The **protection** you rely on

Bussmann series **surge protective solutions** help provide power that's free from damaging surges.

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Selecting a Type 1 SPD

Electrical systems and connections

Step 1: Review the following system diagrams that show the SPD connection points for the Bussmann SPD models that may be applied.

Step 2: Locate the system diagram that matches your application, note the applicable SPD model numbers and then proceed to the product pages for their details.

Understanding the following will help assure that the correct surge protective device is specified.

Typical North American electrical systems include single-phase, split-phase, Delta and Wye.

Selecting the wrong SPD generally arises from misunderstanding the nominal system voltage, ground and neutral connections.

General convention has it that a "ground" wire is not counted as a wire in the system description (e.g., 3 wire, 4 wire, etc.), but it is counted as a connection point if the SPD has a ground wire.

Selecting a voltage rating for Wye systems must be based upon its nominal system voltage rating and not on the leg-to-leg voltages.

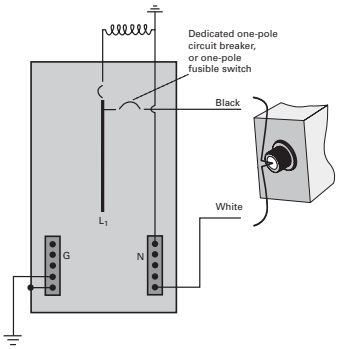
Bonded N-G configurations do not require protection at the service entrance transformer, but protection is suggested in downstream bonded N-G systems if the length of conductor making the bond is greater than 10 feet (3m).

Two wire single-phase - 2 connection points

Application: Sub-panel or feeder panel

Volts: 120, 240 (L-N)

Note: Must be installed within 10 feet (3m) of a bonded neutral ground connection per IEEE C62.41-1991.



SPD catalog numbers:

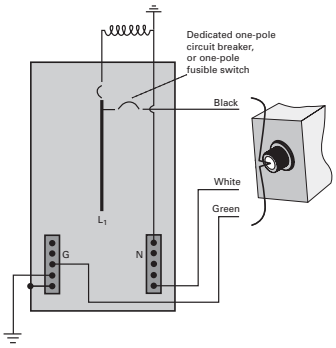
- BSPA
  - Specify from build-a-code catalog number system
- SurgePOD™ PRO
  - SPP40SP1120SN

Three wire split-phase/two-pole - 3 connection points

Application: Service entrance panel

Volts: 120, 240 (L-N)

Note: Installation for where the SPD is greater than 10 feet (3m) from a bonded neutral-ground connection.



SPD catalog numbers:

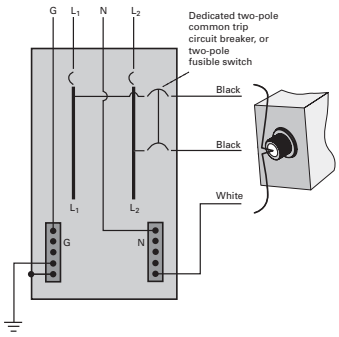
- BSPA
  - Specify from build-a-code catalog number system

Three wire split-phase/two-pole - 3 connection points

Application: Sub-panel or feeder panel

Volts: 120, 240 (L-N), 240, 480 (L1-L2)

Note: Installation at or less than 10 feet (3m) from the transformer and within 10 feet (3m) of a bonded-neutral ground connection.



SPD catalog numbers:

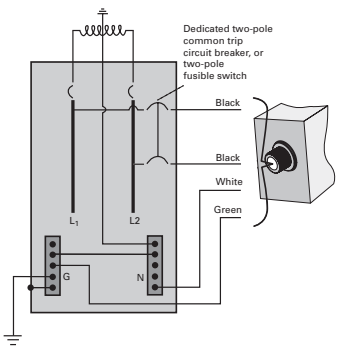
- BSPA
  - Specify from build-a-code catalog number system
- SurgePOD PRO
  - SPP40SP2240PN

Three wire split-phase/two-pole plus ground - 4 connection points

Application: Service entrance equipment

Volts: 120, 240 (L-N), 240 (L1-L2)

Note: Installation where greater than 10 feet (3m) of a bonded-neutral ground connection.



SPD catalog numbers:

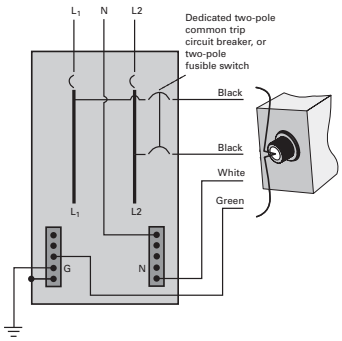
- BSPA
  - Specify from build-a-code catalog number system

Three wire split-phase/two-pole plus ground - 4 connection points

Application: Sub-panel or feeder panel

Volts: 120, 240 (L-N), 240 (L1-L2)

Note: For installation greater than 10 feet (3m) of a bonded-neutral ground connection.



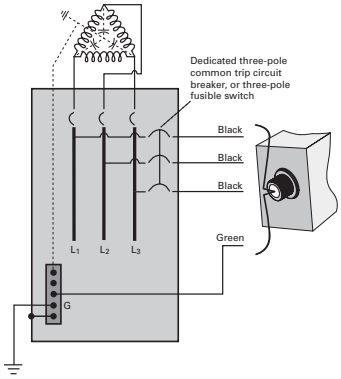
SPD catalog numbers:

- BSPA
  - Specify from build-a-code catalog number system

Three wire Delta plus ground - 4 connection points

Application: Service entrance equipment, sub-panel or feeder panel

Volts: 240, 480, 600 (L-L)



SPD catalog numbers:

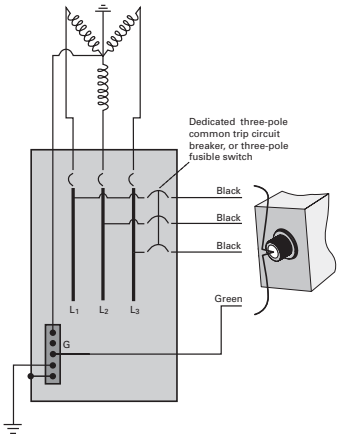
- BSPA
  - Specify from build-a-code catalog number system
- BSPD
  - Specify from build-a-code catalog number system

Three wire Wye plus ground - 4 connection points

Application: Sub-panel or feeder panel

Volts: 208, 480, 600 (L-L)

Note: A common MCC configuration for pumping and water/waste water treatment.



SPD catalog numbers:

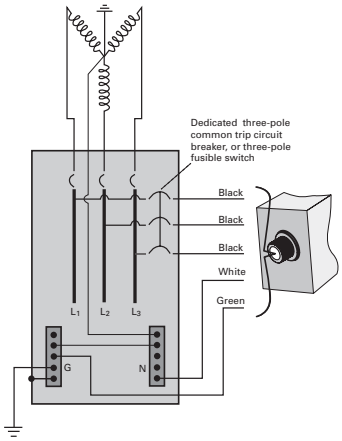
- BSPA
  - Specify from build-a-code catalog number system
- SurgePOD PRO
  - SPP40SP3208WYG
  - SPHP4SP3480WYG

Four wire Wye plus ground - 5 connection points

Application: Service entrance equipment

Volts: 120, 127, 277, 347 (L-N), 208, 220, 480, 600 (L-L)

Note: Common system configuration with Neutral pulled into facility and bonded to ground.



SPD catalog numbers:

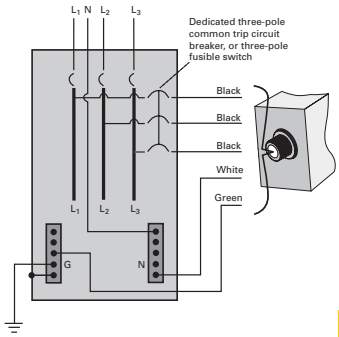
- BSPA
  - Specify from build-a-code catalog number system
- BSPD
  - Specify from build-a-code catalog number system

Four wire Wye plus ground - 5 connection points

Application: Sub-panel or feeder panel

Volts: 120, 127, 277, 347 (L-N), 208, 220, 480, 600 (L-L)

Note: Common system configuration with Neutral pulled into facility and bonded to ground.



SPD catalog numbers:

- BSPA
  - Specify from build-a-code catalog number system
- BSPD
  - Specify from build-a-code catalog number system

SurgePOD™ PRO for UL 1449 4th Edition Listed loadside and lineside protection

The Bussmann series SurgePOD PRO is a Type 1 UL Listed 1449 4th Edition surge protective device suitable for installation on both the loadside or lineside of the service entrance overcurrent protective device and is well suited for light commercial and residential applications.

Available in popular voltage and system specific versions to match common residential and light commercial electrical system and equipment requirements. The SurgePOD PRO delivers superior surge protection using MOV thermal disconnect technology that eliminates the need for additional overcurrent protection.

LISTED

RoHS 2011/65/EU

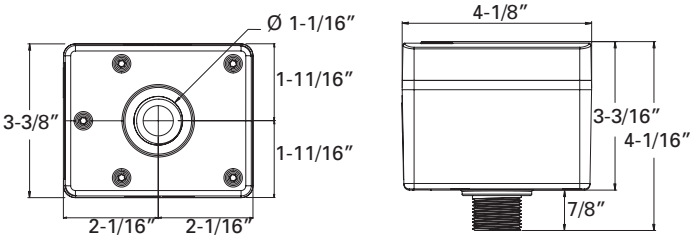
2 YEAR WARRANTY

*easy*ID™ LED Status Indicator

Parallel connection to the electrical system permits the SurgePOD PRO SPD to be installed on any ampacity panel.

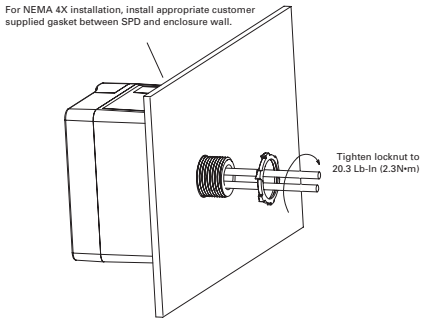
- Type 1 UL 1449 4th Edition Listed SPDs are easily selected and installed on the loadside or lineside of the service entrance overcurrent protective device
- Voltage specific models precisely match and protect electrical systems and equipment better than "one-size-fits-all" SPDs
- Thermal disconnect technology eliminates the need for additional fusing
- NEMA 4X enclosure for indoor or outdoor applications
- *easy*ID™ LED status indicator provides surge protection status at a glance

Dimensions — in



Mounting

SurgePOD PRO is a panel mount device. It may also be mounted using a customer supplied bracket or directly onto a female threaded conduit fitting.



Catalog no.		
SPP40SP1120SN	SPP40SP3240DLG	SPP40SP3208WYG
SPP40SP2240PN	SPP40SP3480DLG	SPP40SP3480WYG

See catalog number explanation below for details.

Catalog number explanation

This is not a build-a-code for configuring an orderable catalog number. It's purpose is to show what portions of the catalog number denotes which specification.

SPP 40S Px xxx xxx

SPP = Product family

Surge rating

- 40 kA surge current capacity

Number of wires

- P1 = 1, P2 = 2, P3 = 3

System voltage (Vac)

- 120, 208, 240, 480

System type/wires and connection points

- SN = Single-phase 2 wire, 2 connection points
- PN = Split-phase 3 wire , 3 connection points
- DLG = Three-phase Delta 3 wire + G, 4 connection points
- WYG = Three-phase Wye 3 wire, 4 connection points

*easy*ID™ LED status indicator

The *easy*ID LED status indicator will illuminate when the unit is properly installed and the system or equipment being protected is energized. The following LED color/status indicates:

GREEN LED = Good

The circuit is energized and protected.

RED LED = Replace

The circuit is energized and unprotected.

The unit needs replacing.

LED is Out / Unlit:

The circuit is most likely deenergized

The unit's leads are disconnected

The unit is damaged

Authorized personnel should follow all prescribed lockout/tagout and safety procedures in troubleshooting the cause for the above conditions. Opening SurgePOD PRO enclosure will void the warranty.

Data sheet no. 10033

SurgePOD PRO

Catalog no.	Nominal system voltage	Max. continuous operating AC voltage (MCOV) (V_c)	System type	Connection points
SPP40SP1120SN	120	150	Single-phase 2 wire	2
SPP40SP2240PN	120/240	150	Split-phase 3 wire	3
SPP40SP3240DLG	240	320	Three-phase Delta 3 wire + G	4
SPP40SP3480DLG	480	550	Three-phase Delta 3 wire + G	4
SPP40SP3208WYG	208	150	Three-phase Wye 3 wire + G	4
SPP40SP3480WYG	480	320	Three-phase Wye 3 wire + G	4

Specifications (for all SurgePOD PRO units)	Values
Short-Circuit Current Rating (SCCR)	200 kA
Nominal discharge current (8x20µs) (I_n)	10 kA
Surge current capacity (8x20µs) (I_{max})	40 kA
Response time (ns) (t_A)	<25ns
Frequency	50/60 Hz
Operating state/fault indication	Bi-color LED - green (good) / red (replace)
Conductor length / gauge	18 inches, 10 AWG stranded tinned copper
Mounting	Chase nipple / bracket*
Enclosure / flammability ratings	NEMA 4X - UL 94-5VA
Degree of protection (installed state)	IP20 (finger-safe)
SPD install location	Indoor/outdoor
Circuit location	Lineside or loadside of service entrance overcurrent protective device
Operating temperature	-40°C to +65°C
Maximum operating altitude	12,000FT
Agency information	cULus, RoHS compliant
Standard	UL 1449 4th Edition Type 1 Listed SPD
Warranty	Two years**

* Customer-supplied bracket.
**See Limited Warranty Statement 3A1502 for details at Eaton.com/bussmannseries.

Voltage protection ratings (VPR)

Catalog no.	Nominal system voltage	MCOV (V_c)	Voltage Protection Ratings (VPR)		
			L-N	L-L	L-G
SPP40SP1120SN	120	150	700	—	—
SPP40SP2240PN	120V/240	150	700	1200	—
SPP40SP3240DLG	240	320	—	2500	1200
SPP40SP3480DLG	480	550	—	3000	1800
SPP40SP3208WYG	208	150†	—	1200	700
SPP40SP3480WYG	480	320†	—	2500	1200

† SPD voltages are measured from Line-to-Neutral, or Line-to-Ground on systems where there is no neutral present. These units do not have a line-to-neutral, so the line-to-ground voltage is 120 V for the 208 V Wye L-G and 277 V for the 480 V L-G, making the normal voltage applied to the unit less than the MCOV values listed in the table.

BSPA NEMA 4X Type 1 and 2

RoHS 2011/65/EU

The Bussmann series BSPA surge protective devices are UL 1449 4th Edition-certified surge protectors. Application of BSPA units throughout a facility will help ensure that equipment is protected from damaging surges.

The BSPA compact NEMA 4X enclosure allows for installation external to an electrical assembly in a variety of environments.

BSPA units are available in all common voltages 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.

Agency information

- UL 1449 4th Edition Type 1 and Type 2
- UL 1283 6th Edition
- Canadian Standards Association (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

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 (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 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
- Five-year warranty

* See catalog number system for availability.

Catalog number system

The catalog numbering system permits specifying any combination to meet requirements.

BSPA 200 208Y 8 P

BSPA = Product family

Surge rating per phase

- 050 = 50 kA per phase
- 100 = 100 kA per phase
- 150 = 150 kA per phase
- 200 = 200 kA per phase

Voltage/system code

- 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)

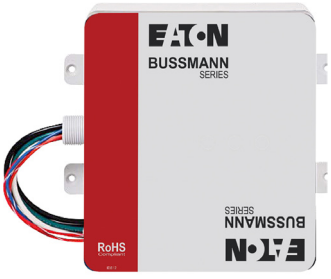
Options

- 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

- P = NEMA 4X

BSPA wire port and conductors



BSPA with mounting feet

Data sheet no. 10661

BSPA configurations

The BSPA allows for selecting along with the standard features the audible alarm, Form C relay contacts and EMI/RFI filtering options shown in 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

LED protection status indicators showing full protection and phase faults

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.

Available optional equipment

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

BSPA voltage configurations per enclosure size*

P1 enclosure		P2 enclosure	
Voltage code	kA	Voltage code	kA
120N/240N/277N/480N		240S	
240S		208Y/415Y/480Y/600Y	120–200
208Y/415Y/480Y/600Y	50–200	240D/480D	
240D/480D		600D	50–200
240H		240H	120–200

* See catalog number system for voltage code details.

Voltage protection ratings (VPRs) per ANSI/UL 1449 4th Edition

Voltage code	Protection mode			
	L–N	L–G	N–G	L–L
50 kA unit VPR				
120N	700	1200	700	—
240N	1200	2000	1500	—
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	—	1000	—	1000
480D	—	2000	—	2500
600D	—	2500	—	2500
100 kA unit VPR				
120N	600	600	600	—
240N	1200	1200	1200	—
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	—	1000	—	1000
480D	—	2000	—	2500
600D	—	2500	—	2500
150-200 kA unit VPR				
120N	700	700	700	—
240N	1000	1200	1000	—
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	—	1000	—	1000
480D	—	1800	—	2000
600D	—	2500	—	2500

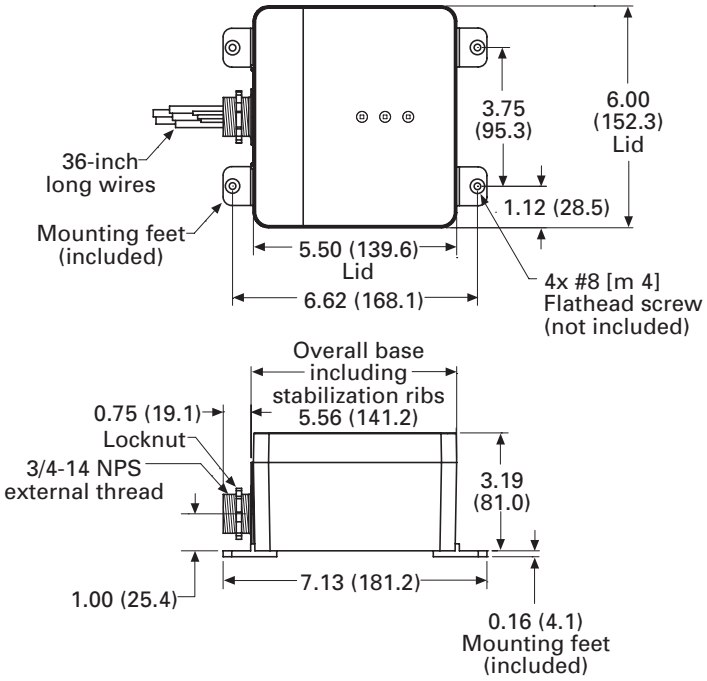
BSPA specifications

Description		Value
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 4th edition, UL 1283 6th 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*
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

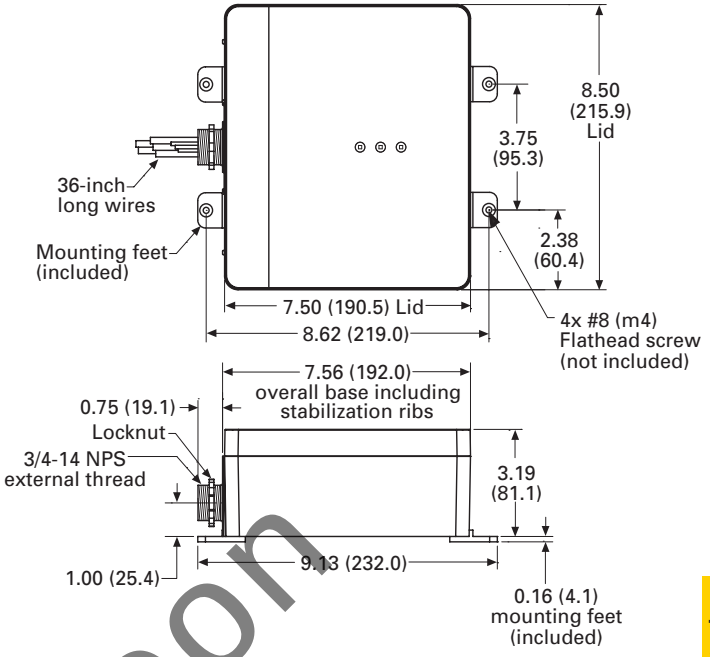
* Mounting feet required to achieve NEMA 4X rating.

Data sheet no. 10661

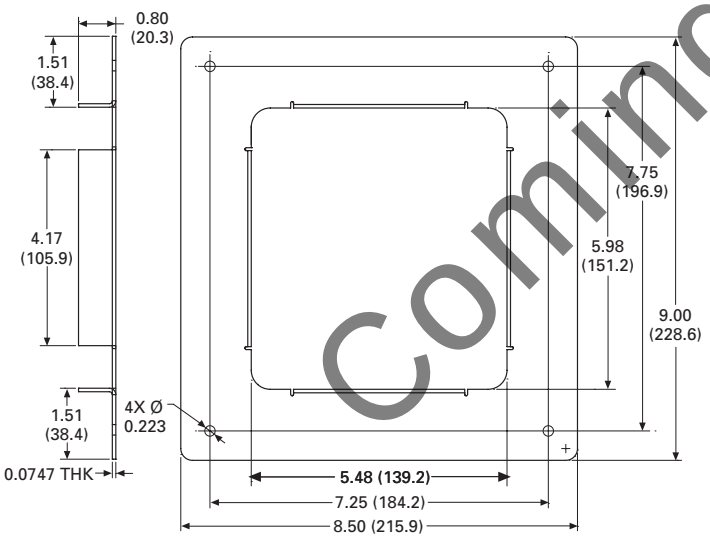
Dimensions — in (mm)



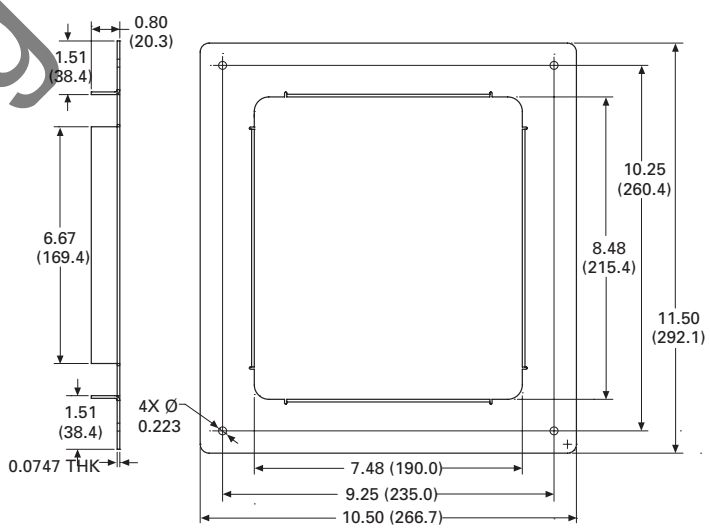
P1 enclosure, NEMA 4X with mounting feet dimensions, weight = 2.5 lb



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



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



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

BSPD high capacity Type 1 and 2

BSPD Surge Protective Devices (SPDs) are UL Listed 1449 4th Edition Type 1 or UL Recognized 1283 5th Edition Type 2 surge protectors, depending on the configuration. The BSPD is available for installation external to an electrical enclosure or panelboard. Application of BSPD units throughout a facility will help ensure that equipment is protected.

NEMA 1 steel enclosure 120 kA and 200 kA maximum surge current capacity

BSPD units are available for common Delta and Wye voltage systems in a variety of surge current capacity ratings from 120 kA through 400 kA. Available in three configurations, the BSPD's configurations and options make it easy to specify units for many electrical applications; including service entrances, distribution switchboards, panelboards and point-of-use.

NEMA 1 steel enclosure 300 kA and 400 kA maximum surge current capacity

NEMA 4X 304 Stainless Steel enclosure, all surge current capacities

- *Basic*, *Standard* and *Standard with Surge Counter* configurations UL Listed 1449 4th Edition, Guide VZCA, File E316410, CSA Certified Notice 516 File 243397
- Standard and Standard with Surge Counter configurations are also UL Recognized 1283 5th Edition, Guide VZCA2, File E316410, CSA Component Acceptance Std. C22.2
- RoHS compliant
- 20 kA nominal discharge current (I_n) rating (maximum rating assigned by UL)
- 120 kA through 400 kA per phase surge current capacity (I_{max}) ratings
- 200 kA Short-Circuit Current Rating (SCCR)
- Two color LED status indicators for each phase on Delta and Wye units, plus N-G on Wye units
- 10-Year warranty

Configurations

The BSPD provides users with the option of selecting between three configurations:

- *Basic* (Type 1)
- *Standard* with Form C contact and EMI/RFI filter (Type 2)
- *Standard with Surge Counter* (Type 2)

The appropriate configuration can be specified from the catalog number system based on the application's requirements or specifications.

Catalog number system

The catalog numbering system permits specifying any combination to meet requirements.

BSPD 200 480D 2 K

BSPD = Product family

Surge rating per phase

- 120 = 120 kA
- 200 = 200 kA
- 300 = 300 kA
- 400 = 400 kA

Voltage/system code

- 208Y = 120/208 Wye (4W + G)
- 480Y = 277/480 Wye (4W + G)
- 600Y = 347/600 Wye (4W + G)
- 240D = 240 Delta (3W + G)
- 480D = 480 Delta (3W + G)
- 600D = 600 Delta (3W + G)

Configurations

- 1 = Basic
  - Green and red LEDs per phase to indicate protection status.
  - Green and red LEDs on Wye units to indicate protection status of the neutral-to-ground mode
- 2 = Standard
  - Green and red LEDs per phase to indicate protection status
  - Green and red LEDs on Wye units to indicate protection status of the neutral-to-ground mode
  - Audible alarm with silence button
  - Form C contact relay
  - EMI/RFI filtering providing up to 50 dB of noise attenuation from 10 kHz to 100 MHz
- 3 = Standard With Surge Counter
  - Green and red LEDs per phase to indicate protection status
  - Green and red LEDs on Wye units to indicate protection status of the neutral-to-ground mode
  - Audible alarm with silence button
  - Form C contact relay
  - EMI/RFI filtering providing up to 50 dB of noise attenuation from 10 kHz to 100 MHz
  - Surge counter with reset button

NEMA enclosures

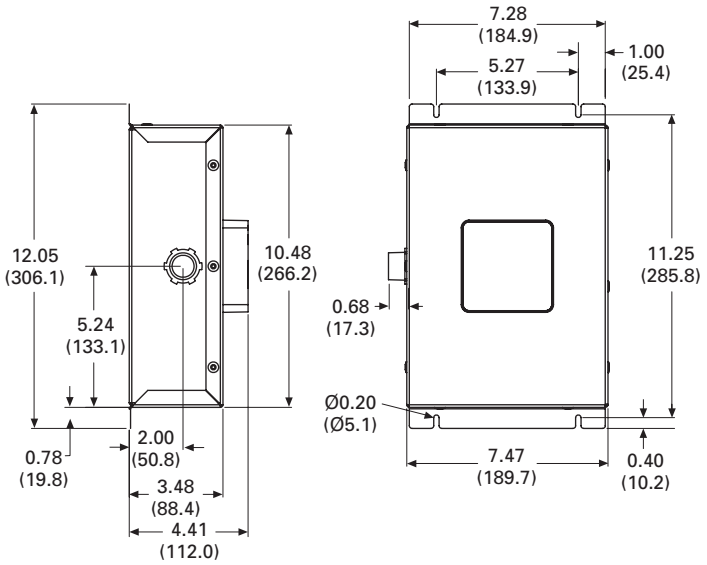
- K = NEMA 1
- P = NEMA 4X

Data sheet no. 10209

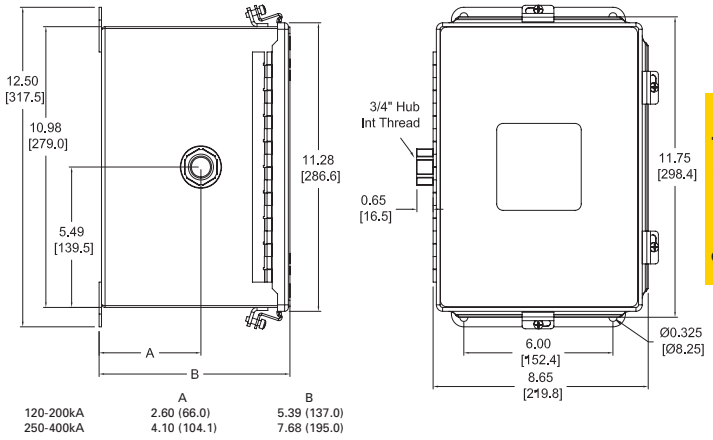
BSPD configurations

Features	Configuration		
	Basic (Type 1)	Standard (Type 2)	Standard with Surge Counter (Type 2)
Two color LED protection status indicators for each phase	X	X	X
Two color LED protection status indicators for the neutral-ground protection mode (Wye systems only)	X	X	X
Audible alarm with silence button		X	X
Form C contact relay		X	X
EMI/RFI filtering, providing up to 50 dB of noise attenuation from 10 kHz to 100 MHz		X	X
Surge counter with reset button			X

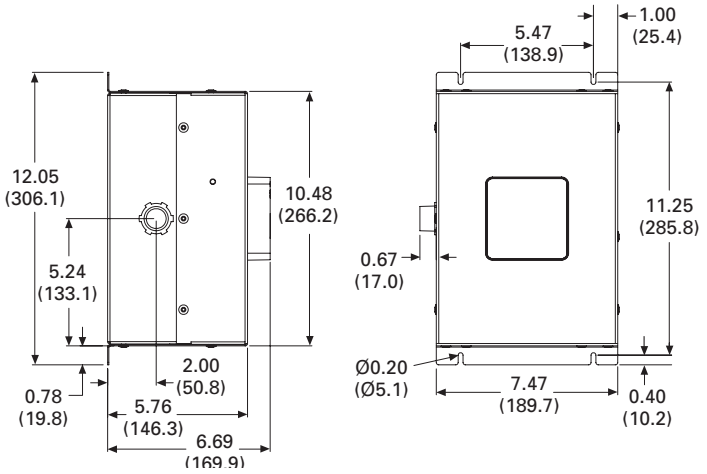
Dimensions — in (mm)



120 kA and 200 kA Units/NEMA 1

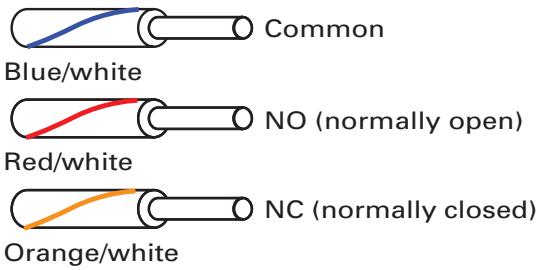


120 kA to 400 kA Units/NEMA 4X



300 kA and 400 kA Units/NEMA 1

Form C Contact relay wire color codes



BSPD specifications

Description	Values
Available system voltages	
Three-phase Wye	120/208, 277/480 and 347/600
Three-phase Delta	240, 480 and 600
Input power frequency	50/60 Hz
Maximum Continuous Operating Voltage (MCOV)	
208Y, and 240D voltage/system codes	150 L-N,150 L-G, 150 N-G, 300 L-L
480Y Voltage/system code	320 L-N, 320 L-G, 320 N-G, 640 L-L
600Y Voltage/system code	420 L-N, 420 L-G, 420 N-G, 840 L-L
480D Voltage/system code	640 L-G, 640 L-L
600D Voltage/system code	840 L-G, 840 L-L
Short-Circuit Current Rating (SCCR)	200 kA
Nominal discharge current (I_n)	20 kA
Surge current capacity per phase (I_{max})	120 kA, 200 kA, 300 kA and 400 kA ratings available
SPD Types	
Type 1	*Basic* configuration, can also be used in Type 2 applications
Type 2	*Standard* and *Standard With Surge Counter* configurations
Enclosure types	NEMA 1
	NEMA 4X 304 stainless steel
Ports	1
SPD conductor length/gauge	48" (1.22m) 10 AWG Stranded copper
Form C contact relay (*Standard* and *Standard With Surge Counter* configurations only)	
Contact ratings	150 Vac or 125 Vdc, 1A maximum
Lead length/gauge	48 inches (1.22m) / 14 AWG
Contact logic	Power ON, normal state; N.O. contact = OPEN, N.C. contact = CLOSED Power OFF, fault state; N.O. contact = CLOSED, N.C. contact = OPEN
Power consumption	
Basic configuration	0.5 W — 208Y and 240D voltage/system codes
	1.1 W — 480Y and 480D voltage/system codes
	1.3 W — 600Y and 600D voltage/system codes
Standard and Standard with Surge Counter configurations	0.6 W — 208Y and 240D voltage/system codes
	1.7 W — 480Y, and 480D voltage/system codes
	2.1 W — 600Y and 600D voltage/system codes
Protection modes	
Three-phase Delta	L-G, L-L
Three-phase Wye	L-N, L-G, N-G, L-L
Operating temperature / humidity	-40 to +50°C (-40 to +122°F) / 5% to 95%, non-condensing
Operating altitude - ft (m)	16,000 (5000)
EMI/RFI filtering attenuation	Up to 50 dB from 10 kHz to 100 MHz (*Standard* and *Standard With Surge Counter* configurations)
Weight - lbs (kg)	
NEMA 1	120-200 kA - 6.8 (3.1)
	300- 400 kA -13.5 (6.1)
NEMA 4X	120-200 kA - 14.6 (6.6)
	300-400 kA - 21.0 (9.5)
Agency information	
Basic, Standard and *Standard with Surge Counter* configurations	UL Listed 1449 4th Edition File E316410 Guide VZCA, CSA Certified Notice 516 File 243397
Standard and *Standard with Surge Counter* configurations	UL Recognized 1283 5th Edition File E316410 Guide VZCA2, CSA Component Acceptance Std. C22.2 No. 8-M1986, File 243397
RoHS compliant	Yes
Seismic withstand capability	Meets or exceeds the requirements specific to I.B.C. 2006, C.B.C. 2007 and U.B.C. Zone 4
Warranty	10 Years (see warranty statement 3A1502 for details at Eaton.com/bussmannseries)

Data sheet no. 10209

Voltage protection ratings

ANSI/UL 1449 4th Edition voltage protection ratings

Voltage Protection Rating (V_{PR}) data for all units is included in the following tables, The data varies based upon the configuration and NEMA enclosure. V_{PR} values for the *Basic* configurations are on the left-hand side of the page. Tables on the right-hand side contain VPR values for the *Standard* or *Standard with Surge Counter* configurations.

NEMA 1: Basic

Catalog numbers ending with 1K.

120-200 kA

	Protection mode			
Voltage/system code	L-N	L-G	N-G	L-L
208Y	700	700	700	1200
480Y	1200	1200	1200	2000
600Y	1500	1500	1500	2500
240D	—	1000	—	1000
480D	—	2000	—	2500
600D	—	2500	—	2500

300 kA

	Protection mode			
Voltage/system code	L-N	L-G	N-G	L-L
208Y	700	700	700	1000
480Y	1200	1200	1200	1800
600Y	1500	1500	1500	2500
240D	—	1000	—	1000
480D	—	1800	—	2000
600D	—	2500	—	2500

400 kA

	Protection mode			
Voltage/system code	L-N	L-G	N-G	L-L
208Y	700	700	700	1000
480Y	1200	1200	1200	1800
600Y	1500	1500	1500	2500
240D	—	1000	—	1000
480D	—	1800	—	2000
600D	—	2500	—	2500

NEMA 1: Standard or Standard w/ Surge Counter

Catalog numbers ending with 2K or 3K.

120-200 kA

	Protection mode			
Voltage/system code	L-N	L-G	N-G	L-L
208Y	600	800	600	1000
480Y	1200	1200	1200	1800
600Y	1500	1500	1500	2500
240D	—	1000	—	1000
480D	—	2500	—	2500
600D	—	2500	—	2500

300 kA

	Protection mode			
Voltage/system code	L-N	L-G	N-G	L-L
208Y	600	700	600	1000
480Y	1000	1200	1000	1800
600Y	1500	1500	1500	2500
240D	—	1000	—	1000
480D	—	1800	—	2000
600D	—	2500	—	2500

400 kA

	Protection mode			
Voltage/system code	L-N	L-G	N-G	L-L
208Y	600	700	600	1000
480Y	1000	1200	1000	1800
600Y	1500	1500	1500	2500
240D	—	1000	—	1000
480D	—	1800	—	2000
600D	—	2500	—	2500

Voltage protection ratings continued

NEMA 4X: Basic

Catalog numbers ending with 1P.

120–200 kA

	Protection mode			
Voltage/system code	L-N	L-G	N-G	L-L
208Y	700	800	700	1200
480Y	1200	1200	1000	2000
600Y	1500	1500	1500	2500
240D	—	1000	—	1000
480D	—	2000	—	2500
600D	—	2500	—	2500

300 kA

	Protection mode			
Voltage/system code	L-N	L-G	N-G	L-L
208Y	700	800	700	1200
480Y	1200	1200	1200	2000
600Y	1500	1500	1500	2500
240D	—	1000	—	1000
480D	—	1800	—	2000
600D	—	2500	—	2500

400 kA

	Protection mode			
Voltage/system code	L-N	L-G	N-G	L-L
208Y	700	800	700	1200
480Y	1200	1200	1200	2000
600Y	1500	1500	1500	2500
240D	—	1000	—	1000
480D	—	1800	—	2000
600D	—	2500	—	2500

NEMA 4X: Standard or Standard w/ Surge Counter

Catalog numbers ending with 2P or 3P.

120–200 kA

	Protection mode			
Voltage/system code	L-N	L-G	N-G	L-L
208Y	900	900	700	1500
480Y	1200	1200	1000	2500
600Y	1500	1500	1500	2500
240D	—	1000	—	1000
480D	—	2500	—	2500
600D	—	2500	—	2500

300 kA

	Protection mode			
Voltage/system code	L-N	L-G	N-G	L-L
208Y	800	900	700	1500
480Y	1200	1200	1000	2000
600Y	1500	1500	1500	2500
240D	—	1000	—	1000
480D	—	2000	—	2000
600D	—	2500	—	2500

400 kA

	Protection mode			
Voltage/system code	L-N	L-G	N-G	L-L
208Y	800	900	700	1500
480Y	1200	1200	1000	2000
600Y	1500	1500	1500	2500
240D	—	1000	—	1000
480D	—	2000	—	2000
600D	—	2500	—	2500

BSPM1___S2G(R) 1-pole high SCCR Type 2 DIN-Rail SPDs

Bussmann series single-pole high SCCR UL Type 2 surge protective devices for two wire systems feature *easy*ID™ local visual indication and optional remote contact signaling for system monitoring. The unique module locking system fixes the protection module to the base part. Modules can be easily replaced without tools by simply depressing the release buttons. Integrated mechanical coding between the base and protection module ensures against installing an incorrect replacement module.

Optional remote signaling Form C contact

The remote signaling contact versions have a floating changeover contact for use as a break or make contact for easy adoption in any monitoring application.

Ratings

- System volts
  - 120 Vac
  - 240 Vac
  - 347 Vac
- Short-Circuit Current Rating (SCCR) up to 200 kA

Systems types

- Single-phase
- 2 wire Wye

Agency information

- UL Recognized 1449 4th Edition, Type 2 Component Assembly
- Vibration and shock tested per EN 60068-2
- RoHS compliant
- CE

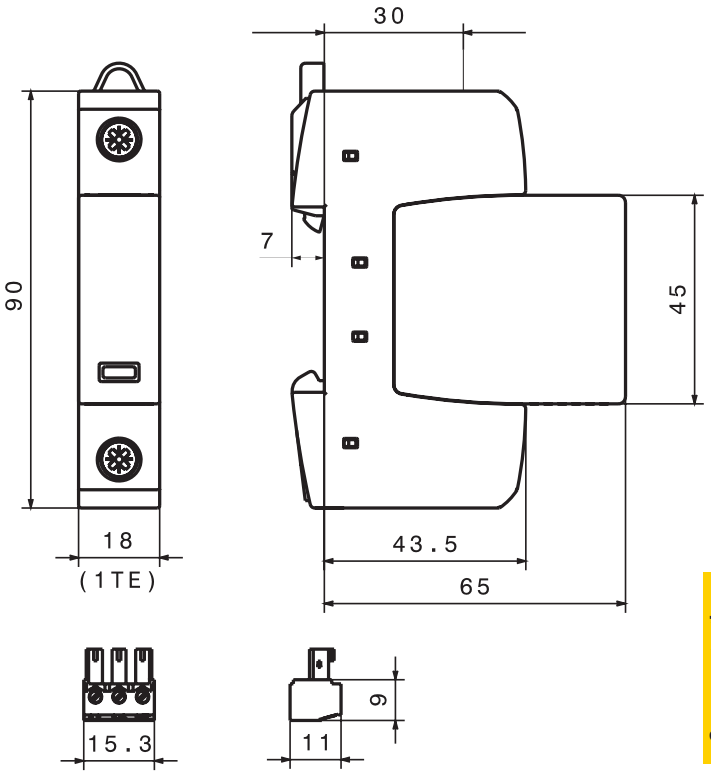
Mounting

- 35mm DIN-Rail

Warranty

- Five years

Dimensions — mm



Shown with optional remote contact signaling

For remote signaling contact, add "R" suffix to the part number, E.g., BSPM1120S2G**R**

Surge protective devices

Catalog numbers and specifications

Ordering information		System volts/catalog no.		
Nominal system voltage		**120 Vac**	**240, 277 or 240 and 277 Vac**	**347 Vac**
Max. Continuous Operating Voltage AC (MCOV) (V_C)		275 Vac	385 Vac	600 Vac
Catalog numbers (base = modules)	W/O remote signaling	BSPM1120S2G	BSPM1240S2G	BSPM1347S2G
	W/ remote signaling	BSPM1120S2GR	BSPM1240S2GR	BSPM1347S2GR
Replacement module	MOV technology	BPM275UL	BPM385UL	BPM600UL
Specifications				
Rated voltage		120-127 Vac	240-277 Vac	347 Vac
Voltage Protection Rating (VPR)		1 kV	1.5 kV	2 kV
SCCR		200 kA	200 kA	125 kA
Discharge current	Nom. I_n	20 kA		
	Max. I_{max}	40 kA		
Response time t_A		≤25 ns		
Frequency		50/60 Hz		
Number of poles		1		
Number of wires/connection points		2 Wires / 2 connection points		
Operating state/fault indication		Green (good) / Red (replace)		
Cross-sectional area	Min.	14 AWG - Cu stranded, solid or fine		
	Max.	2 AWG - Cu solid or stranded / 4 AWG - Cu fine		
Terminal torque		45 lb-in (5.1N•m)		
Mounting		35mm DIN-rail per EN 60715		
Enclosure material		Thermoplastic, UL 94V0		
Protection		IP20 (finger-safe)		
Location		Indoor		
Capacity		1 Mods, DIN 43880		
Application and standard		UL Type 2 Component Assembly, UL 1449, 4th Edition		
Agency information		cURus, RoHS compliant		
Warranty		Five years*		
Remote contact signaling				
Signaling Type		Changeover contact		
Switching capacity (volts/amps)	AC	250V/0.5A		
	DC	250V/0.1A; 125V/0.2A; 75V/0.5A		
Conductor cross-sectional area		60/75°C Max. 1.5mm²/14 AWG solid/flexible		
Ordering Information		Order from catalog numbers above		

* See Limited Warranty Statement 3A1502 for details at Eaton.com/bussmannseries.

Data sheet no. 2149

BSPM2___S3G(R) 2-pole high SCCR Type 2 DIN-Rail SPDs

RoHS 2011/65/EU

Bussmann series 2-pole high SCCR UL Type 2 surge protective devices for split-phase Delta and Wye systems feature *easy*ID local visual indication and optional remote contact signaling for system monitoring. The unique module locking system fixes the protection module to the base part. Modules can be easily replaced without tools by simply depressing the release buttons. Integrated mechanical coding between the base and protection module ensures against installing an incorrect replacement module.

Optional remote signaling Form C contact

The remote signaling contact versions have a floating changeover contact for use as a break or make contact for easy adoption in any monitoring application.

Ratings

- System volts
  - 120/240 Vac
  - 240/480 Vac
  - 120/208 Vac
  - 277/480 Vac
  - 240 Vac
  - 480Vac
- Short-Circuit Current Rating (SCCR) up to 200 kA

Systems types

- Single-phase center tap
- 3 wire Wye
- 2 wire Delta, corner ground and ungrounded

Agency information

- UL Recognized 1449 4th Edition, Type 2 Component Assembly
- Vibration and shock tested per EN 60068-2
- RoHS compliant
- CE

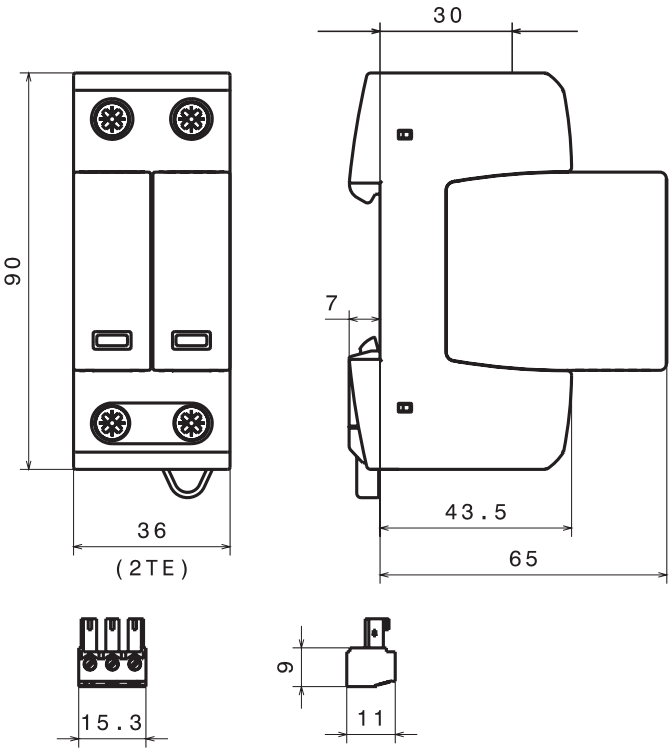
Mounting

- 35mm DIN-Rail

Warranty

- Five years

Dimensions — mm



Shown with optional remote contact signaling

For remote signaling contact, add "R" suffix to the part number, E.g., BSPM2240S3G**R**

Catalog numbers and specifications

Ordering information		System volts/catalog no.	
Nominal system voltage		**120/240, 240 Vac**	**240/480 Vac**
Max. Continuous Operating Voltage MCOV (V_C)	[L-G/L-L]	275/550 Vac	385/770 Vac
Catalog numbers (base + modules)	W/O remote signaling	BSPM2240S3G	BSPM2480S3G
	W/ remote signaling	BSPM2240S3GR	BSPM2480S3GR
Replacement module	MOV technology	BPM275UL	BPM385UL
Specifications			
Rated voltage		120-127 Vac	240-480 Vac
		240-254 Vac	480Vac
		240 Vac	
Voltage Protection Rating (VPR) [L-G/L-L]		1 kV/1.8 kV	1.5 kV/2.5 kV
Discharge current	Nom. I_n	20 kA	
	Max. I_{max}	40 kA	
Response time t_A		≤25 ns	
SCCR		200 kA	
Frequency		50/60 Hz	
Number of poles		2	
Number of wires/connection points		2 wires or 3 wires / 3 connection points	
Operating state/fault indication		Green (good) / rRed (replace)	
Cross-sectional area	Min.	14 AWG - Cu stranded, solid or fine	
	Max.	2 AWG - Cu solid or stranded, 4 AWG - Cu fine	
Terminal torque		45 lb-in (5.1N•m)	
Mounting		35mm DIN-rail per EN 60715	
Enclosure material		Thermoplastic, UL 94V0	
Protection		IP20 (finger-safe)	
Location		Indoor	
Capacity		2 mods, DIN 43880	
Application/standard		UL Type 2 Component Assembly, UL 1449, 4th Edition	
Agency information		cURus, RoHS compliant	
Warranty		Five years*	
Remote contact signaling			
Signaling type		Changeover contact	
Switching capacity (volts/amps)	AC	250V/0.5A	
	DC	250V/0.1A; 125V/0.2A; 75V/0.5A	
Conductor and cross-sectional area		60/75°C Max. 1.5mm²/14 AWG solid/flexible	
Ordering information		Order from catalog numbers above	

* See Limited Warranty Statement 3A1502 for details at Eaton.com/bussmannseries.

Data sheet no. 2150

BSPM3___WYG(R) and BSPM3___DLG(R) 3-pole high SCCR Type 2 DIN-Rail SPDs

RoHS 2011/65/EU

Bussmann series 3-pole high SCCR UL Type 2 surge protective devices for three-phase Delta and Wye systems feature *easy*ID local visual indication and optional remote contact signaling for system monitoring. The unique module locking system fixes the protection module to the base part. Modules can be easily replaced without tools by simply depressing the release buttons. Integrated mechanical coding between the base and protection module ensures against installing an incorrect replacement module.

Optional remote signaling Form C contact

The remote signaling contact versions have a floating changeover contact for use as a break or make contact for easy adoption in any monitoring application.

Ratings

- System volts
  - 208 Vac
  - 480 Vac
  - 600 Vac
- Short-Circuit Current Rating (SCCR) up to 200 kA

Systems types

- Three-phase Wye, 3 wire + ground
- Three-phase Delta, 3 wire + ground

Agency information

- UL Recognized 1449 4th Edition, Type 2 Component Assembly
- Vibration and shock tested per EN 60068-2
- RoHS compliant
- CE

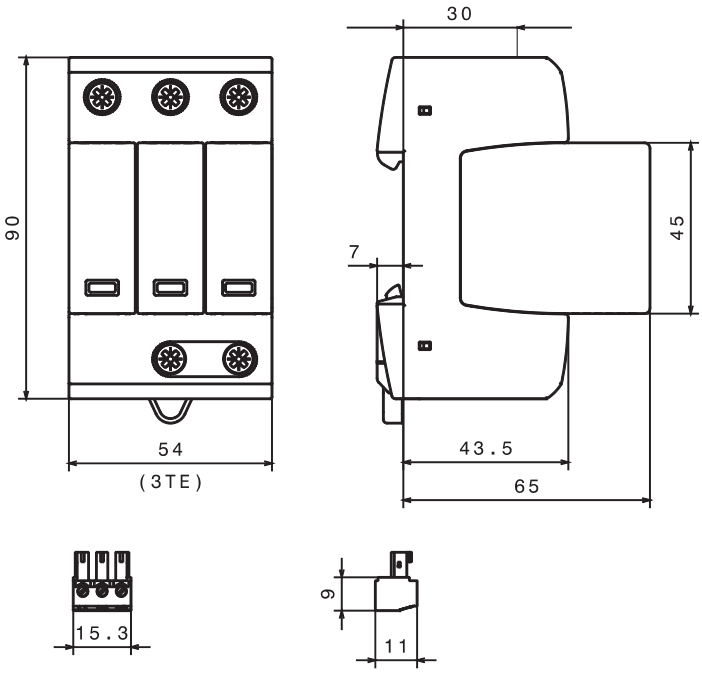
Mounting

- 35mm DIN-Rail

Warranty

- Five years

Dimensions — mm



Shown with optional remote contact signaling

For remote signaling contact, add "R" suffix to the part number, E.g., BSPM3480WYG**R**

Surge protective devices

Catalog numbers and specifications

Ordering information		System volts/catalog no.				
Nominal system voltage		**120/208 Vac**	**240 Vac**	**277/480 Vac**	**480Vac**	**347/600Vac**
Max. Continuous Operating AC Voltage MCOV (V_C) [L-G/L-L]		275/550 Vac	275/550 Vac	385/770 Vac	600/1200Vac	600/1200Vac
Catalog numbers (base + modules)	W/O remote signaling	BSPM3208WYG	BSPM3240DLG	BSPM3480WYG	BSPM3480DLG	BSPM3600WYG
	W/ remote signaling	BSPM3208WYGR	BSPM3240DLGR	BSPM3480WYGR	BSPM3480DLGR	BSPM3600WYGR
Replacement module	MOV technology	BPM275UL	BPM275UL	BPM385UL	BPM600UL	BPM600UL
Specifications						
Rated voltage		120-127 Vac, 208-220 Vac	240 Vac	277/480 Vac	480Vac	347/600Vac
Voltage Protection Rating VPR [L-G/L-L]		1 kV/1.8 kV	1 kV/1.8 kV	1.5 kV/2.5 kV	2 kV/4 kV	2 kV/4 kV
SCCR		200 kA	200 kA	200 kA	125 kA	125 kA
Discharge current	Nom. I_n	20 kA				
	Max. I_{max}	40 kA				
Response time t_A		≤25 ns				
Frequency		50/60 Hz				
Number of poles		3				
Number of wires/connection points		3 wires / 4 connection points				
Operating state/fault indication		Green (good) / red (replace)				
Cross-sectional area	Min..	14 AWG - Cu stranded, solid or fine				
	Max..	2 AWG - Cu solid or stranded, 4 AWG - Cu fine				
Terminal torque		45 lb-in (5.1N•m)				
Mounting		35mm DIN-rail per EN 60715				
Enclosure material		Thermoplastic, UL 94V0				
Protection		IP20 (finger-safe)				
Location		Indoor				
Capacity		3 Mods, DIN 43880				
Application, standard		UL Type 2 Component Assembly, UL 1449, 4th Edition				
Agency information		cURus, RoHS compliant				
Warranty		Five years*				
Remote contact signaling						
Signaling type		Changeover contact				
Switching capacity (volts/amps)	AC	250V/0.5A				
	DC	250V/0.1A; 125V/0.2A; 75V/0.5A				
Conductor and cross-sectional area		60/75°C Max. 1.5mm²/14 AWG solid/flexible				
Ordering information		Order from catalog numbers above				

* See Limited Warranty Statement 3A1502 for details at Eaton.com/bussmannseries.

Data sheet no. 2151

BSPM4___WYNG(R) and BSPM4___HLG(R) 4-pole high SCCR Type 2 DIN-Rail SPDs

Bussmann series 3-pole high SCCR UL Type 2 surge protective devices for three-phase Highleg Delta and Wye systems feature *easy*ID local visual indication and optional remote contact signaling for system monitoring. The unique module locking system fixes the protection module to the base part. Modules can be easily replaced without tools by simply depressing the release buttons. Integrated mechanical coding between the base and protection module ensures against installing an incorrect replacement module.

RoHS 2011/65/EU

Optional remote signaling Form C contact

The remote signaling contact versions have a floating changeover contact for use as a break or make contact for easy adoption in any monitoring application.

Ratings

- System volts
  - 120/208 Vac
  - 127/220 Vac
  - 277/480 Vac
  - 347/600 Vac
  - 120/240 Vac
  - 240/480 Vac
- Short-Circuit Current Rating (SCCR) up to 200 kA

Systems types

- Three-phase Wye, 4 wire + ground
- Three-phase highleg Delta, 4 wire + ground

Agency information

- UL Recognized 1449 4th Edition, Type 2 Component Assembly
- Vibration and shock tested per EN 60068-2
- RoHS compliant
- CE

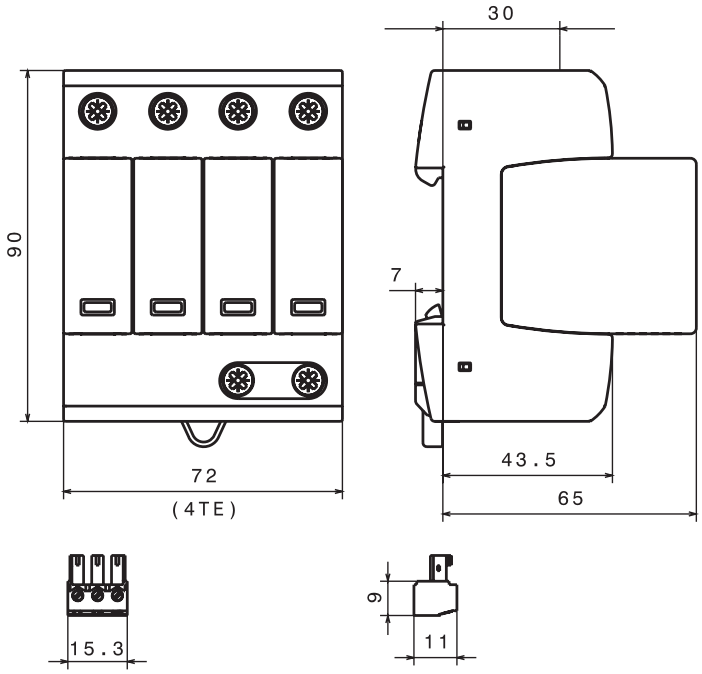
Mounting

- 35mm DIN-Rail

Warranty

- Five years

Dimensions — mm



Shown with optional remote contact signaling

For remote signaling contact, add "R" suffix to the part number, E.g., BSPM4480HLG**R**

Surge protective devices

Catalog numbers and specifications

Ordering information		System volts/catalog no.				
Nominal system voltage		120/208 Vac, 127/220 Vac	120/240 Vac	240/480 Vac	277/480 Vac	347/600Vac
Max. Continuous Operating AC Voltage MCOV (V_C)	[L-N/L-G]	275/550 Vac	275/550 Vac	385/770 Vac	385/600 Vac	600/875 Vac
	[N-G/L-L]	275/550 Vac	275/550 Vac	385/770 Vac	275/770 Vac	275/1200 Vac
	[H-N/H-G]	—	275/550 Vac	600/985 Vac	—	—
	[L-L]	—	550 Vac	985 Vac	—	—
Catalog numbers (base + modules)	W/O remote signaling	BSPM4208WYNG	BSPM4240HLG	BSPM4480HLG	BSPM4480WYNG	BSPM4600WYNG
	W/ remote signaling	BSPM4208WYNGR	BSPM4240HLGR	BSPM4480HLGR	BSPM4480WYNGR	BSPM4600WYNGR
Replacement module, MOV technology, four (4) total required	Module positions: L1 or L3	BPM275UL	BPM275UL	BPM385UL	BPM385UL	BPM600UL
	L2	BPM275UL	BPM275UL	BPM600UL	BPM385UL	BPM600UL
	N	BPM275UL	BPM275UL	BPM385UL	BPM275UL	BPM275UL
Specifications						
Rated voltage		120/208 Vac, 127/220 Vac	120/240 Vac	240/480 Vac	277/480 Vac	347/600 Vac
Voltage Protection Rating VPR	[L-N/L-G]	1 kV/1.8 kV	1 kV/1.8 kV	1.5 kV/2.5 kV	1.5 kV/2.5 kV	2 kV/3 kV
	[N-G/L-L]	1 kV/1.8 kV	1 kV/1.8 kV	1.5 kV/2.5 kV	1 kV/2.5 kV	1 kV/4 kV
	[H-N/H-G]	—	1 kV/1.8 kV	2 kV/3 kV	—	—
	[H-L]	—	1.8 kV	3 kV	—	—
SCCR		200 kA	200 kA	125 kA	200 kA	125 kA
Discharge current	Nom. I_n	20 kA				
	Max. I_{max}	40 kA				
Response time t_A		≤25 ns				
Frequency		50/60 Hz				
Number of poles		4				
Number of wires/connection points		4 wires / 5 connection points				
Operating state/fault indication		Green (good) / red (replace)				
Cross-sectional area	Min.	14 AWG - Cu stranded, solid or fine				
	Max.	2 AWG - Cu solid or stranded, 4 AWG - Cu fine				
Terminal torque		45 lb-in (5.1N•m)				
Mounting		35mm DIN-rail per EN 60715				
Enclosure material		Thermoplastic, UL 94V0				
Protection		IP20 (finger-safe)				
Location		Indoor				
Capacity		4 Mods, DIN 43880				
Application, standard		UL Type 2 Component Assembly, UL 1449, 4th Edition				
Agency information		cURus, RoHS compliant				
Warranty		Five years*				
Remote contact signaling						
Signaling type		Changeover contact				
Switching capacity (volts/amps)	AC	250 V/0.5 A				
	DC	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A				
Conductor and cross-sectional area		60/75°C Max. 1.5mm²/14 AWG solid/flexible				
Ordering information		Order from catalog numbers above				

* See Limited Warranty Statement 3A1502 for details at Eaton.com/bussmannseries.

Data sheet no. 2152

BSPM1A_ _ _ _LV(R) low voltage power SPDs

The Bussmann series UL Type 4, 48 Vac/60 Vdc, 75 Vac/100 Vdc, 120 Vac/200 Vdc, 275 Vac/350 Vdc, 320 Vac/420 Vdc, 385 Vac/500 Vdc, 440 Vac/585 Vdc and 600 Vac/dc single pole, modular surge arresters feature local, *easy*ID™ visual indication and optional remote contact signaling. The unique module locking system fixes the protection module to the base part. Modules can be easily replaced without tools by simply depressing the release buttons. Integrated mechanical coding between the base and protection module ensures against installing an incorrect replacement module.

LV power system arresters

The features of these single-pole devices are for use as a single device or in combination with other devices for AC and DC voltage systems.

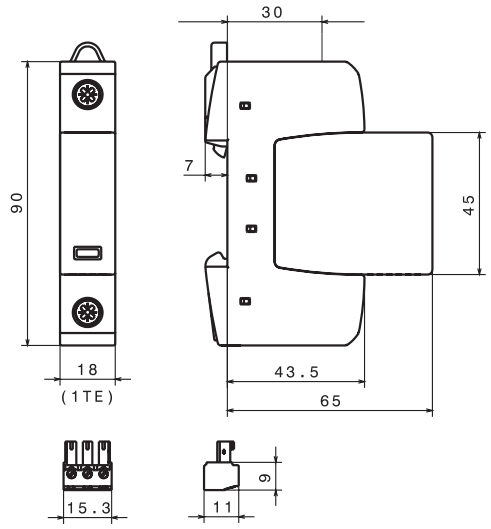
- Surge arrester according to UL 1449 4th Edition, Type 4 Component Assembly for use in Type 2 applications helps meet UL 508A requirements*
- Proven MOV technology for reliable surge protection
- "Thermo Dynamic Control" SPD monitoring device ensures high reliability against surge events
- Module locking system with module release button make module replacement easy without tools
- Optional remote signaling of all protection modules make status monitoring easy and accurate in any monitoring scheme
- No additional upstream overcurrent protection necessary to make installation easier and more economical
- Vibration and shock tested according to EN 60068-2 to withstand harsh environments

* Except as noted in data sheet no. 2056.

Optional remote signaling Form C contact

The remote signaling contact versions have a floating changeover contact for use as a break or make contact for easy adoption in any monitoring application.

Dimensions — mm



Shown with optional remote contact signaling

For remote signaling contact, add "R" suffix to the part number, E.g., BSPM1A150D200LV**R**

Catalog numbers and specifications

Ordering information — for 48 Vac/60 Vdc to 275 Vac/350 Vdc		System volts/catalog no.			
System voltage		48 Vac/60 Vdc	75 Vac/100 Vdc	120 Vac/200 Vdc	275 Vac/350 Vdc
Catalog no. (base + modules)	W/O remote signaling	BSPM1A48D60LV	BSPM1A75D100LV	BSPM1A150D200LV	BSPM1A275D350LV
	With remote signaling	BSPM1A48D60LVR	BSPM1A75D100LVR	BSPM1A150D200LVR	BSPM1A275D350LVR
Replacement modules		BPMA48D60LV	BPMA75D100LV	BPMA150D200LV	BPMA275D350LV
Specifications					
Max. continuous operating AC voltage [V_C]		48 Vac	75 Vac	150 Vac	275 Vac
Voltage protection level [VPL]		≤0.33 kV	≤0.4 kV	≤0.7 kV	≤1.5 kV
Voltage protection level at 5 kA [VPL]		≤0.25 kV	≤0.35 kV	≤0.55 kV	≤1 kV
Max. continuous operating DC voltage [V_C]		60 Vdc	100 Vdc	200 Vdc	350 Vdc
Nominal discharge current (8/20µs) [I_n] AC		7.5 kA	10 kA	15 kA	20 kA
Nominal discharge current (8/20µs) [I_n] DC		7.5 kA	10 kA	12.5 kA	12.5 kA
Surge current capacity(8/20µs) [I_{max}]		25 kA	40 kA	40 kA	40 kA
Temporary overvoltage (TOV)		70 V / 5 sec.	90 V / 5 sec.	175 V / 5 sec.	335 V / 5 sec
Agency information*		—	UL / cUL, CSA, KEMA	UL / cUL, CSA, KEMA	UL / cUL, CSA, KEMA

Ordering information — for 320Vac/420Vdc to 600Vac/dc		System volts/catalog no.			
System voltage		320 Vac/420 Vdc	385 Vac/500 Vdc	440 Vac/585 Vdc	600 Vac/600 Vdc
Catalog numbers: (base + modules)	W/O remote signaling	BSPM1A320D420LV	BSPM1A385D500LV	BSPM1A440D585LV	BSPM1A600D600LV
	With remote signaling	BSPM1A320D420LVR	BSPM1A385D500LVR	BSPM1A440D585LVR	BSPM1A600D600LVR
Replacement modules		BPMA320D420LV	BPMA385D500LV	BPMA440D585LV	BPMA600D600LV
Specifications					
Max. continuous operating AC voltage [V_C]		320 Vac	385 Vac	440 Vac	600 Vac
Max. continuous operating DC voltage [V_C]		420 Vdc	500 Vdc	585 Vdc	600 Vdc
Voltage protection level [VPL]		≤1.5 kV	≤1.75 kV	≤2 kV	≤2.5 kV
Voltage protection level at 5 kA [VPL]		≤1.2 kV	≤1.35 kV	≤1.7 kV	≤2 kV
Nominal discharge current (8/20µs) [I_n] AC		20 kA	20 kA	20 kA	15 kA
Nominal discharge current (8/20µs) [I_n] DC		12.5 kA	5 kA	5 kA	5 kA
Surge current capacity(8/20µs) [I_{max}]		40 kA	40 kA	40 kA	30 kA
Temporary overvoltage (TOV)		335 V / 5 sec.	385 V / 5 sec.	580 V / 5 sec.	600 V / 5 sec.
Agency information*		UL / cUL, CSA, KEMA	UL / cUL, CSA, KEMA	UL / cUL, CSA, KEMA	UL / cUL, CSA, KEMA

Specifications — all catalog numbers	
SPD according to EN 61643-11	Type 2
SPD according to IEC 61643-1	Class II
Response time [t_A]	≤25ns
TOV characteristics	Withstand
Operating temperature range [T_U]	-40°C to +80°C
Operating state/fault indication	Green (good) / red (replace)
Number of ports	1
Cross-sectional area (minimum)	14 AWG solid/stranded
Cross-sectional area (maximum)	1 AWG solid — 2 AWG stranded
Mounting	35mm DIN-Rail per EN 60715
Enclosure material	Thermoplastic, UL 94V0
Location category	Indoor
Degree of protection	IP20
Capacity	1 module, DIN 43880
Warranty	Five years**
Remote contact signaling	
Remote contact signaling type	Changeover contact
AC switching capacity (volts/amps)	250 V/0.5 A
DC switching capacity (volts/amps)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Conductor ratings / cross-sectional area for remote contact signal terminals	60/75°C Max. 14 AWG solid/stranded
Ordering information	Order from catalog numbers above

* Agency information not applicable to DC ratings.
**See Limited Warranty Statement 3A1502 for details at Eaton.com/bussmannseries.

Data sheet no. 2056

BSPH2A_ _ _ _LV(R) low voltage control SPDs

The Bussmann series UL Type 4 24 Vac/dc, 48 Vac/dc, 60 Vac/dc, 120 Vac/dc and 230 Vac/dc, two-pole, modular surge arresters feature local, *easy*ID visual indication and optional remote contact signaling. The unique module locking system fixes the protection module to the base part. Modules can be easily replaced without tools by simply depressing the release buttons. Integrated mechanical coding between the base and protection module ensures against installing an incorrect replacement module.

LV system arresters

The features of these two-pole devices are for use in coordination with other upstream SPDs in UL 508A Applications*.

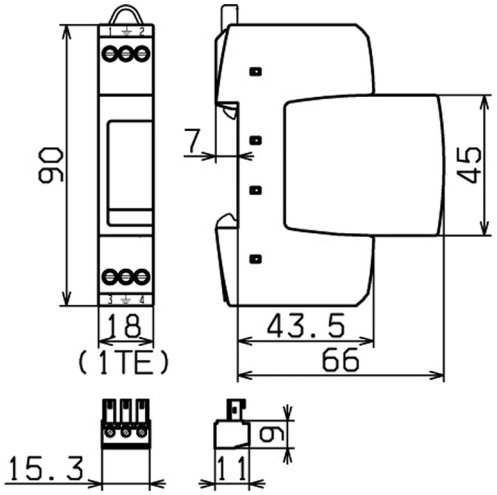
- Surge arrester according to UL 1449 4th Edition, Type 4 Component Assembly for use in Type 3 applications helps meet UL 508A requirements
- Proven MOV and GDT hybrid technology for reliable surge protection
- "Thermo Dynamic Control" SPD monitoring device ensures high reliability against surge events
- Module locking system with module release button make module replacement easy without tools
- Optional remote signaling of all protection modules make status monitoring easy and accurate in any monitoring scheme
- No additional upstream overcurrent protection necessary to make installation easier and more economical
- Vibration and shock tested according to EN 60068-2 to withstand harsh environments

* UL 1449 4th Edition not applicable to DC voltages.

Optional remote signaling Form C contact

The remote signaling contact versions have a floating changeover contact for use as a break or make contact for easy adoption in any monitoring application.

Dimensions — mm



Shown with optional remote contact signaling

For remote signaling contact, add "R" suffix to the part number, E.g., BSPH2A230D230LV**R**

Catalog numbers and specifications

Ordering information		System volts/catalog no.				
System voltage		24 Vac/dc	48 Vac/dc	60 Vac/dc	120 Vac/dc	230 Vac/dc
Max. continuous operating AC voltage (MCOV) [V_C]		30 Vac/dc	60 Vac/dc	75 Vac/dc	150 Vac/dc	255 Vac/dc
Catalog no. (base + modules)	W/O remote signaling	BSPH2A24D24LV	BSPH2A48D48LV	BSPH2A60D60LV	BSPH2A150D150LV	BSPH2A230D230LV
	With remote signaling	BSPH2A24D24LVR	BSPH2A48D48LVR	BSPH2A60D60LVR	BSPH2A150D150LVR	BSPH2A230D230LVR
Replacement Modules		BPHA24D24LV	BPHA48D48LV	BPHA60D60LV	BPHA150D150LV	BPHA230D230LV
Specifications						
Nominal AC voltage [V_o]		24 V	48 V	60 V	120 V	230 V
Max. continuous operating AC voltage [V_C]		30 V	60 V	75 V	150 V	255 V
Max. continuous operating DC voltage [V_C]		30 V	60 V	75 V	150 V	255 V
Nominal discharge current (8/20µs) [I_n]		1 kA	1 kA	2 kA	2 kA	3 kA
Total discharge current (8/20µs) [L+N-Gnd] [I_{total}]		2 kA	2 kA	4 kA	4 kA	5 kA
Nominal load current AC [I_L]		25 A	25 A	25 A	25 A	25 A
Combined impulse [U_{OC}]		2 kV	2 kV	4 kV	4 kV	6 kV
Combined impulse [L+N-Gnd] [U_{OC} total]		4 kV	4 kV	8 kV	8 kV	10 kV
Voltage protection level [L-N] [VPL]		≤180 V	≤350 V	≤400 V	≤640 V	≤1250 V
Voltage protection level [L/N-Gnd] [VPL]		≤630 V	≤730 V	≤730 V	≤800 V	≤1500 V
Temporary overvoltage (TOV) [L-N]		—	—	—	—	335 V / 5 sec.
Temporary overvoltage (TOV) [L/N-Gnd]		—	—	—	—	400 V / 5 sec.
Temporary overvoltage (TOV) [L+N-Gnd]		—	—	—	—	1200V + V_0 / 20
TOV characteristics [L-N]		—	—	—	—	Withstand
TOV characteristics [L/N-Gnd]		—	—	—	—	Withstand
TOV characteristics [L+N-Gnd]		—	—	—	—	Failure
SPD according to EN 61643-11		Type 3				
SPD according to IEC 61643-1		Class III				
Response time [L-N] [t_A]		≤25ns				
Response time [L/N-Gnd] [t_A]		≤100ns				
Operating temperature range [T_U]		-40°C to +80°C				
Operating state/fault indication		Green (good) / red (replace)				
Number of ports		1				
Cross-sectional area (min.)		18 AWG solid/stranded				
Cross-sectional area (max.)		10 AWG solid/12 AWG stranded				
For mounting on		35mm DIN-Rail per EN 60715				
Enclosure material		Thermoplastic, UL 94V0				
Location category		Indoor				
Degree of protection		IP20				
Capacity		1 Module, DIN 43880				
Agency information*		UL / cUL, CSA, KEMA				
Product warranty		Five years**				
Remote contact signaling						
Remote contact signaling type		Changeover contact				
AC switching capacity (volts/amps)		250 V/0.5 A				
DC switching capacity (volts/amps)		250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A				
Conductor ratings and cross-sectional area for remote contact signal terminals		60/75°C Max. 14 AWG solid/stranded				
Ordering information		Order from catalog numbers above				

* Agency information not applicable to DC ratings.
**See Limited Warranty Statement 3A1502 for details at Eaton.com/bussmannseries.

Data sheet no. 2057

BSPD5BNCDD_ DIN-Rail coaxial cable SPDs

The Bussmann series BSPD5BNCDD and BSPD5BNCDI two-stage DIN-Rail mounted surge arresters are UL Listed 497B DIN-Rail mount surge protective devices for BNC connector cable systems. They are well suited for protecting video and camera systems from potential damage. The BSPD5BNCDD features direct (VCD) shield connection while the BSPD5BNCDI features indirect shield connection (VCID) to prevent leakage pickups.

The BSPD5BNCDD and BSPD5BNCDI shielded surge arresters are mounted on the supplied bracket with cable lug or mounted on a rack mounted DIN-Rail with suitable grounding. BNC connector terminated data or video signal cables are plugged into surge arrester with the equipment plugged into the protected side.

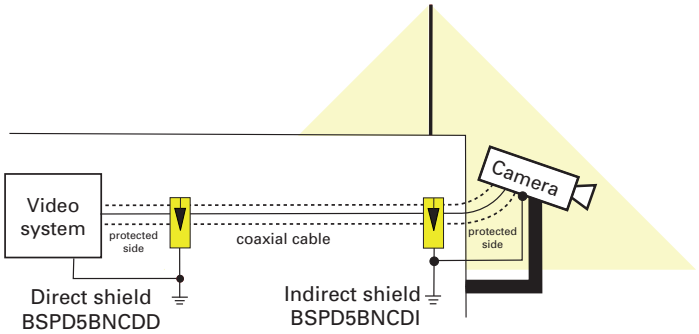
Common applications include protecting outdoor video surveillance systems or video control centers or coaxial data lines. For BSPD5BNCDI, the cable shield is indirectly grounded via a gas discharge tube to avoid being influenced by leakage pickups.

- UL 497B Listed
- Plug-in surge protective device for easy retrofitting
- The space-saving surge arrester with BNC socket is mounted on supplied rail terminal lug or standard 35mm DIN-Rail
- Integrated direct or indirect shield grounding avoids leakage pickups
- Easily adaptable due to BNC sockets

DIN-Rail BNC SPD applications

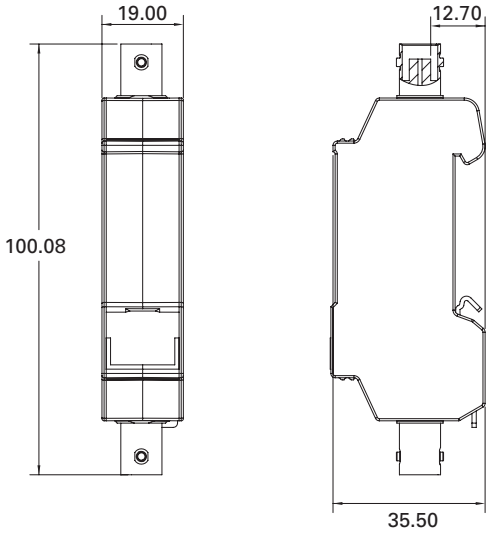
Catalog no.	BSPD5BNCDD	BSPD5BNCDI
Bus systems and measuring systems, and control technology		
Control Net	X	X
Melsec Net 2	X	X
N1 LAN	X	X
Data networks		
Arcnet	X	X
Video systems		
Video (coax)	X	X

Direct vs. indirect shielding example



Apply the BSPD5BNCDD (direct shield) at the equipment location and apply the BSPD5BNCDI (indirect shield) near exterior protected equipment. The indirect shield grounding at the exterior device will help avoid picking up leakage currents that can degrade signal quality while providing surge protection when needed.

Dimensions — mm



Catalog numbers and specifications

Catalog no.		BSPD5BNCDD		BSPD5BNCDI	
Nominal voltage (U_N)		5 V		5 V	
Max. continuous operating DC voltage (U_C)		6.4 V		6.4 V	
Nominal current (I_L)		0.1 A		0.1 A	
C2 Nominal discharge current (8/20µs) shield-PG (I_n)		10 kA		10 kA	
C2 Nominal discharge current (8/20µs) line-shield (I_n)		5 kA		5 kA	
Voltage protection level line-shield for I_n C2 (U_p)		≤35 V		≤35 V	
Voltage protection level line-shield at 1 kV/µs C3 (U_p)		≤13 V		≤13 V	
Frequency range		0-300 MHz		0-300 <Hz	
Capacitance shield-PG (C)		—		≤20pF	
Voltage protection level shield-PG for I_n C2 (U_p)		—		≤650 V	
Voltage protection level shield-PG at 1 kV/µs C3 (U_p)		—		≤600 V	
Cable impedance (Z)		50Ω	75Ω	50Ω	75Ω
Insertion losses	≤0.4dB	160 MHz	80 MHz	160 MHz	80 MHz
	≤3dB	300 MHz	300 MHz	300 MHz	300 MHz
Return Losses	≥10dB	200 MHz	100 MHz	300 MHz	100 MHz
	≥20dB	130 MHz	30 MHz	130 MHz	30 MHz
Series impedance per line		4.7Ω			
Capacitance line-shield (C)		≤25pF			
Operating temperature range		-40°C to +80°C			
Degree of protection		IP10			
Mounting		35mm DIN-Rail per EN 60715			
Connection (input / output)		BNC socket (female) / BNC socket (female)			
Grounding		Via 35mm DIN-Rail per EN 60715			
Enclosure material		Die cast zinc			
Color		Bare surface			
Test standards		IEC 61643-21 / EN 61643-21			
Agency information		UL 497B			
Warranty		Five years*			

* See Limited Warranty Statement 3A1502 for details at Eaton.com/bussmannseries.

Data sheet no. 2158

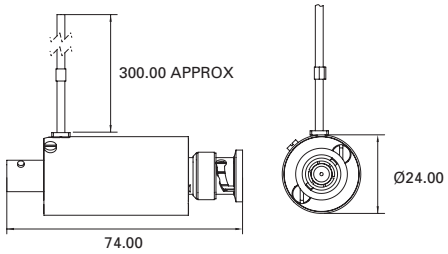
BSPD5BNCSI in-line coaxial cable SPD

The Bussmann series BSPD5BNCSI two-stage in-line surge arrester is a UL Listed 497B In-line surge protective device for BNC connector cable systems. It is well suited for protecting coaxial cable-connected video and camera systems from potential damage.

The BSPD5BNCSI shielded surge arrester is plugged into coaxial terminal equipment or connections. Common applications include protecting outdoor video surveillance systems or video control centers. The cable shield is indirectly grounded via a gas discharge tube to avoid being influenced by leakage pickups. The arrester input is used as a socket and the protected output as a plug.

- UL 497B Listed
- Plug-in surge protective device for easy retrofitting
- Directly plugs into terminal equipment with BNC coaxial connections
- Integrated indirect shield grounding avoids leakage pickups

Dimensions — mm



Catalog numbers and specifications

Catalog no.	BSPD5BNCSI	
Nominal voltage (U_N)	5 V	
Max. continuous operating DC voltage (U_C)	8 V	
C2 Nominal discharge current (8/20µs) per line (I_n)	2.5 kA	
C2 Nominal discharge current (8/20µs) shield-PG (I_n)	10 kA	
Voltage protection level line-shield for I_n C2 (U_p)	≤25 V	
Voltage protection level line-shield at 1 kV/µs C3 (U_p)	≤15 V	
Voltage protection level shield-PG at 1 kV/µs C3 (U_p)	≤600 V	
Cable impedance (Z)	50Ω	75Ω
Insertion loss at ≤3db	300 MHz	265 MHz
Return loss at ≥20db	40 MHz	40 MHz
Series impedance per line	10Ω	
Capacitance line-shield (C)	≤50pF	
Operating temperature range	-40°C to +80°C	
Connection (input / output)	BNC Socket (female) / BNC Plug (male)	
Grounding	Via outgoing earth conductor 18 AWG	
Shield grounding	Indirectly via an integrated spark gap element	
Test standards	IEC 61643-21 / EN 61643-21	
Agency information	UL 497B	
Warranty	Five years*	

* See Limited Warranty Statement 3A1502 for details at Eaton.com/bussmannseries.

In-line BNC SPD applications

Catalog no.	BSPD5BNCSI
Bus systems, and measuring and control technology	
Control Net	X
Melsec Net 2	X
Data networks	
Arcnet	X
Video systems	
Video (coax)	X

BSPD48RJ45 DIN-Rail RJ45/Ethernet cable SPD

The Bussmann series DIN-Rail mount BSPD48RJ45 Surge Protective Device (SPD) is a UL Listed 497B universal DIN-Rail mount surge protective device for RJ45/Ethernet cable systems. It is easy to install or retrofit Ethernet cable systems with RJ connectors.

The BSPD48RJ45 is installed between the patch panel and the active component (a switch for example). The snap-in mechanism of the supporting foot allows the SPD to be safely grounded via the DIN-Rail. For single applications, the BSPD48RJ45 comes with a supplied mounting bracket with cable lug.

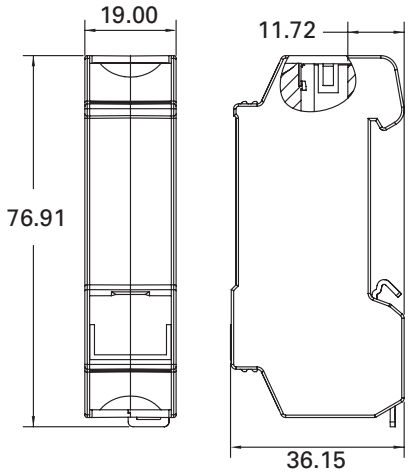
Fulfilling the requirements of Category 6, the BSPD48RJ45 can be universally used for all data services up to nominal voltages of 48 V. It is well suited for existing services such as Gigabit Ethernet, ATM, ISDN, Voice over IP and Power over Ethernet (PoE+ acc. to IEEE 802.3at up to 57 V) and similar applications in structured cabling systems according to Class E up to 250 MHz. Protection of all pairs by means of powerful gas discharge tubes and one adapter filter matrix per pair.

- UL 497B Listed
- Easy to install or retrofit for protection of all lines
- CAT 6 according to ISO/IEC 11801
- CAT 6 in the channel (Class E)
- Power over Ethernet (PoE+ according to IEEE 802.3at)

DIN-Rail RJ45 SPDs applications

Catalog no.	BSPD48RJ45
Bus systems, and measuring and control technology	
Industrial Ethernet	X
Data networks	
ATM	X
Ethernet 10/100/1000	X
FDDI, CDDI	X
Industrial Ethernet	X
Power over Ethernet (PoE)	X
Token Ring	X
VG any LAN	X
Video systems	
Video (2 wire)	X

Dimensions — mm



Catalog numbers and specifications

Catalog no.	BSPD48RJ45
Nominal voltage (U_N)	48 V
Max. continuous operating DC voltage (U_C)	48 V
Max. continuous operating AC voltage (U_C)	34 V
Max. continuous DC voltage pair-pair (PoE) (U_C)	57 V
Nominal current (I_L)	1 A
C2 Nominal discharge current (8/20µs) line-line (I_n)	150 A
C2 Nominal discharge current (8/20µs) line-PG (I_n)	2.5 kA
C2 Total nominal discharge current (8/20µs) line-PG (I_n)	10 kA
C2 Nominal discharge current (8/20µs) pair-pair (PoE) (I_n)	150 A
Voltage protection level line-line for In C2 (U_P)	≤190 V
Voltage protection level line-PG for In C2 (U_P)	≤600 V
Voltage protection level line-line for In C2 (PoE) (U_P)	≤600 V
Voltage protection level line-line at 1 kV/µs C3 (U_P)	≤180 V
Voltage protection level line-PG at 1 kV/µs C3 (U_P)	≤500 V
Voltage protection level pair-pair at 1 kV/µs C3 (PoE) (U_P)	≤600 V
Insertion loss at 250MHz	≤3 dB
Capacitance line-line (C)	≤30pF
Capacitance line-PG (C)	≤25pF
Operating temperature range	-40°C to +80°C
Degree of protection	IP10
Mounting	35mm DIN-Rail per EN 60715
Connection (input / output)	RJ45 socket / RJ45 socket
Pinning	1 / 2, 3 / 6, 4 / 5, 7 / 8
Grounding	Via 35mm DIN-Rail per EN 60715
Enclosure material	Die cast zinc
Color	Bare surface
Test standards	IEC 61643-21 / EN 61643-21
Agency information	UL 497B
Warranty	Five years*

* See Limited Warranty Statement 3A1502 for details at Eaton.com/bussmannseries.

Data sheet no. 2160

BSPD_DING_ DIN-Rail 4 wire SPDs

The Bussmann series universal four-pole, DIN-Rail mounted surge arresters are UL Listed 497B DIN-Rail mount universal surge protective devices. They requiring minimum space, while providing effective protection for the stringent requirements of measuring and control circuits, and bus systems.

To ensure safe operation, the arresters provide protection against vibration and shock up to a 30-fold acceleration of gravity. The function-optimized design of the devices allows quick and easy removal of protection modules via "make-before-break" terminals that assure continuity of data signals in the protected and unprotected state.

For IEC Applications - Instruction for Surge Protective Device Use In Zone 2 Explosive Atmospheres per ATEX.

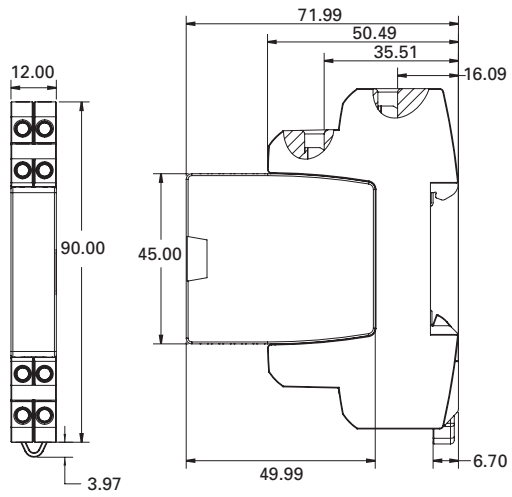
1. When installed in potentially explosive atmospheres, the Data Signal DIN Series shall be installed into an enclosure which meets the requirements of a recognized type of protection, in accordance with EN 60079-0.
2. The Data Signal DIN SPDs as transient suppressor. This approval applies to the following equipment types:
   - BSPD5DING
   - BSPD12DING
   - BSPD24DING
   - BSPD48DING
   - BSPD5DINLHF
   - BSPD24DINLHF

Ambient and temperature class

- -40°C to 80°C, T4: DEKRA 12ATEX0254 X: II 3 G Ex nA IIC T4 Gc
- Standards used for: ATEX: EN60079-0: 2009, EN 60079-15: 2005

- UL 497B Listed
- Function-optimized design for safe use and easy installation
- Four-pole and base mounts on grounded 35mm DIN-Rail
- Module removal without signal interruption via "make-before-break" circuitry
- 0-180 V BSPD0180DINL automatically adjusts to system operating voltage and can protect data circuits of different voltages up to 100mA load current.

Dimensions — mm



0-180 V self-adjusting SPD application and operation mode

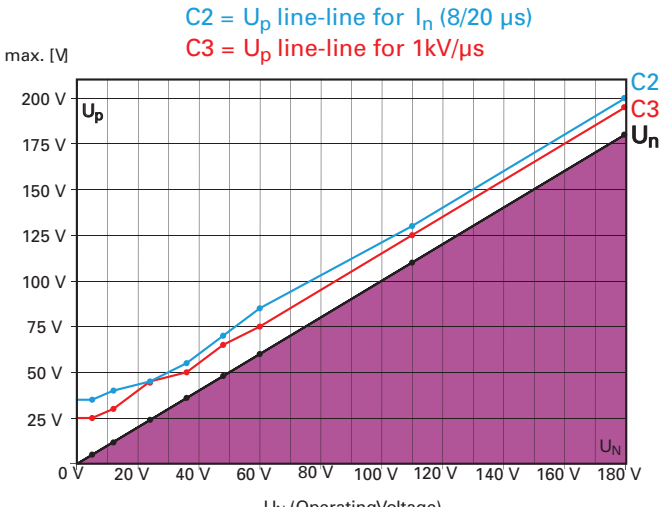


Diagram 1: voltage protection level U_p (V) (line-line)

The BSPD0180DINL surge protective device automatically adjusts to the operating voltage (from 0 to 180 volts) of the protected device.

When a surge occurs, the SPD voltage protection level adjusts itself based upon the output terminal operating voltage of the base.

Note 1 - See Diagram 1 - VPL line-line graph line C3.
Note 2 - See Diagram 1 - VPL line-line graph line C2.

Catalog numbers and specifications

Catalog no. (with prefix BSPD…)	5DING	12DING	24DING	48DING	5DINLHF	24DINLHF	0180DINL
Nominal voltage (U_N)	5 V	12 V	24 V	48 V	5 V	24 V	0-180 V
Max. continuous operating DC voltage (U_C)	6 V	15 V	33 V	54 V	6 V	33 V	180 V
Max. continuous operating AC voltage (U_C)	4.2 V	10.6 V	23.3 V	38.1 V	4.2 V	23.3 V	127 V
Nominal current at 45°C (I_L)	1.0 A	0.75 A	0.75 A	0.75 A	1.0 A	1.0 A	≤0.1 A@80°C
VPL line-line for I_{imp} D1 (U_p)	≤29 V	≤50 V	≤102 V	≤160 V	≤25 V	≤65 V	≤U_N + 53 V
VPL line-PG for I_{imp} D1 (U_p)	≤27 V	≤37 V	≤66 V	≤95 V	≤550 V	≤550 V	—
VPL line-line at 1 kV/µs C3 (U_p)	≤18 V	≤38 V	≤90 V	≤140 V	≤11 V	≤47 V	see Note 1
VPL line-PG at 1 kV/µs C3 (U_p)	≤9 V	≤19 V	≤45 V	≤70 V	≤550 V	≤550 V	-
VPL line-line for I_n C2 (U_p)	—	—	—	—	—	—	see Note 2
VPL line-PG for C2 / C3 / D1	—	—	—	—	—	—	≤550 V
D1 Total lightning impulse current (10/350µs) (I_{imp})	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
D1 Lightning impulse current (10/350µs) per line (I_{imp})	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA	2.5 kA
C2 Total nominal discharge current (8/20µs) (I_n)	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
C2 Nominal discharge current (8/20µs) per line (I_n)	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA	10 kA
Series impedance per line	1.0Ω	1.8Ω	1.8Ω	1.8Ω	1.0Ω	1.0Ω	10Ω/7.5Ω typ
Frequency of the operating voltage (fU_N)	-	-	-	-	-	-	0-400 Hz
Permissible superimposed signal voltage (U_{Signal})	—	—	—	—	—	—	± 5 V
"Nominal current at 80°C (I_L) (corresponds to max. short-circuit current)"	—	—	—	—	—	—	100mA
Cut-off frequency line-PG (f_G)	1.0 MHz	2.7 MHz	6.8 MHz	8.7 MHz	100 MHz	100 MHz	—
Cut-off frequency line-line (U_{Signal}, balanced 100Ω) (f_G)	—	—	—	—	—	—	50MHz
Capacitance line-line (C)	≤2.7nF	≤1.0nF	≤0.5nF	≤0.35nF	≤25pF	≤25pF	≤80pF
Capacitance line-PG (C)	≤5.4nF	≤2.0nF	≤1.0nF	≤0.7nF	≤16pF	≤16pF	≤16pF
ATEX approvals	†	†	†	†	†	†	—
Agency information	††	††	††	††	††	††	‡
IEC 61643-21 test category	D1, C2, C3						
Operating temperature range	-40°C to +80°C						
Degree of protection	IP20						
For mounting on	35mm DIN-Rails per EN 60715						
Grounding	Via base part						
Color / enclosure material	Grey / polyamide PA 6.6						
Test standards	IEC 61643-21 / EN 61643-21, UL 497B						
Connection (input / output)	Screw terminal						
Conductors — Solid	12-28 AWG						
Conductors — Flexible	14-28 AWG						
Terminal torque	3.5 lb-In						
Warranty	Five years*						

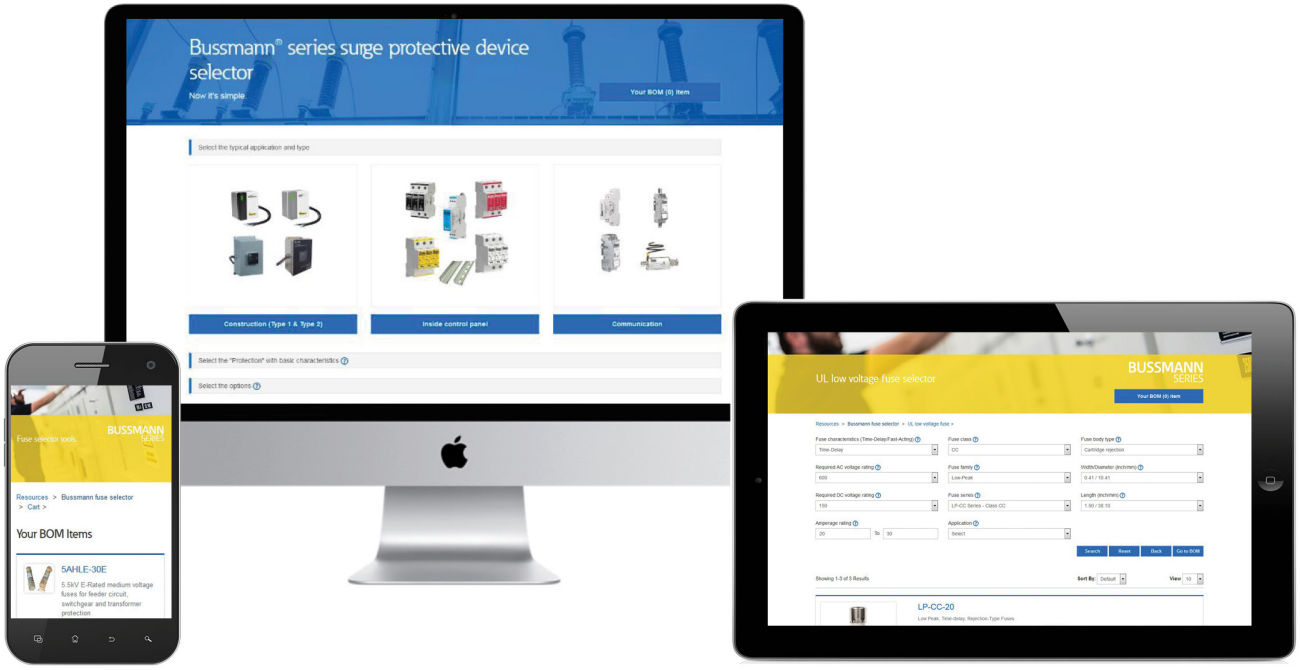
* See Limited Warranty Statement 3A1502 for details at Eaton.com/bussmannseries.
† DEKRA 12ATEX0254 X: II 3 G Ex nA IIC T4 Gc
††ATEX, UL, CSA
‡ UL 497B

Data sheet no. 2161

4 wire data signal SPD applications

Universal 4 wire data signal SPD products are specified by communication technology. The table below contains the specific SPD product, by catalog number, and the applications they are suited for.

Catalog no.	BSPD5DING	BSPD12DING	BSPD24DING	BSPD48DING	BSPD5DINLHF	BSPD24DINLHF	BSPD0180DINL
Bus systems and measuring, and control technology							
0-20 mA, 4-20 mA signals			X			X (4-20mA only)X	
Binary Signals	X	X	X	X			
CAN-Bus (data line only)					X		X
C-Bus (Honeywell)		_			X		X
Data Highway Plus							X
Device Net (data line only)					X		X
Dupline							X
E-Bus (Honeywell)							X
Fieldbus Foundation						X	X
FIPIO / FIPWAY						X	
FSK					X		X
IEC-Bus (RS485)					X		X
Interbus INLINE (I/O)							X
Interbus INLINE,					X		X
Long-distance bus							
K Bus						X	
LON - TP/XF 78					X		
LUXMATE Bus						X	X
M Bus							X
MODBUS					X		X
MPI Bus					X		X
Procontic CS31 (RS232)		X					
Procontic T200 (RS422)					X		X
PROFIBUS DP/FMS					X		X
PROFIBUS PA						X	X
PROFIBUS SIMATIC NET					X		X
PSM EG RS422 & RS485					X		X
Rackbus (RS485)					X		X
R Bus					X		X
RS 485					X		X
RS422, V11					X		X
SafetyBUS p					X		X
Securilan LON Bus					X		
SIGMASYS				X			
SS97 SIN/X (RS 232)		X					
SUCONET					X		X
Resistance Temp. Measuring							
Ni1000, PT100, PT1000 Wire		X					
NTC & PTC Thermistors							
TTL		X					
TTY 4–20mA			X				
Telecommunication, telephony							
a/b Wires							X
ADSL, ADSL 2+							X
ISDN S0, S2m/U2m, UKO/UPO							X
Modem M1		X					
SDSL, SHDSL						X	X
Telephony Systems							X
(e.g., Siemens, HICOM, Alcatel)							
T-DSL							X
Telecommunication Systems							X
(e.g., Siemens, HICOM, Alcatel)							
VDSL							X
Data networks							
V 24 (RS232 C)		X					



Bussmann series products at your fingertips

We make searching for and selecting Bussmann™ series products easy with four unique product selector tools:

Surge Protective Device Selector
Low Voltage Fuses Selector
Medium Voltage Fuse Selector
Connector Selector

Each tool allows you to select from available attributes to find the product that best meets your needs. Results are then displayed with links to product detail webpages for more information. Quick access to our team of experts for additional assistance is also made available. And with a responsive design, the tools can be used anytime, anywhere.

Find these selector tools and more at **toolbox.bussmann.com**.