

EMA Series SPDs

Square D External Panel Surge Protective Devices

Square D™ brand Surgelagic™ external EMA panel Surge Protective Devices (SPDs) deliver specification grade performance for service entrance or critical branch panel applications. This multi-phase surge suppression system provides transient suppression, noise filtration, and sine wave tracking in a durable, modular package.



by Schneider Electric

EMA Series SPDs

Features



EMA series Surge Protective Devices (SPDs) provide superior design and service life for a wide variety of commercial, industrial, or institutional applications. Square D brand Surgelogic SPDs offer first-rate performance and surge suppression for demanding service entrance applications or as part of a suppression network. The robust modular construction minimizes possible down time and helps to reduce maintenance costs.

Superior Performance

Surgelogic SPDs utilize a high-energy suppression circuit that provides 6-10 modes of suppression from 100,000 to 480,000 peak Amps of surge current rating per phase. Modular SPDs contain a suppression circuit that not only provides additional transient surge suppression, but also noise filtration. Enhanced EMI/RFI filtering with sine wave tracking is an option for modular panels to provide greater noise filtration and improved clamping. For harsh environments, stainless steel NEMA 4X rated EMA SPD products provide surge suppression in areas that can damage other enclosures.

Easy Installation

External panel SPDs mount adjacent to the equipment through a conduit connection and as close to the circuit breaker as possible in order to reduce lead lengths and improve surge suppression.

Warranty

Surgelogic EMA Series SPDs have a 10-year warranty.

FEATURES	ADVANTAGES	BENEFITS
Type 1 SPD Configuration suitable for use in both UL SPD Type 1 and Type 2 applications	Overcurrent protective devices (OCPD) not required in Type 1 locations	Flexibility to install on line side of service entrance applications
NEMA 1 or 4X Rated	Allows for Indoor (NEMA 1) and Outdoor (NEMA 4X) applications	Provides suppression to vulnerable equipment powered from weather exposed panels
100,000 to 480,000 Amp Capacity (depending on model)	Longer service life and suppression against high-energy lightning strikes	High performance surge suppression even in severe electrical conditions
Optional enhanced EMI/RFI filtering (sine wave tracking) module	Increased clamping and greater noise filtration	Improves surge suppression and reduces high frequency noise
Advanced Diagnostics	Allows for visual indication/testing of the suppressor's functionality	Provides immediate response if suppressor is damaged
Suppression Status Alarms	Allows multiple methods of alarm notification	Immediate notification through audible, visual and remote signaling if reduced suppression occurs
Coordinated Fuse Technology	Coordinated fusing allows disconnection methods for thermal and high-current events	Provides premium surge suppression while managing both thermal and high-current end-of-life events

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Features (continued)

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Performance

Surge Current Rating per Phase	Up to 480kA
Short Circuit Current Rating	200kA
Modes of Protection	6, 10
Fusing	Individually fused MOVs
Thermal Fusing	Yes
Overcurrent Fusing	Yes
Sine Wave Tracking	Yes
EMI/RFI Filtering	Up to -42 dB
with Enhanced Module*	-54 dB at 100 kHz
Operating Frequency	50/60 Hz

Mechanical Description

Enclosure	Carbon Steel or Stainless Steel
NEMA Ratings	NEMA 1 or 4X
Connection Method	#10-#2/0 AWG Terminals
Mounting Method/Circuit Type	Parallel
Operating Altitude	Sea Level-12,000' (3,658 m)
Storage Temperature	-40 °F (-40 °C) to 149 °F (65 °C)
Operating Temp.	-4 °F (-20 °C) to 149 °F (65 °C)
LCD Operating Temp.	14 °F (-10 °C) to 140 °F (60 °C)
Operating Humidity	0 to 95% non-condensing

Diagnostics

Push to test diagnostic switches, red and green status LEDs per phase (internal redundant status LEDs are green), module status LEDs per mode, dry contacts, audible alarm with disable switch, surge counter.

Options

- Enhanced EMI/RFI filtering (sine wave tracking) module
- NEMA 4X rating with stainless steel enclosure
- Disconnect switch
- Remote monitor

Listings and Performance

Type 1 SPD: UL Listed per UL 1449 4th Edition, and CSA C22.2 No. 8-13 5th Edition. (UL 1283 components used) Suitable for use in both UL SPD Type 1 and UL SPD Type 2 applications.

Type 2 SPD: cULus Listed per UL 1449 4th Edition, UL 1283 5th Edition, CSA C22.2 No. 269.2-13 1st Edition, and CSA C22.2 No. 8-13 5th Edition.

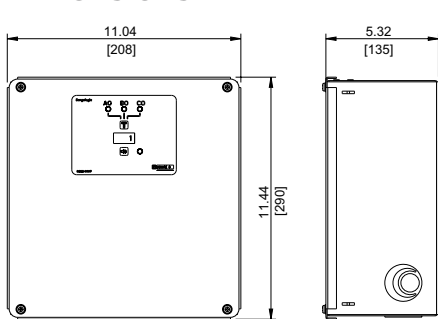
Complies with UL 96A 12th Edition Master Label requirements for Lightning Protection Systems.

* Optional EMI/RFI filtering, sine wave tracking (SWT) module

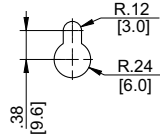
EMA Series SPDs

Features (continued)

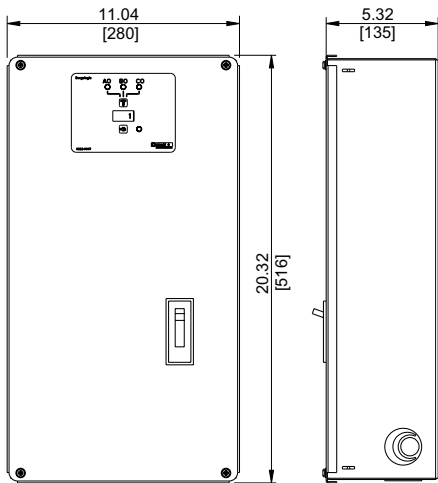
Dimensions



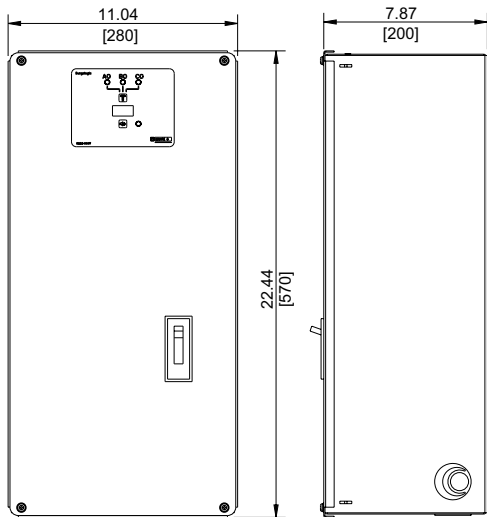
inches
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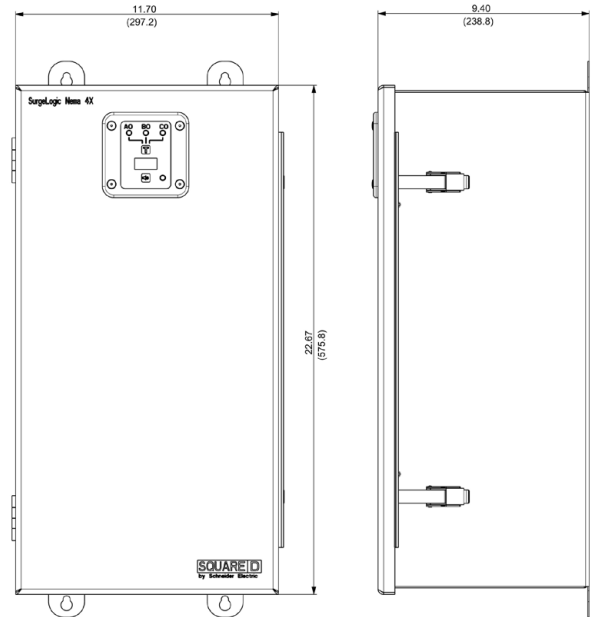
NEMA 1, Carbon steel enclosure
Approximate Weight: 23lbs (10.4 kg)



NEMA 1, Carbon steel enclosure with integral switch/SWT option
Approximate Weight: 27lbs (12.2 kg)



NEMA 1, Carbon steel enclosures for 320 kA and 480 kA units with or without integral switch/SWT option
Approximate Weight: 37lbs (16.8 kg)



NEMA 4X, Stainless steel enclosure with or without integral switch/SWT option
Approximate Weight: 32.2 lbs (14.6 kg) to 45.2 lbs (20.5 kg)

EMA Series SPDs Specifications

Model Number Protocol

Model Number Example	Product	+ Voltage Code	+ Product Type	+ Max Surge Current Rating	+ Options
	SSP	02	EMA	12	SDF

Voltage Code	Voltage Description
01	120/240V
02	208Y/120V ¹
03	240/120V HLD
04	480Y/277V ²
05	480V DELTA ³
06	240V DELTA
08	600Y/347V
09	600V DELTA ⁴

1 208Y/120 series also applies to the following voltage 220Y/127

2 480Y/277 series also applies to the following voltages 380Y/220, 400Y/230, and 415Y/240

3 480V Delta series also applies to the following voltage 480Y/277V HRG

4 600V Delta series also applies to the following voltages 600Y/347V HRG

Max Surge Current Rating Code	Max Surge Current Rating Description
10*	100 kA
12	120 kA
16	160 kA
18	180 kA
20*	200 kA
24	240 kA
32	320 kA
48	480 kA

* Only available in Delta configurations

Options Code	Options Description	Example Model Number	Notes
	NEMA 1 Enclosure	SSP04EMA12	
D	NEMA 1 Enclosure with Disconnect Switch	SSP04EMA12D	
F	NEMA 1 Enclosure with Enhanced Filtering Module	SSP04EMA12F	Not available in HLD or Delta Configurations
DF	Nema 1 Enclosure with Disconnect Switch and Enhanced Filtering Module	SSP04EMA12DF	Not available in HLD or Delta Configurations
S	NEMA 4X, Stainless Steel Enclosure	SSP04EMA12S	
SD	NEMA 4X, Stainless Steel Enclosure with Disconnect Switch	SSP04EMA12SD	
SF	NEMA 4X, Stainless Steel Enclosure with Enhanced Filtering Module	SSP04EMA12SF	Not available in HLD or Delta Configurations
SDF	NEMA 4X, Stainless Steel Enclosure with Disconnect Switch and Enhanced Filtering Module	SSP04EMA12SDF	Not available in HLD or Delta Configurations

EMA Series SPDs

Specifications (continued)

Voltage Protection Ratings (VPR) - Wye and Delta Configurations

Voltage	Model Number Code	Modes of Protection	Configuration	MCOV	I _n	VPR			
						L-N	L-G	L-L	N-G
120/240V	01	6	1 Ø, 3-wire+G	150V	20kA	700V	700V	1000V	600V
208Y/120V ¹	02	10	3 Ø, Wye, 4-wire+G	150V	20kA	700V	700V	1000V	600V
240V DELTA	06	6	3 Ø, Delta, 3-wire+G	300V	20kA	N/A	1200V	1200V	N/A
480Y/277V ²	04	10	3 Ø, Wye, 4-wire+G	320V	20kA	1200V	1200V	2000V	1000V
480V DELTA ³	05	6	3 Ø, Delta, 3-wire+G	640V	20kA	N/A	1800V	2000V	N/A
600Y/347V	08	10	3 Ø, Wye, 4-wire+G	420V	20kA	1500V	1500V	2500V	1200V
600V DELTA ⁴	09	6	3 Ø, Delta, 3-wire+G	840V	10kA	N/A	2500V	2500V	N/A

¹ 208Y/120 series also applies to the following voltage 220Y/127

² 480Y/277 series also applies to the following voltages 380Y/220, 400Y/230, and 415Y/240

³ 480V Delta series also applies to the following voltage 480Y/277V HRG

⁴ 600V Delta series also applies to the following voltages 600Y/347V HRG

Voltage Protection Ratings (VPR) - High-Leg Delta (HLD) Configuration

Voltage	Model Number Code	Modes of Protection	Configuration	MCOV	I _n	VPR						
						L-N	H-N	L-G	H-G	L-L	H-L	N-G
240/120HLD	03	10	3 Ø, HLD, 4-wire+G	150V	20kA	700V	1000V	700V	1000V	1200V	1200V	600V

Enclosure Size Determination

Enclosure Type	Surge Current Rating (kA)	
	100-240*	320-480**
Steel enclosure, NEMA Type 1	11"x12"	11"x20"
Stainless steel enclosure, NEMA Type 4X	11"x23"	11"x23"
Steel enclosure, NEMA Type 1 with disconnect switch	11"x20"	11"x22"
Stainless steel enclosure, NEMA Type 4X with disconnect switch	11"x23"	11"x23"
Steel enclosure, NEMA Type 1 with enhanced filtering module	11"x20"	11"x22"
Stainless steel enclosure, NEMA Type 4X with enhanced filtering module	11"x23"	11"x23"
Steel enclosure, NEMA Type 1 with disconnect switch and enhanced filtering module	11"x22"	11"x22"
Stainless steel enclosure, NEMA Type 4X with disconnect switch and enhanced filtering module	11"x23"	11"x23"

* 600V Delta (600Y/347V HRG): 100-180kA

** 600V Delta (600Y/347V HRG): 200-320kA

Enhanced Filtering Module	EMI/RFI Noise Rejection	Measured Let-Through Voltage	
		A1 Ringwave (2kv,67A) at 180 Degree Phase Angle	
	at 100 kHz	L-N	L-L
	-54 dB	85V	80V

SPD ACCESSORIES

Remote Monitor	TVS12RMU
11" x 12" Flush Mount Collar	SSP12EMAMKF
11" x 20" Flush Mount Collar	SSP20EMAMKF

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