

External Modular SPD

Square D[®] External Panel Surge Protective Devices

Square D brand SurgeLogic[®] external modular 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 and noise filtration in a durable, modular package.



by Schneider Electric

External Modular SPD Features



External panel modular 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 unsurpassed 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 from 120,000 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.

For harsh environments, external modular panels are optionally available in a NEMA 4X stainless steel enclosure to provide surge suppression in areas that can damage other enclosures.

Easy Installation

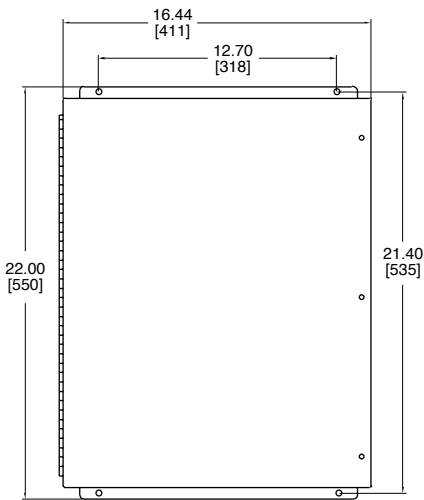
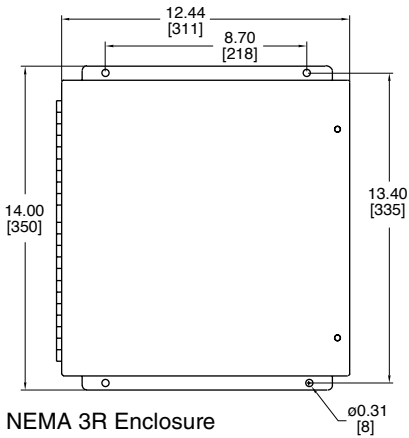
External panel SPDs mount adjacent to the panel through a conduit connection and as close to the circuit breaker as possible in order to reduce lead lengths and improve surge suppression.

10-year Warranty

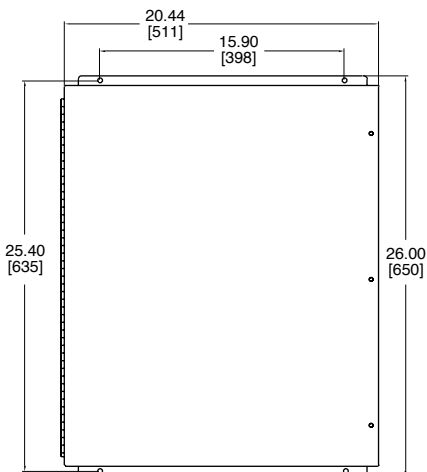
Surgelogic external modular SPDs have a 10-year warranty.

FEATURES	ADVANTAGES	BENEFITS
NEMA 3R or 4X Enclosure	Allows installation in outdoor applications	Provides suppression to vulnerable equipment powered from weather exposed panels
120,000 to 480,000 AMP Capacity (depending on model)	Provides longer service life and suppression against high-energy lightning strikes	High performance surge suppression even in the worst electrical conditions
EMI/RFI Noise Rejection	Increased transient suppression	Improves surge suppression to the equipment
Advanced Diagnostics	Allows for online testing of the suppressors functionality	Allows immediate response if suppressor is damaged
Suppression Status Alarms	Provides immediate alarm if suppression is ever damaged	Warns if operating with reduced or without surge suppression
Coordinated Fuse Technology	Thermal fuse capable of passing extreme surge currents	Provides premium surge suppression while managing thermal effects from MOV end of life

External Modular SPD Features (continued)



NEMA 4X Stainless Steel Enclosure with or without Integral Switch



NEMA 3R Enclosures for 320 kA and 400 kA Units with or without Integral Switch

External SPDs



Performance

Short Circuit Current Rating	200kA
Fusing	Individually fused MOVs
Filtering EM/RFI Noise Rejection	Yes

Mechanical Description

Housing Ratings	NEMA 3R or 4X
Connection Method	#10-#2 AWG Terminals
Mounting Method/Circuit Type	Parallel
Thermal Fusing	Yes
Operating Frequency	50/60 Hz
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.	32° F (0° C) to 149° F (65° C)

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

- NEMA 4X stainless steel enclosure
- Integral switch
- Flush mount collar for panel sizes 12"x12"x6" (TVS12FMK) and 16"x20"x6" (TVS20FMK) only
- Remote monitor (TVS12RMU)

Listings and Performance

cULus UL1449 3rd Edition Type 2 SPD, UL 1283, CSA C22.2 No. 8-M1986

External Modular SPD Specifications

Voltage	Surge Current	Configuration	Model Number	MCOV	I _n	VPR			
						L-N	L-G	L-L	N-G
120/240V	120kA	1 Ø, 3-wire+G	TVS1EMA12_	150V	20kA	700V	700V	1200V	700V
208Y/120V ■	120kA	3 Ø, Wye, 4-wire+G	TVS2EMA12_	150V	20kA	700V	700V	1200V	700V
480Y/277V ▲	120kA	3 Ø, Wye, 4-wire+G	TVS4EMA12_	320V	20kA	1200V	1200V	2000V	1200V
600Y/347V	120kA	3 Ø, Wye, 4-wire+G	TVS8EMA12_	420V	20kA	1500V	1500V	2500V	1500V
120/240V	160kA	1 Ø, 3-wire+G	TVS1EMA16_	150V	20kA	700V	700V	1200V	700V
208Y/120V ■	160kA	3 Ø, Wye, 4-wire+G	TVS2EMA16_	150V	20kA	700V	700V	1200V	700V
480Y/277V ▲	160kA	3 Ø, Wye, 4-wire+G	TVS4EMA16_	320V	20kA	1200V	1200V	2000V	1200V
600Y/347V	160kA	3 Ø, Wye, 4-wire+G	TVS8EMA16_	420V	20kA	1500V	1500V	2500V	1500V
120/240V	240kA	1 Ø, 3-wire+G	TVS1EMA24_	150V	20kA	700V	700V	1200V	700V
208Y/120V ■	240kA	3 Ø, Wye, 4-wire+G	TVS2EMA24_	150V	20kA	700V	700V	1200V	700V
480Y/277V ▲	240kA	3 Ø, Wye, 4-wire+G	TVS4EMA24_	320V	20kA	1200V	1200V	2000V	1200V
600Y/347V	240kA	3 Ø, Wye, 4-wire+G	TVS8EMA24_	420V	20kA	1500V	1500V	2500V	1500V
120/240V	320kA	1 Ø, 3-wire+G	TVS1EMA32_	150V	20kA	700V	700V	1200V	700V
208Y/120V ■	320kA	3 Ø, Wye, 4-wire+G	TVS2EMA32_	150V	20kA	700V	700V	1200V	700V
480Y/277V ▲	320kA	3 Ø, Wye, 4-wire+G	TVS4EMA32_	320V	20kA	1200V	1200V	2000V	1200V
600Y/347V	320kA	3 Ø, Wye, 4-wire+G	TVS8EMA32_	420V	20kA	1500V	1500V	2500V	1500V
120/240V	480kA	1 Ø, 3-wire+G	TVS1EMA48_	150V	20kA	700V	700V	1200V	700V
208Y/120V ■	480kA	3 Ø, Wye, 4-wire+G	TVS2EMA48_	150V	20kA	700V	700V	1200V	700V
480Y/277V ▲	480kA	3 Ø, Wye, 4-wire+G	TVS4EMA48_	320V	20kA	1200V	1200V	2000V	1200V
600Y/347V	480kA	3 Ø, Wye, 4-wire+G	TVS8EMA48_	420V	20kA	1500V	1500V	2500V	1500V

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

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

Voltage	Surge Current	Configuration	Model Number	MCOV	I _n	VPR						
						L-N	H-N	L-G	H-G	L-L	H-L	N-G
240/120HLD	120kA	3 Ø, High-leg delta, 4-wire+G	TVS3EMA12_	150V	20kA	700V	1200V	700V	1000V	1200V	1500V	700V
240/120HLD	160kA	3 Ø, High-leg delta, 4-wire+G	TVS3EMA16_	150V	20kA	700V	1200V	700V	1000V	1200V	1500V	700V
240/120HLD	240kA	3 Ø, High-leg delta, 4-wire+G	TVS3EMA24_	150V	20kA	700V	1200V	700V	1000V	1200V	1500V	700V
240/120HLD	320kA	3 Ø, High-leg delta, 4-wire+G	TVS3EMA32_	150V	20kA	700V	1200V	700V	1000V	1200V	1500V	700V
240/120HLD	480kA	3 Ø, High-leg delta, 4-wire+G	TVS3EMA48_	150V	20kA	700V	1200V	700V	1000V	1200V	1500V	700V

Model numbers not recognized as line items in Schneider Electric ordering system until a suffix code is applied

MODEL NUMBER SUFFIX CODES

A = NEMA 3R steel enclosure (e.g. TVS4EMA12A)

AI = NEMA 3R steel enclosure with integral switch (e.g. TVS4EMA12AI)

S = NEMA 4X stainless steel enclosure (e.g. TSV4EMA12S) only in 120, 160, and 240kA surge currents

SI = NEMA 4X stainless steel enclosure with integral switch (e.g. TVS4EMA12SI) only in 120, 160, and 240kA surge currents

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