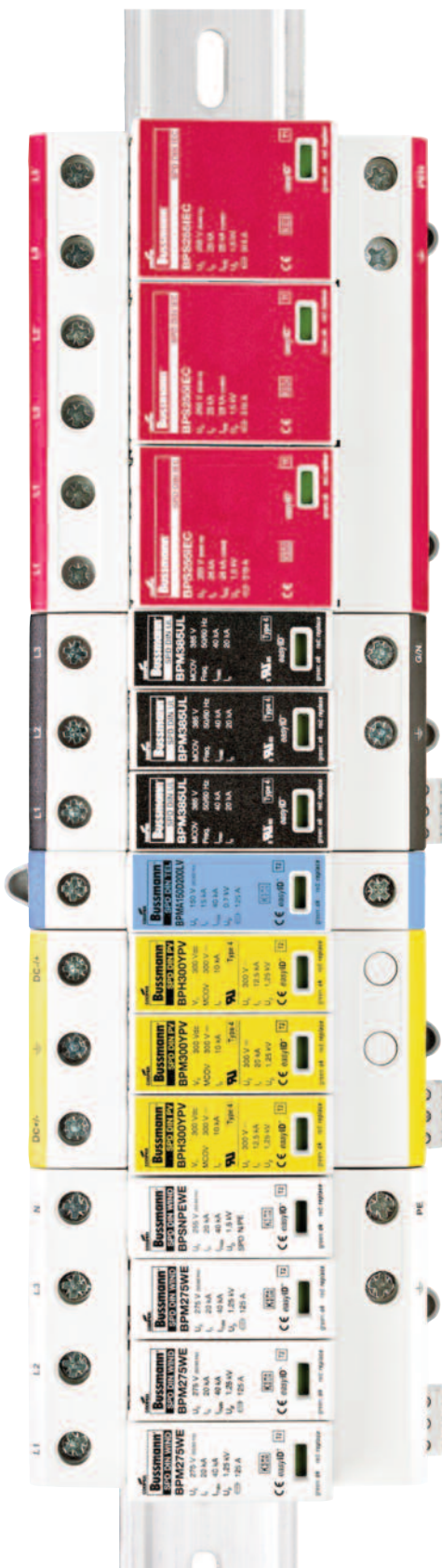




Scan this tag to get product information about the New Bussmann Surge Protection products for UL, PV, IEC, Wind Power and Telecom applications.

RED indicates **NEW** information



Overvoltage Protective Devices

Surge Protective Devices

UL Type 1 NEMA 4X SPDs

SurgePOD HEAVY DUTY (Black Label)	442-445
SurgePOD PRO (Grey Label)	446-448

UL DIN-Rail

High SCCR SPDs

1-Pole Type 2 BSPM_S2G	449-450
2-Pole Type 2 BSPM_S3G	451-452
3-Pole Type 2 BSPM_WYG/DLG	453-454
4-Pole Type 2 BSPM_WYNG/HLG	455-456

Low Voltage AC/DC Power

1-Pole Type 2 BSPM_LV	457-458
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Low-Voltage AC/DC Control

2-Pole Type 3 BSPH2A_LV	459-460
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IEC DIN-Rail

Class I

2-Pole Class I BSPS_TN/TT	461-462
3-Pole Class I BSPS_TNC	463-464
4-Pole Class I BSPS_TNS/TT	465-466

Class II

1-Pole Class II BSPM_TN / BSPG_NPE	467-468
2-Pole Class II BSPM_TN / BSPH_TT	469-470
3-Pole Class II BSPM_TNC	471-472
4-Pole Class II BSPM_TNS / BSPH_TT	473-474

Solar Power Photovoltaic (PV) DIN-Rail

Lightning Arrester

1-Pole PV Advance Lightning Arrester / BSPS_PV	475-476
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Overvoltage Surge Protective Devices

2-Module PV HEAVY DUTY SPD / BSPH2_PV	477-478
3-Module PV HEAVY DUTY SPD / BSPH_YPV	479-480
3-Module PV PRO SPD / BSPP_YPV	481-482

Wind Power IEC DIN-Rail

Class I

1-pole Class I BSPS_WE	483-484
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Class II

1-Pole Class II BSPM_WE / BSPS_WE	485-486
2-Pole Class II BSPM_WE / BSPH_WE	487-488
3-Pole Class II BSPM_WE	489-490
4-Pole Class II BSPM_WE / BSPH_WE	491-492

UL 4978 Data Signal SPDs

DIN-Rail BNC/Coaxial Cable BSPD5BNCD_	493-494
In-Line BNC/Coaxial Cable BSPD5BNCSI	495-496
DIN-Rail RJ45/Ethernet Cable BSPD48RJ45	497-498
DIN-Rail Universal 4 Wire BSPD_DIN_	499-501

Surge Protective Overvoltage Device Modules

SurgePod™ Series, 150 to 550Vac MCOV502-503

DIN-Rail TVS Series with Holder504



Scan this tag to get access to the Surge Protective Devices Cross Reference Search.

SURGE PROTECTION MADE SIMPLE™ FOR COMMERCIAL & INDUSTRIAL APPLICATIONS

SURGEPOD™ HEAVY DUTY SPD FOR UL 1449 3rd Edition Listed Loadside and Lineside Protection

Description

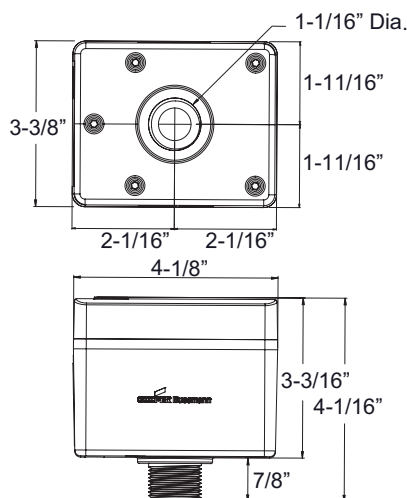
The Bussmann SurgePOD™ HEAVY DUTY is a Type 1 UL Listed 1449 3rd Edition surge protective device suitable for installation on both the loadside or lineside of the service entrance overcurrent protective device.

Available in voltage and system specific versions to match electrical system and equipment requirements. The SurgePOD HEAVY DUTY delivers optimum surge protection using advanced patent pending SurgePOD™ module featuring thermal disconnect technology that eliminates the need for additional overcurrent protection.

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

- Type 1 UL 1449 3rd Edition Listed SPDs are easily selected and installed on the loadside or lineside of the service entrance overcurrent protective device
- Patented Bussmann SurgePOD module technology eliminates the need for additional fusing
- Voltage specific models precisely match and protect electrical systems and equipment up to 600Vac
- Compact UV resistant NEMA 4X for indoor or outdoor applications
- easyID™ LED status indicator provides surge protection status at a glance

Dimensions - in



SPH50SP1120SN	SPH50SP2480PN	SPH50SP3208WYG
SPH50SP1240SN	SPH50SP3240PNG	SPH50SP3480WYG
SPH50SP1347SN	SPH50SP3480PNG	SPH50SP3600WYG
SPH50SP2120SNG	SPH50SP3240DLG	SPH50SP4208WYNG
SPH50SP2240SNG	SPH50SP3480DLG	SPH50SP4480WYNG
SPH50SP2347SNG	SPH50SP4240HLG	SPH50SP4600WYNG
SPH50SP2240PN	SPH50SP4480HLG	

NEMA 4X Rated Heavy Duty Type 1 UL Listed SPD

Type 1 SPD Part Number System

	SPH	50S	PX	XXX	XXX
SPH = Product Series	Surge Protection Heavy Duty				
Surge Rating		50S = 50kA max discharge current			
No of Wires/Poles			P1 = 1 P2 = 2 P3 = 3 P4 = 4		
Rated System Voltage				120, 208, 240, 347, 480, 600Vac	
System					SN = Single-Phase 2 Wire, 2 Connection Points SNG = Single-Phase 2 Wire + G, 3 Connection Points PN = Split-Phase 3 Wire, 3 Connection Points PNG = Split-Phase 3 Wire + G, 4 Connection Points DLG = Three-Phase Delta 3 Wire + G, 4 Connection Points HLG = Three-Phase Highleg Delta 4 Wire + G, 5 Connection Points WYG = Three-Phase Wye 3 Wire, 4 Connection Points WYNG = Three-Phase Wye 3 Wire + G, 5 Connection Points

SurgePOD™ HEAVY DUTY Technical Information

Catalog Number	Nominal System Voltage	Max. Continuous Operating AC Voltage (MCOV) (V _C)	System Type	Connection Points
SPH50SP1120SN	120V	150V	Single-Phase 2 Wire	2
SPH50SP1240SN	240V	320V	Single-Phase 2 Wire	2
SPH50SP1347SN	347V	420V	Single-Phase 2 Wire	2
SPH50SP2120SNG	120V	150V	Single-Phase 2 Wire + G	3
SPH50SP2240SNG	240V	320V	Single-Phase 2 Wire + G	3
SPH50SP2347SNG	347V	420V	Single-Phase 2 Wire + G	3
SPH50SP2240PN	120/240V	150V	Split-Phase 3 Wire	3
SPH50SP2480PN	240/480V	320V	Split-Phase 3 Wire	3
SPH50SP3240PNG	120/240V	150V	Split-Phase 3 Wire + G	4
SPH50SP3480PNG	240/480V	320V	Split-Phase 3 Wire + G	4
SPH50SP3240DLG	240V	320V	Three-Phase Delta 3 Wire + G	4
SPH50SP3480DLG	480V	550V	Three-Phase Delta 3 Wire + G	4
SPH50SP4240HLG	120/240V	150/320V	Three-Phase Highleg Delta 4 Wire + G	5
SPH50SP4480HLG	240/480V	320/550V	Three-Phase Highleg Delta 4 Wire + G	5
SPH50SP3208WYG	208V	150V	Three-Phase Wye 3 Wire + G	4
SPH50SP3480WYG	480V	320V	Three-Phase Wye 3 Wire + G	4
SPH50SP3600WYG†	600V	420V	Three-Phase Wye 3 Wire + G	4
SPH50SP4208WYNG	208Y/120V	150V	Three-Phase Wye 4 Wire + G	5
SPH50SP4480WYNG	480Y/277V	320V	Three-Phase Wye 4 Wire + G	5
SPH50SP4600WYNG†	600Y/347V	420V	Three-Phase Wye 4 Wire + G	5

† 600V Wye versions are not CSA Certified.

SurgePOD™ HEAVY DUTY Technical Information

Specifications (for all SurgePOD HD units)	Values
Short Circuit Current Rating (SCCR)	200kA
Nominal Discharge Current (8x20μs) I _N	20kA
Max. Discharge Current (8x20μs) I _{max}	50kA
Response Time t _A	<25ns
Frequency	50/60Hz
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
Standard	UL 1449 3 rd Edition Type 1 Listed SPD
Agency Information	cULus, CSA**, RoHS Compliant
Product Warranty	5 Years***
Operating Temperature	-40°C to +85°C
Maximum Operating Altitude	16,000FT

* Customer-supplied bracket.

** 600V Wye versions not CSA Certified.

*** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/Surge.

Voltage Protection Ratings (VPRs)

Catalog Number	Rated System Voltage (V _o)	MCOV (V _c)	Voltage Protection Ratings (VPRs)			
			L-N	L-L	L-G	N-G
SPH50SP1120SN	120V	150V	700	—	—	—
SPH50SP1240SN	240V	320V	1200	—	—	—
SPH50SP1347SN	347V	420V	1500	—	—	—
SPH50SP2120SNG	120V	150V	700	—	1200	700
SPH50SP2240SNG	240V	320V	1200	—	2500	1200
SPH50SP2347SNG	347V	420V	1500	—	2500	1500
SPH50SP2240PN	120V/240V	150V	700	1200	—	—
SPH50SP2480PN	240V/480V	320V	1200	2500	—	—
SPH50SP3240PNG	120V/240V	150V	700	1200	1200	700
SPH50SP3480PNG	240V/480V	320V	1200	2500	2500	1200
SPH50SP3240DLG	240V	320V	—	2500	1200	—
SPH50SP3480DLG	480V	550V	—	3000	1800	—
SPH50SP4240HLG	120/240V	150V/320V	700/1200	1200/2500	1200/2500	700/1200
SPH50SP4480HLG	240/480V	320V/550V	1200/1800	2500/3000	2500/3000	1200/1800
SPH50SP3208WYG	208V	150V	—	1200	700	—
SPH50SP3480WYG	480V	320V	—	2500	1200	—
SPH50SP3600WYG [†]	600V	420V	—	2500	1500	—
SPH50SP4208WYNG	208Y/120V	150V	700	1200	1200	700
SPH50SP4480WYNG	480Y/277V	320V	1200	2500	2500	1200
SPH50SP4600WYNG [†]	600Y/347V	420V	1500	2500	2500	1500

[†] 600V Wye versions are not CSA Certified.

easyID™ LED Status Indicator

The easyID™ 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.



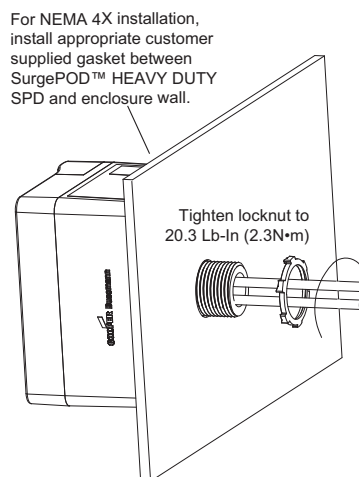
LED is Out / Unlit:

- 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 HEAVY DUTY enclosure will void UL listing and warranty.

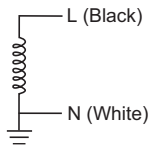
Mounting

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



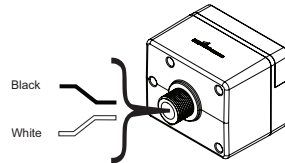
Wiring Connections

Single-Phase



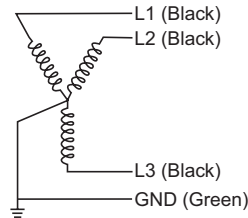
120, 240, 347V (L-N)
2 Wire

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

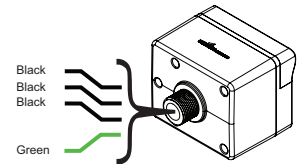


**SPH50SP1120SN,
SPH50SP1240SN,
SPH50SP1347SN**

Wye + Ground

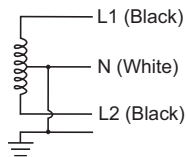


208, 480, 600V (L-L)
3 Wire Wye + Ground



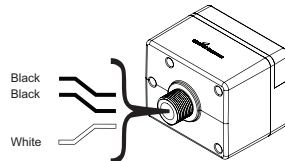
**SPH50SP3208WYG,
SPH50SP3480WYG,
SPH50SP3600WYG**

Two-Pole with Neutral



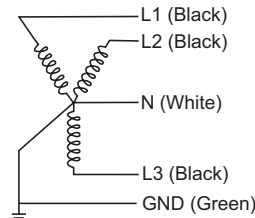
120V (L-N) / 240V (L1-L2),
240V (L-N) / 480V (L1-L2)
Single Phase (Split) Center Tap

For installations at or less than 10 feet (3m) from the transformer.

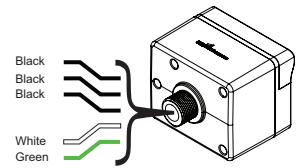


**SPH50SP2240PN,
SPH50SP2480PN**

Wye with Neutral + Ground

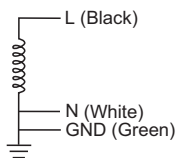


120V (L-N) / 208V (L-L),
127V (L-N) / 220V (L-L),
277V (L-N) / 480V (L-L),
347V (L-N) / 600V (L-L)
4 Wire Wye + Ground



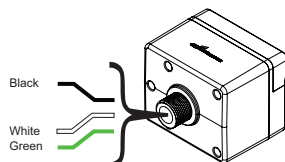
**SPH50SP4208WYNG,
SPH50SP4480WYNG,
SPH50SP4600WYNG**

Single-Phase + Ground



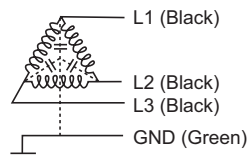
120, 240, 347V (L-N)
2 Wire + Ground

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

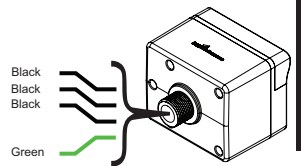


**SPH50SP2120SNG,
SPH50SP2240SNG,
SPH50SP2347SNG**

Delta + Ground

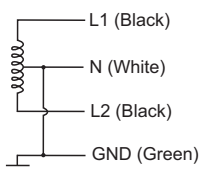


240, 480V (L-L)
3 Wire Delta + Ground



**SPH50SP3240DLG,
SPH50SP3480DLG**

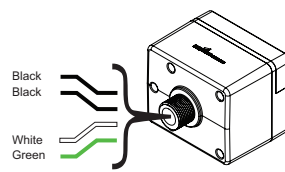
Two-Pole with Neutral + Ground



120V (L-N) / 240V (L1-L2),
240V (L-N) / 480V (L1-L2)

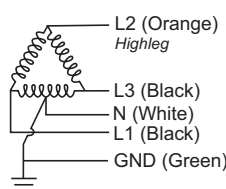
Single Phase (Split) Center Tap + Ground

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

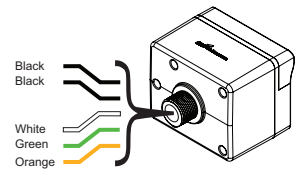


**SPH50SP3240PNG,
SPH50SP3480PNG**

Highleg Delta



120V (L1 / L3-N) / 240V (L-L),
240V (L1 / L3-N) / 480V (L-L)
4 Wire Highleg Delta + Ground



**SPH50SP4240HLG,
SPH50SP4480HLG**

SURGE PROTECTION MADE SIMPLE™ FOR LIGHT COMMERCIAL & RESIDENTIAL APPLICATIONS

SURGEPOD™ PRO SPD FOR UL 1449 3rd Edition Listed Loadside and Lineside Protection



Description

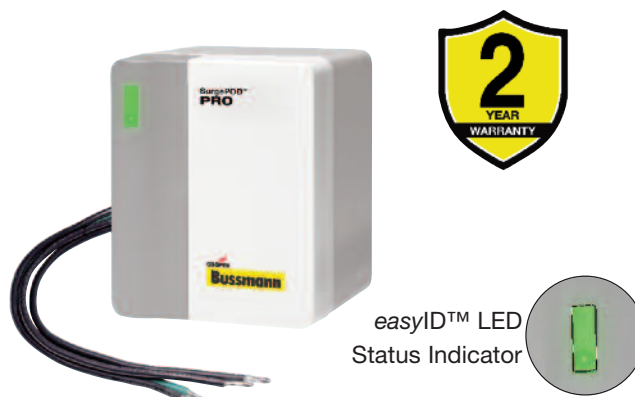
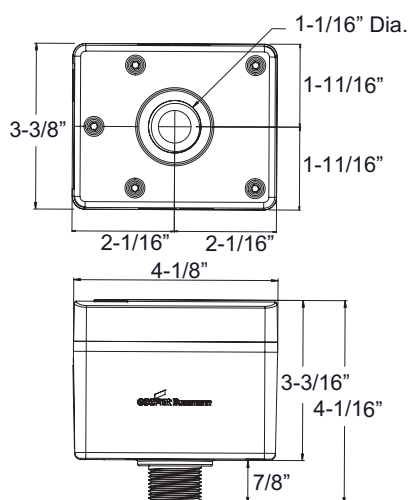
The Bussmann SurgePOD™ PRO is a Type 1 UL Listed 1449 3rd Edition surge protective device suitable for installation on both the loadside or lineside of the service entrance overcurrent protective device.

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.

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

- Type 1 UL 1449 3rd 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
- Compact UV resistant NEMA 4X enclosure for indoor or outdoor applications
- easyID™ LED status indicator provides surge protection status at a glance

Dimensions - in



SPP40SP1120SN
SPP40SP2240PN

SPP40SP3240DLG
SPP40SP3480DLG

SPP40SP3208WYG
SPP40SP3480WYG

NEMA 4X Rated Pro Type 1 UL Listed SPD

Type 1 SPD Part Number System

	SPP	40S	PX	XXX	XXX
SPP = Product Series	Surge Protection PRO				
Surge Rating		40S = 40kA max discharge current			
No of Wires/Poles			P1 = 1 P2 = 2 P3 = 3 P4 = 4		
Rated System Voltage				120, 208, 240, 480Vac	
System					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

SurgePOD™ PRO Technical Information

Catalog Number	Nominal System Voltage	Max. Continuous Operating AC Voltage (MCOV) (V _C)	System Type	Connection Points
SPP40SP1120SN	120V	150V	Single-Phase 2 Wire	2
SPP40SP2240PN	120/240V	150V	Split Phase 3 Wire	3
SPP40SP3240DLG	240V	320V	Three-Phase Delta 3 Wire + G	4
SPP40SP3480DLG	480V	550V	Three-Phase Delta 3 Wire + G	4
SPP40SP3208WYG	208V	150V	Three-Phase Wye 3 Wire + G	4
SPP40SP3480WYG	480V	320V	Three-Phase Wye 3 Wire + G	4

Specifications (for all SurgePOD PRO units)	Values
Short Circuit Current Rating (SCCR)	200kA
Nominal Discharge Current (8x20μs) I _N	10kA
Max. Discharge Current (8x20μs) I _{max}	40kA
Response Time (ns) t _A	<25ns
Frequency	50/60Hz
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
Standard	UL 1449 3 rd Edition Type 1 Listed SPD
Agency Information	cULus, RoHS Compliant
Product Warranty	2 Years**
Operating Temperature	-40°C to +65°C
Maximum Operating Altitude	12000FT

* Customer-supplied bracket.

** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/Surge.

Voltage Protection Ratings (VPRs)

Catalog Number	Nominal System Voltage	MCOV (V _C)	Voltage Protection Ratings (VPRs)		
			L-N	L-L	L-G
SPP40SP1120SN	120V	150V	700	—	—
SPP40SP2240PN	120V/240V	150V	700	1200	—
SPP40SP3240DLG	240V	320V	—	2500	1200
SPP40SP3480DLG	480V	550V	—	3000	1800
SPP40SP3208WYG	208V	150V	—	1200	700
SPP40SP3480WYG	480V	320V	—	2500	1200

easyID™ LED Status Indicator

The easyID™ 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:

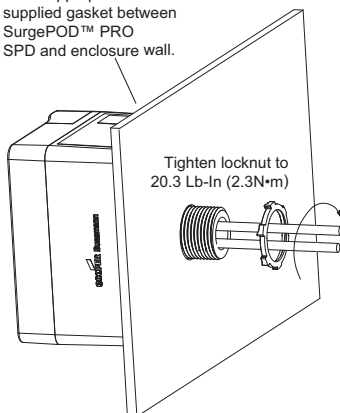
- The circuit is most likely deenergized
- The unit's leads are disconnected
- The unit is damaged

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 UL listing and warranty.

Mounting

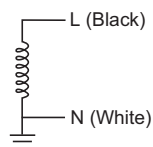
SurgePOD PRO is a panel mount device. It may also be mounted using a customer supplied bracket or directly onto a female threaded conduit fitting.

For NEMA 4X installation, install appropriate customer supplied gasket between SurgePOD™ PRO SPD and enclosure wall.



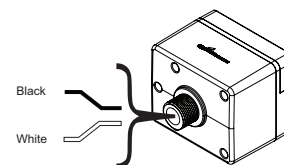
Wiring Connections

Single-Phase



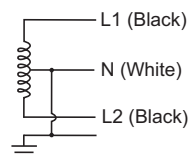
120V (L-N)
2 Wire

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



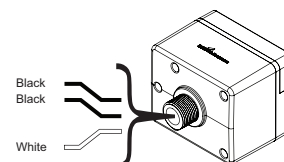
SPP40SP1120SN

Two-Pole with Neutral



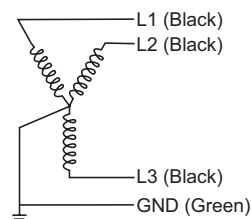
120V (L-N) / 240V (L1-L2),
Single Phase (Split) Center Tap

For installations at or less than 10 feet (3m) from the transformer.

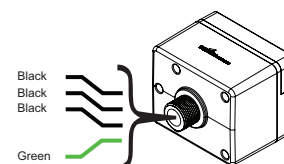


SPP40SP2240PN,

Wye + Ground

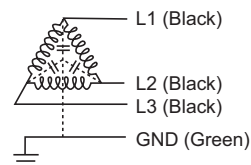


208, 480V (L-L)
3 Wire Wye + Ground

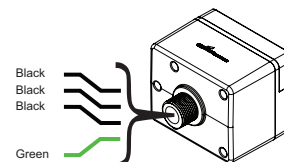


**SPP40SP3208WYG,
SPP40SP3480WYG**

Delta + Ground



240, 480V (L-L)
3 Wire Delta + Ground



**SPP40SP3240DLG,
SPP40SP3480DLG**

UL DIN-Rail SPD - High SCCR

BSPM_ _ _ S2G

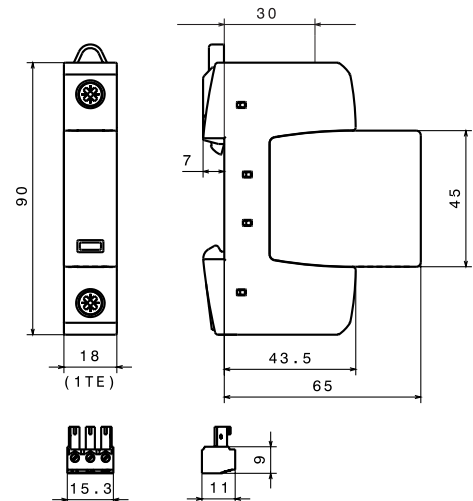
Dimensions - mm



easyID™
Visual Status Indication



Remote Signal
Contact Available



Shown with optional remote contact signaling

Specifications

Description

The Bussmann single pole UL modular surge arresters for 120, 240 and 347Vac single-phase systems feature local, *easyID™* 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.

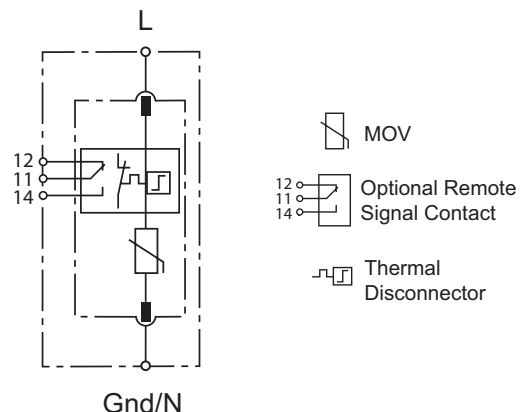
Features

- Surge arrester according to UL 1449 3rd Edition, Type 2 Component Assembly helps meet UL 508A requirements
- Heavy-duty zinc oxide varistors for high discharge capacity
- "Thermo Dynamic Control" SPD monitoring device ensures high reliability against surge events
- Module locking system with module release button makes module replacement easy without tools
- Up to 200kA Short-Circuit Current Rating (SCCR) makes higher *assembly* SCCR ratings possible
- Optional remote signaling of all protection modules makes status monitoring easy and accurate in any monitoring scheme
- No upstream overcurrent protection necessary to make installation easier and more economical
- Vibration and shock tested according to EN 60068-2 to withstand harsh environments

Optional Remote Signaling 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.

Circuit Diagram



BSPM1120S2G, BSPM1240S2G, BSPM1347S2G*

Shown with optional remote contact signaling

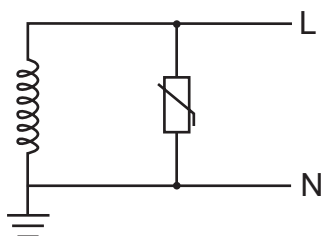
*For remote signaling contact, add "R" suffix to the part number, E.g., BSPM1347S2GR

Data Sheet: 2149

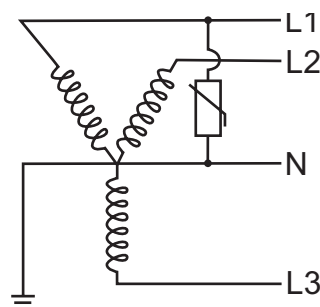
UL DIN-Rail SPD - High SCCR

ORDERING INFORMATION				
Nominal System Voltage	120Vac	240, 277 or 240 & 277Vac	347Vac	
Max. Continuous Operating AC Voltage (MCOV) [V _C]	275Vac	385Vac	600Vac	
Catalog Numbers:	Without Remote Signaling	BSPM1120S2G	BSPM1240S2G	BSPM1347S2G
	With Remote Signaling	BSPM1120S2GR	BSPM1240S2GR	BSPM1347S2GR
Replacement Module	MOV Technology	BPM275UL	BPM385UL	BPM600UL
SPECIFICATIONS				
Rated Voltage	120-127Vac	240-277Vac	347Vac	
Voltage Protection Rating V _{PR}	1kV	1.5kV	2kV	
SCCR	200kA	200kA	125kA	
Nominal Discharge Current I _n (kA)		20kA		
Max. Discharge Current I _{max} (kA)		40kA		
Response Time t _A		≤25 ns		
Frequency		50/60Hz		
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.)		14AWG - Cu Stranded, Solid or Fine		
Cross-Sectional Area (max.)		2AWG - Cu Solid or Stranded / 4AWG - Cu Fine		
Terminal Torque		45 lb-in		
For Mounting On		35mm DIN Rail per to EN 60715		
Enclosure Material		Thermoplastic, UL 94V0		
Degree of Protection		IP20 (finger-safe)		
Location Category		Indoor		
Capacity		1 Mods, DIN 43880		
Application		UL Type 2 Component Assembly		
Standard		UL 1449, 3 rd Edition		
Agency Information		cURus, CSA, RoHS Compliant		
Product Warranty		Five Years*		
REMOTE CONTACT SIGNALING				
Remote Contact Signaling Type		Changeover Contact		
AC Switching Capacity (Volts/Amps)		250V/0.5A		
DC Switching Capacity (Volts/Amps)		250V/0.1A; 125V/0.2A; 75V/0.5A		
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm ² /14AWG Solid/Flexible		
Ordering Information		Order from Catalog Numbers Above		

* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.



120, 240, 347Vac 2 Wire Systems



120, 277, 347Vac 2 Wire Wye Systems

Part Numbers for all systems BSPM1120S2G, BSPM1240S2G, BSPM1347S2G

UL DIN-Rail SPD - High SCCR

BSPM_ _ _ S3G

Dimensions - mm



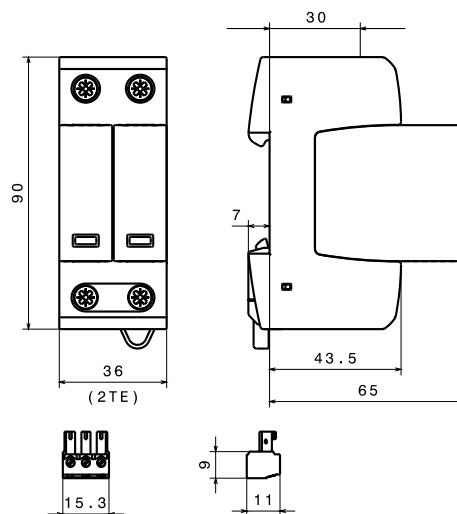
RoHS



easyID™
Visual Status Indication



Remote Signal
Contact Available



Shown with optional remote contact signaling

Description

The Bussmann 2-pole UL modular surge arresters for 120/240, 120/208, 127/254, 240, 240/480, 277/480 and 480Vac (split-phase) systems feature local, *easyID™* 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.

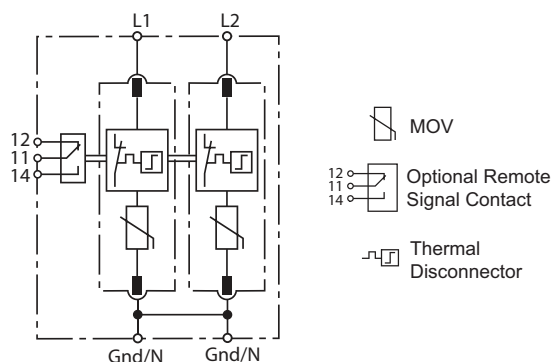
Features

- Surge arrester according to UL 1449 3rd Edition, Type 2 Component Assembly helps meet UL 508A requirements
- Heavy-duty zinc oxide varistors for high discharge capacity
- "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
- Up to 200kA Short-Circuit Current Rating (SCCR) make higher *assembly* SCCR ratings possible
- Optional remote signaling of all protection modules make status monitoring easy and accurate in any monitoring scheme
- No upstream overcurrent protection necessary to make installation easier and more economical
- Vibration and shock tested according to EN 60068-2 to withstand harsh environments

Optional Remote Signaling 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.

Circuit Diagram



BSPM2240S3G, BSPM2480S3G*

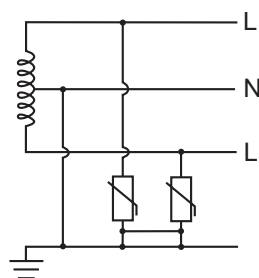
Shown with optional remote contact signaling

*For remote signaling contact, add "R" suffix to the part number, E.g., BSPM2480S3GR

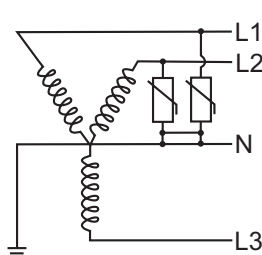
UL DIN-Rail SPD - High SCCR

ORDERING INFORMATION			
Nominal System Voltage		120/240, 240Vac	240/480Vac
Max. Continuous Operating Voltage	MCOV [L-G/L-L]	275/550Vac	385/770Vac
Catalog Numbers:	Without Remote Signaling	BSPM2240S3G	BSPM2480S3G
	With Remote Signaling	BSPM2240S3GR	BSPM2480S3GR
Replacement Module	MOV Technology	BPM275UL	BPM385UL
SPECIFICATIONS			
Rated Voltage		120-127Vac 240-254Vac 240Vac	240-480Vac 480Vac
Voltage Protection Rating V_{PR} [L-G/L-L]		1kV/1.8kV	1.5kV/2.5kV
Nominal Discharge Current I_n (kA)		20kA	
Max. Discharge Current I_{max} (kA)		40kA	
Response Time t_A		≤25 ns	
SCCR		200kA	
Frequency		50/60Hz	
Number of Poles		2	
Number of Wires/Connection Points		2 Wires or 3 Wires / 3 Connection Points	
Operating State/Fault Indication		Green (good) / Red (replace)	
Cross-Sectional Area (min.)		14AWG - Cu Stranded, Solid or Fine	
Cross-Sectional Area (max.)		2AWG - Cu Solid or Stranded, 4AWG - Cu Fine	
Terminal Torque		45 lb-in	
For Mounting On		35mm DIN-Rail per EN 60715	
Enclosure Material		Thermoplastic, UL 94V0	
Degree of Protection		IP20 (finger-safe)	
Location Category		Indoor	
Capacity		2 mods, DIN 43880	
Application		UL Type 2 Component Assembly	
Standard		UL 1449, 3 rd Edition	
Agency Information		cURus, CSA, RoHS Compliant	
Product Warranty		Five Years*	
REMOTE CONTACT SIGNALING			
Remote Contact Signaling Type		Changeover Contact	
AC Switching Capacity (Volts/Amps)		250V/0.5A	
DC Switching Capacity (Volts/Amps)		250V/0.1A; 125V/0.2A; 75V/0.5A	
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm²/14AWG Solid/Flexible	
Ordering Information		Order from Catalog Numbers Above	

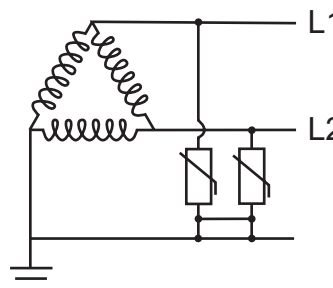
* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.



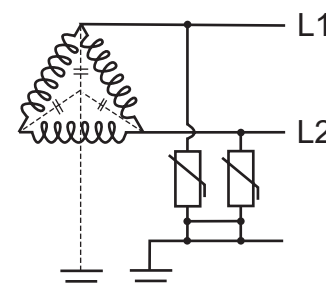
120/240V, 240/480Vac
Single Phase (Split) Center Tap
BSPM2240S3G, BSPM2480S3G



120/208V, 277/480Vac
3 Wire Wye System
BSPM2240S3G, BSPM2480S3G



2 Wire Corner Grounded Delta
240, 480Vac
BSPM2440S3G, BSPM2480S3G



UL DIN-Rail SPD - High SCCR

BSPM_ _ _ WYG, BSPM_ _ _ DLG

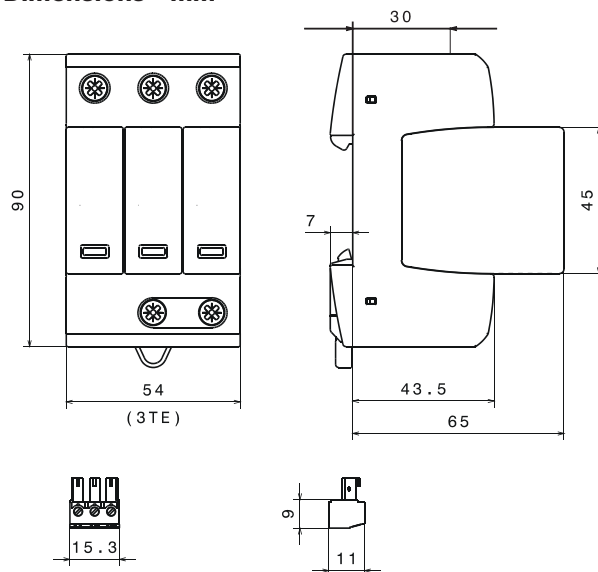
Dimensions - mm



easyID™
Visual Status Indication



Remote Signal
Contact Available



Shown with optional remote contact signaling

Description

The Bussmann 3-pole UL modular surge arresters for 240 and 480 3-phase Delta, and 120/208, 277/480 and 347/600Vac 3-phase Wye systems feature local, *easyID™* 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.

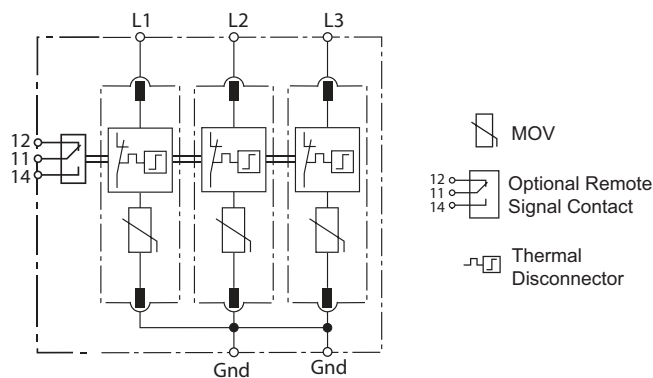
Features

- Surge arrester according to UL 1449 3rd Edition, Type 2 Component Assembly helps meet UL 508A requirements
- Heavy-duty zinc oxide varistors for high discharge capacity
- "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
- Up to 200kA Short-Circuit Current Rating (SCCR) make higher *assembly* SCCR ratings possible
- Optional remote signaling of all protection modules make status monitoring easy and accurate in any monitoring scheme
- No upstream overcurrent protection necessary to make installation easier and more economical
- Vibration and shock tested according to EN 60068-2 to withstand harsh environments

Optional Remote Signaling Contact

The remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

Circuit Diagrams



**BSPM3208WYG, BSPM3480WYG), BSPM3600WYG,
BSPM3240DLG, BSPM3480DLG***

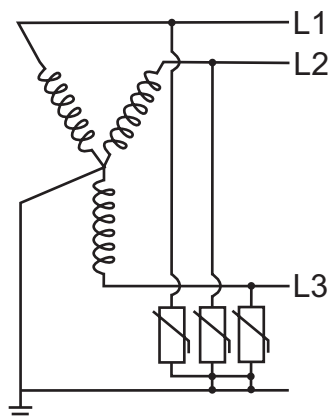
Shown with optional remote contact signaling

*For remote signaling contact, add "R" suffix to the part number, E.g., BSPM3480DLGR

UL DIN-Rail SPD - High SCCR

ORDERING INFORMATION						
Nominal System Voltage		120/208Vac	240Vac	277/480Vac	480Vac	347/600Vac
Max. Continuous Operating AC Voltage MCOV [L-G/L-L]		275/550Vac	275/550Vac	385/770Vac	600/1200Vac	600/1200Vac
Catalog Numbers:	Without Remote Signaling	BSPM3208WYG	BSPM3240DLG	BSPM3480WYG	BSPM3480DLG	BSPM3600WYG
	With Remote Signaling	BSPM3208WYGR	BSPM3240DLGR	BSPM3480WYGR	BSPM3480DLGR	BSPM3600WYGR
Replacement Module	MOV Technology	BPM275UL	BPM275UL	BPM385UL	BPM600UL	BPM600UL
SPECIFICATIONS						
Rated Voltage		120-127Vac, 208-220Vac	240Vac	277/480Vac	480Vac	347/600Vac
Voltage Protection Rating V _{PR} [L-G/L-L]		1kV/1.8kV	1kV/1.8kV	1.5kV/2.5kV	2kV/4kV	2kV/4kV
SCCR		200kA	200kA	200kA	125kA	125kA
Nominal Discharge Current I _n (kA)		20kA				
Max. Discharge Current I _{max} (kA)		40kA				
Response Time t _A		≤25 ns				
Frequency		50/60Hz				
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.)		14AWG - Cu Stranded, Solid or Fine				
Cross-Sectional Area (max.)		2AWG - Cu Solid or Stranded, 4AWG - Cu Fine				
Terminal Torque		45 lb-in				
For Mounting On		35mm DIN-Rail per to EN 60715				
Enclosure Material		Thermoplastic, UL 94V0				
Degree of Protection		IP20 (finger-safe)				
Location Category		Indoor				
Capacity		3 Mods, DIN 43880				
Application		UL Type 2 Component Assembly				
Standard		UL 1449, 3 rd Edition				
Agency Information		cURus, CSA, RoHS Compliant				
Product Warranty		Five Years*				
REMOTE CONTACT SIGNALING						
Remote Contact Signaling Type		Changeover Contact				
AC Switching Capacity (Volts/Amps)		250V/0.5A				
DC Switching Capacity (Volts/Amps)		250V/0.1A; 125V/0.2A; 75V/0.5A				
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm ² /14AWG Solid/Flexible				
Ordering Information		Order from Catalog Numbers Above				

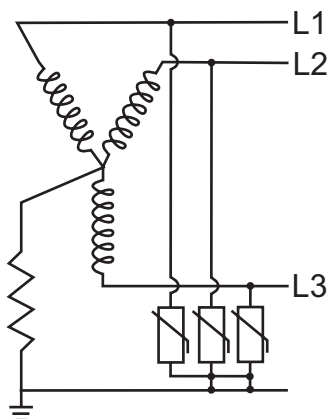
* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.



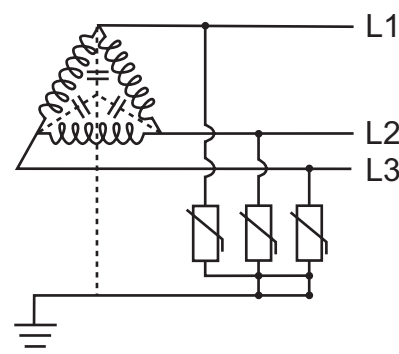
208, 480, 600Vac

Wye 3-Phase, 3 Wire + Ground

BSPM3208WYG, BSPM3480WYG, BSPM3600WYG



208V, 480V, 600Vac



240, 480Vac

Delta 3-Phase, 3 Wire + Ground

BSPM3240DLG, BSPM3480DLG

UL DIN-Rail SPD - High SCCR

BSPM_ _ _ WYNG, BSPM_ _ _ HLG

Dimensions - mm



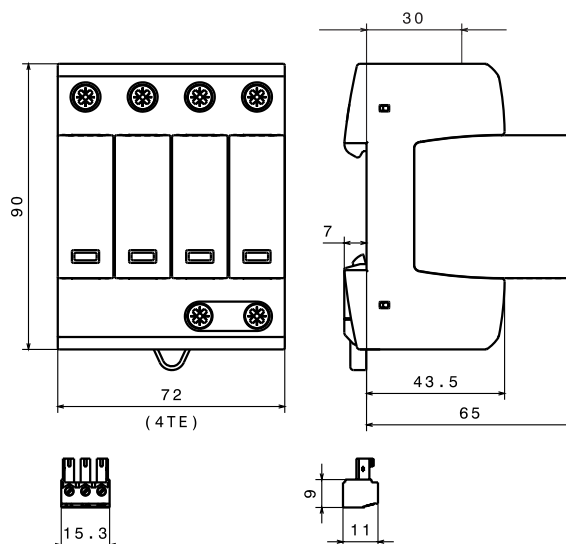
RoHS



easyID™
Visual Status Indication



Remote Signal
Contact Available



Shown with optional remote contact signaling

Description

The Bussmann 4-pole UL modular surge arresters for 120/240, 240/480Vac 3-phase Highleg Delta and 120/208, 127/220, 277/480 and 347/600Vac 3-phase 4 wire Wye systems feature local, **easyID™** 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.

Features

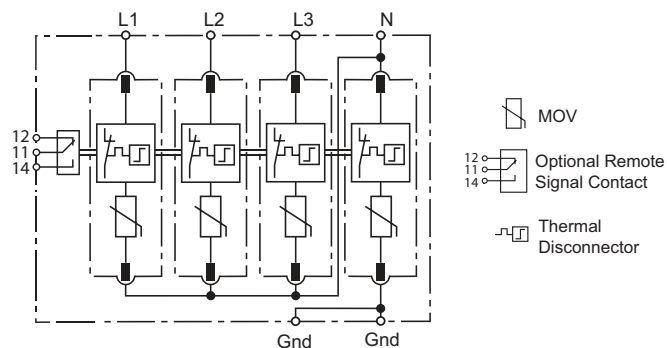
- Surge arrester according to UL 1449 3rd Edition, Type 2 Component Assembly helps meet UL 508A requirements
- Heavy-duty zinc oxide varistors for high discharge capacity
- "Thermo Dynamic Control" SPD monitoring device ensures high reliability against surge events
- Module locking system with module release button make module replacement easy without tools
- Up to 200kA Short-Circuit Current Rating (SCCR) make higher assembly SCCR ratings possible
- Optional remote signaling of all protection modules make status monitoring easy and accurate in any monitoring scheme
- No upstream overcurrent protection necessary to make installation easier and more economical
- Vibration and shock tested according to EN 60068-2 to withstand harsh environments

Optional Remote Signaling 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.

Data Sheet: 2152

Circuit Diagram



**BSPM4208WYNG, BSPM4480WYNG, BSPM4600WYNG,
BSPM4240HLG, BSPM4480HLG***

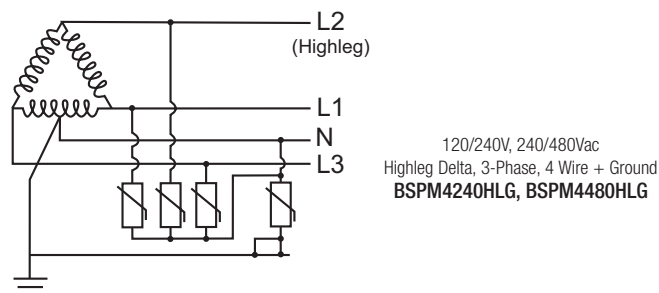
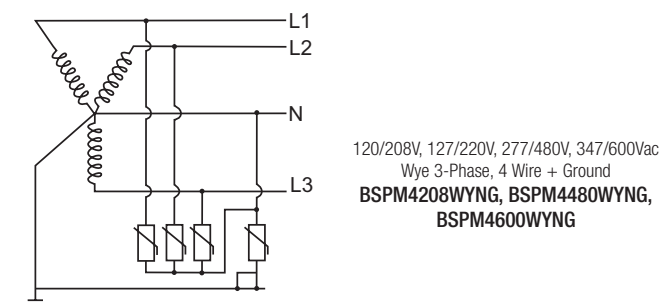
Shown with optional remote contact signaling

*For remote signaling contact, add "R" suffix to the part number, E.g., BSPM4480HLGR

UL DIN-Rail SPD - High SCCR

ORDERING INFORMATION						
Nominal System Voltage		120/208Vac, 127/220Vac	120/240Vac	240/480Vac	277/480Vac	347/600Vac
Max. continuous operating AC voltage MCOV	[L-N]/[L-G]	275/550Vac	275/550Vac	385/770Vac	385/660Vac	600/875Vac
	[N-G]/[L-L]	275/550Vac	275/550Vac	385/770Vac	275/770Vac	275/1200Vac
	[H-N]/[H-G]	- -	275/550Vac	600/985Vac	- -	- -
	[H-L]	- -	550Vac	985Vac	- -	- -
Catalog Numbers:	Without Remote Signaling	BSPM4208WYNG	BSPM4240HLG	BSPM4480HLG	BSPM4480WYNG	BSPM4600WYNG
	With Remote Signaling	BSPM4208WYNGR	BSPM4240HLGR	BSPM4480HLGR	BSPM4480WYNGR	BSPM4600WYNGR
Replacement Modules	Module Positions	L1 or L3	BPM275UL	BPM275UL	BPM385UL	BPM600UL
MOV Technology		L2	BPM275UL	BPM275UL	BPM600UL	BPM600UL
Four (4) Total Required		N	BPM275UL	BPM275UL	BPM385UL	BPM275UL
SPECIFICATIONS						
Rated Voltage		120/208Vac, 127/220Vac	120/240Vac	240/480Vac	277/480Vac	347/600Vac
Voltage Protection Rating V_{PR}	[L-N/L-G]	1kV/1.8kV	1kV/1.8kV	1.5kV/2.5kV	1.5kV/2.5kV	2kV/3kV
	[N-G/L-L]	1kV/1.8kV	1kV/1.8kV	1.5kV/2.5kV	1kV/2.5kV	1kV/4kV
	[H-N/H-G]	- -	1kV/1.8kV	2kV/3kV	- -	- -
	[H-L]	- -	1.8kV	3kV	- -	- -
SCCR		200kA	200kA	125kA	200kA	125kA
Nominal Discharge Current I_n (kA)		20kA				
Max. Discharge Current I_{max} (kA)		40kA				
Response Time t_A		≤ 25 ns				
Frequency		50/60Hz				
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.)		14AWG - Cu Stranded, Solid or Fine				
Cross-Sectional Area (max.)		2AWG - Cu Solid or Stranded, 4AWG - Cu Fine				
Terminal Torque		45 lb-in				
For Mounting On		35mm DIN-Rail per to EN 60715				
Enclosure Material		Thermoplastic, UL 94V0				
Degree of Protection		IP20 (finger-safe)				
Location Category		Indoor				
Capacity		4 Mods, DIN 43880				
Application		UL Type 2 Component Assembly				
Standard		UL 1449, 3 rd edition				
Agency Information		cURus, CSA, RoHS Compliant				
Product Warranty		Five Years*				
REMOTE CONTACT SIGNALING						
Remote Contact Signaling Type		Changeover Contact				
AC Switching Capacity (Volts/Amps)		250V/0.5A				
DC Switching Capacity (Volts/Amps)		250V/0.1A; 125V/0.2A; 75V/0.5A				
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm²/14AWG Solid/Flexible				
Ordering Information		Order from Catalog Numbers Above				

* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

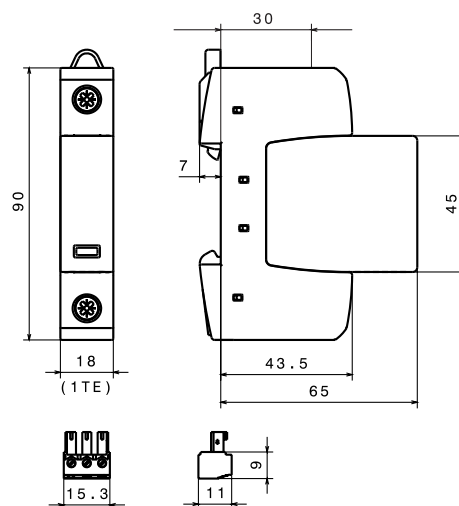
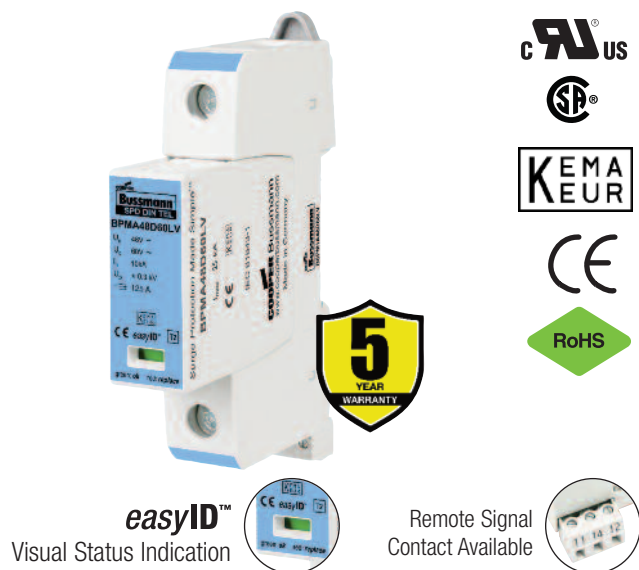


Data Sheet: 2152

UL DIN-Rail SPD - Low Voltage AC/DC Power

BSPM1A_ _ _ _ LV

Dimensions - mm



Shown with optional remote contact signaling

Description

The Bussmann UL Type 2 48Vac/60Vdc, 75Vac/100Vdc, 120Vac/200Vdc, 275Vac/350Vdc, 320Vac/420Vdc, 385Vac/500Vdc, 440Vac/585Vdc and 600Vac/dc single pole, modular surge arresters feature local, easyID™ 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.

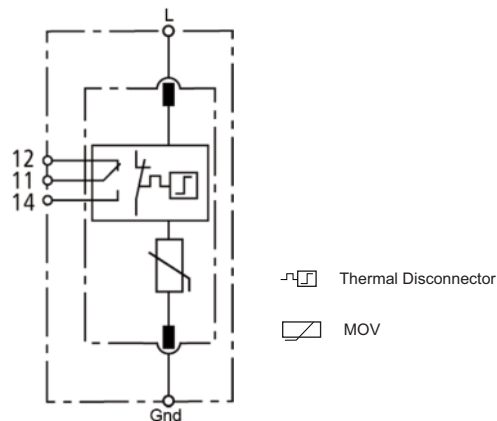
- Surge arrester according to UL 1449 3rd Edition, Type 2 Component Assembly helps meet UL 508A requirements*
- Proven MOV technology for reliable surge protection
- "Thermo Dynamic Control" SPD monitoring device ensures high reliability against surge events
- Module locking system with module release 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 upstream overcurrent protection necessary to make installation easier and more economical
- Vibration and shock tested according to EN 60068-2 to withstand harsh environments

Optional Remote Signaling 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.

* Except as noted in data sheets.

Module Circuit Diagrams - Shown with optional remote contact signaling



**BSPM1A48D60LV, BSPM1A75D100LV,
BSPM1A150D200LV,
BSPM1A275D350LV, BSPM1A320D420LV,
BSPM1A385D500LV, BSPM1A440D585LV,
BSPM1A600D600LV***

Shown with optional remote contact signaling

*For remote signaling contact, add "R" suffix to the part number, E.g., BSPM1A150D200LVR

UL DIN-Rail SPD - Low Voltage AC/DC Power

Ordering Information - 48Vac/60Vdc to 275Vac/350Vdc					
System Voltage		48Vac/60Vdc	75Vac/100Vdc	120Vac/200Vdc	275Vac/350Vdc
Catalog Numbers:	Without Remote Signaling	BSPM1A48D60LV	BSPM1A75D100LV	BSPM1A150D200LV	BSPM1A275D350LV
(Base + Modules)	With Remote Signaling	BSPM1A48D60LVR	BSPM1A75D100LVR	BSPM1A150D200LVR	BSPM1A275D350LVR
Replacement Modules		BPMA48D60LV	BPMA75D100LV	BPMA150D200LV	BPMA275D350LV
Specifications					
Max. continuous operating AC voltage [V _C]		48Vac	75Vac	150Vac	275Vac
Max. continuous operating DC voltage [V _C]		60Vdc	100Vdc	200Vdc	350Vdc
Nominal discharge current (8/20 μs) [I _n]		10kA	10kA	15kA	20kA
Max. discharge current (8/20 μs) [I _{max}]		25kA	40kA	40kA	40kA
Voltage protection level [V _{PR}]		≤ 0.3 kV	≤ 0.4kV	≤ 0.7kV	≤ 1.25kV
Voltage protection level at 5 kA [V _{PR}]		≤ 0.25kV	≤ 0.35kV	≤ 0.55kV	≤ 1kV
Temporary overvoltage (TOV)		70V / 5 sec.	90V / 5 sec.	175V / 5 sec.	335V / 5 sec
Agency Information*		--	UL / cUL, CSA, KEMA	UL / cUL, CSA, KEMA	UL / cUL, CSA, KEMA

Ordering Information - 320Vac/420Vdc to 600Vac/dc					
System Voltage		320Vac/420Vdc	385Vac/500Vdc	440Vac/585Vdc	600Vac/600Vdc
Catalog Numbers:	Without Remote Signaling	BSPM1A320D420LV	BSPM1A385D500LV	BSPM1A440D585LV	BSPM1A600D600LV
(Base + Modules)	With Remote Signaling	BSPM1A320D420LVR	BSPM1A385D500LVR	BSPM1A440D585LVR	BSPM1A600D600LVR
Replacement Modules		BPMA320D420LV	BPMA385D500LV	BPMA440D585LV	BPMA600D600LV
Specifications					
Max. continuous operating AC voltage [V _C]		320Vac	385Vac	440Vac	600Vac
Max. continuous operating DC voltage [V _C]		420Vdc	500Vdc	585Vdc	600Vdc
Nominal discharge current (8/20 μs) [I _n]		20kA	20kA	20kA	15kA
Max. discharge current (8/20 μs) [I _{max}]		40kA	40kA	40kA	30kA
Voltage protection level [V _{PR}]		≤ 1.5kV	≤ 1.75kV	≤ 2kV	≤ 2.5kV
Voltage protection level at 5 kA [V _{PR}]		≤ 1.2kV	≤ 1.35kV	≤ 1.7kV	≤ 2kV
Temporary overvoltage (TOV)		335V / 5 sec.	385V / 5 sec.	580V / 5 sec.	600V / 5 sec.
Agency Information*		UL / cUL, CSA, KEMA	UL / cUL, CSA, KEMA	UL / cUL, CSA, KEMA	UL / cUL, CSA, KEMA

Ordering Information - All Models	
SPD according to EN 61643-11	Type 2
SPD according to IEC 61643-1	Class II
Response time [t _A]	≤ 25 ns
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 (min.)	1.5mm ² /14AWG solid/flexible
Cross-sectional area (max.)	35mm ² /1AWG stranded/25mm ² /2AWG flexible
For mounting on	35mm DIN-Rail per EN 60715
Enclosure material	Thermoplastic, UL 94V0
Location category	Indoor
Degree of protection	IP20
Capacity	1 Mod., DIN 43880
Product Warranty	Five Years**
Remote Contact Signaling	
Remote Contact Signaling Type	Changeover Contact
AC Switching Capacity (Volts/Amps)	250V/0.5A
DC Switching Capacity (Volts/Amps)	250V/0.1A; 125V/0.2A; 75V/0.5A
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals	60/75°C Max. 1.5mm ² /14AWG Solid/Flexible
Ordering Information	Order from Catalog Numbers Above

* Standards information not applicable to DC ratings.

** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

UL DIN-Rail SPD - Low Voltage AC/DC Control

BSPH2A__ _LV(R)

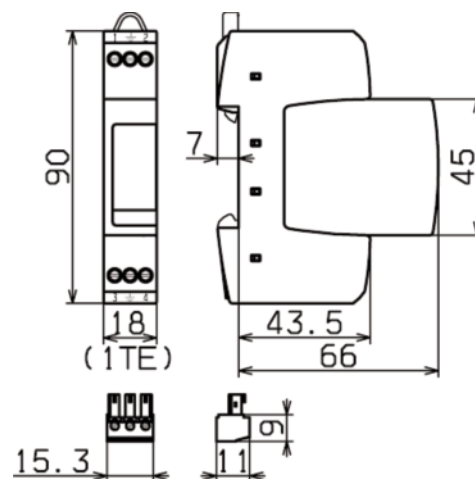
Dimensions - mm



easyID™
Visual Status Indication



Remote Signal
Contact Available



Shown with optional remote contact signaling

Specifications

Description

The Bussmann UL Type 3 24Vac/dc, 48Vac/dc, 60Vac/dc, 120Vac/dc and 230Vac/dc, two-pole, modular surge arresters feature local, *easyID™* 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*.

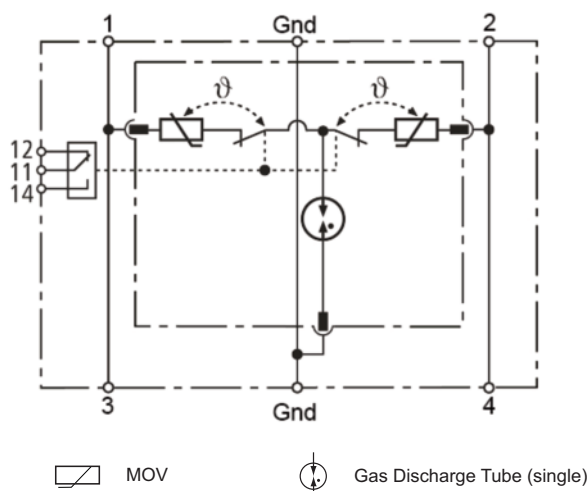
- Surge arrester according to UL 1449 3rd Edition, Type 3 Component Assembly helps meet UL 508A requirements
- Proven MOV and GDT hybrid technology for reliable surge protection
- "Thermo Dynamic Control" SPD monitoring device ensures high reliability against surge events
- Module locking system with 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 upstream overcurrent protection necessary to make installation easier and more economical
- Vibration and shock tested according to EN 60068-2 to withstand harsh environments

Optional Remote Signaling 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.

* UL 1449 3rd Edition not applicable to DC voltages.

Module Circuit Diagrams



BPH2A24D24LV BPH2A48D48LV BPH2A60D60LV
BPH2A150D150LV BPH2A230D230LV

Shown with optional remote contact signaling

*For remote signaling contact, add "R" suffix to the part number, E.g., BSPH2A230D230LVR

Data Sheet: 2057

UL DIN-Rail SPD - Low Voltage AC/DC Power

Ordering Information					
System Voltage	24Vac/dc	48Vac/dc	60Vac/dc	120Vac/dc	230Vac/dc
Max. Continuous operating AC voltage (MCOV) [V _C]	30Vac/dc	60Vac/dc	75Vac/dc	150Vac/dc	255Vac/dc
Catalog Numbers:	Without Remote Signaling	BSPH2A24D24LV	BSPH2A48D48LV	BSPH2A60D60LV	BSPH2A150D150LV
(Base + Modules)	With Remote Signaling	BSPH2A24D24LVR	BSPH2A48D48LVR	BSPH2A60D60LVR	BSPH2A150D150LVR
Replacement Modules	BPHA24D24LV	BPHA48D48LV	BPHA60D60LV	BPHA150D150LV	BPHA230D230LV
Specifications					
Nominal AC voltage [V ₀]	24V	48V	60V	120V	230V
Max. continuous operating AC voltage [V _C]	30V	60V	75V	150V	255V
Max. continuous operating DC voltage [V _C]	30V	60V	75V	150V	255V
Nominal load current AC [I _L]	25A	25A	25A	25A	25A
Nominal discharge current (8/20 μs) [I _n]	1kA	1kA	2kA	2kA	3kA
Total discharge current (8/20 μs) [L+N-Gnd] [I _{total}]	2kA	2kA	4kA	4kA	5kA
Combined impulse [U _{OC}]	2kV	2kV	4kV	4kV	6kV
Combined impulse [L+N-Gnd] [U _{OC} total]	4kV	4kV	8kV	8kV	10kV
Voltage protection level [L-N] [V _{PR}]	≤ 180V	≤ 350V	≤ 400V	≤ 640V	≤ 1250V
Voltage protection level [L/N-Gnd] [V _{PR}]	≤ 630V	≤ 730V	≤ 730V	≤ 800V	≤ 1500V
Temporary overvoltage (TOV) [L-N]	--	--	--	--	335V / 5 sec.
Temporary overvoltage (TOV) [L/N-Gnd]	--	--	--	--	400V / 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]	≤ 25 ns				
Response time [L/N-Gnd] [t _A]	≤ 100 ns				
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.)	0.5mm²/18AWG solid/flexible				
Cross-sectional area (max.)	4mm²/10AWG solid/2.5mm²/12AWG flexible				
For mounting on	35mm DIN rail per EN 60715				
Enclosure material	Thermoplastic, UL 94V0				
Location category	Indoor				
Degree of protection	IP20				
Capacity	1 Mod., 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)	250V/0.5A				
DC Switching Capacity (Volts/Amps)	250V/0.1A; 125V/0.2A; 75V/0.5A				
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals	60/75°C Max. 1.5mm²/14AWG Solid/Flexible				
Ordering Information	Order from Catalog Numbers Above				

* Standards information not applicable to DC ratings.

** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

IEC Class I DIN-Rail SPD

BSPS___**TN**, **BSPS**___**TT**



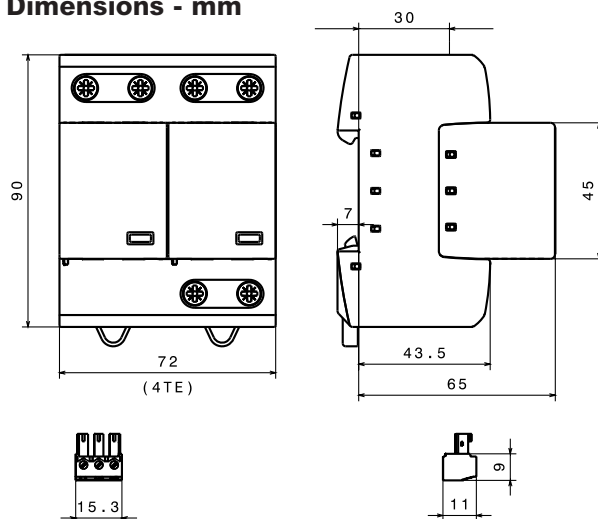
easyID™
Visual Status Indication



Remote Signal
Contact Available



Dimensions - mm



Shown with optional remote contact signaling

Description

The Bussmann IEC Class I 230V, two-pole, modular combined lightning, current and surge arresters feature local, *easyID™* 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. 230V models are offered with MCOV rating of 255V.

TN System Arresters

The features of these two-pole devices are for use as a modular combined lightning and current arrester and surge arrester for use in single TN- systems ("2-0" circuit).

TT System Arrester

Provides a current arresting means for use in single TT- systems ("1-1" circuit).

Remote Signaling Contact

The three-pole terminal remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

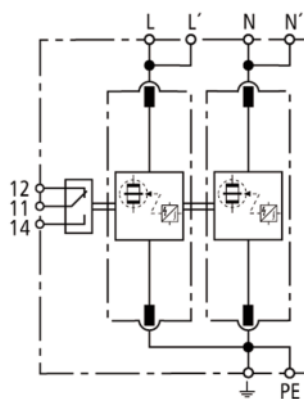
Circuit Diagrams



Creepage Discharge Spark Gap

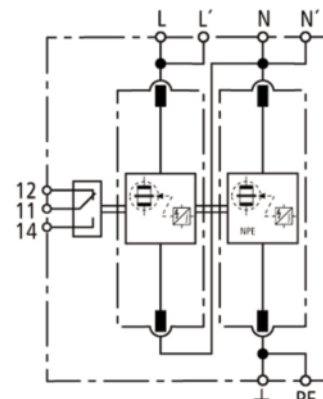


Spark Gap Trigger



BSPS2255TN

Shown with optional
remote contact signaling



BSPS2255TT

Shown with optional
remote contact signaling

*For remote signaling contact, add "R" suffix to the part number, E.g., BSPS2255TNR

IEC Class I DIN-Rail SPD

Ordering Information			
System Voltage/Poles		230V/2	230V/2
Max. Continuous operating AC voltage (MCOV) [U _C]		255V	255V
Catalog Numbers:	Without Remote Signaling	BSPS2255TN	BSPS2255TT
	With Remote Signaling	BSPS2255TNR	BSPS2255TTR
Replacement Modules:	MOV technology	(2X) BPS255IEC	(1X) BPS255IEC
	Spark Gap technology	- -	(1X) BPS50NPEIEC*
Specifications			
Specific energy [L+N-PE] [W/R]		625.00 kJ/ohms	- -
Lightning impulse current (10/350 μs) [L, N-PE] [I _{imp}]		25kA	25/50kA I _s [L-N]/[N-PE]
Specific energy [L,N-PE] [W/R]		156.25 kJ/ohms	156.25kJ/ohms/ 625.00 kJ/ohms
Voltage protection level [L-PE]/[N-PE] [U _p]		≤ 1.5 kV/≤ 1.5 kV	- -
Voltage protection level [L-N]/[N-PE] [U _p]		- -	≤ 1.5kV/≤ 1.5kV
Follow current extinguishing capability AC [I _{fi}]		50kA rms	- -
Follow current extinguishing capability [L-N]/[N-PE] [I _{fi}]		- -	50kA rms/100A rms
Temporary overvoltage (TOV) [N-PE] [U _T]		- -	1200V/200 ms
SPD according to EN 61643-11/... IEC 61643-1		Type 1/Class I	
Energy-coordinated protection effect with regard to the terminal equipment		Type 1 + Type 2	
Energy-coordinated protection effect with regard to the terminal equipment (≤ 5m)		Type 1 + Type 2 + Type 3	
Nominal AC voltage [U _N]		230V	
Lightning impulse current (10/350 μs) [L+N-PE] [I _{total}]		50kA	
Nominal discharge current (8/20 μs) [I _n]		25/50kA	
Follow current limitation/Selectivity		no tripping of a 20A gL/gG fuse up to 50kA rms (prosp.)	
Response time [t _A]		≤ 100 ns	
Max. Backup fuse (L) up to I _K ≤ 50kA rms		315A gL/gG	
Max. Backup fuse (L) for I _K > 50kA rms		200A gL/gG	
Max. Backup fuse (L-L)		125A gL/gG	
Temporary overvoltage (TOV) [L-N] [U _T]		440V/5 sec.	
TOV characteristics		withstand	
Operating temperature range (parallel connection) [T _{Up}]		-40°C to +80°C	
Operating temperature range (series connection) [T _{Us}]		-40°C to +60°C	
Operating temperature range [parallel]/[continuity] [T _U]		-40°C to +80°C/-40°C to +60°C	
Operating state/fault indication		green (good)/red (replace)	
Number of ports		1	
Cross-sectional area (L, L , N, N , PE, $\perp$) [min.]		10mm² solid/flexible	
Cross-sectional area (L, N, PE) [max.]		50mm²/1AWG stranded-35mm²/2AWG flexible	
Cross-sectional area (L , N , $\perp$) [max.]		35mm²/2AWG stranded-25mm²/4AWG flexible	
For mounting on		35mm DIN Rail per EN 60715	
Enclosure material		Thermoplastic, UL 94V0	
Location category		Indoor	
Degree of protection		IP20	
Capacity		4 mods., DIN 43880	
Standards Information		KEMA	
Product Warranty		Five Years**	
Remote Contact Signaling			
Remote Contact Signaling Type		Changeover Contact	
AC Switching Capacity (Volts/Amps)		250V/0.1A	
DC Switching Capacity (Volts/Amps)		250V/0.1A; 125V/0.2A; 75V/0.5A	
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm²/14AWG Solid/Flexible	
Ordering Information		Order from Catalog Numbers Above	

Recommended Bussmann NH DIN Size Back Up Fuses			
Size	NH Fuse Part Number	Size	NH Fuse Part Number
00	125NHG00B (max L-L)	02	125NHG02B (max L-L)
0	125NHG0B (max L-L)	02	200NHG02B (max L I _k >50kA)
01	125NHG01B (max L-L)	2	315NHG2B (max L ≤50kA)
1	200NHG1B (max L I _k >50kA)	03	315NHG03B (max L ≤50kA)

* N-PE Surge arrester for location between neutral conductor and protective conductor in TT systems.

** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

IEC Class I DIN-Rail SPD

BSPS_ _ _ _ TNC



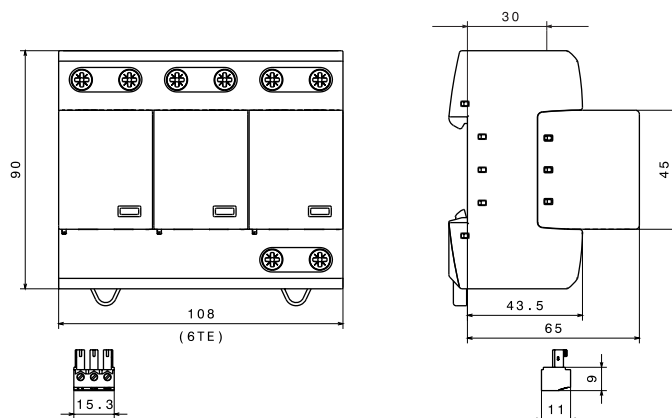
easyID™
Visual Status Indication



Remote Signal
Contact Available

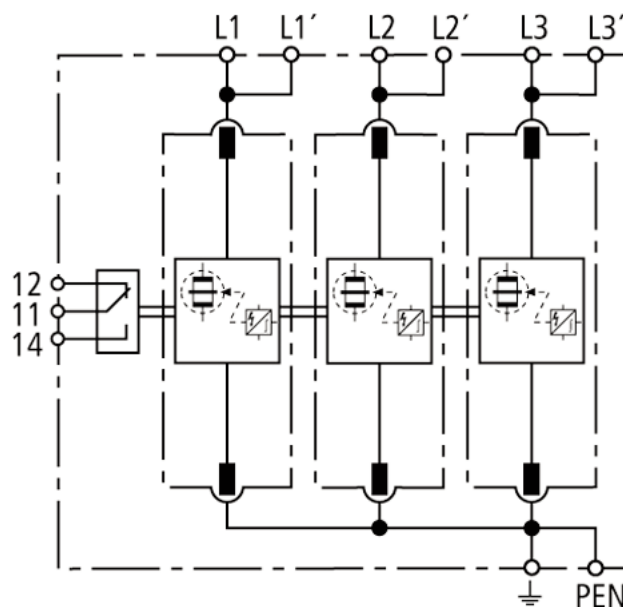


Dimensions - mm



Shown with optional remote contact signaling

Circuit Diagrams



BSPS3255TNC

Shown with optional remote contact signaling

Description

The Bussmann IEC Class I 230V, three-pole, modular combined lightning, current and surge arresters feature local, **easyID™** 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.

230V models are offered with a MCOV rating of 255V.

TNC System Arrester

The features of these three-pole devices are for use in TN-C 230/400V systems ("3-0" circuit) against surges.

Remote Signaling Contact

The three-pole terminal remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

IEC Class I DIN-Rail SPD

Ordering Information	
System Voltage/Poles	230/400V/3
Max. Continuous operating AC voltage (MCOV) [U _C]	255V
Catalog Numbers:	Without Remote Signaling BSPS3255TNC
	With Remote Signaling BSPS3255TNCR
Replacement Module	MOV technology BPS255IEC
Specifications	
SPD according to EN 61643-11/... IEC 61643-1	Type 1/Class I
Energy-coordinated protection effect with regard to the terminal equipment	Type 1 + Type 2
Energy-coordinated protection effect with regard to the terminal equipment ($\leq 5m$)	Type 1 + Type 2 + Type 3
Nominal AC voltage [U _N]	230/400V
Lightning impulse current (10/350 μs) [L1+L2+L3-PEN] [I _{total}]	75kA
Specific energy [L1+L2+L3-PEN] [W/R]	1.40 MJ/ohms
Lightning impulse current (10/350 μs) [L-PEN] [I _{imp}]	25kA
Specific energy [L-PEN] [W/R]	156.25kJ/ohms
Nominal discharge current (8/20 μs) [I _n]	25/75kA
Voltage protection level [U _p]	$\leq 1.5kV$
Follow current extinguishing capability AC [I _{fi}]	50kA rms
Follow current limitation/Selectivity	no tripping of a 20A gL/gG fuse up to 50kA rms (prosp.)
Response time [t _A]	≤ 100 ns
Max. Backup fuse (L) up to I _K = 50kA rms	315A gL/gG
Max. Backup fuse (L) for I _K > 50kA rms	200A gL/gG
Max. Backup fuse (L-L)	125A gL/gG
Temporary overvoltage (TOV) [U _T]	440V/5 sec.
TOV characteristics	withstand
Operating temperature range [parallel]/[continuity] [T _U]	-40°C to +80°C/-40°C to +60°C
Operating state/fault indication	green (good)/red (replace)
Number of ports	1
Cross-sectional area (L1, L1, L2, L2, L3, L3, PEN, $\frac{1}{2}$) [min.]	10mm ² solid/flexible
Cross-sectional area (L1, L2, L3, PEN) [max.]	50mm ² /1AWG stranded-35mm ² /2AWG flexible
Cross-sectional area (L1, L2, L3, $\frac{1}{2}$) [max.]	35mm ² /2AWG stranded-25mm ² /4AWG flexible
Mounting	35mm DIN rail per to EN 60715
Enclosure material	Thermoplastic, UL 94V0
Location category	Indoor
Degree of protection	IP20
Capacity	6 mods., DIN 43880
Standards Information	KEMA
Product Warranty	Five Years*
Remote Contact Signaling	
Remote Contact Signaling Type	Changeover Contact
AC Switching Capacity (Volts/Amps)	250V/0.1A
DC Switching Capacity (Volts/Amps)	250V/0.1A; 125V/0.2A; 75V/0.5A
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals	60/75°C Max. 1.5mm ² /14AWG Solid/Flexible
Ordering Information	Order from Catalog Numbers Above

* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

Recommended Bussmann NH DIN Size Back Up Fuses			
Size	NH Fuse Part Number	Size	NH Fuse Part Number
00	125NHG00B (max L-L)	02	125NHG02B (max L-L)
0	125NHG0B (max L-L)	02	200NHG02B (max L Ik >50kA)
01	125NHG01B (max L-L)	2	315NHG2B (max L $\leq$ 50kA)
1	200NHG1B (max L Ik >50kA)	03	315NHG03B (max L $\leq$ 50kA)

IEC Class I DIN-Rail SPD

BSPS___**TNS**, **BSPS**___**TT**



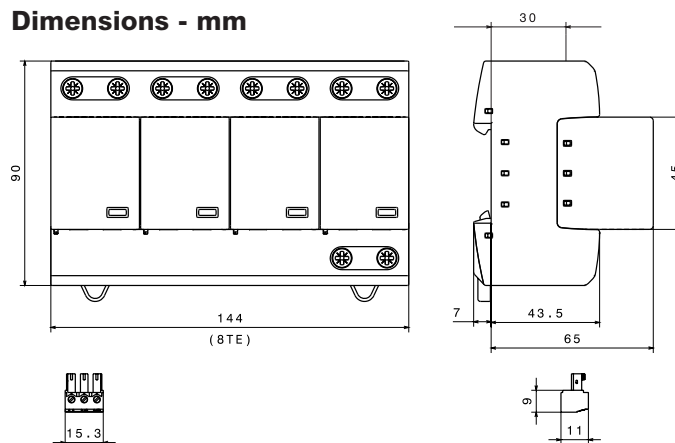
easyID™
Visual Status Indication



Remote Signal
Contact Available



Dimensions - mm



Shown with optional remote contact signaling

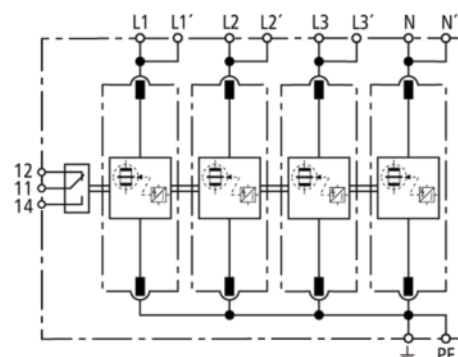
Circuit Diagrams



Creepage Discharge Spark Gap

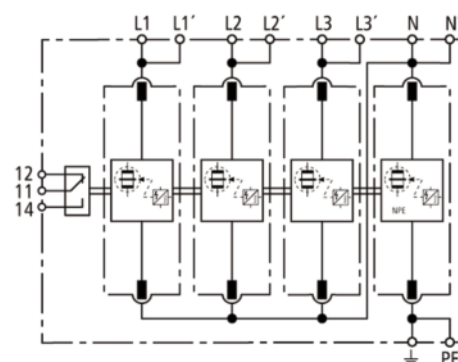


Spark Gap Trigger



BSPS4255TNS

Shown with optional
remote contact signaling



BSPS4255TT

Shown with optional
remote contact signaling

Description

The Bussmann IEC Class I 230V, four-pole, modular combined lightning, current and surge arresters feature local, *easyID™* 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.

230V models are offered with MCOV ratings of 255V.

TNS System Arresters

The features of these four-pole devices are for use in TNS 230/400V systems ("4-0" circuit) against surges.

TT System Arrester

Provides a current arresting means between neutral conductor and protective conductor in TT 230/400V systems ("3+1" circuit) against surges.

Remote Signaling Contact

The three-pole terminal remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

IEC Class I DIN-Rail SPD

Ordering Information			
System Voltage/Poles		230/400V/4	230/400V/4
Max. Continuous operating AC voltage (MCOV) [U _C]		255V	255V
Catalog Numbers:	Without Remote Signaling	BSPS4255TNS	BSPS4255TT
	With Remote Signaling	BSPS4255TNSR	BSPS4255TTR
Replacement Modules:	MOV technology	BPS255IEC	BPS255IEC
	Spark Gap technology	- -	BPS100NPEIEC*
Specifications			
SPD according to EN 61643-11/... IEC 61643-1		Type 1/Class I	
Energy-coordinated protection effect with regard to the terminal equipment		Type 1 + Type 2	
Energy-coordinated protection effect with regard to the terminal equipment (≤ 5m)		Type 1 + Type 2 + Type 3	
Nominal AC voltage [U _N]		230/400V	
Lightning impulse current (10/350 μs) [L1+L2+L3+N-PE] [I _{total}]		100kA	
Specific energy [L1+L2+L3+N-PE] [W/R]		2.50MJ/ohms	
Lightning impulse current (10/350 μs) [L, N-PE] [I _{imp}]		25kA	
TNS system specific energy [L,N-PE] [W/R]		156.25kJ/ohms	
TT system specific energy [L-N]/[N-PE] [W/R]		156.25kJ/ohms/2.50kJ/ohms	
Nominal discharge current (8/20 μs) [I _n]		25/100kA	
Voltage protection level [L-PE]/[N-PE] [U _p]		≤ 1.5kV/≤ 1.5kV	
TNS system follow current extinguishing capability AC [I _{ff}]		50kA rms	
TT system follow current extinguishing capability AC [I _{ff}]		50kA rms/100A rms	
Follow current limitation/Selectivity		No tripping of a 20A gL/gG fuse up to 50kA rms (prosp.)	
Response time [t _A]		≤ 100 ns	
Max. Backup fuse (L) up to I _K ≤ 50kA rms		315A gL/gG	
Max. Backup fuse (L) for I _K > 50kA rms		200A gL/gG	
Max. Backup fuse (L-L)		125A gL/gG	
Temporary overvoltage (TOV) [L-N] [U _T]		440V/5 sec.	
Temporary overvoltage (TOV) [N-PE] [U _T]		1200V/200mS	
TOV characteristics		Withstand	
Operating temperature range [parallel]/[continuity] [T _U]		-40°C to +80°C/-40°C to +60°C	
Operating state/fault indication		green (good)/red (replace)	
Number of ports		1	
Cross-sectional area (L1, L1 , L2, L2 , L3, L3 , N, N , PE, $\frac{1}{2}$) [min.]		10mm² solid/flexible	
Cross-sectional area (L1, L2, L3, N, PE) [max.]		50mm²/1AWG stranded-35mm²/2AWG flexible	
Cross-sectional area (L1 , L2 , L3 , N , $\frac{1}{2}$) [max.]		35mm²/2AWG stranded-25mm²/4AWG flexible	
Mounting		35mm DIN Rail per EN 60715	
Enclosure material		Thermoplastic, UL 94V0	
Location category		Indoor	
Degree of protection		IP20	
Capacity		8 mods., DIN 43880	
Agency Information		KEMA	
Product Warranty		Five Years**	
Remote Contact Signaling			
Remote Contact Signaling Type		Changeover Contact	
AC Switching Capacity (Volts/Amps)		250V/0.1A	
DC Switching Capacity (Volts/Amps)		250V/0.1A; 125V/0.2A; 75V/0.5A	
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm²/14AWG Solid/Flexible	
Ordering Information		Order from Catalog Numbers Above	

* N-PE Surge arrester for location between neutral conductor and protective conductor in TT systems.

** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

Recommended Bussmann NH DIN Size Back Up Fuses			
Size	NH Fuse Part Number	Size	NH Fuse Part Number
00	125NHG00B (max L-L)	02	125NHG02B (max L-L)
0	125NHG0B (max L-L)	02	200NHG02B (max L Ik >50kA)
01	125NHG01B (max L-L)	2	315NHG2B (max L ≤50kA)
1	200NHG1B (max L Ik >50kA)	03	315NHG03B (max L ≤50kA)

Data Sheet: 1165

IEC Class II DIN-Rail SPD

BSPM___**TN**, **BSPG**___**NPE**



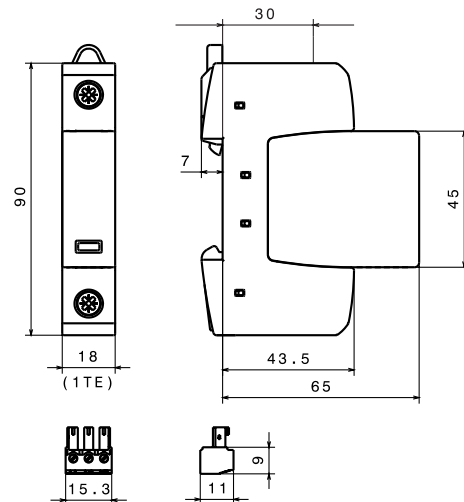
easyID™
Visual Status Indication



Remote Signal
Contact Available



Dimensions - mm



Shown with optional remote contact signaling

Description

The Bussmann IEC Class II 275, 320, 385, 440 and 600V, one-pole, modular surge arresters feature local, *easyID™* 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. Class II single-pole surge arrester models are offered with MCOV ratings of 255, 275, 320, 385, 440 and 600V.

TN System Arresters

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

TT System Arrester

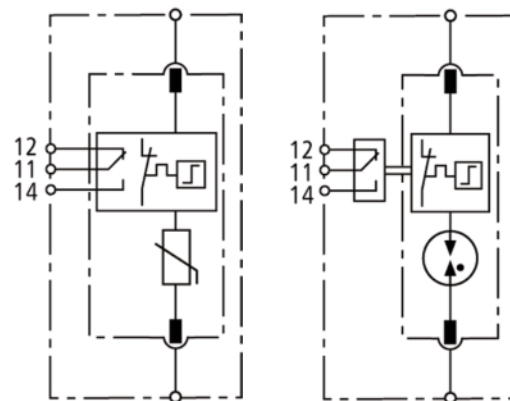
Provides a current arresting means between neutral conductor and protective conductor in TT systems, this device helps ensure fulfilling the requirements for protection of personnel and equipment in "3+1" and "1+1" circuits.

Remote Signaling Contact

The three-pole terminal remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

Module Circuit Diagrams -

Shown with optional remote contact signaling



MOV

Thermal Disconnect

Gas Discharge Tube (single)

BSPM1275TN
BSPM1320TN
BSPM1385TN
BSPM1440TN
BSPM1600TN

BSPG1255NPE(R)

*For remote signaling contact, add "R" suffix to the part number, E.g., BSPM1275TNR

IEC Class II DIN-Rail SPD

Ordering Information						
System Voltage/Poles	230V/1	230V/1	230V/1	400V/1	600V/1	230V/1*
Max. Continuous operating AC voltage (MCOV) [U _C]	275V	320V	385V	440V	600V	255V
Catalog Numbers:	Without Remote Signaling	BSPM1275TN	BSPM1320TN	BSPM1385TN	BSPM1440TN	BSPM1600TN
(Base + Modules)	With Remote Signaling	BSPM1275TNR	BSPM1320TNR	BSPM1385TNR	BSPM1440TNR	BSPM1600TNR
Replacement Modules	BPM275IEC	BPM320IEC	BPM385IEC	BPM440IEC	BPM600IEC	BPG255NPE
Specifications						
Line system type	TN / TT	TN / TT	TN / TT	TN	TN	TT
Max. Continuous operating DC voltage [U _C]	350V	420V	500V	585V	600V	- -
Voltage protection level [U _p]	≤ 1.25kV	≤ 1.5kV	≤ 1.75kV	≤ 2kV	≤ 2.5kV	≤ 1.5kV
Voltage protection level at 5kA [U _p]	≤ 1kV	≤ 1.2kV	≤ 1.35kV	≤ 1.7kV	≤ 2kV	- -
Max. mains-side overcurrent protection	125A gL/gG	125A gL/gG	125A gL/gG	125A gL/gG	100A gL-gG	- -
Short-circuit withstand capability for max. mains-side overcurrent protection	50kA _{rms}	25kA _{rms}	25kA _{rms}	25kA _{rms}	25kA rms	- -
Temporary overvoltage (TOV) [U _T]	335V/5 sec.	335V/5 sec.	385V/5 sec.	580V/5 sec.	600V/5 sec.	1200V/200 ms
Response time [t _A]	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	≤ 100 ns
Follow current extinguishing capability [I _{fi}]	- -	- -	- -	- -	- -	100A _{rms}
Lightning impulse current (10/350 μs) [I _{imp}]	- -	- -	- -	- -	- -	12kA
Nominal discharge current (8/20 μs) [I _n]	20kA	20kA	20kA	20kA	15kA	20kA
Max. Discharge current (8/20 μs) [I _{max}]	40kA	40kA	40kA	40kA	30kA	40kA
Standards Information	KEMA	KEMA, CSA	KEMA, CSA	KEMA, CSA	KEMA, CSA	KEMA
Capacity	1 mod., DIN 43880					
SPD according to EN 61643-11	Type 2					
SPD according to IEC 61643-1	Class II					
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 (min.)	1.5mm²/14AWG solid/flexible					
Cross-sectional area (max.)	35mm²/2AWG stranded-25mm²/4AWG flexible					
Mounting	35mm DIN Rail per EN 60715					
Enclosure material	Thermoplastic, UL 94V0					
Location category	Indoor					
Degree of protection	IP20					
Product Warranty	Five Years**					
Remote Contact Signaling						
Remote Contact Signaling Type	Changeover Contact					
AC Switching Capacity (Volts/Amps)	250V/0.1A					
DC Switching Capacity (Volts/Amps)	250V/0.1A; 125V/0.2A; 75V/0.5A					
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals	60/75°C Max. 1.5mm²/14AWG Solid/Flexible					
Ordering Information	Order from Catalog Numbers Above					

* N-PE Surge arrester for location between neutral conductor and protective conductor in TT systems.

** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

Recommended Bussmann Back Up Fuses		
DIN Fuse Size	TT / TN System NH Fuse Part Numbers	
	275, 320, 385, 440V	600V
00	125NHG00B	100NHG00B-690
0	125NHG0B	100NHG0B-690
01	125NHG01B	- -
1	- -	100NHG1B-690
02	125NHG02B	- -
2	- -	100NHG2B-690

IEC Class II DIN-Rail SPD

BSPM_ _ _ _TN, BSPH_ _ _ _TT



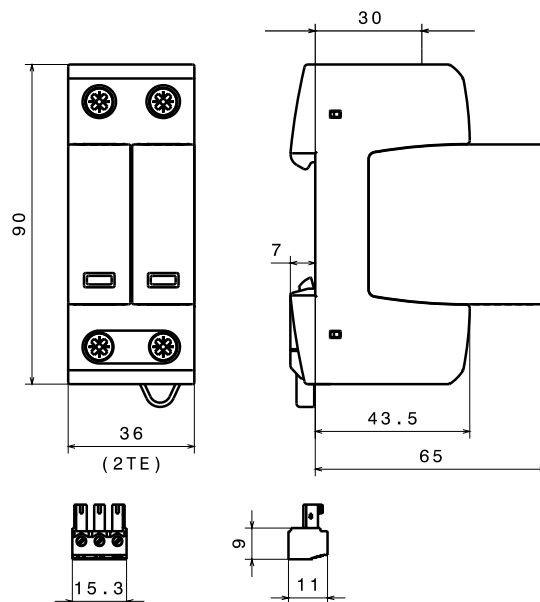
easyID™
Visual Status Indication



Remote Signal
Contact Available



Dimensions - mm



Shown with optional remote contact signaling

Description

The Bussmann IEC Class II 230V, two-pole, modular surge arresters feature local, **easyID™** 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. 230V models are offered with MCOV ratings of 255 and 275V.

TN System Arresters

The features of these single-pole devices are for use in single-phase 230V TN systems ("2-0" circuit).

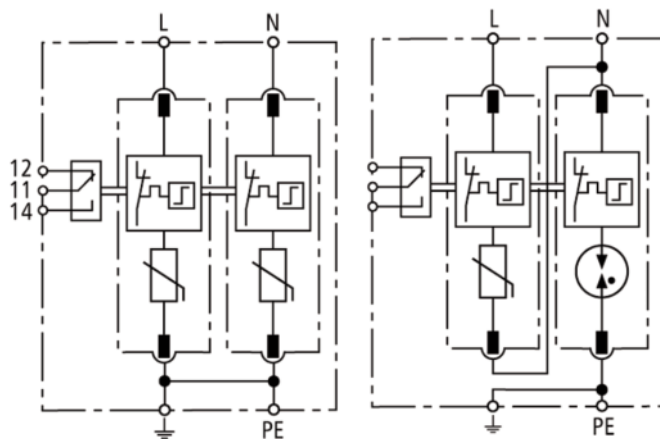
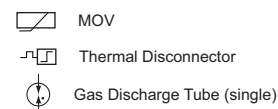
TT System Arrester

The features of these single-pole devices are for use in single-phase 230V TT and TNS systems ("1-1" circuit).

Remote Signaling Contact

The three-pole terminal remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

Circuit Diagrams



BSPM2275TN

Shown with optional remote
contact signaling

BSPH2275TT

Shown with optional remote
contact signaling

*For remote signaling contact, add "R" suffix to the part number, E.g., BSPM2275TNR

IEC Class II DIN-Rail SPD

Ordering Information			
System Voltage/Poles		230V/2	230V/2
Max. continuous operating AC voltage (MCOV) [U _C]		275V	- -
Max. Continuous operating AC voltage (MCOV) [L-N] [U _C]		- -	275V
Max. Continuous operating AC voltage (MCOV) [N-PE] [U _C]		- -	255V
Catalog Numbers:	Without Remote Signaling	BSPM2275TN	BSPH2275TT
	With Remote Signaling	BSPM2275TNR	BSPH2275TTR
Replacement Modules:	MOV Technology	BPM275IEC	BPM275IEC
	Spark Gap technology	- -	BPSNPEIEC*
Specifications			
Lightning impulse current (10/350 μs) [N-PE] [I _{imp}]		- -	12kA
Voltage protection level [U _p]		≤ 1.25kV	- -
Voltage protection level at 5kA [U _p]		≤ 1kV	- -
Voltage protection level [L-N] [U _p]		- -	≤ 1.25kV
Voltage protection level [L-N] at 5kA [U _p]		- -	≤ 1kV
Voltage protection level [N-PE] [U _p]		- -	≤ 1.5kV
Follow current extinguishing capability [N-PE] [I _{fi}]		- -	100A rms
Response time [t _A]		≤ 25 ns	- -
Response time [L-N] [t _A]		- -	≤ 25 ns
Response time [N-PE] [t _A]		- -	≤ 100 ns
Temporary overvoltage (TOV) [U _T]		335V/5 sec.	- -
Temporary overvoltage (TOV) [L-N] [U _T]		- -	335V/5 sec.
Temporary overvoltage (TOV) [N-PE] [U _T]		- -	1200V/200 ms
SPD according to EN 61643-11		Type 2	
SPD according to IEC 61643-1		Class II	
Nominal discharge current (8/20 μs) [I _n]		20kA	
Max. discharge current (8/20 μs) [I _{max}]		40kA	
Max. mains-side overcurrent protection		125A gL/gG	
Short-circuit withstand capability for max. mains-side overcurrent protection		50kA rms	
Nominal AC voltage [U _N]		230V	
TOV characteristics		withstand	
Operating temperature range [T _{ij}]		-40°C to +80°C	
Operating state/fault indication		green (good)/red (replace)	
Number of ports		1	
Cross-sectional area (min.)		1.5mm2/14AWG solid/flexible	
Cross-sectional area (max.)		35mm2/2AWG stranded-25mm2/4AWG flexible	
Mounting		35mm DIN rail per EN 60715	
Enclosure material		Thermoplastic, UL 94V0	
Location category		Indoor	
Degree of protection		IP20	
Capacity		2 mods., DIN 43880	
Standards Information		KEMA	
Product Warranty		Five Years**	
Remote Contact Signaling			
Remote Contact Signaling Type		Changeover Contact	
AC Switching Capacity (Volts/Amps)		250V/0.1A	
DC Switching Capacity (Volts/Amps)		250V/0.1A; 125V/0.2A; 75V/0.5A	
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm²/14AWG Solid/Flexible	
Ordering Information		Order from Catalog Numbers Above	

* N-PE Surge arrester for location between neutral conductor and protective conductor in TT systems.

** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

Recommended Bussmann Back Up Fuses	
DIN Fuse Size	NH Fuse Part Number
00	125NHG00B
0	125NHG0B
01	125NHG01B
02	125NHG02B

Data Sheet: 1167

IEC Class II DIN-Rail SPD

BSPM___TNC



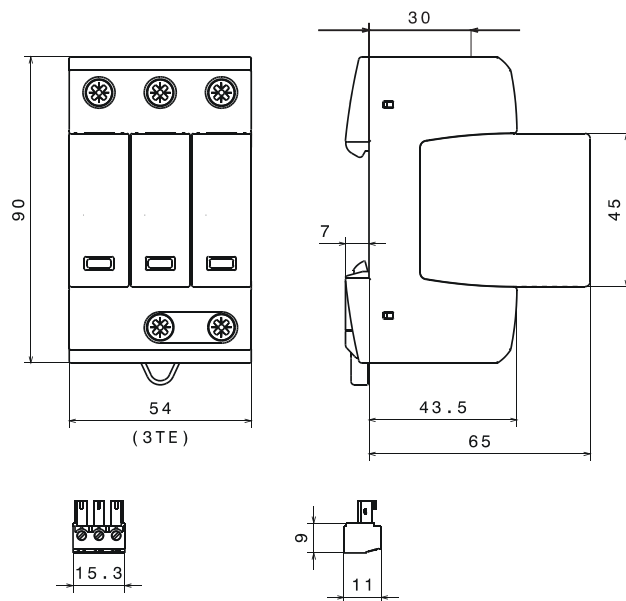
easyID™
Visual Status Indication



Remote Signal
Contact Available



Dimensions - mm



Shown with optional remote contact signaling

Description

The Bussmann IEC Class II 120/240V and 230/400V, three-pole, modular surge arresters feature local, *easyID™* 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. 120V models are offered with a MCOV rating of 150V. 230V models are offered with a MCOV rating of 275 or 385V.

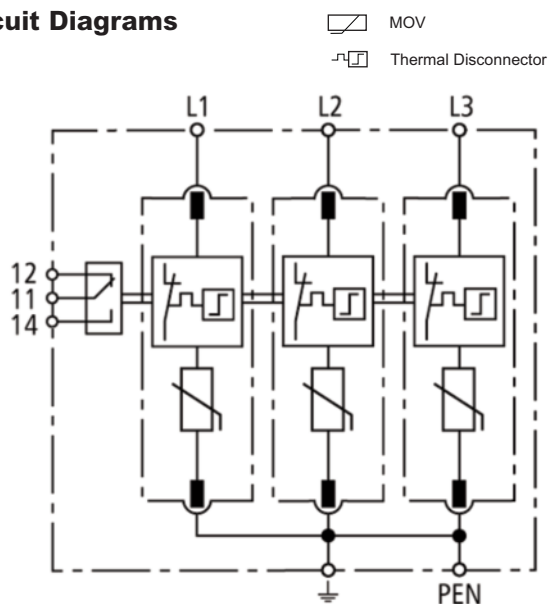
TNC System Arresters

The features of these three-pole devices are for use in TN-C 120/240V or 230/400V systems ("3-0" circuit) against surges.

Remote Signaling Contact

The three-pole terminal remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

Circuit Diagrams



BSPM3150TNC, BSPM3275TNC, BSPM3385TNC

Shown with optional remote contact signaling

*For remote signaling contact, add "R" suffix to the part number, E.g., BSPM3150TNCR

IEC Class II DIN-Rail SPD

ORDERING INFORMATION			
System Voltage/Poles	120V/3	230V/3	230V/3
Max. Continuous operating AC voltage (MCOV) [U _C]	150V	275V	385V
Catalog Numbers:	Without Remote Signaling	BSPM3150TNC	BSPM3275TNC
	With Remote Signaling	BSPM3150TNCR	BSPM3275TNCR
Replacement Module	MOV technology	BPM150IEC	BPM275IEC
		BPM385IEC	
SPECIFICATIONS			
Nominal AC voltage [U _N]	120/240V	230/400V	230/400V
Voltage protection level [U _p]	≤ 0.7kV	≤ 1.25kV	≤ 1.75kV
Voltage protection level at 5kA [U _p]	≤ 0.55kV	≤ 1kV	≤ 1.35kV
Short-circuit withstand capability for max. mains-side overcurrent protection	50kA _{rms}	50kA _{rms}	25kA _{rms}
Temporary overvoltage (TOV) [U _T]	175V/5 sec	335V/5 sec.	385V/5 sec
Nominal discharge current (8/20 μs) [I _n]	15kA	20kA	20kA
Max. Discharge current (8/20 μs) [I _{max}]		40kA	
SPD according to EN 61643-11	Type 2		
SPD according to IEC 61643-1	Class II		
Response time [t _A]	≤ 25 ns		
Max. mains-side overcurrent protection	125A gL/gG		
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 (min.)	1.5mm²/14AWG solid/flexible		
Cross-sectional area (max.)	35mm²/2AWG stranded-25mm²/4AWG flexible		
Mounting	35mm DIN rail per EN 60715		
Enclosure material	Thermoplastic, UL 94V0		
Location category	Indoor		
Degree of protection	IP20		
Capacity	3 mods., DIN 43880		
Standards Information	KEMA		
Product Warranty	Five Years*		
REMOTE CONTACT SIGNALING			
Remote Contact Signaling Type	Changeover Contact		
AC Switching Capacity (Volts/Amps)	250V/0.1A		
DC Switching Capacity (Volts/Amps)	250V/0.1A; 125V/0.2A; 75V/0.5A		
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals	60/75°C Max. 1.5mm²/14AWG Solid/Flexible		
Ordering Information	Order from Catalog Numbers Above		

* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

Recommended Bussmann Back Up Fuses	
DIN Fuse Size	NH Fuse Part Number
00	125NHG00B
0	125NHG0B
01	125NHG01B
02	125NHG02B

IEC Class II DIN-Rail SPD

BSPH_TNS, BSPH_TT



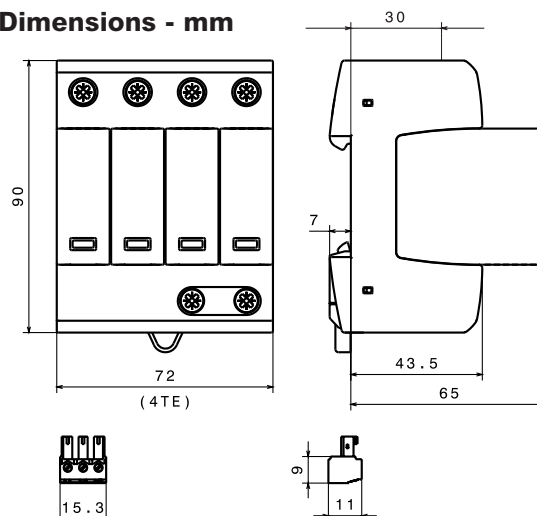
easyID™
Visual Status Indication



Remote Signal
Contact Available

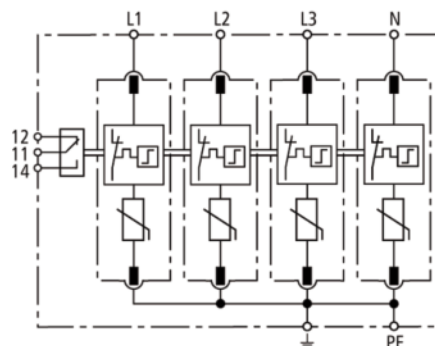
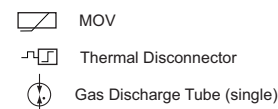


Dimensions - mm



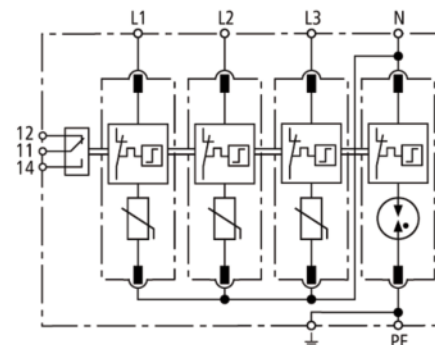
Shown with optional remote contact signaling

Circuit Diagrams



BSPM4275TNS

Shown with optional remote contact signaling



**BSPH4275TT, BSPH4320TT
BSPH4385TT**

Shown with optional remote contact signaling

Description

The Bussmann IEC Class II 230/400V, four-pole, modular surge arresters feature local, *easyID™* 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.

These 230V models are offered with MCOV ratings of 275, 320 or 385V.

TNS System Arrester

The features of these four-pole devices are for use in TNS 230/400V systems ("4-0" circuit) against surges.

TT System Arrester

The features of these four-pole devices are for use in TT and TN-S 230/400V systems ("3+1" circuit) against surges.

Remote Signaling Contact

The three-pole terminal remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

IEC Class II DIN-Rail SPD

ORDERING INFORMATION					
System Voltage/Poles		230V/4	230V/4	230V/4	230V/4
Max. continuous operating AC voltage (MCOV) [U _C]		275V	--	--	--
Max. continuous operating AC voltage (MCOV) [L-N] [U _C]		--	275V	320V	385V
Max. continuous operating AC voltage [N-PE] [U _C]		--	255V	255V	255V
Catalog Numbers:	Without Remote Signaling	BSPM4275TNS	BSPH4275TT	BSPH4320TT	BSPH4385TT
	With Remote Signaling	BSPM4275TNSR	BSPH4275TTR	BSPH4320TTR	BSPH4385TTR
Replacement Modules:	MOV technology	BPM275IEC	BPM275IEC	BPM320IEC	BPM385IEC
	Spark Gap technology	--	BPSNPEIEC*	BPSNPEIEC*	BPSNPEIEC*
SPECIFICATIONS					
Lightning impulse current (10/350 μs) [N-PE] [I _{imp}]		--	12kA	12kA	12kA
Voltage protection level [U _p]		≤ 1.25kV	--	--	--
Voltage protection level at 5kA [U _p]		≤ 1kV	--	--	--
Voltage protection level [L-N] [U _p]		--	≤ 1.25kV	≤ 1.5kV	≤ 1.75kV
Voltage protection level [L-N] at 5kA [U _p]		--	≤ 1kV	≤ 1.2kV	≤ 1.35kV
Voltage protection level [N-PE] [U _p]		--	≤ 1.5kV	≤ 1.5kV	≤ 1.5kV
Follow current extinguishing capability [N-PE] [I _{fi}]		--	100A _{rms}	100A _{rms}	100A _{rms}
Response time [t _A]		≤ 25 ns	--	--	--
Response time [L-N] [t _A]		--	≤ 25 ns	≤ 25 ns	≤ 25 ns
Response time [N-PE] [t _A]		--	≤ 100 ns	≤ 100 ns	≤ 100 ns
Temporary overvoltage (TOV) [U _T]		335V/5 sec.	--	--	--
Temporary overvoltage (TOV) [L-N] [U _T]		--	335V/5 sec.	335V/5 sec.	385V/5 sec.
Temporary overvoltage (TOV) [N-PE] [U _T]		--	1200V/200 ms	1200V/200 ms	1200V/200 ms
Short-circuit withstand capability for max. mains-side overcurrent protection		50kA _{rms}	50kA _{rms}	25kA _{rms}	25kA _{rms}
SPD according to EN 61643-11		Type 2			
SPD according to IEC 61643-1		Class II			
Nominal AC voltage [U _N]		230/400V			
Nominal discharge current (8/20 μs) [I _n]		20kA			
Max. discharge current (8/20 μs) [I _{max}]		40kA			
Max. mains-side overcurrent protection		125A gL/gG			
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 (min.)		1.5mm²/14AWG solid/flexible			
Cross-sectional area (max.)		35mm²/2AWG stranded-25mm²/4AWG flexible			
Mounting		35mm DIN rail per EN 60715			
Enclosure material		Thermoplastic, UL 94V0			
Location category		Indoor			
Degree of protection		IP20			
Capacity		4 mods., DIN 43880			
Standards Information		KEMA			
Product Warranty		Five Years**			
REMOTE CONTACT SIGNALING					
Remote Contact Signaling Type		Changeover Contact			
AC Switching Capacity (Volts/Amps)		250V/0.1A			
DC Switching Capacity (Volts/Amps)		250V/0.1A; 125V/0.2A; 75V/0.5A			
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm²/14AWG Solid/Flexible			
Ordering Information		Order from Catalog Numbers Above			

* N-PE Surge arrester module for location between neutral conductor and protective conductor in TT systems.

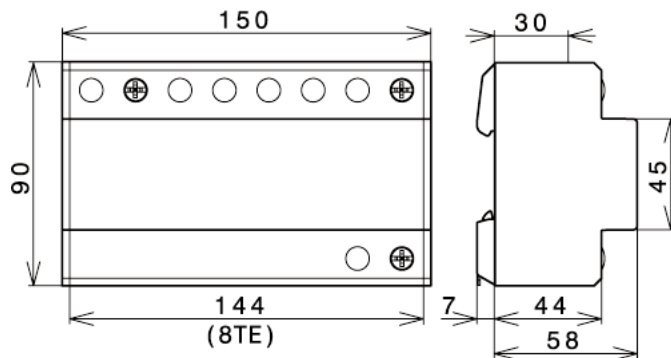
** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

Recommended Bussmann Back Up Fuses	
DIN Fuse Size	NH Fuse Part Number
00	125NHG00B
0	125NHG0B
01	125NHG01B
02	125NHG02B

Photovoltaic DIN-Rail Lightning SPD

BSPS _ _ _ PV

Dimensions - mm

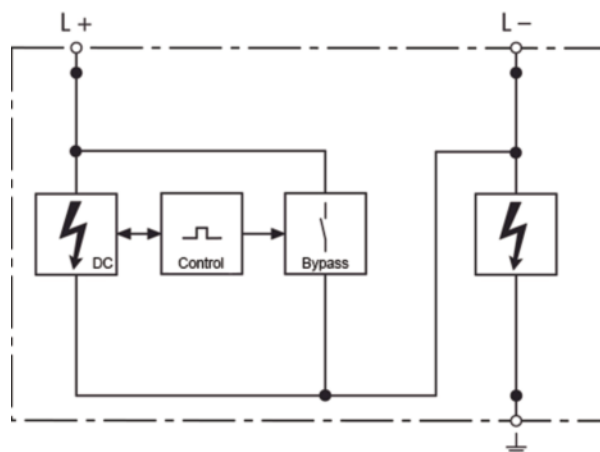


Description

The Bussmann combined lightning current and surge arrester (SPD Class I according to IEC 61643-1) is for use in photovoltaic power supply systems.

- Prewired combined lightning current and surge arrester for use in photovoltaic generator circuits
- For use in photovoltaic installations up to 1000V U_{CPV}
- High lightning current discharge capacity using spark gap technology
- Maximum system availability due to spark gap technology with DC current extinction

Module Circuit Diagrams

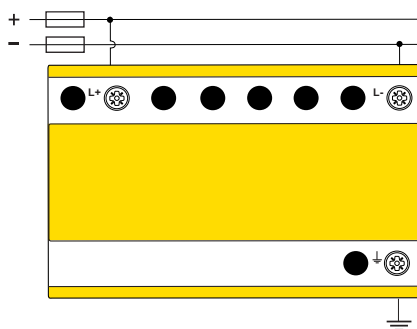


Surge Protection
Devices

Photovoltaic DIN-Rail Lightning SPD

Ordering Information	
Max. PV System Voltage	1000Vdc
Catalog Number:	BSPS31000PV
Specifications	
SPD Classification according to EN 61643-11	Type 1
SPD Classification according to IEC 61643-1	Class I
Max. PV voltage [U_{CPV}] of the PV generator	1000V
Max. Continuous operating DC voltage [$U_{max DC}$]	1000V
Min. Continuous operating DC voltage [$U_{min DC}$]	100V
Follow current extinguishing capability DC [$I_{fi DC}$]	100A
Nominal discharge current (8/20 μ s) [I_n]	100kA
Lightning impulse current (10/350 μ s) [$L+/L- \rightarrow PE$] [I_{imp}]	50kA
Specific energy [$L+/L- \rightarrow PE$] [W/R]	625.00 kJ/ohms
Lightning impulse current (10/350 μ s) [$L+ \rightarrow L-$] [I_{imp}]	25kA
Specific energy [$L+ \rightarrow L-$] [W/R]	156.25 kJ/ohms
Voltage protection level [$L+ \rightarrow L-$] [U_p]	$\leq 3.3kV$
Voltage protection level [$(L+/L-) \rightarrow PE$] [U_p]	$\leq 4kV$
Operating current [$I_{IN DC}$]	$\leq 5mA$
Response time [$L+ \rightarrow L-$] [t_A]	$\leq 20 ns$
Protective conductor current [I_{PE}]	$\leq 1\mu A$
Operating temperature range [T_{UJ}]	-40°C to +60°C
Number of ports	1
Cross-sectional area (min.)	10mm ² /6AWG solid/flexible
Cross-sectional area (max.)	50mm ² /2AWG stranded/ 35mm ² /1AWG flexible
Mounting	35mm DIN rail per EN 60715
Enclosure material	Thermoplastic, UL 94V0
Place of installation	Indoor
Degree of protection	IP-20
Capacity	8 Mods., DIN 4
Product Warranty	Five Years*

* See Bussmann document 3A1502 on the web at www.cooperbussmann.com.



Photovoltaic DIN-Rail SPD

BSPH2_ _ _ PV



Type 4



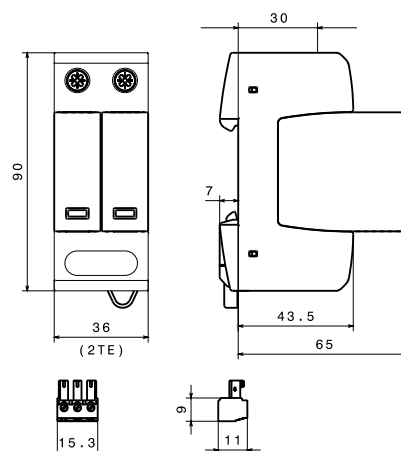
easyID™
Visual Status Indication



Remote Signal
Contact Available

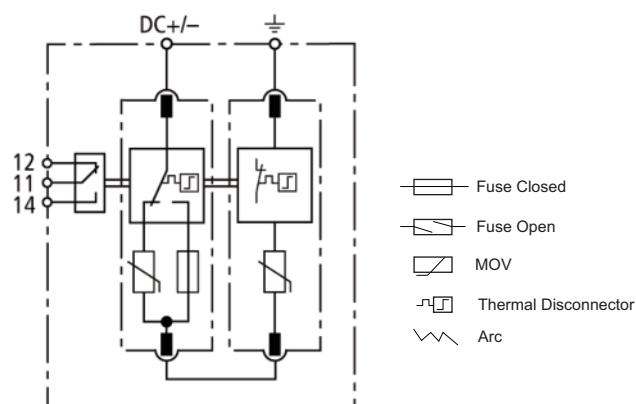


Dimensions - mm



Shown with optional remote contact signaling

Module Circuit Diagrams



BSPH2600PV*

Shown with optional remote contact signaling

Description

The Bussmann modular Surge Protective Device (SPD) (with two-step DC switching device) features *easyID™* visual indication and optional remote contact signaling (floating changeover contact) for use in photovoltaic systems.

This complete surge protective device is suitable for all PV systems in accordance with UL 1449 3rd Edition and IEC 60364-7-712. Includes a five year limited warranty.

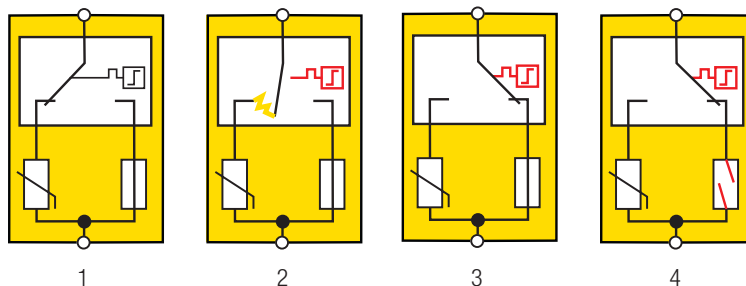
This prewired solution consist of a base and locking modules that feature a combined disconnection and short-circuiting (shunting) device with safe electrical isolation to prevent fire damage due to DC arcs. An integrated DC fuse allows safe module replacement without arc formation.

In case of insulation faults in the generator circuit, a reliable and tested fault-resistant circuit prevents damage to the surge protective devices.

The green and red visual indicator flags show the module protective status (green = good, red = replace). Apart from this visual indication, the remote signaling option features a three terminal floating changeover contact that can be used as a make or break contact depending on the particular monitoring system design employed.

Short-Circuit Interrupting (SCI) Technology

1. Original State
2. Disconnection Device Response
3. Arc Extinguishes
4. Safe Electrical Isolation



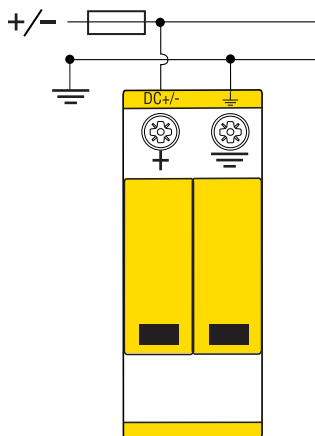
Data Sheet: 2145

Photovoltaic DIN-Rail SPD

Ordering Information		
Nominal PV System Voltage		600Vdc
Catalog Numbers:	Without Remote Signaling	BSPH2600PV
(Base + Modules)	With Remote Signaling	BSPH2600PVR
Replacement Modules:	Left	BPH300YPV
	Right	BPM300YPV
Specifications		
Conformity with prEN 50539-11		Yes
SPD Classification per EN 61643-11		Type 2
SPD Classification per IEC 61643-1		Class II
Max. PV voltage [U _{CPV}]		≤ 600V
Short-circuit withstand capacity [I _{SCWPV}]		1000A
MCOV [U _{CPV}]		700Vdc
Nominal discharge current (8/20 μs) [(DC+/DC-) --> PE] [I _n]		12.5kA
Max. Discharge current (8/20 μs) [(DC+/DC-) --> PE] [I _{max}]		25kA
Voltage protection level [U _p]		≤ 2.5kV
Voltage protection level at 5kA [U _p]		≤ 2kV
Response time [t _A]		≤ 25 ns
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.)		60/75°C 1.5mm ² /14AWG Solid/Flexible
Cross-sectional area (max.)		60/75°C 35mm ² /2AWG Stranded/25mm ² /4AWG Flexible
For mounting on		35 mm DIN rail per EN 60715
Enclosure material		Thermoplastic, UL 94V0
Place of installation		Indoor
Degree of protection		IP20
Capacity		2 Modules, DIN 43880
Standards Information		UL
Product Warranty		Five Years*
Remote Contact Signaling		
Remote Contact Signaling Type		Changeover Contact
AC Switching Capacity (Volts/Amps)		250V/0.1A
DC Switching Capacity (Volts/Amps)		250V/0.1A; 125V/0.2A; 75V/0.5A
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm ² /14AWG Solid/Flexible
Ordering Information		Order from Catalog Numbers Above

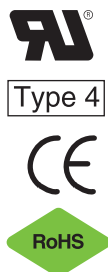
* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

Typical Application Schematic

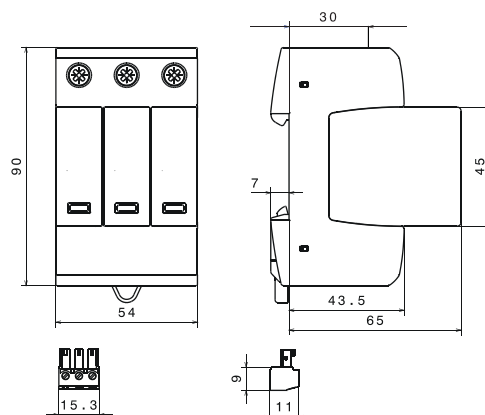


Photovoltaic DIN-Rail SPD

BSPH___YPV



Dimensions - mm



Shown with optional remote contact signaling

easyID™
Visual Status Indication



Remote Signal
Contact Available



Description

The Bussmann three-module photovoltaic Surge Protective Device (SPD) (with three-step DC switching device) features *easyID™* visual indication and optional remote contact signaling (floating changeover contact) for use in PV systems.

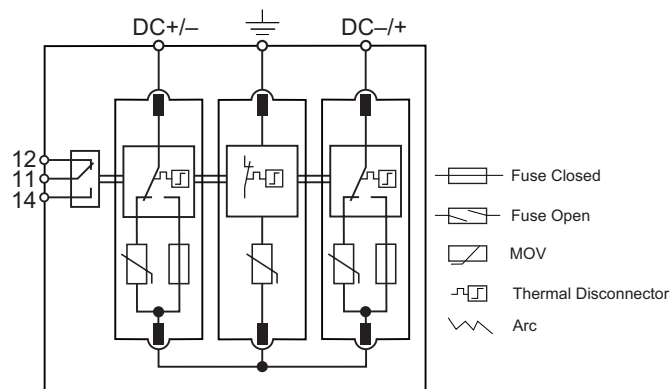
These complete surge protective devices are suitable for all PV systems in accordance with UL 1449 3rd Edition and IEC 60364-7-712. Includes a five year limited warranty.

These prewired solutions consist of a base and locking modules that feature a combined disconnection and short-circuiting (shunting) device with safe electrical isolation to prevent fire damage due to DC arcs. An integrated DC fuse allows safe module replacement without arc formation.

In case of insulation faults in the generator circuit, a reliable and tested fault-resistant Y circuit prevents damage to the surge protective devices.

The green and red visual indicator flags show the module protective status (green = good, red = replace). Apart from this visual indication, the remote signaling option features a three terminal floating changeover contact that can be used as a make or break contact depending on the particular monitoring system design employed.

Module Circuit Diagrams



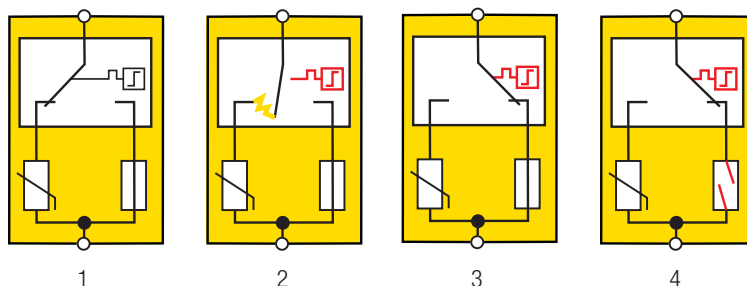
BSPH___YPV*

Shown with optional remote contact signaling

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

Short-Circuit Interrupting (SCI) Technology

1. Original State
2. Disconnection Device Response
3. Arc Extinguishes
4. Safe Electrical Isolation



Data Sheet: 2055

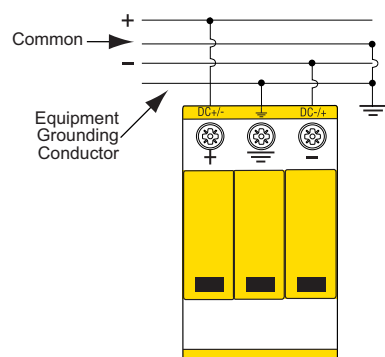
Photovoltaic DIN-Rail SPD

Ordering Information				
Nominal PV System Voltage		600Vdc	1000Vdc	1200Vdc
Catalog Numbers: (Base + Modules)	Without Remote Contact Signaling	BSPH3600YPV	BSPH31000YPV	BSPH31200YPV
	With Remote Contact Signaling	BSPH3600YPVR	BSPH31000YPVR	BSPH31200YPVR
Replacement Modules:	Outer (2 modules installed)	BPH300YPV	BPH500YPV	BPH600YPV
	Center (1 module installed)	BPM300YPV	BPM500YPV	BPM600YPV
Specifications				
Nominal PV System Voltage		600V	1000V	1200V
MCOV [U _{CPV}]		700Vdc	1170Vdc	1200Vdc
Max System Discharge Current (8/20 μs) [I _{max}]		40kA	40kA	30kA
Voltage Protection Level [U _p]		≤2.5kV	≤4.0kV	≤4.5kV
Voltage Protection Level at 5kA [U _p]		≤2.0kV	≤3.5kV	≤4.0kV
Integrated Fuse Breaking Capacity/Interrupting Rating		30kA / 1000Vdc	30kA / 1000Vdc	30kA / 1200Vdc
Technology		Short-Circuit Interruption (SCI) Overcurrent Protection		
Operating Temperature Range [T _U]		-40°C to +80°C		
Nominal Discharge Current (8/20 μs) [(DC+/DC-) --> PE] [I _n]		12.5kA		
Response Time [t _A]		≤25ns		
Operating State/Fault Indication		Green (good) / Red (replace)		
Conductor Ratings and Cross-Sectional Area: Minimum Maximum		60/75°C 1.5mm² / 14AWG Solid/Flexible		
		60/75°C 35mm² / 2AWG Stranded / 25mm² / 4AWG Flexible		
Mounting		35mm DIN Rail per EN 60715		
Enclosure Material		UL 94V0 Thermoplastic		
Degree of Protection		IP20		
Capacity		3 Modules, DIN 43880		
Standards Information:	UL	UL 1449 3 rd Edition (Type 2)*		
	IEC	IEC 61643-11 Type 2, IEC 61643-1 Class II		
Product Warranty		Five Years**		
Remote Contact Signaling				
Remote Contact Signaling Type		Changeover Contact		
AC Switching Capacity (Volts/Amps)		250V / 0.1A		
DC Switching Capacity (Volts/Amps)		250V / 0.1A; 125V / 0.2A; 75V / 0.5A		
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm² / 14AWG Solid/Flexible		
Ordering Information		Order from Catalog Numbers Above		

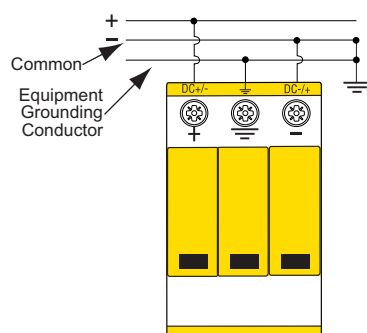
* Does not apply to 1200Vdc.

** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

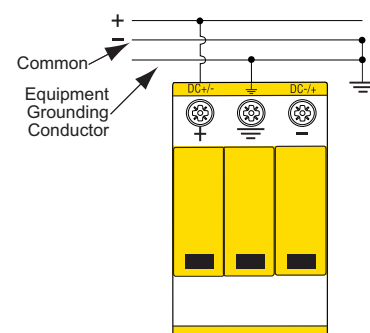
Typical Application Schematics



Application A
Two energized poles/modes
600, 1000 & 1200Vdc systems



Application B
One energized pole/mode
600Vdc & 1000Vdc systems only



Application C
One energized pole/mode
600Vdc & 1000Vdc systems only
(Max. system discharge current
(8/20 μ s) [I_{max}] 25kA)

Photovoltaic DIN-Rail SPD

BSPP____YPV(R)

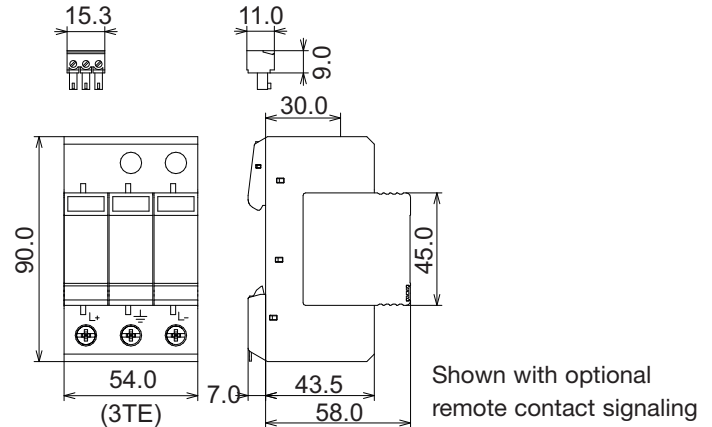
Dimensions - mm



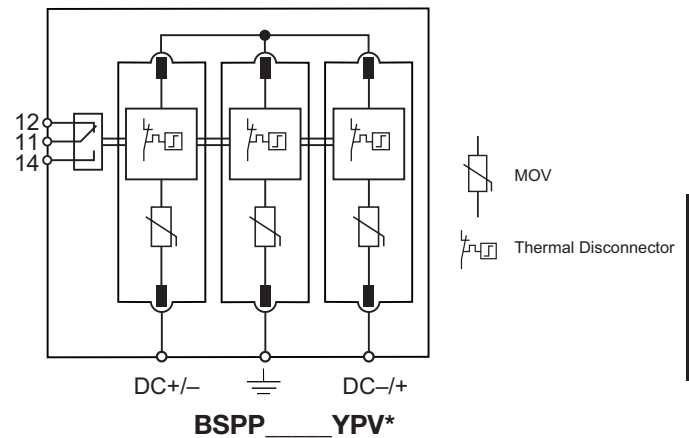
easyID™
Visual Status
Indication



Remote Signal
Contact
Available



Module Circuit Diagrams



Shown with optional remote contact signaling
* For remote signaling contact, add "R" suffix to the part number.
E.g., BSPP3600YPV**R**

Description

The Bussmann three-module photovoltaic Surge Protective Device (SPD) features *easyID™* visual indication and optional remote contact signaling (floating changeover contact) for use in PV systems.

These complete surge protective devices are suitable for all PV systems in accordance with UL 1449 3rd Edition, EN 50539-11 and IEC 60364-7-712. Includes a two year limited warranty.

These prewired solutions consist of a base and modules that feature a disconnection device in the event of an overload.

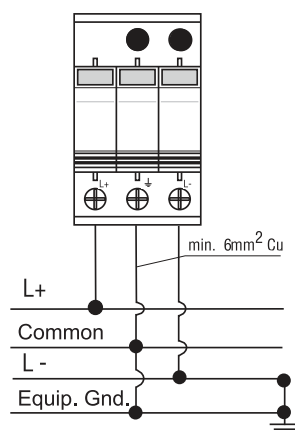
In case of insulation faults in the generator circuit, a reliable and tested fault-resistant Y circuit prevents damage to the surge protective devices.

The green and red visual indicator flags show the module protective status (green = good, red = replace). Apart from this visual indication, the remote signaling option features a three terminal floating changeover contact that can be used as a make or break contact depending on the particular monitoring system design employed.

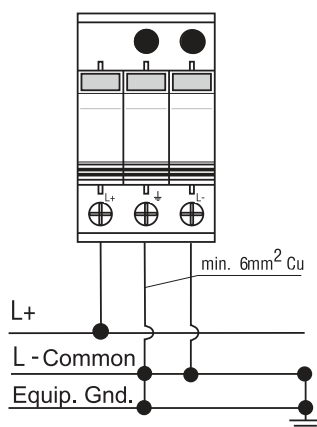
Wind IEC Class I DIN-Rail SPD

Ordering Information			
Nominal PV System Voltage		600Vdc	1000Vdc
Catalog Numbers: (Base + Modules)	Without Remote Contact Signaling	BSPP3600YPV	BSP31000YPV
	With Remote Contact Signaling	BSPP3600YPVR	BSP31000YPVR
Replacement Modules:		BPP300SYPV	BPP500SYPV
Specifications			
Nominal PV System Voltage [U _{CPV}]		600V	1000V
MCOV [U _{CPV}]		600Vdc	1000Vdc
Max System Discharge Current (8/20μs) [I _{max}]		40kA	40kA
Voltage Protection Level [U _p]		≤2.5kV	≤4.0kV
Voltage Protection Level at 5kA [U _p]		≤2.0kV	≤3.5kV
Short-Circuit Withstand Capability [I _{SCP}]		125A	
Technology		Fault Resistant Y MOV Circuit	
Operating Temperature Range [T _U]		-40°C to +80°C	
Nominal Discharge Current (8/20μs) (DC+ → DC-) (DC+/DC- → PE) [I _n]		20kA	
Response Time [t _A]		≤25ns	
Operating State/Fault Indication		Green (good) / Red (replace)	
Conductor Ratings and Cross-Sectional Area:	Minimum	60/75°C 1.5mm ² / 14AWG Solid/Flexible	
	Maximum	60/75°C 35mm ² / 2AWG Stranded / 25mm ² / 4AWG Flexible	
Mounting		35mm DIN-Rail per EN 60715	
Enclosure Material		UL 94V0 Thermoplastic	
Degree of Protection		IP20	
Capacity		3 Modules, DIN 43880	
Standards Information:	UL	UL 1449 3 rd Edition (Type 2)	
	IEC	EN 50539-11, IEC 61643-11 Type 2, IEC 61643-1 Class II	
Product Warranty		Two Years*	
Remote Contact Signaling			
Remote Contact Signaling Type		Changeover Contact	
AC Switching Capacity (Volts/Amps)		250V / 0.1A	
DC Switching Capacity (Volts/Amps)		250V / 0.1A; 125V / 0.2A; 75V / 0.5A	
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm ² / 14AWG Solid/Flexible	
Ordering Information		Order from Catalog Numbers Above	

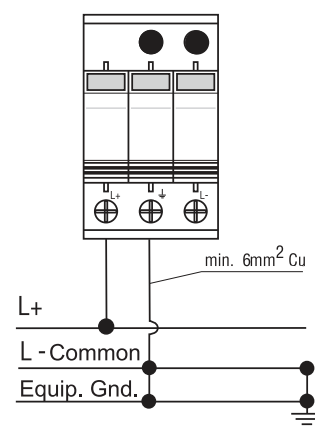
Typical Application Schematics



Application A
Two energized poles/modes
600 & 1000Vdc systems



Application B
One energized pole/mode
600Vdc & 1000Vdc systems only



Application C
One energized pole/mode
600Vdc & 1000Vdc** systems

* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

** BSPP31000YPV(R) 1000Vdc one energized pole/mode requires the following:

1. Use a suitable electrical insulator to keep a 10mm min. safety distance from the PV-SPD and other grounded parts in the housing.
2. No metal covers are in the area of the module release buttons as shown.

Wind IEC Class I DIN-Rail SPD

BSPS_ _ _ _ WE



RoHS



easyID™

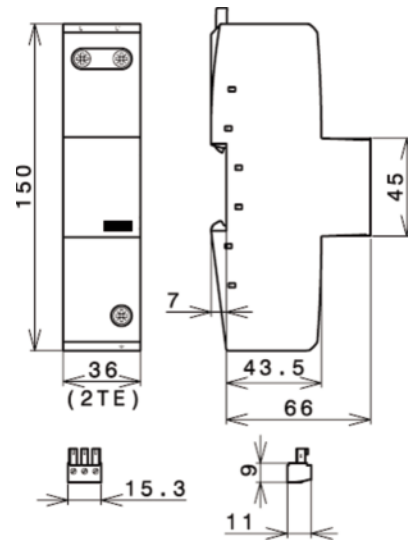
Visual Status Indication



Remote Signal
Contact Available



Dimensions - mm



Shown with optional remote contact signaling

Description

The Bussmann IEC Class I 400 and 690V, one-pole lightning current arresters feature local, easyID™ visual indication and optional remote contact signaling.

440V and 760V maximum continuous operating voltage arresters protect installations against surges and direct lightning strikes.

System & Application

TNC 400V/690V: 3x BSPS1400WE(R)

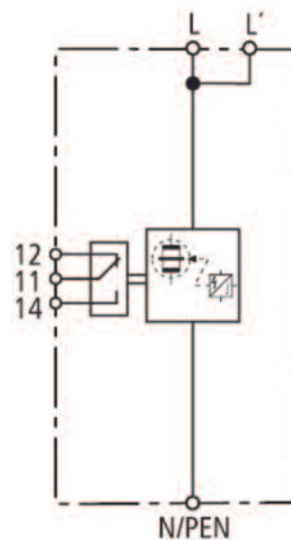
TNS 400/690V: 4x BSPS1400WE(R)

IT 690V: 3x BSPS1690WER

Remote Signaling Contact

The three-pole terminal remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

Circuit Diagrams - Shown with optional remote contact signaling



BSPS1400WE*
BSPS1690WE



Creepage Discharge Spark Gap



Spark Gap Trigger

Wind IEC Class I DIN-Rail SPD

Ordering Information			
System Voltage/Poles		400V/1	690V/1
Max. Continuous Operating AC voltage (MCOV) [U _C]		440V	760V
Catalog Numbers:	Without Remote Signaling	BSPS1400WE	- -
	With Remote Signaling	BSPS1400WER	BSPS1690WER
Specifications			
Line System Type	TNC, TNS, IT	TNC, TNS, IT	
Lightning impulse current (10/350 μs) [I _{imp}]	35kA	25kA	
Specific Energy [W/R]	306.25kJ/ohms	156.25kJ/ohms	
Nominal Discharge Current (8/20 μs) [I _n]	35kA	25kA	
Voltage Protection Level [U _p]	≤ 2.5kV	≤ 4kV	
Follow Current Extinguishing Capability AC [I _{fr}]	50kA _{rms}	25kA _{rms}	
Follow Current Limitation / Selectivity	no tripping of a 32 A gL/gG fuse up to 50 kA _{rms} (prosp.)	no tripping of a 32 A gL/gG fuse up to 25 kA _{rms} (prosp.)	
Response Time [t _A]	≤ 100 ns	≤ 100 ns	
Max. Backup Fuse (L) up to I _K = 25kA _{rms} (t _a ≤ 5 s)	- -	250A gL/gG	
Max. Backup Fuse (L) up to I _K > 25kA _{rms}	- -	100A gL/gG	
Max. Backup Fuse (L) up to I _K = 50kA _{rms} (t _a ≤ 0.2 s)	500A gL/gG	- -	
Max. Backup Fuse (L) up to I _K = 50kA _{rms} (t _a ≤ 5 s)	250A gL/gG	- -	
Max. Backup Fuse (L) for I _K > 50kA _{rms}	160A gL/gG	- -	
Max. Backup Fuse (L-L)	125A gL/gG	125A gL/gG	
Short-Circuit Withstand Capability for Max. Mains-Side Overcurrent Protection	50kA _{rms}	25kA _{rms}	
Temporary Overvoltage (TOV) [U _T]	690V / 5 sec.	1000V / 5 sec.	
Cross-Sectional Area (L, L , $\frac{1}{2}$) [min.]	- -	10mm² solid/flexible	
Cross-Sectional Area (L, L , N/PEN) [min.]	10mm² solid/flexible	- -	
Cross-Sectional Area (L, N/PEN) [max.]	50mm²/1AWG stranded/35mm²/2AWG flexible	- -	
Cross-Sectional Area (L, $\frac{1}{2}$) [max.]	- -	50mm²/1AWG stranded/35 mm²/2AWG flexible	
Cross-Sectional Area (L) [max.]	35mm²/2AWG stranded/25mm²/4AWG flexible	35mm²/2AWG stranded/25mm²/4AWG flexible	
SPD According to EN 61643-11	Type 1		
SPD According to IEC 61643-1	Class I		
TOV Characteristics	Withstand		
Operating Temperature Range (parallel connection) [T _{UP}]	-40°C to +80°C		
Operating Temperature Range (series connection) [T _{US}]	-40°C to +60°C		
Operating State/Fault Indication	Green (good) / Red (replace)		
Number of Ports	1		
Mounting	35mm DIN rail per EN 60715		
Enclosure Material	Thermoplastic, UL 94V0		
Place of Installation	Indoor		
Degree of Protection	IP20		
Capacity	2 Mods., DIN 43880		
Product Warranty	Five Years*		
Remote Contact Signaling			
Remote Contact Signaling Type	Changeover Contact		
AC Switching Capacity (Volts/Amps)	250V/0.5A		
DC Switching Capacity (Volts/Amps)	250V/0.1A; 125V/0.2A; 75V/0.5A		
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals	60/75°C Max. 1.5mm²/ 14AWG Solid/Flexible		
Ordering Information	Order from Catalog Numbers Above		

Recommended Bussmann NH DIN Size Back Up Fuses	
Size	NH Fuse Part Number
000	100NHG000B-690 (max L) up to I _K > 25kA _{rms}
00	125NHG00B-690 (max L-L)
01	160NHG01B-690 (max L) for I _K > 50kA _{rms}
02	250NHG02B-690 (max L) up to I _K = 25kA _{rms} (t _a ≤ 5 s)
02	250NHG02B-690 (max L) up to I _K = 50kA _{rms} (t _a ≤ 5 s)
3	500NHG3B-690 (max L) up to I _K = 50kA _{rms} (t _a ≤ 0.2 s)

* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

Wind IEC Class II DIN-Rail SPD

BSPM_ _ _ WE, BSPS_ _ _ WE



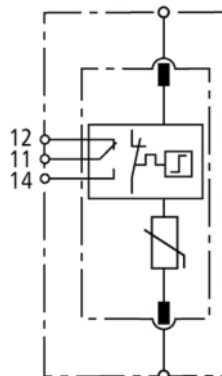
easyID™
Visual Status Indication



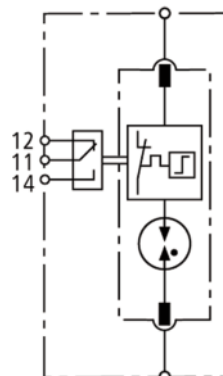
Remote Signal
Contact Available



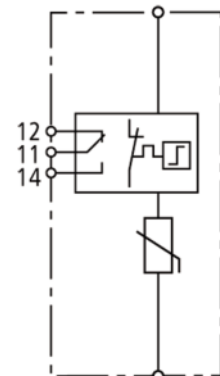
Module Circuit Diagrams - Shown with optional remote contact signaling



BSPM175WE*
BSPM1400WE
BSPM1690WE



BSPG1230WE*



BSPM11000WE*

MOV

Thermal Disconnect

Gas Discharge Tube (single)

*For remote signaling contact, add "R" suffix to the part number, E.g., BSPM175WER

Description

The Bussmann IEC Class II 75, 230, 400, 690 and 1000V, one-pole, modular surge arresters feature local, *easyID™* visual indication and optional remote contact signaling. The unique module locking system on the 75 to 690V arresters 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.

TN System Arresters (also 1-Phase TT systems)

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

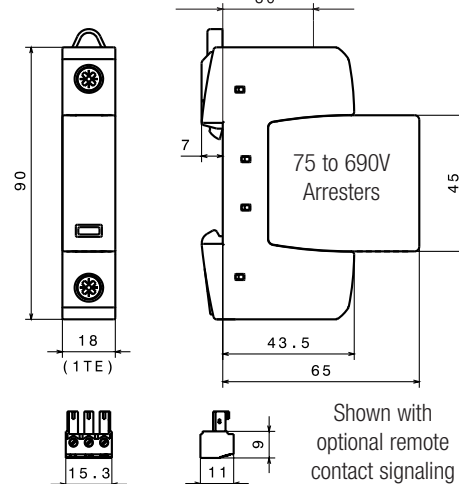
TT System Arrester

Provides a current arresting means between neutral conductor and protective conductor in TT systems, this device helps ensure fulfilling the requirements for protection of personnel and equipment in "3+1" and "1+1" circuits.

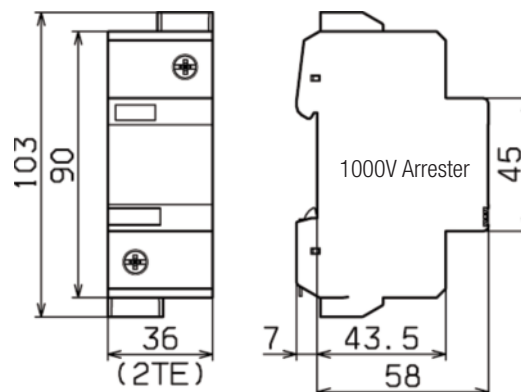
Remote Signaling Contact

The three-pole terminal remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

Dimensions - mm



Shown with
optional remote
contact signaling



Wind IEC Class II DIN-Rail SPD

Ordering Information						
System Voltage/Poles	75V/1	230V/1	400V/1	690V/1	1000V/1	
Max. Continuous operating AC voltage (MCOV) [U _C]	75V	255V	440V	600V	1000V	
Catalog Numbers:	Without Remote Signaling	BSPM175WE	BSPG1230WE	BSPM1400WE	BSPM1690WE	BSPM11000WE
(Base + Modules)	With Remote Signaling	BSPM175WER	BSPG1230WER	BSPM1400WER	BSPM1690WER	BSPM11000WER
Replacement Modules	BPM75WE	BPG255NPEWE*	BPM440WE	BPM750WE	N/A	
Specifications						
Line System Type	TN / TT	TT	TN / TT	TN / TT	TN / TT	
Max. Continuous Operating DC Voltage [U _C]	100V	- -	585	600V	1000V	
Rated Varistor Voltage AC [U _{mov}]	- -	- -	- -	750V	1000V	
Nominal Discharge Current (8/20 μs) [I _n]	10kA	20kA	20kA	15kA	15kA	
Max. Discharge Current (8/20 μs) [I _{max}]	40kA	40kA	40kA	25kA	30kA	
Follow Current Extinguishing Capability [I _{fi}]	- -	100 A _{rms}	- -	- -	- -	
Lightning Impulse Current (10/350 μs) [I _{imp}]	- -	12kA	- -	- -	- -	
Voltage Protection Level [U _p]	≤ 0.4kV	≤ 1.5kV	≤ 2.0kV	≤ 3kV	≤ 4.2kV	
Voltage Protection Level at 5kA [U _p]	≤ 0.35kV	- -	≤ 1.7kV	≤ 2.5kV	≤ 3.5kV	
Response Time [t _A]	≤ 25 ns	≤ 100 ns	≤ 25 ns	≤ 25 ns	≤ 25 ns	
Max. Mains-side Overcurrent Protection	125A gL/gG	- -	125A gL/gG	100A gL/gG	100A aM**	
Short-Circuit Withstand Capability for Max. Mains-side Overcurrent Protection	50kA _{rms}	- -	25kA _{rms}	25kA _{rms}	25kA _{rms}	
Temporary Overvoltage (TOV) [U _T]	90V / 5 sec.	1200V / 200ms	580V / 5 sec.	900V / 5 sec.	1000V / 5 sec.	
Standards Information	KEMA, CSA	KEMA	KEMA, CSA	KEMA, CSA	- -	
Capacity	1 Mod., DIN 43880	1 Mod., DIN 43880	1 Mod., DIN 43880	1 Mod., DIN 43880	2 Mod., DIN 43880	
SPD According to EN 61643-11	Type 2					
SPD According to IEC 61643-1	Class II					
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 (min.)	1.5mm²/14AWG solid/flexible					
Cross-Sectional Area (max.)	35mm²/2AWG stranded-25mm²/4AWG flexible					
Mounting	35mm DIN rail per EN 60715					
Enclosure Material	Thermoplastic, UL 94V0					
Location Category	Indoor					
Degree of Protection	IP20					
Product Warranty	Five Years***					
Remote Contact Signaling						
Remote Contact Signaling Type	Changeover Contact					
AC Switching Capacity (Volts/Amps)	250V/0.5A					
DC Switching Capacity (Volts/Amps)	250V/0.1A; 125V/0.2A; 75V/0.5A					
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals	60/75°C Max. 1.5mm²/14AWG Solid/Flexible					
Ordering Information	Order from Catalog Numbers Above					

* N-PE Surge arrester for location between neutral conductor and protective conductor in TT systems.

** 125A gL/gG @ 690Vac.

*** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

Recommended Bussmann Back Up Fuses	
DIN Fuse Size	NH Fuse Part Number
00	100NHG00B-690
00	125NHG00B-690

Wind IEC Class II DIN-Rail SPD

BSPM_____WE, BSPH_____WE



easyID™

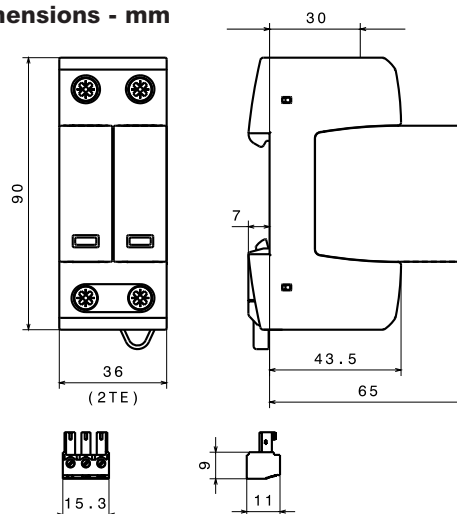
Visual Status Indication



Remote Signal
Contact Available

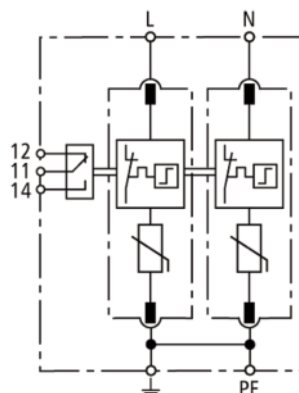


Dimensions - mm

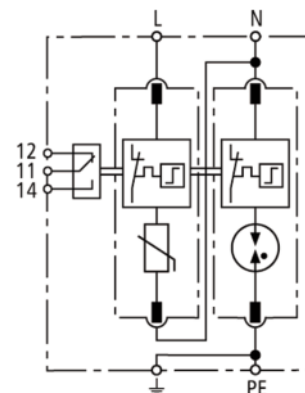


Shown with optional remote contact signaling

Module Circuit Diagrams - Shown with optional remote contact signaling



BSPM2230WE*



BSPH2230WE*

MOV

Thermal Disconnector

Gas Discharge Tube (single)

Surge Protection
Devices

Description

The Bussmann IEC Class II 230V, two-pole, modular surge arresters feature local, easyID™ 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.

TN System Arrester

The features of these two-pole device are for use as a single device.

TT System Arrester

For use as a single device in a 1-phase TT system.

Remote Signaling Contact

The three-pole terminal remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

*For remote signaling contact, add "R" suffix to the part number, E.g., BSPM2230WER

Wind IEC Class II DIN-Rail SPD

Ordering Information			
System Voltage/Poles		230V/2	230V/2
Max. Continuous operating AC voltage (MCOV) [U _C]		275V	275 / 255V
Catalog Numbers:	Without Remote Signaling	BSPM2230WE	BSPH2230WE
(Base + Modules)	With Remote Signaling	BSPM2230WER	BSPH2230WER
Replacement Modules	MOV	BPM275WE	BPM275WE
	Spark Gap	- -	BPSNPEWE*
Specifications			
Line System Type		TN	TT
Max. Continuous Operating AC Voltage [L-N] [U _C]		- -	275V
Max. Continuous Operating AC Voltage [N-PE] [U _C]		- -	255V
Nominal Discharge Current (8/20 μs)[I _n]		20kA	20kA
Max. Discharge Current (8/20 μs)[I _{max}]		40kA	40kA
Lightning Impulse Current (10/350 μs) [N-PE] [I _{imp}]		- -	12kA
Voltage Protection Level [U _p]		≤ 1.25kV	- -
Voltage Protection Level at 5kA [U _p]		≤ 1kV	- -
Voltage Protection Level [L-N] [U _p]		- -	≤ 1.25kV
Voltage Protection Level [L-N] at 5kA [U _p]		- -	≤ 1kV
Voltage Protection Level [N-PE] [U _p]		- -	≤ 1.5kV
Follow Current Extinguishing Capability [N-PE] [I _f]		- -	100A _{rms}
Response Time [L-N] [t _A]		- -	≤ 25 ns
Response Time [N-PE] [t _A]		- -	≤ 100 ns
Response Time [t _A]		≤ 25 ns	- -
Max. Mains-side Overcurrent Protection		125A gL/gG	125A gL/gG
Short-circuit Withstand Capability for Max. Mains-side Overcurrent Protection		50kA _{rms}	50kA _{rms}
Temporary Overvoltage (TOV) [U _T]		335 V / 5 sec.	- -
Temporary Overvoltage (TOV) [L-N] [U _T]		- -	335V / 5 sec.
Temporary Overvoltage (TOV) [N-PE] [U _T]		- -	1200V / 200 ms
SPD According to EN 61643-11		Type 2	
SPD According to IEC 61643-1		Class II	
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 (min.)		1.5mm²/14AWG solid/flexible	
Cross-sectional Area (max.)		35mm²/2AWG stranded-25mm²/4AWG flexible	
Mounting		35mm DIN rail per EN 60715	
Enclosure Material		Thermoplastic, UL 94V0	
Location Category		Indoor	
Degree of Protection		IP20	
Capacity		2 Mods., DIN 43880	
Standards Information		KEMA	
Product Warranty		Five Years**	
Remote Contact Signaling			
Remote Contact Signaling Type		Changeover Contact	
AC Switching Capacity (Volts/Amps)		250V/0.5A	
DC Switching Capacity (Volts/Amps)		250V/0.1A; 125V/0.2A; 75V/0.5A	
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm²/ 14AWG Solid/Flexible	
Ordering Information		Order from Catalog Numbers Above	

* N-PE Surge arrester for location between neutral conductor and protective conductor in TT systems.

** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

Recommended Bussmann Back Up Fuse	
DIN Fuse Size	NH Fuse Part Number
00	125NHG00B

Wind IEC Class II DIN-Rail SPD

BSPM___WE



easyID™

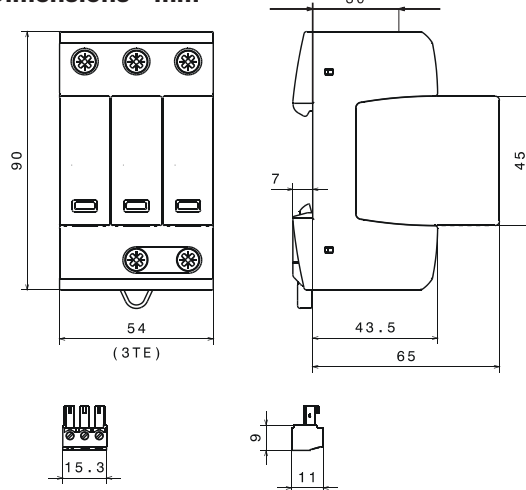
Visual Status Indication



Remote Signal
Contact Available

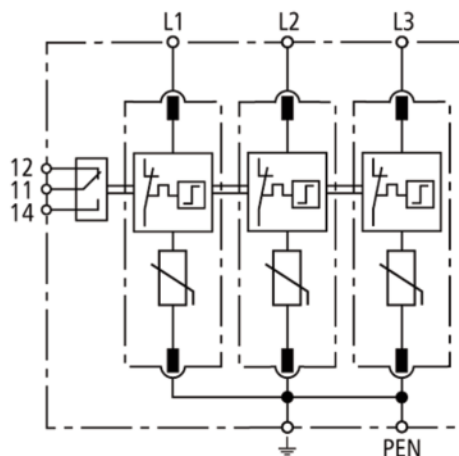


Dimensions - mm



Shown with optional remote contact signaling

Module Circuit Diagrams - Shown with optional remote contact signaling



BSPM3230WE
BSPM3400WE
BSPM3690WE

MOV

Thermal Disconnect

Specifications Description

The Bussmann IEC Class II 230, 400 and 690V three-pole, modular surge arresters feature local, **easyID™** 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.

TNC System Arresters

The features of these three-pole devices are for use as a single device.

Remote Signaling Contact

The three-pole terminal remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

Wind IEC Class II DIN-Rail SPD

Ordering Information				
System Voltage/Poles		230V/3	400V/3	690V/3
Max. Continuous operating AC voltage (MCOV) [U _C]		275V	440V	600V
Catalog Numbers:	Without Remote Signaling	BSPM3230WE	BSPM3400WE	BSPM3690WE
(Base + Modules)	With Remote Signaling	BSPM3230WER	BSPM3400WER	BSPM3690WER
Replacement Modules		BPM275WE	BPM440WE	BPM750WE
Specifications				
Line System Type		TNC	TNC	TNC
Nominal AC Voltage [U _N]		230/400V	400/690V	600V
Rated Varistor Voltage [U _{mov}]		275V	440V	750V
Nominal Discharge Current (8/20 μs) [I _n]		20kA	20kA	15kA
Max. Discharge Current (8/20 μs) [I _{max}]		40kA	40kA	25kA
Voltage Protection Level [U _p]		≤1.25kV	≤ 2kV	≤3kV
Voltage Protection Level at 5kA [U _p]		≤1kV	≤ 1.7kV	≤2.5kV
Response Time [t _A]		≤25 ns	≤ 25 ns	≤25 ns
Max. Mains-side Overcurrent Protection		125A gL/gG	125A gL/gG	100A gL/gG
Short-circuit Withstand Capability for Max. Mains-side Overcurrent Protection		50kA _{rms}	25kA _{rms}	25kA _{rms}
Temporary Overvoltage (TOV) [U _T]		335V / 5 sec.	580V / 5 sec.	900V / 5 sec.
SPD According to EN 61643-11		Type 2		
SPD According to IEC 61643-1		Class II		
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 (min.)		1.5mm²/14AWG solid/flexible		
Cross-Sectional Area (max.)		35mm²/2AWG stranded-25mm²/4AWG flexible		
Mounting		35mm DIN rail per EN 60715		
Enclosure Material		Thermoplastic, UL 94V0		
Location Category		Indoor		
Degree of Protection		IP20		
Capacity		3 Mods., DIN 43880		
Standards Information		KEMA		
Product Warranty		Five Years*		
Remote Contact Signaling				
Remote Contact Signaling Type		Changeover Contact		
AC Switching Capacity (Volts/Amps)		250V/0.5A		
DC Switching Capacity (Volts/Amps)		250V/0.1A; 125V/0.2A; 75V/0.5A		
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals		60/75°C Max. 1.5mm²/14AWG Solid/Flexible		
Ordering Information		Order from Catalog Numbers Above		

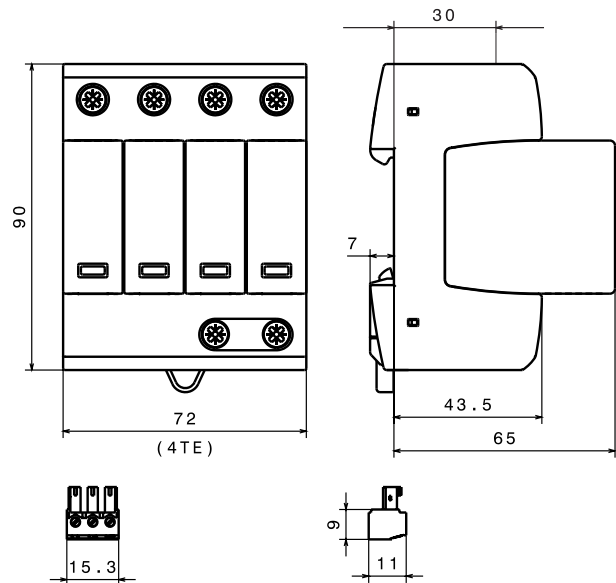
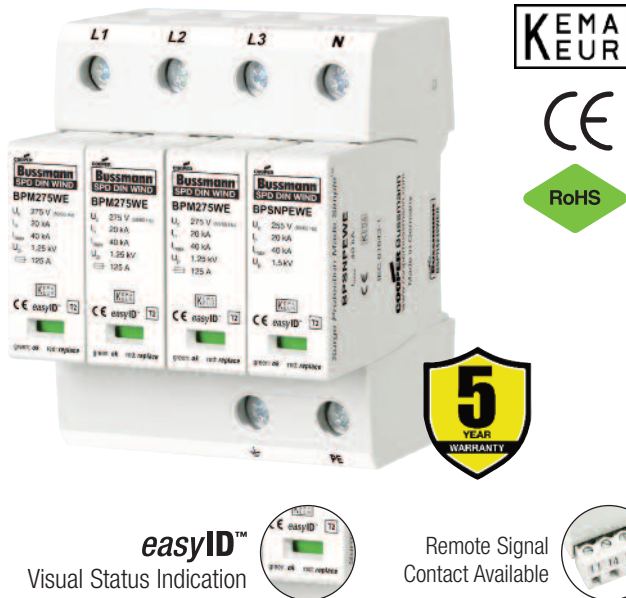
* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

Recommended Bussmann Back Up Fuse	
DIN Fuse Size	NH Fuse Part Number
00	100NHG00B-690
	125NHG00B-690

Wind IEC Class II DIN-Rail SPD

BSPM_____WE, BSPH_____WE

Dimensions - mm



Shown with optional remote contact signaling

Specifications Description

The Bussmann IEC Class II 230/400V, four-pole, modular surge arresters feature local, *easyID™* 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.

These 230V models are offered with MCOV ratings of 275V.

TNS System Arrester

The features of these four-pole devices are for use in TNS 230/400V systems ("4-0" circuit) against surges.

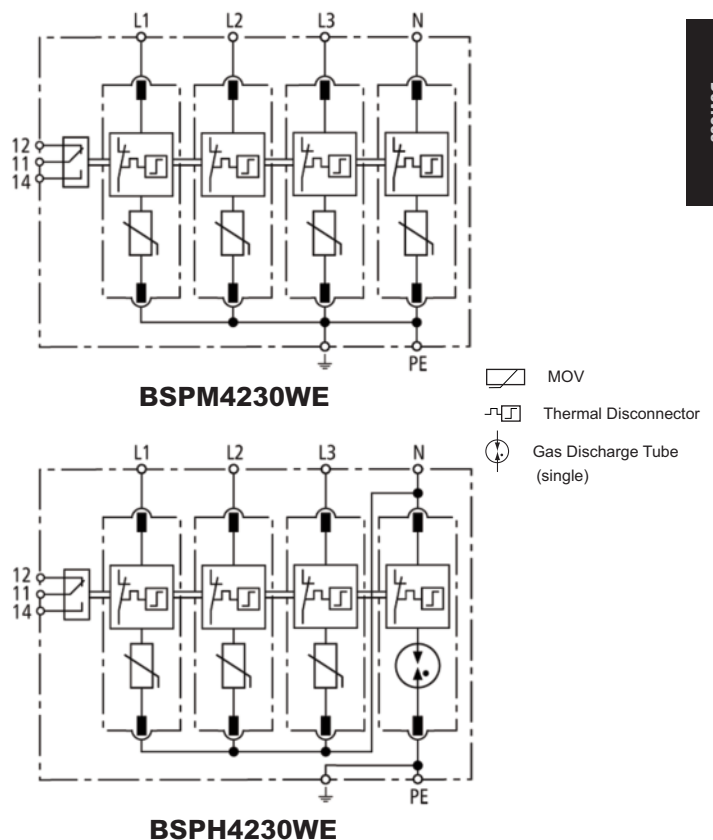
TT System Arrester

The features of these four-pole devices are for use in TT and TN-S 230/400V systems ("3+1" circuit) against surges.

Remote Signaling Contact

The three-pole terminal remote signaling contact versions have a floating changeover contact for use as a break or make contact, according to circuit concept.

Circuit Diagrams - Shown with optional remote contact signaling



Wind IEC Class II DIN-Rail SPD

ORDERING INFORMATION		
System Voltage/Poles	230/400V/4	230/400V/4
Max. continuous operating AC voltage (MCOV) [U _C]	275V	- -
Max. continuous operating AC voltage (MCOV) [L-N] [U _C]	- -	275V
Max. continuous operating AC voltage [N-PE] [U _C]	- -	255V
Catalog Numbers:	Without Remote Signaling	BSPM4230WE
	With Remote Signaling	BSPM4230WER
Replacement Modules:	MOV technology	BPM275WE
	Spark Gap technology	- -
		BPSNPEWE*
SPECIFICATIONS		
Line System Type	TNS	TT / TNS
Nominal AC voltage [U _N]	230/400V	230/400V
Lightning impulse current (10/350 μs) [N-PE] [I _{imp}]	- -	12kA
Voltage protection level [U _p]	≤ 1.25kV	- -
Voltage protection level at 5kA [U _p]	≤ 1kV	- -
Voltage protection level [L-N] [U _p]	- -	≤ 1.25kV
Voltage protection level [L-N] at 5kA [U _p]	- -	≤ 1kV
Voltage protection level [N-PE] [U _p]	- -	≤ 1.5kV
Follow current extinguishing capability [N-PE] [I _f]	- -	100A _{rms}
Response time [t _A]	≤ 25 ns	- -
Response time [L-N] [t _A]	- -	≤ 25 ns
Response time [N-PE] [t _A]	- -	≤ 100 ns
Temporary overvoltage (TOV) [U _T]	335V / 5 sec.	- -
Temporary overvoltage (TOV) [L-N] [U _T]	- -	335V / 5 sec.
Temporary overvoltage (TOV) [N-PE] [U _T]	- -	1200V / 200 ms
SPD according to EN 61643-11	Type 2	
SPD according to IEC 61643-1	Class II	
Nominal discharge current (8/20 μs) [I _n]	20kA	
Max. discharge current (8/20 μs) [I _{max}]	40kA	
Max. mains-side overcurrent protection	125A gL/gG	
Short-circuit withstand capability for max. mains-side overcurrent protection	50kA rms	
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 (min.)	1.5mm²/14AWG solid/flexible	
Cross-sectional area (max.)	35mm²/2AWG stranded-25mm²/4AWG flexible	
Mounting	35mm DIN rail per EN 60715	
Enclosure material	Thermoplastic, UL 94V0	
Location category	Indoor	
Degree of protection	IP20	
Capacity	4 Mods., DIN 43880	
Standards Information	KEMA	
Product Warranty	Five Years**	
REMOTE CONTACT SIGNALING		
Remote Contact Signaling Type	Changeover Contact	
AC Switching Capacity (Volts/Amps)	250V/0.1A	
DC Switching Capacity (Volts/Amps)	250V/0.1A; 125V/0.2A; 75V/0.5A	
Conductor Ratings and Cross-Sectional Area for Remote Contact Signal Terminals	60/75°C Max. 1.5mm²/14AWG Solid/Flexible	
Ordering Information	Order from Catalog Numbers Above	

Recommended Bussmann Back Up Fuse	
DIN Fuse Size	NH Fuse Part Number
00	125NHG00B

* N-PE Surge arrester module for location between neutral conductor and protective conductor in TT systems.

** See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

Surge Protection Made Simple™ for Coaxial Data Cables

UL Listed 497B DIN-Rail Mount Surge Protective Device for BNC Connector Cable Systems



Description

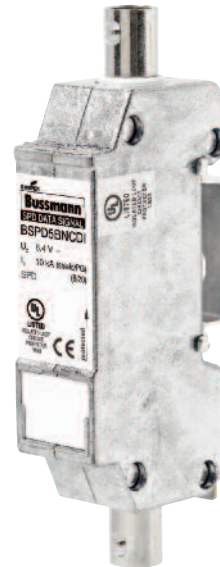
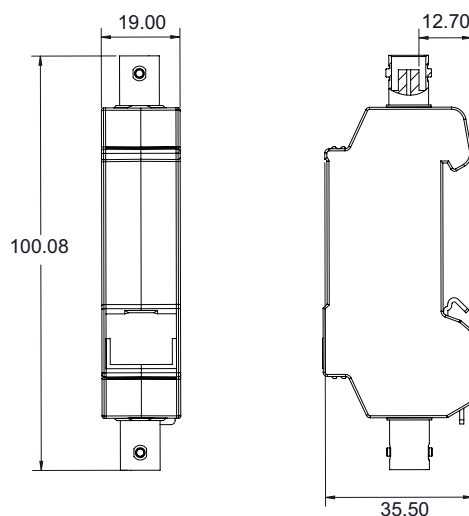
The Bussmann BSPD5BNCDD and BSPD5BNCDI two-stage DIN-Rail mounted surge arresters are for protecting coaxial cable-connected systems (such as video and camera systems) from potential damage. The BSPD5BNCDD features direct (VCD) shield connection while the BSPD5BNCDI features indirect shield connection (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

Dimensions-mm

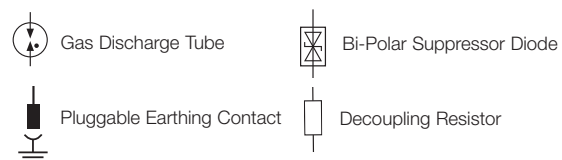
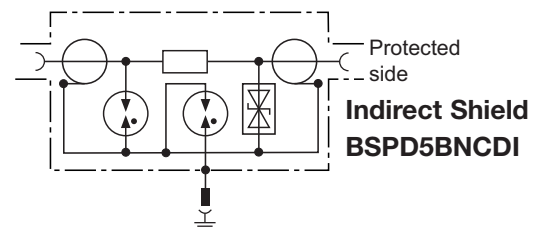
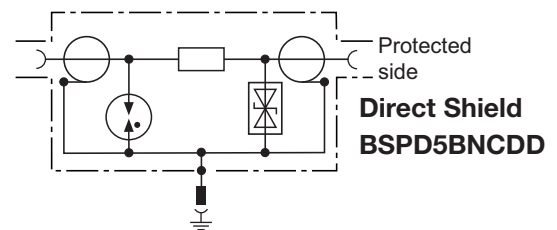


BSPD5BNCDD
BSPD5BNCDI



DIN-Rail Mount SPD for BNC Coax

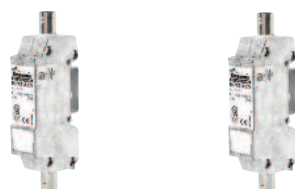
Circuit Diagrams



Technical Data

Catalog Number	BSPD5BNCDD	BSPD5BNCDI
Return loss at 300MHz	≥8dB	≥10dB
Capacitance shield-PG (C)	—	≤20pF
Voltage protection level shield-PG for I _n C2 (U _p)	—	≤650V
Voltage protection level shield-PG at 1kV/μs C3 (U _p)	—	≤600V
Nominal voltage (U _N)	5V	
Max. continuous operating DC voltage (U _C)	6.4V	
Nominal current (I _L)	0.1A	
C2 Nominal discharge current (8/20μs) shield-PG (I _n)	10kA	
C2 Nominal discharge current (8/20μs) line-shield (I _n)	5kA	
Voltage protection level line-shield for I _n C2 (U _p)	≤35V	
Voltage protection level line-shield at 1kV/μs C3 (U _p)	≤13V	
Frequency range	0-300MHz	
Insertion loss at 160MHz	≤0.4dB	
Insertion loss at 300MHz	≤3dB	
Return loss at 130MHz	≥20dB	
Impedance (Z)	50Ω	
Series impedance per line	4.7Ω	
Capacitance line-shield (C)	≤25pF	
Operating temperature range	-40°C to +80°C	
Degree of protection	IP10	
For mounting on	35mm DIN-Rails per EN 60715	
Connection (input / output)	BNC Socket (female) / BNC Socket (female)	
Grounding	Via 35mm DIN-Rail per EN 60715	
Enclosure material	Zinc die casting	
Color	Bare surface	
Test standards	IEC 61643-21 / EN 61643-21	
Agency Information	UL 497B	
Warranty	5 Years*	

* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/Surge.

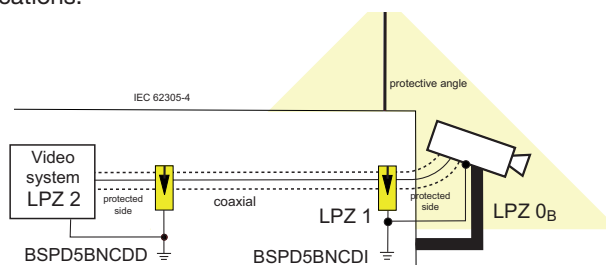


DIN-Rail BNC SPD Applications

Part Numbers	BSPD5BNCDD	BSPD5BNCDI
Bus Systems and Measuring, 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 - Application 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. See illustration below for installation locations.



Surge Protection Made Simple™ for Coaxial Data Cables

UL Listed 497B In-line Surge Protective Device for BNC Connector Cable Systems



Description

The Bussmann BSPD5BNCSI two-stage in-line surge arrester is for protecting coaxial cable-connected systems (such as video and camera systems) from potential damage.

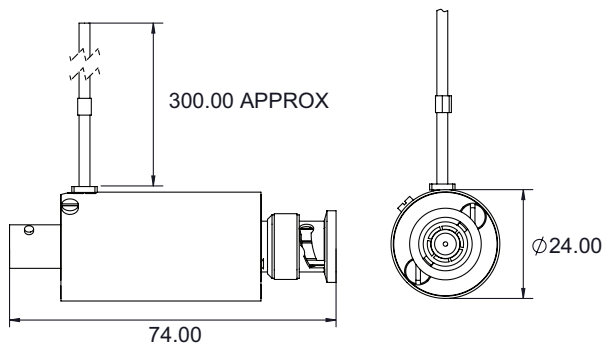
The BSPD5BNCSI shielded surge arrester is plugged into coaxial terminal equipment or connections. Common applications include protecting outdoor video surveillance systems or video control centers. The cable shield is indirectly grounded via a gas discharge tube to avoid being influenced by leakage pickups.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

BSPD5BNCSI

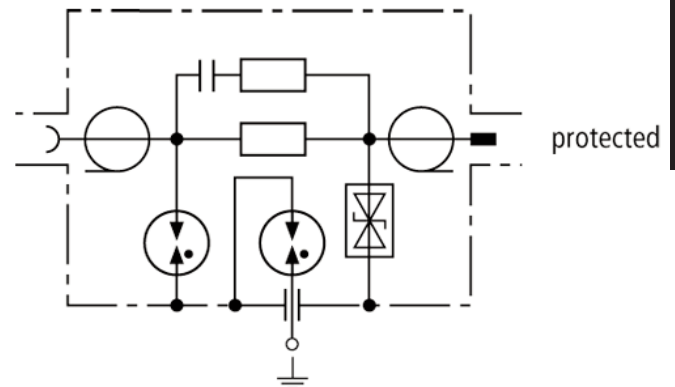


Dimensions-mm



In-line SPD for BNC Coax

Circuit Diagram



Gas Discharge Tube



Bi-Polar Suppressor Diode



Decoupling Resistor



Capacitor

TECHNICAL DATA	
Catalog Number	BSPD5BNCSI
Nominal voltage (U_N)	5V
Max. continuous operating DC voltage (U_C)	8V
C2 Nominal discharge current (8/20 μ s) per line (I_N)	2.5kA
C2 Nominal discharge current (8/20 μ s) shield-PG (I_N)	10kA
Voltage protection level line-shield for I_N C2 (U_p)	$\leq 25V$
Voltage protection level line-shield at 1kV/ μ s C3 (U_p)	$\leq 15V$
Voltage protection level shield-PG at 1kV/ μ s C3 (U_p)	$\leq 600V$
Insertion loss at 265MHz	$\leq 3dB$
Return loss at 40MHz	$\geq 20dB$
Impedance (Z)	75 Ω
Series impedance per line	10 Ω
Capacitance line-shield (C)	$\leq 50pF$
Operating temperature range	-40°C to +80°C
Connection (input / output)	BNC Socket (female) / BNC Plug (male)
Grounding	Via outgoing earth conductor 18AWG (0.75mm ²)
Shield grounding	Indirectly via an integrated spark gap element
Test standards	IEC 61643-21 / EN 61643-21
Agency information	UL 497B
Warranty	5 Years*

* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/Surge.

In-line BNC SPD Applications

Part Number	BSPD5BNCSI
Bus Systems and Measuring & Control Technology	
Control Net	X
Melsec Net 2	X
Data Networks	
Arcnet	X
Video Systems	
Video (coax)	X



Surge Protection Made Simple™ for Ethernet Data Cables

UL Listed 497B Universal DIN-Rail Mount Surge Protective Device for RJ45/Ethernet Cable Systems



Description

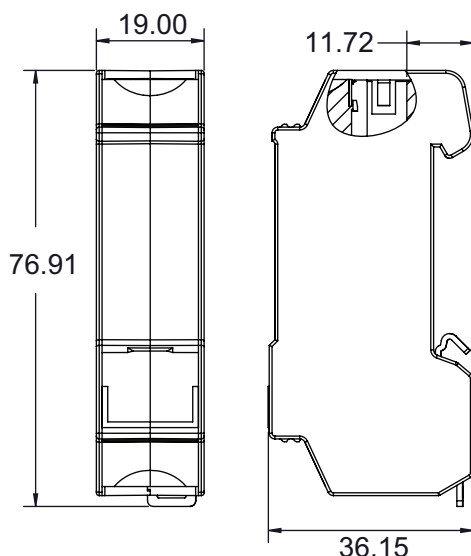
The Bussmann DIN-Rail mount BSPD48RJ45 Surge Protective Device (SPD) for Ethernet cable systems with RJ connectors is easy to install in new, or retrofitting into existing, installations.

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 48V. 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 57V) and similar applications in structured cabling systems according to Class E up to 250MHz. 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)

Dimensions -mm

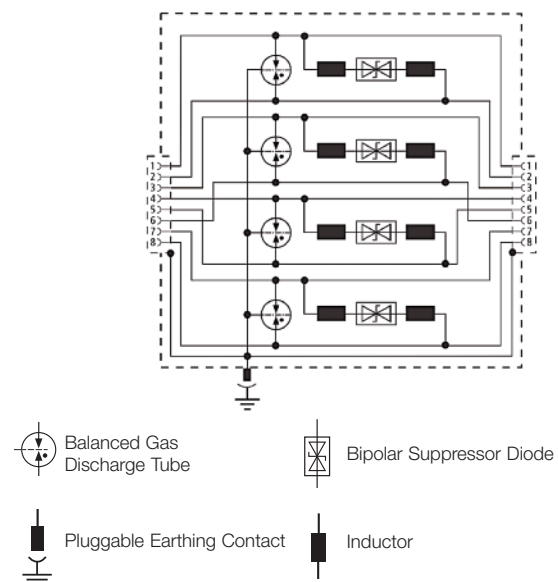


BSPD48RJ45



DIN-Rail Mount SPD for RJ45 / Ethernet Connection

Circuit Diagram



TECHNICAL DATA	
Catalog Number	BSPD48RJ45
Nominal voltage (U _N)	48V
Max. continuous operating DC voltage (U _C)	48V
Max. continuous operating AC voltage (U _C)	34V
Max. continuous DC voltage pair-pair (PoE) (U _C)	57V
Nominal current (I _N)	1A
C2 Nominal discharge current (8/20μs) line-line (I _N)	150A
C2 Nominal discharge current (8/20μs) line-PG (I _N)	2.5kA
C2 Total nominal discharge current (8/20μs) line-PG (I _N)	10kA
C2 nominal discharge current (8/20μs) pair-pair (PoE) (I _N)	150A
Voltage protection level line-line for I _N C2 (U _P)	≤190V
Voltage protection level line-PG for I _N C2 (U _P)	≤600V
Voltage protection level line-line for I _N C2 (PoE) (U _P)	≤600V
Voltage protection level line-line at 1kV/μs C3 (U _P)	≤180V
Voltage protection level line-PG at 1kV/μs C3 (U _P)	≤500V
Voltage protection level pair-pair at 1kV/μs C3 (PoE) (U _P)	≤600V
Insertion loss at 250MHz	≤3dB
Capacitance line-line (C)	≤30pF
Capacitance line-PG (C)	≤25pF
Operating temperature range	-40°C to +80°C
Degree of protection	IP10
For mounting on	35mm DIN-Rails per EN 60715
Connection (input / output)	RJ45 socket / RJ45 socket
Pinning	1 / 2, 3 / 6, 4 / 5, 7 / 8
Grounding	Via 35mm DIN-Rails per EN 60715
Enclosure material	Zinc die casting
Color	Bare surface
Test standards	IEC 61643-21 / EN 61643-21
Agency information	UL 497B
Warranty	5 Years*

* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/Surge.

DIN-Rail RJ45 SPDs Applications

Part Number	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



Surge Protection Made Simple™ for Twisted Pair Data Cables UL Listed 497B DIN-Rail Mount Universal Surge Protective Device for Measuring and Control Circuits, and Bus Systems



Description

The Bussmann universal four-pole, DIN-Rail mounted surge arresters provide effective protection with minimum space requirements and are designed for stringent requirements on the availability 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.

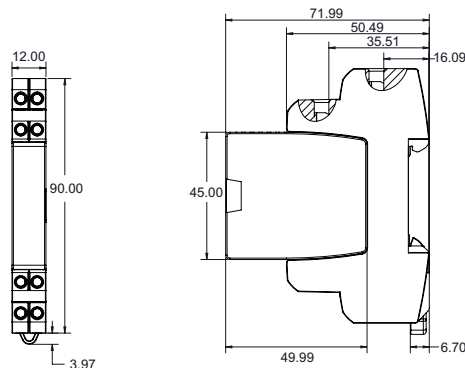
For IEC Applications - Instruction for Surge Protective Device Use In Zone 2 Explosive Atmospheres per ATEX.

- 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.
- The Data Signal DIN Series 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
- 0-180V BSPD0180DINL automatically adjusts to system operating voltage and can protect data circuits of different voltages up to 100mA load current.

Dimensions-mm

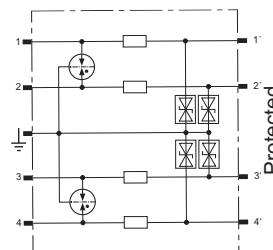


BSPD5DING
BSPD12DING
BSPD24DING
BSPD48DING
BSPD5DINLHF
BSPD24DINLHF
BSPD0180DINL

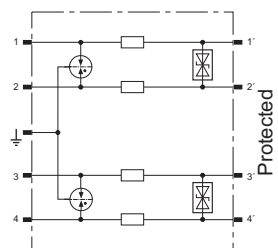


Four-Pole DIN-Rail Mount Universal SPD for Data Signal Applications

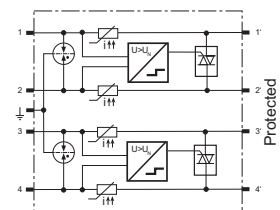
Circuit Diagrams



BSPD5DING
BSPD12DING
BSPD24DING
BSPD48DING



BSPD5DINLHF
BSPD12DINLHF
BSPD24DINLHF



BSPD0180DINL

Balanced Gas Discharge Tube

Decoupling Resistor

Bipolar Suppressor Diode

Transient Blocking Unit

Thyristor

Surge Detection

TECHNICAL DATA							
Catalog number — Prefix: BSPD...	...5DING	...12DING	...24DING	...48DING	...5DINLHF	...24DINLHF	...0180DINL
Nominal voltage (U _N)	5V	12V	24V	48V	5V	24V	0-180V
Nominal current at 45°C (I _L)	1.0A	0.75A	0.75A	0.75A	1.0A	1.0A	≤0.1A@80°C
VPL line-line for I _{imp} D1 (U _p)	≤29V	≤50V	≤102V	≤160V	≤25V	≤65V	≤ U _N + 53V
VPL line-PG for I _{imp} D1 (U _p)	≤27V	≤37V	≤66V	≤95V	≤550V	≤550V	-
VPL line-line at 1kV/μs C3 (U _p)	≤18V	≤38V	≤90V	≤140V	≤11V	≤47V	see Note 1
VPL line-PG at 1kV/μs C3 (U _p)	≤9V	≤19V	≤45V	≤70V	≤550V	≤550V	-
VPL line-line for I _N C2 (U _p)	-	-	-	-	-	-	see Note 2
VPL line-PG for C2 / C3 / D1	-	-	-	-	-	-	≤ 550V
D1 Total lightning impulse current (10/350μs) (I _{imp})	10kA	10kA	10kA	10kA	10kA	10kA	10kA
D1 Lightning impulse current (10/350μs) per line (I _{imp})	2.5kA	2.5kA	2.5kA	2.5kA	2.5kA	2.5kA	2.5kA
C2 Total nominal discharge current (8/20μs) (I _N)	20kA	20kA	20kA	20kA	20kA	20kA	20kA
C2 Nominal discharge current (8/20μs) per line (I _N)	10kA	10kA	10kA	10kA	10kA	10kA	10kA
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)	-	-	-	-	-	-	0-400Hz
Max. continuous operating DC voltage (U _C)	6V	15V	33V	54V	6V	33V	180V
Max. continuous operating AC voltage (U _C)	4.2V	10.6V	23.3V	38.1V	4.2V	23.3V	127V
Permissible superimposed signal voltage (U _{Signal})							± 5V
"Nominal current at 80°C (I _L) (corresponds to max. short-circuit current)"	—	—	—	—	—	—	100mA
Cut-off frequency line-PG (f _G)	1.0MHz	2.7MHz	6.8MHz	8.7MHz	100MHz	100MHz	-
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	12-28AWG (4-0.08mm²)					
	Flexible	14-28AWG (2.5-0.08mm²)					
Terminal torque	3.5 Lb-In (0.4 N•m)						
Warranty	5 Years*						

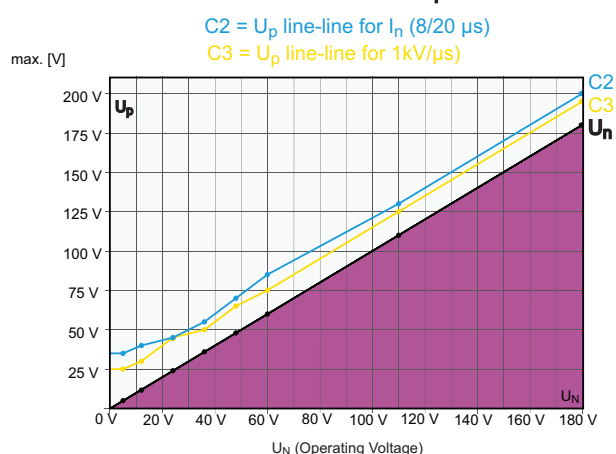
* See Bussmann SPD Limited Warranty Statement (3A1502) for details at www.cooperbussmann.com/surge.

0-180V SPD Application and Mode of Operation

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

When an overvoltage event occurs, the SPD voltage protection level adjusts itself based upon the output terminal operating voltage of the base.

Diagram 1: Voltage Protection Level U_p (V) (Line - Line)



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

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

† DEKRA 12ATEX0254 X: II 3 G Ex nA IIC T4 Gc

†† ATEX, UL, CSA

‡ UL 497B

DIN-Rail Universal 4 Wire Data Signal SPDs and Applications

Universal 4 wire data signal SPD products are specified by communication technology. The table below contains the specific SPD product, by part number, and the applications to which they are suited to be used.



Part Numbers	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, Long-distance bus					X		X
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 NTC & PTC Thermistors		X					
TTL		X					
TTY 4-20mA			X				
TELECOMMUNICATION, TELEPHONY							
a/b Wires							X
ADSL, ADSL 2+							X
ISDN S ₀ , S _{2m} /U _{2m} , U _{KO} /U _{PO}							X
Modem M1		X					
SDSL, SHDSL						X	X
Telephony Systems (e.g., Siemens, HICOM, Alcatel)							X
T-DSL							X
Telecommunication Systems (e.g., Siemens, HICOM, Alcatel)							X
VDSL							X
DATA NETWORKS							
V 24 (RS232 C)		X					

SurgePOD™ Series

Surge Protective Overvoltage Device Modules



Description

Bussmann SurgePOD surge protective overvoltage device modules are board-mounted. Upon an overvoltage condition, their voltage clamping feature becomes conductive, safely shunting the surge to ground.

All SurgePOD devices are UL 1449 3rd Edition Recognized Type 1 SPD and contain an internal element that safely disconnects the device upon reaching an overvoltage breakdown condition.

Remote contact signaling is accomplished with an optional *Normally Open* microswitch that closes upon reaching an overvoltage breakdown condition.

Local visual indication is accomplished with optional visual indicating tabs that protrude through the device's top upon reaching an overvoltage breakdown condition.

The SurgePOD's MOV substrate material may be damaged by excessive shock or rough handling. To ensure integrity of finished device, do NOT install any SurgePOD devices that are dropped or abused during assembly.

Suitability of SurgePOD devices for application to be determined by end user.



Catalog Number System:

Series: SPOD 320 S T R
 SPOD
 MCOV: 150, 270, 320, 420, 510, 550
 Lead Length:
 S = Short - 6.87mm
 L = Long - 16.76mm
 Visual Indicator Tab:
 T = Yes
 Blank = None
 Remote Contact Signaling:
 R = Yes (Normally Open)
 Blank = None

Agency Information

UL 1449 3rd Edition Recognized Type 1 Surge Protective Device; File E340782.

Electrical Specifications

Maximum Continuous Operating Voltage (MCOV)	150Vac to 550Vac
Short-Circuit Current Rating (SCCR)	200kA
Nominal Discharge Current (I_n) 8/20ms	20kA
Max Discharge Current Rating (I_{max}) 8/20ms	50kA
Remote Contact Signaling Microswitch	20mA@15Vdc



SurgePOD Specifications	Voltage / Color Code					
	150V	270V	320V	420V	510V	550V
I_n	20kA	20kA	20kA	20kA	20kA	20kA
I_{max}	50kA	50kA	50kA	50kA	50kA	50kA
SCCR	200kA	200kA	200kA	200kA	200kA	200kA
MCOV (V_{rms})	150V	270V	320V	420V	510V	550V
VPR	600V	900V	1200V	1500V	1500V	1500V
Nominal V_{rms} *	120V	220V	277V	347V	480V	480V

* Nominal V_{rms} @ 50/60Hz.

Data Sheet: 1170

SurgePOD™ Series

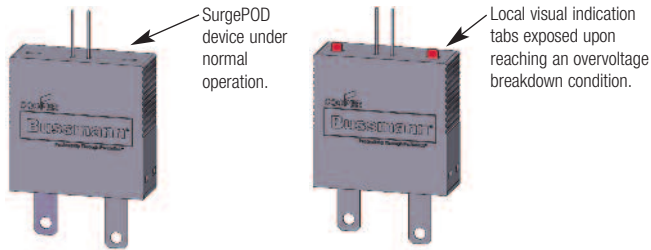
Mechanical Specifications

All components are rated IP20 finger-safe in the installed state.

Environmental Specifications

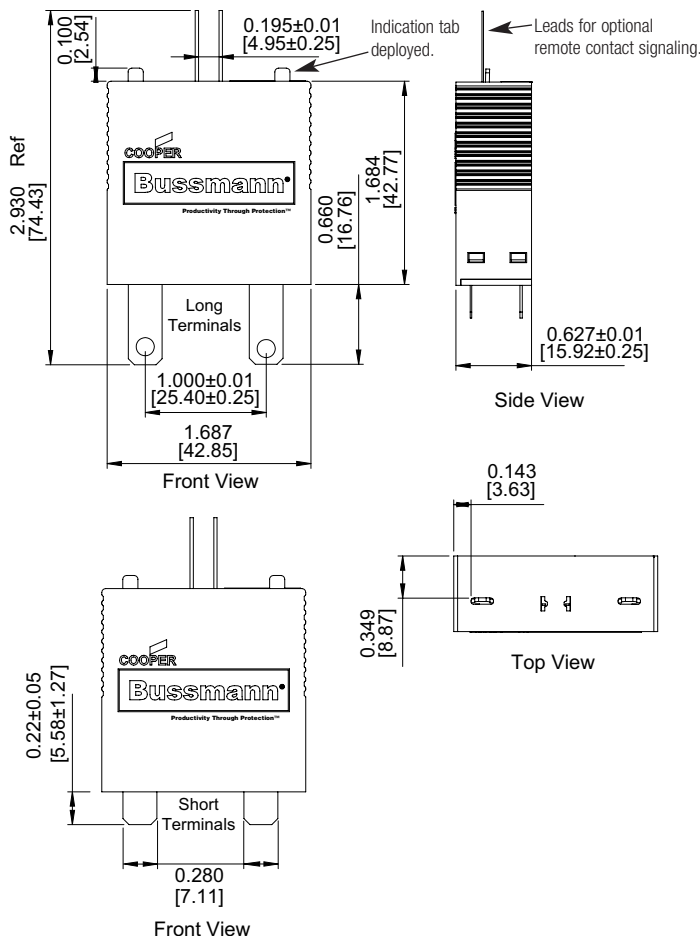
Plastic Material: Polybutylene Terephthalate
Flammability Rating: UL 94V0
Storage Temperature: -25°C to 85°C
Operating Temperature: -25°C to 85°C

Local Visual Indication Tabs (Optional)

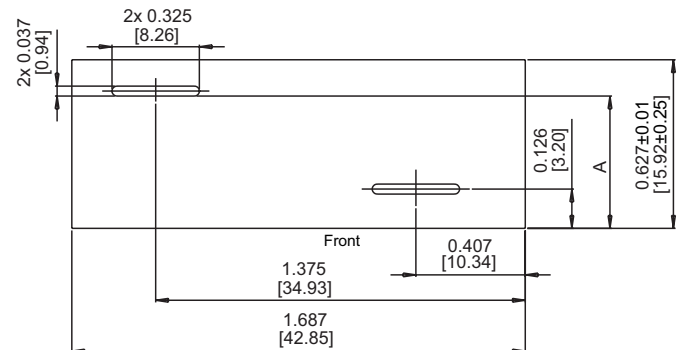


Dimensions - in [mm]

Tolerance is ± 0.005 " [0.13mm] unless otherwise stated.



Terminal Dimensions / Pad Layout - in [mm]

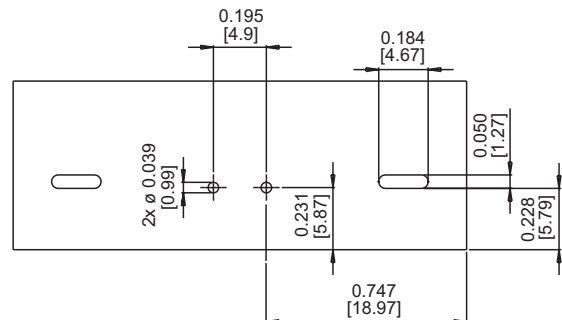


Dimension A		
MCOV Rating	Inches	mm
150	0.431	10.95
270, 320	0.479	12.17
420, 510, 550	0.526	13.36

Terminal Information and Mounting

The SurgePOD surge protective overvoltage devices have nickel-plated copper terminals for easy solder connection to printed circuit boards.

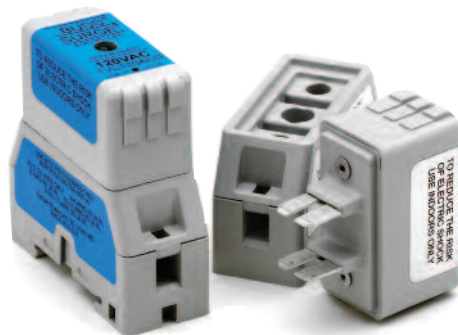
Recommended Pad Layout for Remote Contact Signaling - in [mm]



Packaging Information

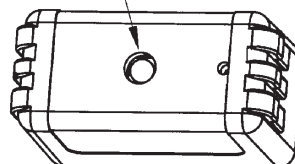
- 200 units per master pack

DIN-Rail TVS Series



Status LED

OFF - Suppressor Non-Operational (power may be on)
GREEN - Suppressor Operational (power on)



Specifications

Description: DIN-Rail mount voltage surge protection system for AC or DC voltage using diode or MOV technology.

Construction:

Suppressor: Case: 20% glass filled PES (Polyethersulfone)
Terminals: 110 Copper
Terminal Plating: Electroless tin

Holder: Case: 15% glass filled PBT (Polybutylene Terephthalate)
Interface Clips: CDA 7025
Interface Clip Plating: Electroless tin
Contact Lubricant: Fluoroether grease
Box Lug: Copper
DIN-Rail Springs: Stainless steel

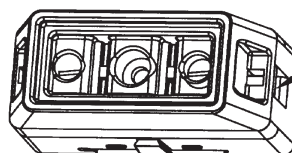
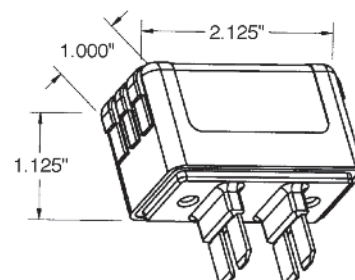
Ratings*:

- Volts: — 12Vdc (2kA surge current)
- 24Vdc (2kA surge current)
- 48Vdc (2kA surge current)
- 120Vac (7kA-18kA surge current)
- 240Vac (7kA-18kA surge current)

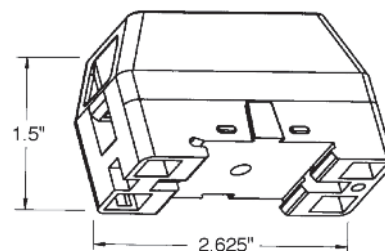
* See Catalog Numbers table for all specifications pertaining to specific voltage ratings.

Agency Information: UL Recognized (UL 1449) for AC products, (UL 497B) for DC products, CSA Approved.

Dimensions -in



Power Terminals
14AWG - 4AWG
Dual 10AWG



Product Specifications:

1. All TVS devices have non-polarized electrical connections as shown.
2. Suppressor voltage characteristics per chart.
3. Suppressor to provide non-interrupted service.
4. Enclosure material is 94V0 flame and explosion resistant.
5. Product markings show manufacturer, part number and safety warnings as required.
6. Mechanical dimensions as noted.
7. Suppressor Status LED as shown.
8. AC units operate on either 50 or 60Hz.

Catalog Numbers

Catalog Numbers	Voltage Application	MCOV	Technology	SVR 500A, 8x20μs	Surge Current Rating	Agency Information	Label Color
TVS12DCD	12Vdc	14Vdc	SASD	36Vdc	2kA	UL 497B	Red
TVS24DCD	24Vdc	28Vdc	SASD	58Vdc	2kA	UL 497B	White
TVS48DCD	48Vdc	57Vdc	SASD	90Vdc	2kA	UL 497B	Black
TVS120ACD	120Vac	140Vac	SASD	330Vac	7kA	UL 1449	Blue
TVS120ACM	120Vac	140Vac	MOV	500Vac	18kA	UL 1449	Grey
TVS240ACD	240Vac	280Vac	SASD	600Vac	7kA	UL 1449	Blue
TVS240ACM	240Vac	280Vac	MOV	800Vac	18kA	UL 1449	Grey

Data Sheet: 9006