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BoltShield™ Surge Protective Devices

BSPD series for panelboards

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Surge Protective Devices (SPDs) provide the best protection from both externally and internally generated surges when located as close to the building distribution system as possible. For cost and space reasons many buildings only include one SPD located at the main incoming panel and do not cascade SPDs throughout the building as recommended by IEEE. The new Siemens BSPD series of SPDs are economical and easy to install in most panels throughout a building so that whole facility protection can be obtained. See the Siemens BoltShield web page and brochures for more information.

Features

- UL 1449 SPD Type 1*
- Monolithic distribution grade MOV
- Thermally protected MOV
- 100kA surge current protection per phase
- 20kA I-nominal ratings
- 200kA SCCRs
- 10 year standard warranty
- Form C dry contact, 240V AC, 1A max, 48V DC, 0.5A max
- Audible Alarm

Product specifications

General specifications		
Maximum surge current rating range		100 kA per phase
UL Type designation		SPD Type 1*
UL 1449 I-nominal rating		20kA
UL 1449 short circuit current rating		200kA
Repetitive impulse		5,000 hits
Response time		<1 ns

Physical specifications		
Humidity range		0-95% non-condensing
Operating frequency		0-415Hz
Operating temperature		-25°C to +60°C
Dimensions in inches (mm)	2 pole	3 (79.5) x 2 (50.1) x 2.6 (71.5)
	3 pole	3 (79.5) x 3 (75.2) x 2.8 (71.5)
Weight	2 pole	0.64 lb (291 g)
	3 pole	1.0 lb (450 g)
Neutral/ground connection		#14 AWG (pre-wired)

Diagnostic monitoring specifications	Design specifications
Green/red visual mechanical flag failure indicators	Monolithic distribution grade MOV
Flashing dual color LED (green/red) status indicator	Integrated optimized thermal protection
Audible alarm w/ silence switch/button	Fits in footprint of BL/BQD, or xGB/3VA41**
Form C dry contact, 240V AC, 1A max, 48V DC, 0.5A max	Modes of protection (L-N or L-G, L-L)

*Type 1 SPDs suitable for use in Type 2 applications.

** Each SPD comes with an adapter for xGB/3VA41 applications. Replacement adapterkit BSPDXGB1 is available, containing 2 and 3 pole adapters (1 each).

UL 1449 performance data and ordering information

System voltage	L-N (L-G)	L-L	I _n	SCCR	MCOV	Catalog numbers	Siemens breaker form factor
120/240V, 1Ø, 3W	600V	900	20kA	200kA	150V	BSPD2A100**	2-P, BL/BQD or xGB/3VA41
240/120V, 3Ø, 4W	600V/800V	1200	20kA	200kA	150V	BSPD3B100	3-P, BL/BQD or xGB/3VA41
208Y/120V, 3Ø, 4W	600V	900	20kA	200kA	150V	BSPD3C100	3-P, BL/BQD or xGB/3VA41
240V, 3Ø, 3W	800V	1500	20kA	200kA	280V	BSPD3D100	3-P, BL/BQD or xGB/3VA41
480Y/277V, 3Ø, 4W	1000V	1800	20kA	200kA	320V	BSPD3E100	3-P, BL/BQD or xGB/3VA41
480V, 3Ø, 3W	1800V	3000	20kA	200kA	550V	BSPD3F100	3-P, BL/BQD or xGB/3VA41
600V, 3Ø, 3W	2000V	4000	20kA	200kA	700V	BSPD3G100	3-P, BL/BQD or xGB/3VA41
380Y/220V, 3Ø, 4W	900V	1800	20kA	200kA	320V	BSPD3K100	3-P, BL/BQD or xGB/3VA41
600Y/347V, 3Ø, 4W	1200V	2500	20kA	200kA	400V	BSPD3L100	3-P, BL/BQD or xGB/3VA41
400Y/230V, 3Ø, 4W	900V	1800	20kA	200kA	320V	BSPD3S100	3-P, BL/BQD or xGB/3VA41
415Y/240V, 3Ø, 4W	900V	1800	20kA	200kA	320V	BSPD3T100	3-P, BL/BQD or xGB/3VA41

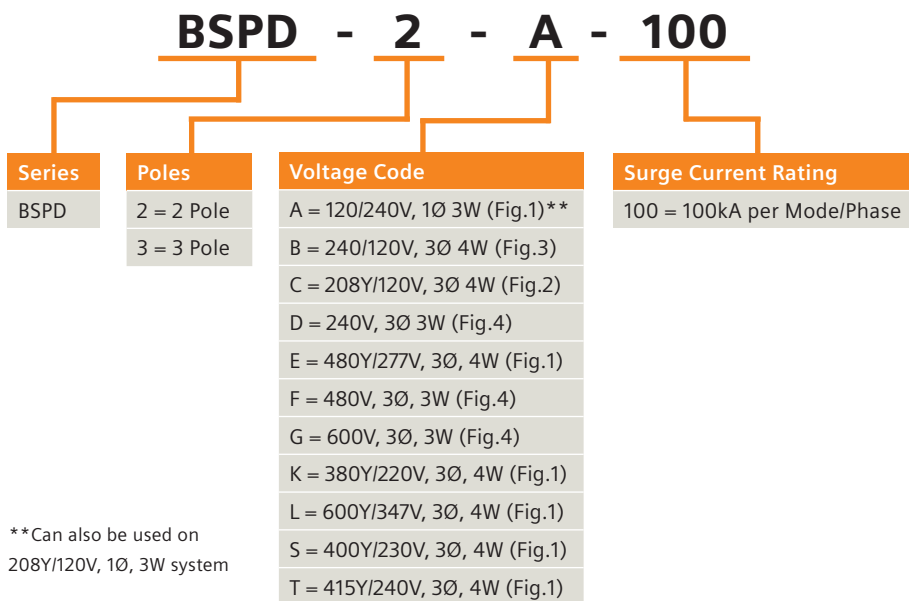
**Can also be used on 208Y/120V, 1Ø, 3W System.

Standards compliance and certifications

UL 1449 4th Edition, cUL, UL1283, UL 96A Compliant, ANSI/IEEE C62.41.1-2002, C62.41.2-2002, C62.45-2002, NEC Article 285

ISO 9001:2014 Quality Management System, 100% Quality Tested prior to shipping

Catalog number logic



National Electric Code (NEC) Requirements are changing for SPDs. The 2020 NEC is requiring SPDs in more locations as standard engineering practice. These include residential main distribution panels and commercial / industrial applications for the following equipment: emergency systems (Article 700.8), elevators, dumbwaiters, escalators, moving walks, platform lifts, and stairway chairlifts (Article 620), critical operations data systems (Article 645), Industrial Machinery (Article 670), and fire pumps (Article 695). The Siemens BoltShield family of residential and commercial products allow this to be done easily and at a reasonable cost.

Benefits of installing multiple BSPDs

Adding multiple BSPDs in a single panelboard can increase modes of protection and a surge capacity. See the BoltShield brochure for more details and review an example chart below:

Number of QSPDs	Connection	Modes of protection	Surge current capacity per mode	Surge current capacity per phase
1	Neutral	3	100kA	100kA
2	Neutral + Ground	6	100kA	200kA
2	Neutral(2)	3	200kA	200kA
3	Neutral(2) + Ground(1)	6	200kA(L-N) + 100kA (L-G)	300kA
3	Ground(3)	3	300kA	300kA
4	Neutral(2) + Ground(2)	6	200kA	400kA

Wiring configurations

Split

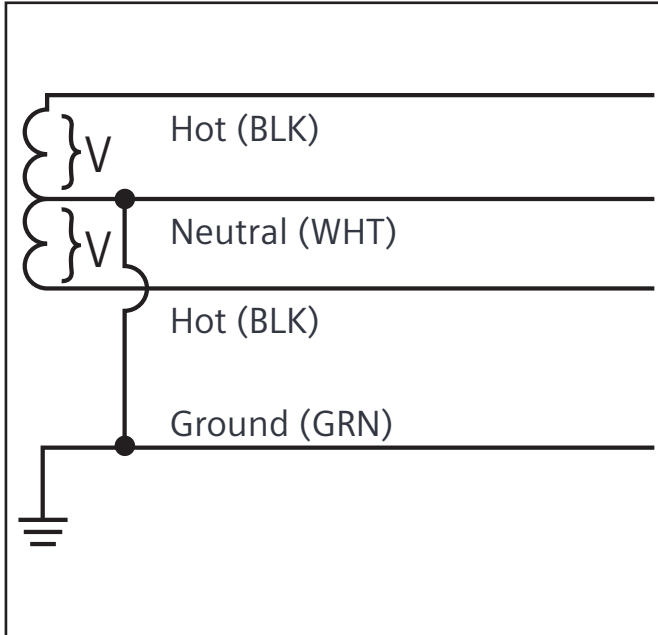


Figure 1

2 Hots, 1 Neu, 1 Grnd

WYE

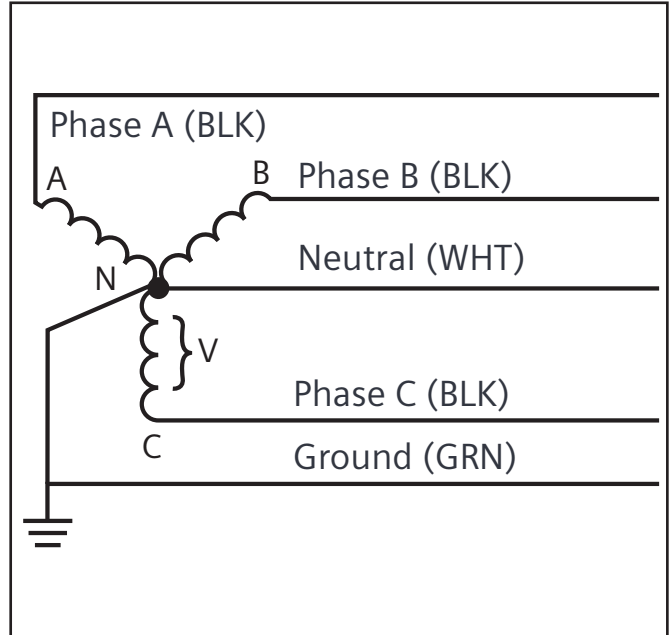


Figure 2

3 Hots, 1 Neu, 1 Grnd

Hi-Leg Delta (B High)

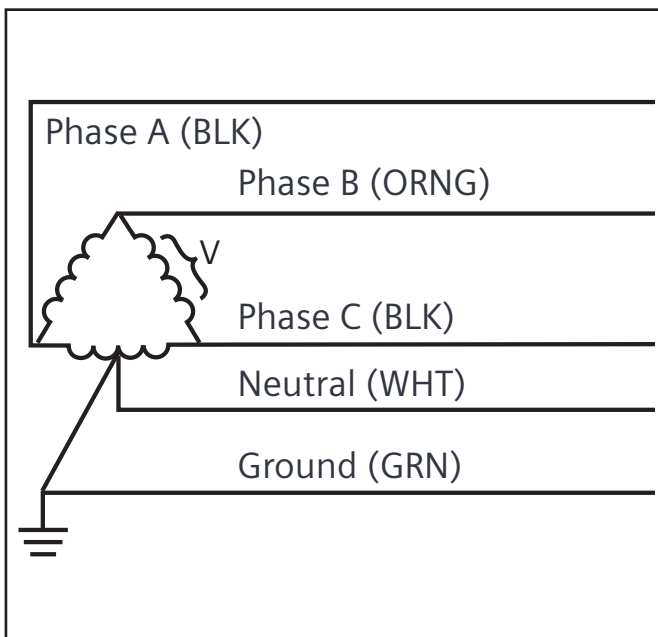


Figure 3

3 Hots (B High), 1 Neu, 1 Grnd

Delta & HRG WYE

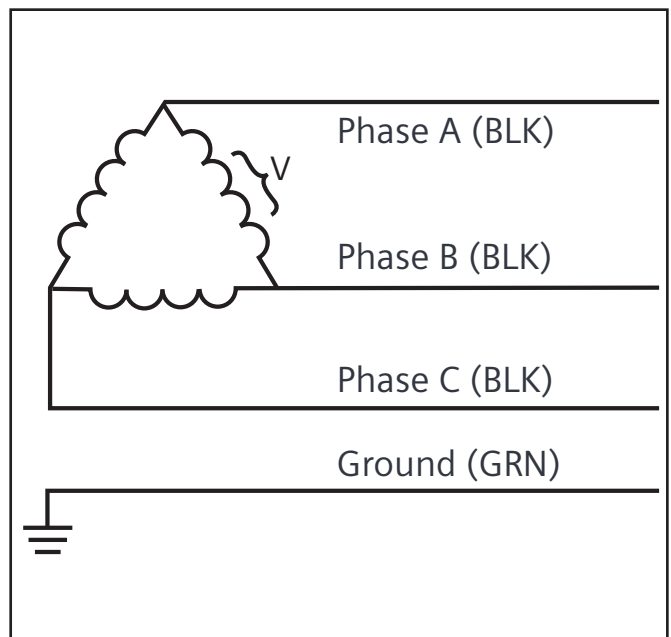
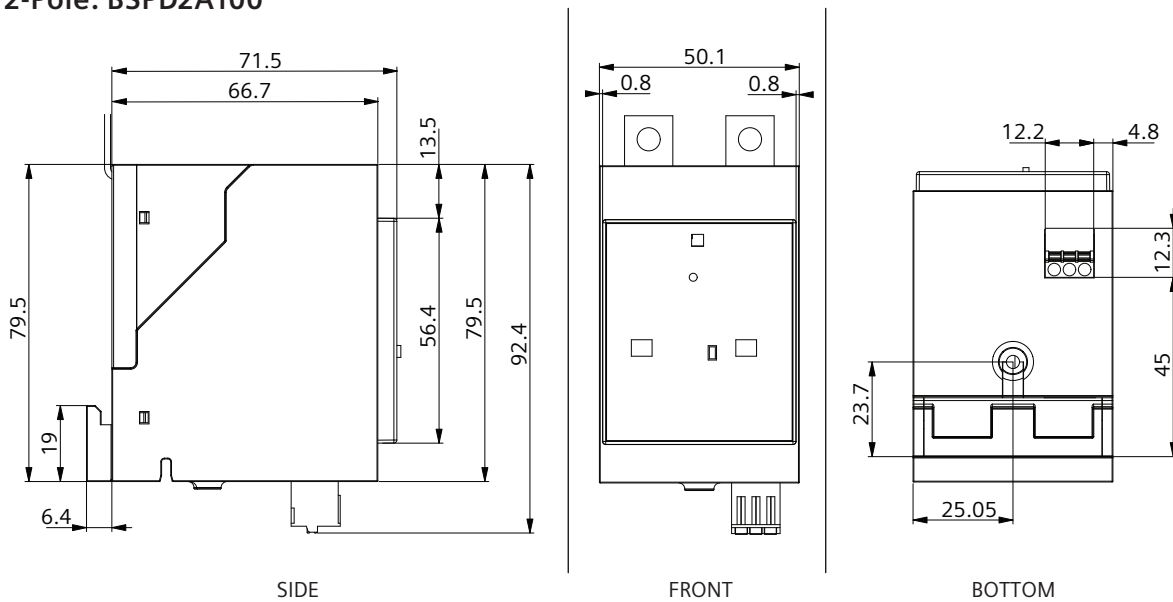


Figure 4

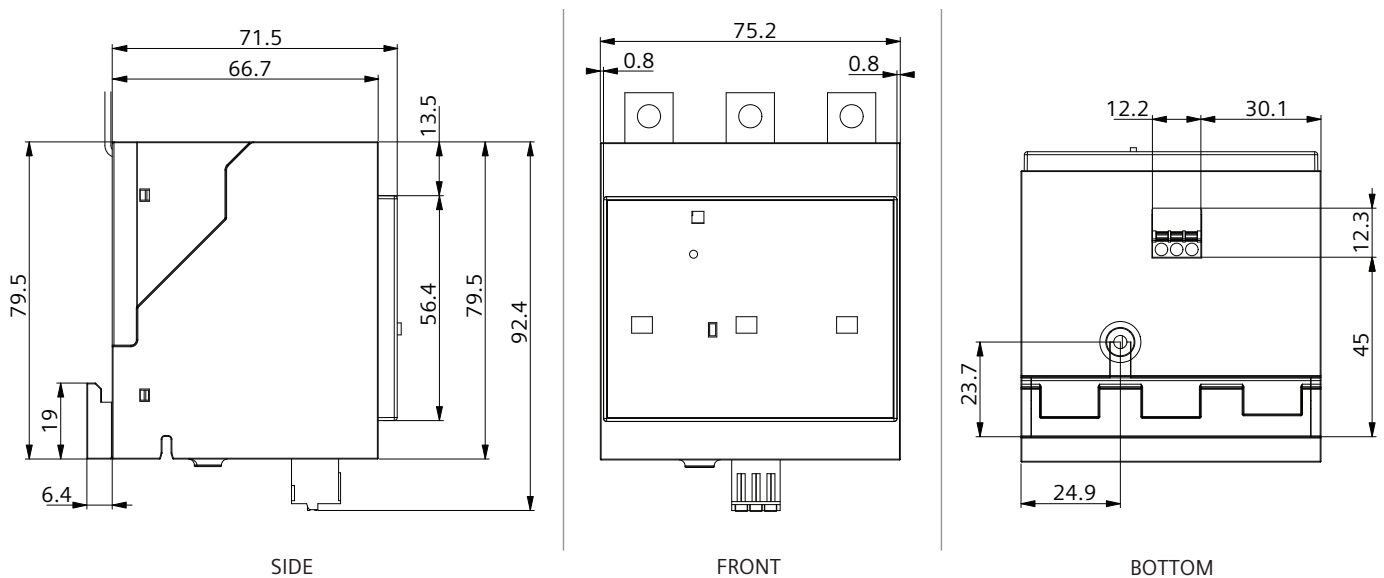
3 Hots, 1 Grnd

Product diagrams (in millimeters)

2-Pole: BSPD2A100



3-Pole: BSPD3x100



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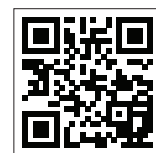
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