

CONNECT AND PROTECT

nVent ERICO Surge Protective Devices

SES 160 & 320 Series

nVent

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Introduction



Protect your facility with the latest from nVent ERICO Surge Protective Devices.

- **Up to 320 kA per phase surge rating in a new compact design**
- **Optional filter with up to 56dB attenuation**
- **LED indicators, audible alarms and Form C contacts**
- **cUL 1449 Ed. 5 and UL 1283 Ed. 7**

nVent ERICO has a range of specialized devices that are unmatched in capabilities and performance, including surge diversion, surge filtering and TD technology.

Although lightning is the most spectacular form of externally generated surges, it is only one source of over-voltage. Significant damage can occur, even to the more robust systems, as a result of lightning induced surges or from switching induced surges. With power quality problems, it is important to correctly identify the problem in order to ensure that the intended preventative equipment is suitable.

Achieving an adequate level of protection against high and low-level transient events results in prevention of costly downtime. Proper electrical protection of structures, operations and personnel demands a systematic and comprehensive approach to protection.

nVent ERICO's line of Service Entrance Suppression is designed to protect sensitive electronics at the service entrance for residential or light commercial service panels. These models protect against both surges caused by severe transient events as well as smaller scale disruptions alike.

Learn more about our full SES product line and how it can keep your facility covered, from the ground, up.

Service Entrance Suppressor(B), 160 kA



The nVent ERICO SES160B Series of Surge Protective Devices (SPD) provide economical protection against damaging transients and surge currents. cUL® 1449 Listed SPD for Type 1 or Type 2 locations. Allows for installation on the line or load of the service panels, circuit breakers not required. With a 160 kA per phase surge rating, the SES160B is well suited for category C locations. Applications include service entrance, distribution, branch panels, MMC, lighting panels, HVAC, and more. With a NEMA® 4X enclosure rating this product series is also well suited for outdoor applications.

FEATURES

- 160 kA 8/20 µs maximum surge rating per phase
- Excellent clamping, low UL voltage protection ratings
- Relay alarming for power/phase loss and surge protective device health
- Compact design can be directly mounted to panel or installed in a small space
- Optional Flush Mounting Plate (p/n SES160BFP)

c UL us

Part Number	SES160B120240SP	SES160B120V	SES160B208Y	SES160B240D	SES160B240V	SES160B480D	SES160B480Y
Nominal System Voltage (Un)	120/240 V	120 V	120/208 V	240 V	240 V	480 V	277/480 V
Distribution System	1Ph 3W+G	1Ph 2W+G	3Ph Y 4W+G	3PhΔ 3W+G	1Ph 2W+G	3PhΔ 3W+G	3Ph Y 4W+G
Max Continuous Operating Voltage (Uc)	180/360 V	180 V	150/300 V	275 V	350 V	550 V	350/700 V
Frequency	0 – 600 Hz						
Short Circuit Current Rating (SCCR)	200 kA						
Nominal Discharge Current (In), Per Mode	20 kA 8/20 µs						
Max Discharge Current (Imax), Per Phase	160 kA 8/20 µs						
Voltage Protection Rating (VPR), L-L	1,200 V	–	1,000 V	1,500 V	–	3,000 V	2,000 V
Voltage Protection Rating (VPR), L-N	700 V	700 V	600 V	–	1,200 V	–	1,200 V
Voltage Protection Rating (VPR), L-PE	700 V	700 V	700 V	900 V	1,000 V	1,500 V	1,000 V
Voltage Protection Rating (VPR), N-PE	600 V	600 V	500 V	–	1,000 V	–	1,000 V
Protection Modes	All modes protected						
Status Indication	1 green LED per line; Audible alarm; Form C Dry Contacts						
Remote Contact Switching Capacity	2.0 A @ 240 V						
Remote Contacts	Yes						
Lead Length	18"						
Lead Size	#12						
Temperature	–40 to 185°F						
Enclosure Material	Polycarbonate						
Enclosure Rating	NEMA®-4X; UL® 50E Type 4						
Mounting	3/4" straight nipple						
Unit Weight	1.16 lb						
Certification Details	CSA C22.2 No. 269.1; UL® 1449 Edition 5 Type 1/2, 20 kA Mode						
Complies With	ANSI®/IEEE® C62.41.2-2002 Cat A, Cat B, Cat C ANSI®/IEEE® C62.41.1-2002 Cat A, Cat B, Cat C ANSI®/IEEE® C62.45-2002 Cat A, Cat B, Cat C						
Depth	2.93"						
Height	4.2"						
Width	3 1/4"						

Service Entrance Suppressor(F), 160 kA



The nVent ERICO SES160F Series is an enhanced version of the SES160B Series. The SES160F Surge-Filter is robust, with a 160 kA per phase surge rating. The high surge rating increases both survivability and life cycle. With the addition of a filter nuisance high frequency transients on the power distribution system are attenuated, protecting sensitive equipment. cUL® 1449 Listed SPD for Type 2 locations. Applications include service entrance, distribution, branch panels, MMC, lighting panels, HVAC, A/V systems, IT equipment, and more.

FEATURES

- Compact design can be directly mounted to panel or installed in a small space
- Front-facing design eases installation and performance monitoring
- 160 kA 8/20 µs maximum surge rating per phase
- Up to 57 dB attenuation (10 kHz to 100 MHz) per MIL-STD 220A
- Optional Flush Mounting Plate (p/n SES160FFP)
- Ground reference monitoring triggers an alarm when N-PE mode exceeds 20 volts

Part Number	SES160F120240SP	SES160F120V	SES160F208Y	SES160F240D	SES160F240V	SES160F480D	SES160F480Y
Nominal System Voltage (Un)	120/240 V	120 V	120/208 V	240 V	240 V	480 V	277/480 V
Distribution System	1Ph 3W+G	1Ph 2W+G	3Ph Y 4W+G	3PhΔ 3W+G	1Ph 2W+G	3PhΔ 3W+G	3Ph Y 4W+G
Max Continuous Operating Voltage (Uc)	180/360 V	180 V	150/300 V	275 V	350 V	550 V	350/700 V
Filtering	–40 dB @ 100 kHz						
Frequency	0 – 600 Hz						
Short Circuit Current Rating (SCCR)	200 kA						
Nominal Discharge Current (In), Per Mode	20 kA 8/20 µs						
Max Discharge Current (Imax), Per Phase	160 kA 8/20 µs						
Voltage Protection Rating (VPR), L-L	1,200 V	–	1,200 V	1,800 V	–	4,000 V	2,500 V
Voltage Protection Rating (VPR), L-N	700 V	700 V	700 V	–	1,200 V	–	1,200 V
Voltage Protection Rating (VPR), L-PE	700 V	700 V	700 V	1,000 V	1,200 V	1,800 V	1,200 V
Voltage Protection Rating (VPR), N-PE	700 V	700 V	600 V	–	1,200 V	–	1,200 V
Protection Modes	All modes protected						
Status Indication	1 green LED per line Audible alarm; Flashing red status LED; Form C Dry Contacts						
Remote Contact Switching Capacity	2.0 A @ 240 V						
Remote Contacts	Yes						
Lead Length	18"						
Lead Size	#12						
Temperature	–40 to 185°F						
Enclosure Material	Polycarbonate						
Enclosure Rating	NEMA®-4X; UL® 50E Type 4						
Mounting	3/4" straight nipple						
Unit Weight	1.38 lb						
Certification Details	CSA C22.2 No. 269.2; UL® 1283 Edition 7; UL® 1449 Edition 5 Type 2, 20 kA Mode						
Complies With	ANSI®/IEEE® C62.41.2-2002 Cat A, Cat B, Cat C ANSI®/IEEE® C62.41.1-2002 Cat A, Cat B, Cat C ANSI®/IEEE® C62.45-2002 Cat A, Cat B, Cat C						
Depth	3.06"						
Height	7.95"						
Width	2 3/4"						

Service Entrance Suppressor(B), 320 kA



The nVent ERICO SES320 B Series of Surge Protective Devices (SPD) provides economical protection against damaging transients and surge currents. The B Series is a cUL 1449 listed SPD for Type 1 and Type 2 locations allowing for installation either on the line or load of service panels without requiring circuit breakers. With a 320 kA per phase surge rating, the SES320 B is well suited for category C locations. Typical applications for the nVent ERICO SES320 B Series include service entrances, distribution, branch panels, MCC, lighting panels, HVAC, and more. Featuring a NEMA 4X enclosure rating, the B series is also appropriate for use in outdoor applications.

FEATURES

- 320 kA 8/20 µs maximum surge rating per phase
- Excellent clamping, low UL voltage protection ratings
- Relay alarming for power/phase loss and surge protective device health
- Compact design can be directly mounted to panel or installed in a small space
- Ground reference monitoring triggers an alarm when N-PE mode exceeds 20 volts
- Optional Flush Mounting Plate (SES320FP)
- 10-year limited warranty

c UL us

Part Number	SES320B 120240D	SES320B 120240SP	SES320B 120V	SES320B 208Y	SES320B 240D	SES320B 240V	SES320B 480D	SES320B 480Y
Nominal System Voltage (Un)	120/240 V		120 V	120/208 V	240 V		480 V	277/480 V
Max Continuous Operating Voltage (Uc)	180/275 V	180/360 V	180 V	150/300 V	275 V	350 V	550 V	350/700 V
Distribution System	3PhΔ 4W+G	1Ph 3W+G	1Ph 2W+G	3Ph Y 4W+G	3PhΔ 3W+G	1Ph 2W+G	3PhΔ 3W+G	3Ph Y 4W+G
Frequency	0 – 600 Hz							
Short Circuit Current Rating (SCCR)	200 kA							
Voltage Protection Rating (VPR), L-G	800 V 9,000 V	800 V		700 V	900 V	1,200 V	1,800 V	1,200 V
Voltage Protection Rating (VPR), L-L	1,200 V 1,500 V	1,200 V	–	1,000 V	1,800 V	–	3,000 V	2,000 V
Voltage Protection Rating (VPR), L-N	800 V 1,000 V	700 V		600 V	–	1,200 V	–	1,200 V
Voltage Protection Rating (VPR), N-G	700 V	600 V		700 V	–	1,000 V	–	1,000 V
Nominal Discharge Current (In), Per Mode	20 kA 8/20 µs							
Max Discharge Current (Imax), Per Phase	320 kA 8/20 µs							
Protection Modes	All modes protected							
Status Indication	1 green LED per line Dual color status LED, flashing red for faults Audible alarm							
Remote Contact Switching Capacity	2.0 A @ 240 V							
Remote Contacts	Yes, Form C							
Lead Length	36"							
Lead Size	#10							
Temperature	–40 to 185°F							

Service Entrance Suppressor(B), 320 kA

Part Number	SES320B 120240D	SES320B 120240SP	SES320B 120V	SES320B 208Y	SES320B 240D	SES320B 240V	SES320B 480D	SES320B 480Y
Enclosure Material	Polycarbonate							
Enclosure Rating	NEMA®-4X UL® 50E Type 4							
Mounting	3/4" straight nipple							
Unit Weight	1.38 lb							
Certification Details	CSA C22.2 No. 269.1 UL® 1449 Edition 5 Type 1/2, 20 kA Mode							
Complies With	ANSI®/IEEE® C62.41.2-2002 Cat A, Cat B, Cat C ANSI®/IEEE® C62.41.1-2002 Cat A, Cat B, Cat C ANSI®/IEEE® C62.45-2002 Cat A, Cat B, Cat C							
Depth	2.99"							
Height	6.89"							
Width	8.38"							

Service Entrance Suppressor(F), 320 kA



The nVent ERICO SES320 F Series of Surge Protective Devices (SPD) is an enhanced version of our nVent ERICO SES320 B Series. The SES320 F Surge-Filter is robust and features a 320 kA per phase surge rating, increasing both survivability and overall life cycle. With the addition of a filter, bothersome high frequency transients on the power distribution system are attenuated, therefore protecting sensitive equipment. The F Series is a cUL 1449 Listed SPD for Type 2 locations. Typical applications for the nVent ERICO SES320 F Series service entrances, distribution, branch panels, MCC, lighting panels, HVAC, A/V systems, IT equipment, and more.

FEATURES

- Compact design can be directly mounted to panel or installed in a small space
- Front-facing design eases installation and performance monitoring
- 320 kA 8/20 µs maximum surge rating per phase
- Up to 60 dB attenuation (10 kHz to 100 MHz) per MIL-STD 220A
- Ground reference monitoring triggers an alarm when N-PE mode exceeds 20 volts
- Optional Flush Mounting Plate (SES320FP)
- 10-year limited warranty

c UL us

Part Number	SES320F 120240D	SES320F 120240SP	SES320F 120V	SES320F 208Y	SES320F 240D	SES320F 240V	SES320F 480D	SES320F 480Y
Nominal System Voltage (Un)	120/240 V		120 V	120/208 V	240 V		480 V	277/480 V
Max Continuous Operating Voltage (Uc)	180/275 V	180/360 V	180 V	150/300 V	275 V	350 V	550 V	350/700 V
Distribution System	3PhΔ 4W+G	1Ph 3W+G	1Ph 2W+G	3Ph Y 4W+G	3PhΔ 3W+G	1Ph 2W+G	3PhΔ 3W+G	3Ph Y 4W+G
Filtering	–40 dB @ 100 kHz							
Frequency	0 – 600 Hz							
Short Circuit Current Rating (SCCR)	200 kA							
Voltage Protection Rating (VPR), L-G	800 V 9,000 V	800 V		700 V	900 V	1,200 V	1,800 V	1,200 V
Voltage Protection Rating (VPR), L-L	1,200 V 1,500 V	1,200 V	–	1,000 V	1,800 V	–	3,000 V	2,000 V
Voltage Protection Rating (VPR), L-N	800 V 1,000 V	700 V		600 V	–	1,200 V	–	1,200 V
Voltage Protection Rating (VPR), N-G	700 V	600 V		700 V	–	1,000 V	–	1,000 V
Nominal Discharge Current (In), Per Mode	20 kA 8/20 µs							
Max Discharge Current (Imax), Per Phase	320 kA 8/20 µs							
Protection Modes	All modes protected							
Status Indication	1 green LED per line Dual color status LED, flashing red for faults Audible alarm							
Remote Contact Switching Capacity	2.0 A @ 240 V							
Remote Contacts	Yes, Form C							
Lead Length	36"							
Lead Size	#10							

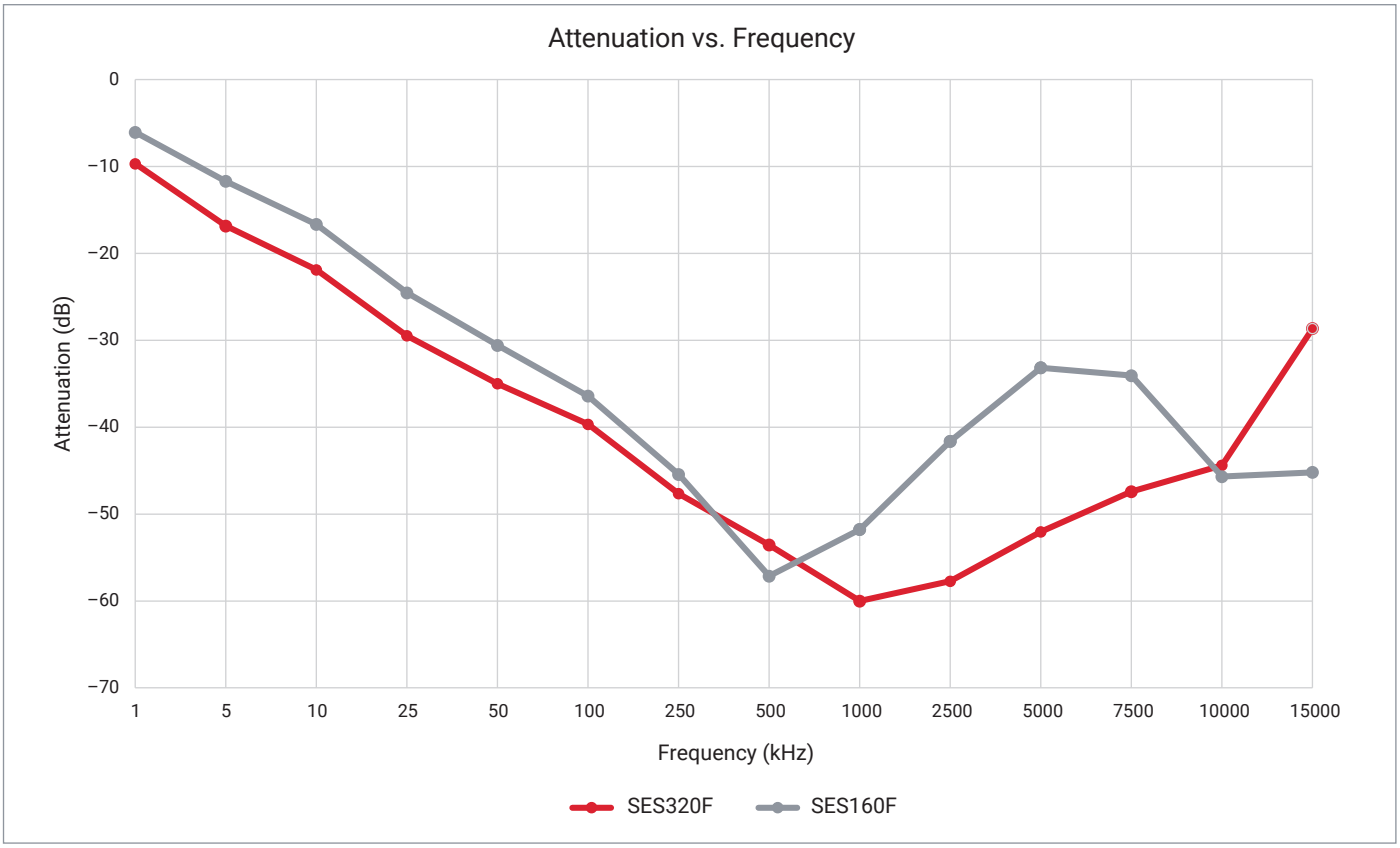
Service Entrance Suppressor(F), 320 kA

Part Number	SES320F 120240D	SES320F 120240SP	SES320F 120V	SES320F 208Y	SES320F 240D	SES320F 240V	SES320F 480D	SES320F 480Y
Temperature	–40 to 185°F							
Enclosure Material	Polycarbonate							
Enclosure Rating	NEMA®-4X UL® 50E Type 4							
Mounting	3/4" straight nipple							
Unit Weight	1.38 lb							
Certification Details	CSA C22.2 No. 269.2 UL® 1283 Edition 7 UL® 1449 Edition 5 Type 2, 20 kA Mode							
Complies With	ANSI®/IEEE® C62.41.2-2002 Cat A, Cat B, Cat C ANSI®/IEEE® C62.41.1-2002 Cat A, Cat B, Cat C ANSI®/IEEE® C62.45-2002 Cat A, Cat B, Cat C Mil-Std 220A							
Depth	2.99"							
Height	6.89"							
Width	8.38"							

Filter Model Chart

nVent ERICO product development creates innovative products backed with 100 years of industry experience.

Our products go through rigorous testing and research to validate they are ready to protect your facility.



In this test (MIL-STD 220A), the filter is effective at reducing the amplitude of AC voltage signals, especially as a frequency of 500 kHz is approached. Attenuation across a range of frequencies appears to be consistent within the voltage range tested. Frequencies greater than 15 MHz resulted in the sinusoidal signal becoming distorted beyond recognition and the Vpp unable to be measured.

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