

BSPA Type 1 and Type 2 surge protective devices



Catalog symbol:

- BSPA_

Description:

Bussmann™ series BSPA surge protective devices are UL 1449 4th Edition SPDs. Applying BSPA units throughout a facility will help ensure that equipment is protected from damaging surges. The BSPA compact NEMA 4X enclosure allows for external installation on an electrical assembly in a variety of environments.

Agency information

- UL® 1449 4th Edition Type 1 and Type 2
- UL 1283 6th Edition
- CSA® (CSAT) 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
- RoHS compliant

Applications

BSPA units are available in all common voltage and system configurations, and in a variety of peak surge current capacity ratings from 50 through 200 kA per phase. Several feature package options (filtering, audible alarm and Form C contacts) extend application flexibility along with a range of configurable options suitable for most commercial and light industrial applications covering service entrances, distribution panelboards and point-of-use applications.

Features

- Thermally-protected metal oxide varistor (MOV) technology
- Tri-colored LED status indicators display continuous self-diagnostic testing, including neutral-ground mode
- 20 kA nominal discharge current (In) 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 five feature/option combinations
- Corrosion-resistant NEMA 4X enclosure with detachable mounting feet
- 200 kA short-circuit current rating (SCCR)
- Factory wired with 36-inch 10 AWG leads
- Optional Form C contact relay for integration into remote monitoring systems*
- Optional EMI/RFI filtering form improved power quality*
- Optional audible alarm*
- No user-serviceable parts or items requiring periodic maintenance
- Ten-year warranty

* See catalog number system for availability.



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BSPA configurations

In addition to the BSPAs standard features, options include an audible alarm, Form C relay contacts and EMI/RFI filtering shown in Table 1.

Table 1. Configurable features

Feature	Standard	Options
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, for up to 40 dB of noise attenuation from 10 kHz to 100 MHz*		•

* Available on Type 2 SPD units only.

Tri-colored LED status indicators

These LED indicators show continuous self-diagnostic testing, including neutral-ground mode and display:

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

Enclosure ratings, options, dimensions and weights

The BSPA NEMA 4X enclosure is supplied with mounting feet to facilitate installation in a variety of applications. There are two enclosure sizes, P1 and P2, dependent on the voltage code and surge rating.

Table 2. Available optional equipment

Available option	Catalog no.
Flush mount plate for P1 enclosure	BSPA-FLUSHPLT1
Flush mount plate for P2 enclosure	BSPA-FLUSHPLT2

Voltage configurations per enclosure size

Table 3. BSPA voltage configurations per enclosure size*

P1 enclosure		P2 enclosure	
Voltage code	kA	Voltage code	kA
120N/240N	50–200	240S	
240S		208Y/415Y/480Y/600Y	120–200
208Y/415Y/480Y/600Y	50–100	240D/480D	
240D/480D		600D	50–200

* See catalog number system for voltage code details.

Voltage Protection Ratings (VPRs)

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

Voltage code	Protection mode				
	L–N	L–G	N–G	L–L	
50 kA unit VPR					
120N		700	1200	700	N/A
240N		1200	2000	1500	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
100 kA unit VPR					
120N		600	600	600	N/A
240N		1200	1200	1200	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
150-200 kA unit VPR					
120N		700	700	700	N/A
240N		1000	1200	1000	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

Specifications

Table 5. BSPA specifications

Description	Specification	
Leads	Length	36"
	Size	10 AWG stranded copper
Mounting	Chase nipple/panel (with mounting feet)	
Peak surge current capacity ratings available	50, 100, 150, 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	
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	
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):	Voltage code	
	120N	150 L–N, 150 L–G, 150 N–G
	240N	320 L–N, 320 L–G, 320 N–G
	240S, 208Y	150 L–N, 150 L–G, 150 N–G, 300 L–L
	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 and storage temperature	–40°F to +140°F (–40°C to +60°C)	
Operating humidity	5% through 95%, non-condensing	
Operating altitude	Up to 2000 m (6561 ft)	
Agency information	UL 1449 4 th edition, UL 1283 6 th 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 4 th 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*	
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	10 years standard	

* Mounting feet required to achieve NEMA 4X rating.

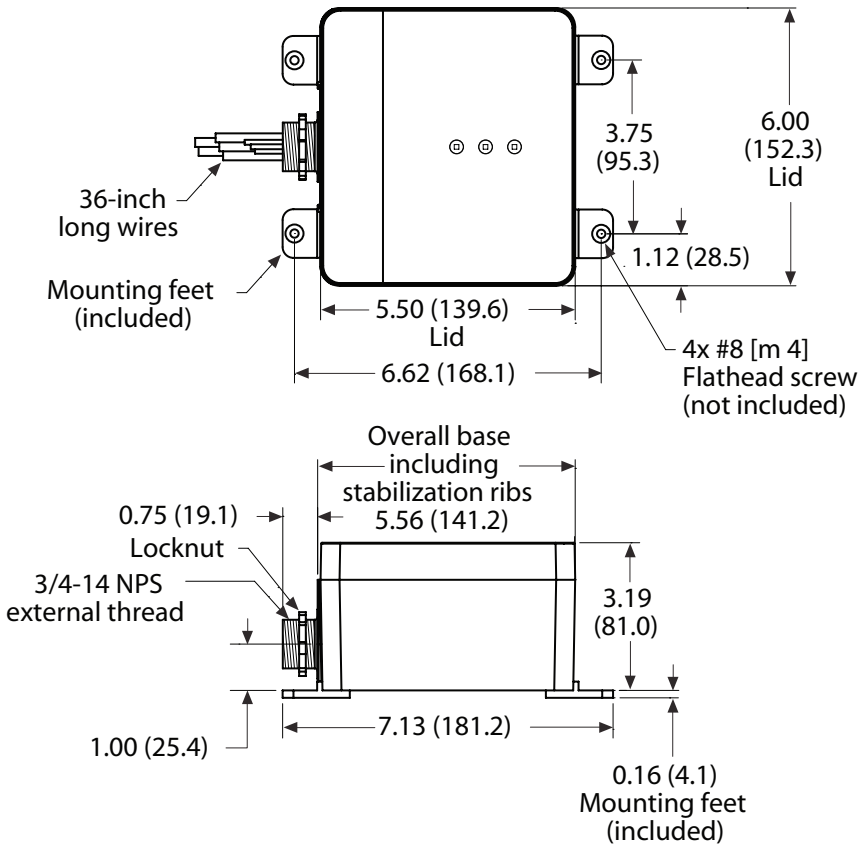


Figure 1. P1 enclosure, NEMA 4X with mounting feet dimensions, weight = 2.5 lb

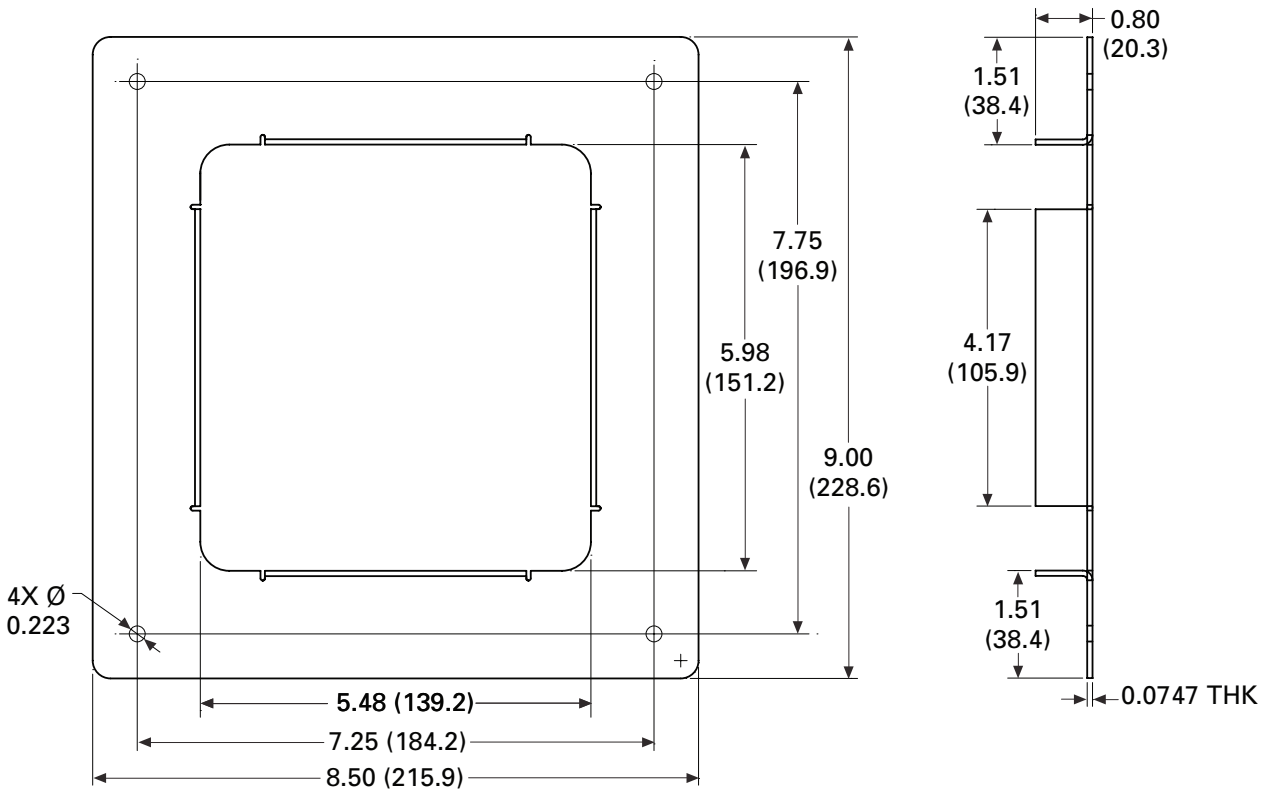


Figure 2. Optional flush mount plate for P1 enclosure (catalog number BSPA-FLUSHPLT1)

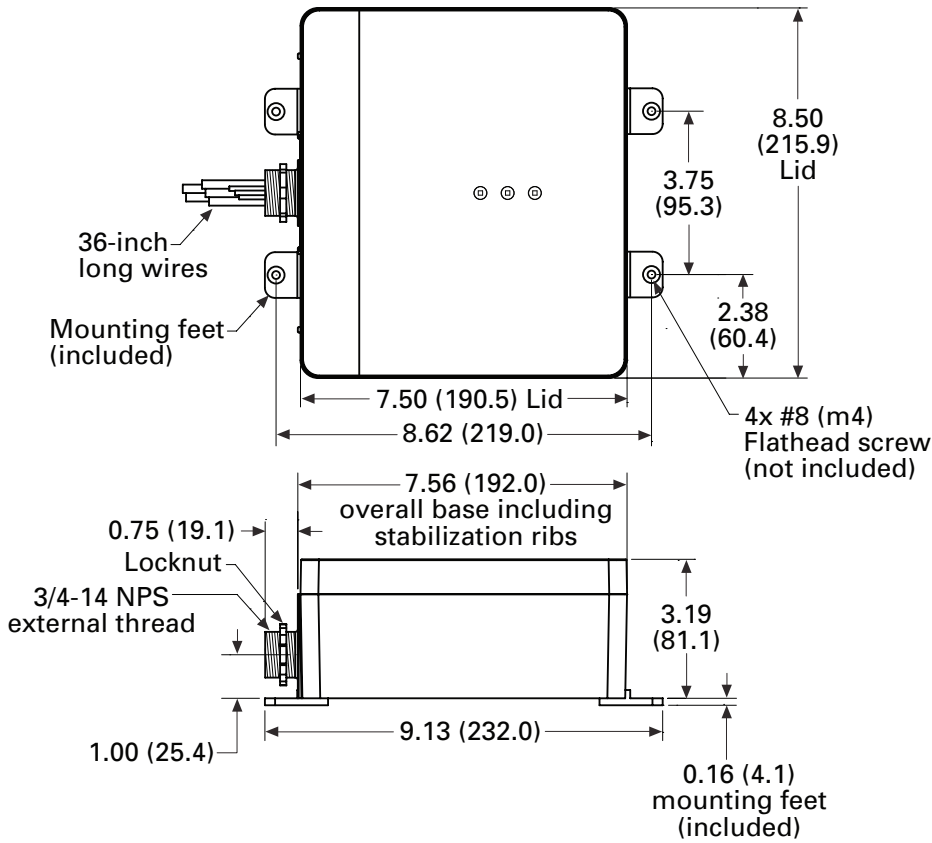


Figure 3. P2 enclosure, NEMA 4X with mounting feet dimensions, weight = 4 lb

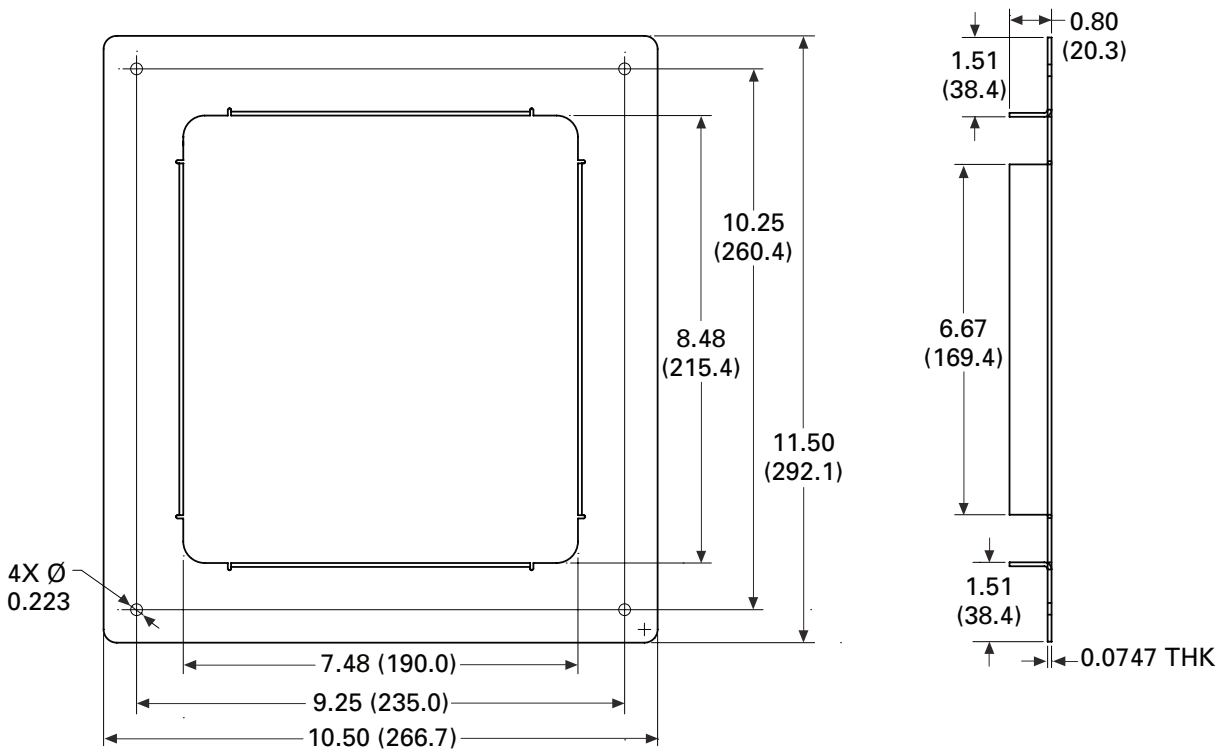


Figure 4. Optional flush mount plate for P2 enclosure (catalog number BSPA-FLUSHPLT2)

Catalog number selection

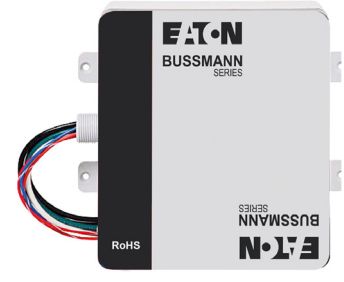
To order your BSPA surge protective device, use any combination from the catalog numbering system below.

Table 6. BSPA catalog number configuration

	BSPA	200	208Y	8	P
BSPA = Product family	[Line connecting to BSPA]				
Surge rating per phase	[Line connecting to 200 and 208Y]				
• 050 = 50 kA per phase					
• 100 = 100 kA per phase					
• 150 = 150 kA per phase					
• 200 = 200 kA per phase					
Voltage/system code	[Line connecting to 208Y and 8]				
• 120N = 120 V single-phase (2W + G)					
• 240N = 240 V single-phase (2W + G)					
• 240S = 120/240 V split-phase (3W + G)					
• 240D = 240 V Delta (3W + G)					
• 480D = 480 V Delta (3W + G)					
• 600D = 600 V Delta (3W + G)					
• 208Y = 120/208 V Wye (4W + G)					
• 415Y = 240/415 V Wye (4W + G)					
• 480Y = 277/480 V Wye (4W + G)					
• 600Y = 347/600 V Wye (4W + G)					
Options	[Line connecting to P]				
• 1 = No options (standard configuration), Type 1					
• 4 = Form C relay, Type 1					
• 5 = Audible alarm and Form C relay, Type 1					
• 7 = EMI filtering and Form C relay, Type 2					
• 8 = EMI filtering, audible alarm and Form C relay, Type 2					
NEMA enclosure	[Line connecting to P]				
• P = NEMA 4X					



BSPA wire port and conductors



BSPA with feet for panel mounting



LED protection status indicators showing full protection and phase faults

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