Y and 480Y MCOV 240D MCOV 480D MCOV	150 L-N, 150 L-G, 150 N-G, 300 L-L 320 L-N, 320 L-G, 320 N-G, 640 L-L 320 L-G, 320 L-L 640 L-G, 640 L-L
Ports	1
Operating temperature	–40°F through 122°F (–40°C through 50°C)
Operating humidity	5% through 95%, noncondensing
Operating altitude	Up to 16,000 ft (5000m)
Seismic withstand capability	Meets or exceeds the requirements specified in IBC® 2006, CBC 2007 and UBC® Zone 4
Enclosure dimensions and weights	Refer to Figures 1–3 for enclosure dimensions and weights
Form C relay contact ratings	150 Vdc or 125 Vac, 1A maximum
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 50 dB from 10 kHz to 100 MHz
Agency certifications and approvals	UL 1449 3rd Edition listed device; CSA listed UL 1283 (Type 2 SPDs only)
Warranty	10 years

Catalog number selection

Table 23. Catalog Number Configuration



Example: PSPD250480D2K = SPD Series, 250 kA per phase, 480D voltage, standard feature package, housed in NEMA 1 enclosure

Technical support information

If you have any questions or need additional information, please contact the Eaton Technical Resource Center at 800-809-2772, option 4, option 2. You may also submit inquiries via e-mail: surgeprotection@eaton.com.

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