

**SPD Series Unit Integrated within an Eaton Panelboard****SPD Series for Integration into Electrical Distribution Equipment****Product Description**

Eaton's SPD Series surge protective devices are the latest and most advanced UL 1449 4th Edition certified surge protectors. SPD Series units are available in all common voltages and configurations, and also in a variety of surge current capacity ratings from 50 to 400 kA.

**Application Description**

The SPD Series is available as an integrated device within the following Eaton electrical assemblies:

- Panelboards
- Switchboards
- Motor control centers
- Switchgear
- Automatic transfer switches
- Bus plugs

**Features, Benefits and Functions**

- Uses thermally protected metal oxide varistor (MOV) technology
- Three feature package options

***The Integrated SPD Performance Advantage***

Installation conductor length is the single most important factor related to an SPD's performance. Performance decreases as the connected conductor length increases. Integrating the SPD within the electrical assembly provides the best possible surge protection by keeping installation conductor lead lengths as short as possible. Integrating the SPD within an electrical assembly can decrease let-through voltages by hundreds of volts, providing you with the best possible surge protection for sensitive electronic loads.

***Remote Display Mounting Option Available***

The SPD Series offers the option of mounting its display remotely from the device. This is useful for applications where OEMs or other integrators would like to embed the unit within a piece of equipment and still be able to view its display.



*In this installation, the SPD Series is mounted directly to the panelboard's bus bars. This type of installation will provide the best possible surge protection by minimizing the connected lead length.*



*The SPD Series is also available as an integrated unit interfaced via a circuit breaker resident in the electrical assembly. This installation keeps connected lead lengths short while providing a means of disconnecting power to the unit quickly and easily.*

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## SPD, Power Conditioning, PF Capacitors and Harmonic Filters

### Surge Protection and Power Conditioning

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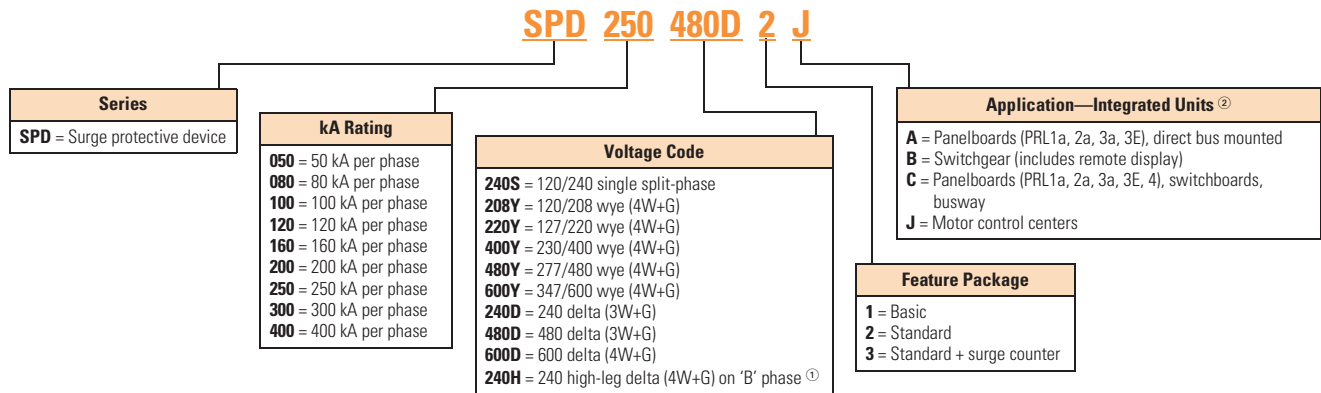
#### Standards and Certifications

- UL 1449 4th Edition recognized component for the United States and Canada, covered by Underwriters Laboratories certification and follow-up service
- UL 1283 7th Edition (Type 2 SPDs only)



#### Catalog Number Selection

#### SPD Series Units Mounted Internal to Electrical Distribution Equipment



#### Notes

- <sup>①</sup> Please consult the factory for 240 high-leg delta (4W+G) applications with high leg on 'C' phase.
- <sup>②</sup> Units used in PRL1a, 2a, 3a and 3E panelboard applications are available in 50–200 kA ratings only. Use the 'C' option for PRL1a, 2a, 3a and 3E panelboard applications when unit is connected through a circuit breaker.
- Example: SPD250480D2J = SPD Series, 250 kA per phase, 480D voltage, standard feature package, motor control center application.

## Technical Data and Specifications

### 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 (maximum rating assigned by UL)								
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, 127/220, 230/400, 277/480, 347/600								
Three-phase delta system voltages available	240, 480, 600								
Input power frequency	50/60 Hz								
Power consumption (basic units):									
208Y, 220Y, 240S, 240D and 240H voltage codes	0.5 W								
400Y, 480Y and 480D voltage codes	1.1 W								
600Y and 600D voltage codes	1.3 W								
Power consumption (standard and standard with surge counter units):									
208Y, 220Y, 240S, 240D and 240H voltage codes	0.6 W								
400Y, 480Y and 480D basic voltage codes	1.7 W								
600Y and 600D voltage codes	2.1 W								
Protection modes	<table border="1"> <tbody> <tr> <td>Single split-phase</td> <td>L-N, L-G, N-G, L-L</td> </tr> <tr> <td>Three-phase wye</td> <td>L-N, L-G, N-G, L-L</td> </tr> <tr> <td>Three-phase delta</td> <td>L-G, L-L</td> </tr> <tr> <td>Three-phase high-leg delta</td> <td>L-N, L-G, N-G, L-L</td> </tr> </tbody> </table>	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	Three-phase high-leg delta	L-N, L-G, N-G, L-L
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								
Three-phase high-leg delta	L-N, L-G, N-G, L-L								
Maximum continuous operating voltage (MCOV):									
240S, 208Y, 220Y and 240H MCOV	150 L-N, 150 L-G, 150 N-G, 300 L-L								
400Y and 480Y MCOV	320 L-N, 320 L-G, 320 N-G, 640 L-L								
600Y MCOV	420 L-N, 420 L-G, 420 N-G, 840 L-L								
240D MCOV	320 L-G, 320 L-L								
480D MCOV	640 L-G, 640 L-L								
600D MCOV	840 L-G, 840 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 (5000 m)								
Seismic withstand capability	Meets or exceeds the requirements specified in IBC 2006, CBC 2007 and UBC Zone 4								
Form C relay contact ratings	150 Vdc or 125 Vac, 1 A 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								

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## SPD, Power Conditioning, PF Capacitors and Harmonic Filters

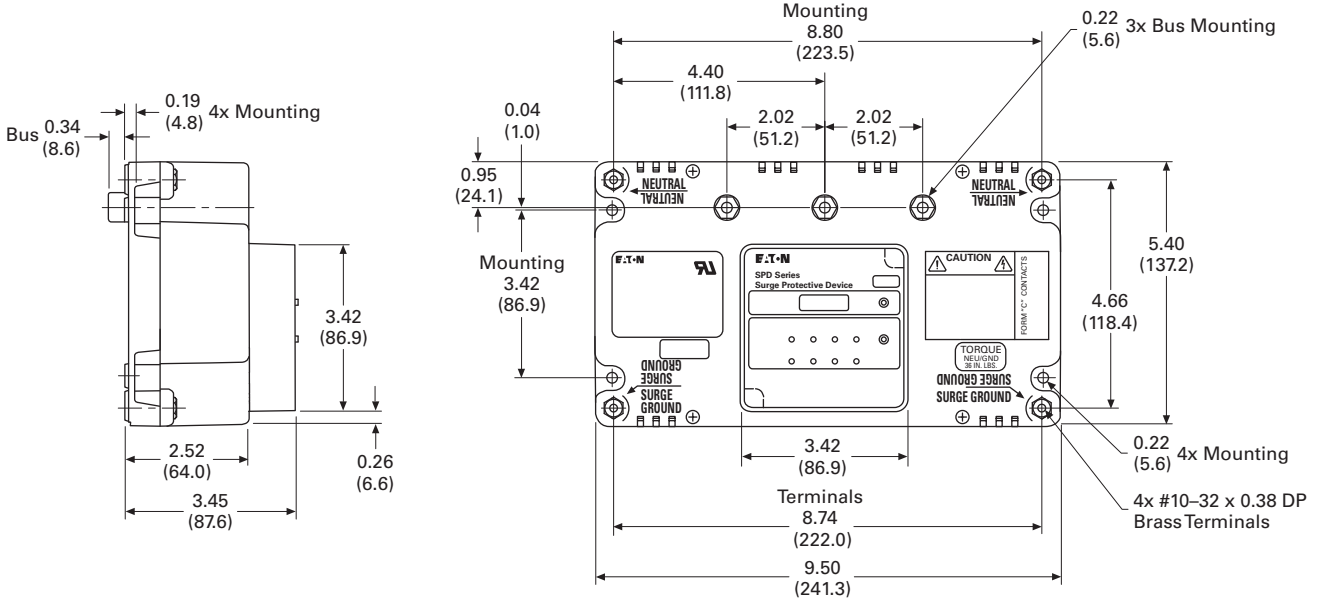
### Surge Protection and Power Conditioning

#### Dimensions

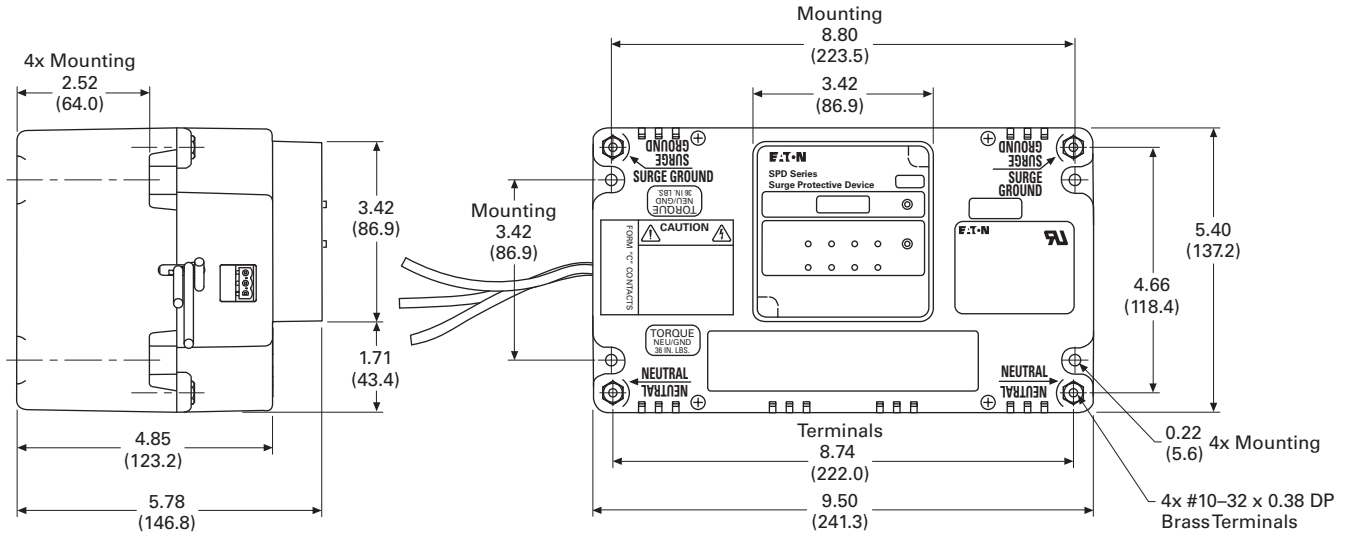
Approximate Dimensions in Inches (mm)

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#### 50–200 kA Integrated Units



#### 250–400 kA Integrated Units



#### Weights

- 50–200 kA units approximately 3.5 lb (1.6 kg)
- 250–400 kA units approximately 7.0 lb (3.2 kg)