

Section 6

Surge Protective Devices

Commercial Applications

EMA/EBA SPDs,
pages 6-2, 6-3, & 6-4Panelboards &
Switchboards, page 6-5Retrofit,
page 6-5Residential & Light
Commercial ApplicationsNipple Mounted SPDs,
pages 6-6, 6-7, and 6-8Whole House SPDs,
page 6-8QO/HOM SPDs,
page 6-8

Externally Mounted Surge Protective Devices

External Modular SPDs—EMA SPDs	6-2
External Modular L-L Enhanced SPDs	6-3
External Brick Assembly SPDs—EBA SPDs	6-3
Replacement Modules	6-4

Internally Mounted Surge Protective Devices—New Construction

Panelboards—Refer to 9-1
Switchboards and Switchgear—Refer to 11-1
Model 6 Motor Control Centers—Refer to 17-1
IPaCS—Refer to 10-1
Busway 12-1

Internally Mounted Surge Protective Devices—Retrofit

Internally Mounted SPD—Retrofit	6-5
OEM/Assembler Kits	6-6

Nipple-Mounted Surge Protective Devices

<i>New!</i> SDSA3650 SPDs	6-6
HWA SPDs	6-7
<i>New!</i> SDSA1175 SPDs	6-7
Mounting Brackets and Flush Mount Kits	6-7
<i>New!</i> XR SPDs	6-8

Residential Surge Protective Devices

<i>New!</i> Whole House SPDs	6-8
Whole House Accessories	6-8
QO™, NQ, and Homeline™ Loadcenter SPDs	6-8

Externally Mounted Surge Protective Devices

SurgeLogic™ offers a full range of externally mounted SPDs. These units are designed to provide surge suppression from service entrance panels to point-of-use equipment.

US and Canadian UL® Listed to UL 1449 3rd Edition and UL 1283 5th Edition. Complies with requirements of NEC® Article 285 and CSA 22.2 No. 8-M1986 as appropriate. Complies with UL 96A 12th Edition Master Label requirements for Lightning Protection Systems.

- 10 year product warranty
- 10 modes of protection
- 200 kA SCCR
- EMI/RFI filtering
- Audible alarm with enable/disable switch, dry contacts, and surge counter standard
- Indicator LEDs; normal (green) and fault condition (red) for each phase
- UL 1449 Type 2 (or Type 1 with optional suffix in catalog number)

External SPD Options:

- **Sine Wave Tracking Module.** Sine Wave Tracking (SWT) circuitry provides enhanced EMI/RFI filtering of -54 dB at 100 kHz and establishes the power surge clamping window relative to the sine wave voltage to increase performance at distribution and branch panel applications.
- **Type 1.** UL 1449 Type 1 SPDs can be located at any point in the electrical system, on the line or load side of the equipment overcurrent device.
- **Integral Switch.** The integral switch provides a mechanical means to electrically isolate the entire surge suppressor before opening the enclosure door to facilitate servicing of the unit's components.
- **Remote Monitor.** This option displays the alarm status of the surge protective device up to 1000 feet from the unit.
- **Flush Mount Kits.** Flush mounting kits can be used on 120–240 kA EMA and EBA series devices. Devices with integral switch require a 20 inch flush mounting collar.

External Modular Assembly (EMA) SPDs

EMA SPD products feature a design based on individual phase modules for a flexible, cost effective way to achieve superior surge suppression at every level of the electrical distribution system. Modularity results in lower life cycle costs and fast, easy service or replacement.



External Modular SPD
with Integral Switch



External Modular SPD
with Sine Wave Tracking Module



External Modular
High-Resistance Ground SPD

Table 6.1: EMA SPDs

Service Voltage	Peak Surge Current Rating per Phase (kA)	NEMA 3R Cat. No.	\$ Price	NEMA 4X Stainless Steel Cat. No.	\$ Price
120/240 V, 1-phase, 3-wire + ground	120	TVS1EMA12A()	4547.00	TVS1EMA12S()	5964.00
	160	TVS1EMA16A()	4997.00	TVS1EMA16S()	6414.00
	240	TVS1EMA24A()	7421.00	TVS1EMA24S()	8838.00
	320	TVS1EMA32A()	9962.00	TVS1EMA32S()	11379.00
	480	TVS1EMA48A()	14798.00	TVS1EMA48S()	16215.00
208Y/120 V, 3-phase, 4-wire + ground ■ Wye	120	TVS2EMA12A()	4760.00	TVS2EMA12S()	6177.00
	160	TVS2EMA16A()	5231.00	TVS2EMA16S()	6648.00
	240	TVS2EMA24A()	7782.00	TVS2EMA24S()	9200.00
	320	TVS2EMA32A()	10431.00	TVS2EMA32S()	11849.00
	480	TVS2EMA48A()	15522.00	TVS2EMA48S()	16940.00
240/120 V, 3-phase, 4-wire + ground High-leg Delta	120	TVS3EMA12A()	4760.00	TVS3EMA12S()	6177.00
	160	TVS3EMA16A()	5231.00	TVS3EMA16S()	6648.00
	240	TVS3EMA24A()	7782.00	TVS3EMA24S()	9200.00
	320	TVS3EMA32A()	10431.00	—	—
	480	TVS3EMA48A()	15522.00	—	—
240 V, 3-phase, 3-wire + ground Delta	120	TVS6EMA12A()	4760.00	TVS6EMA12S()	6177.00
	160	TVS6EMA16A()	5231.00	TVS6EMA16S()	6648.00
	240	TVS6EMA24A()	7782.00	TVS6EMA24S()	9200.00
	320	TVS6EMA32A()	10431.00	TVS6EMA32S()	11849.00
	480	TVS6EMA48A()	15522.00	TVS6EMA48S()	16940.00
480Y/277 V, 3-phase, 4-wire + ground ■♦ Wye	120	TVS4EMA12A()	4973.00	TVS4EMA12S()	6390.00
	160	TVS4EMA16A()	5468.00	TVS4EMA16S()	6885.00
	240	TVS4EMA24A()	8147.00	TVS4EMA24S()	9564.00
	320	TVS4EMA32A()	10904.00	TVS4EMA32S()	12321.00
	480	TVS4EMA48A()	16250.00	TVS4EMA48S()	17667.00
480Y/277 V, 3-phase, 3-wire + ground High-Resistance Ground	120	TVS4HEMA12A()	4973.00	TVS4HEMA12S()	6390.00
	160	TVS4HEMA16A()	5468.00	TVS4HEMA16S()	6885.00
	240	TVS4HEMA24A()	8147.00	TVS4HEMA24S()	9564.00
	320	TVS4HEMA32A()	10904.00	TVS4HEMA32S()	12321.00
	480	TVS4HEMA48A()	16250.00	TVS4HEMA48S()	17667.00
480 V, 3-phase, 3-wire + ground, Delta	120	TVS5EMA12A()	4973.00	TVS5EMA12S()	6390.00
	160	TVS5EMA16A()	5468.00	TVS5EMA16S()	6885.00
	240	TVS5EMA24A()	8147.00	TVS5EMA24S()	9564.00
	320	TVS5EMA32A()	10904.00	TVS5EMA32S()	12321.00
	480	TVS5EMA48A()	16250.00	TVS5EMA48S()	17667.00
600Y/347 V, 3-phase, 4-wire + ground ■ Wye	120	TVS8EMA12A()	5220.00	TVS8EMA12S()	6638.00
	160	TVS8EMA16A()	5714.00	TVS8EMA16S()	7131.00
	240	TVS8EMA24A()	8528.00	TVS8EMA24S()	9945.00
	320	TVS8EMA32A()	11399.00	TVS8EMA32S()	12816.00
	480	TVS8EMA48A()	17012.00	TVS8EMA48S()	18429.00
600Y/347 V, 3-phase, 3-wire + ground High-Resistance Ground	120	TVS8HEMA12A()	5220.00	TVS8HEMA12S()	6638.00
	160	TVS8HEMA16A()	5714.00	TVS8HEMA16S()	7131.00
	180	TVS8HEMA18A()	8528.00	TVS8HEMA18S()	9945.00
	240	TVS8HEMA24A()	11399.00	TVS8HEMA24S()	12816.00
	320	TVS8HEMA32A()	17012.00	TVS8HEMA32S()	18429.00
600 V, 3-phase, 3-wire + ground, Delta	120	TVS9EMA12A()	5220.00	TVS9EMA12S()	6638.00
	160	TVS9EMA16A()	5714.00	TVS9EMA16S()	7131.00
	180	TVS9EMA18A()	8528.00	TVS9EMA18S()	9945.00
	240	TVS9EMA24A()	11399.00	TVS9EMA24S()	12816.00
	320	TVS9EMA32A()	17012.00	TVS9EMA32S()	18429.00

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

■ Can be used on 4-wire or 3-wire grounded neutral system.

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

New!

External Modular Options ()		\$ Price
(1) UL 1449 Type 1		0.00
(I) ★ Integral Switch		738.00
(SWT) Sine Wave Tracking Module (not applicable for Delta or HRG)		750.00
(I1) ★ UL 1449 Type 1 and Integral Switch		738.00
(SWT1) UL 1449 Type 1 and Sine Wave Tracking Module (not applicable for Delta or HRG)		750.00
(ISWT) ★ Integral Switch and Sine Wave Tracking Module (not applicable for Delta or HRG)		1488.00
(ISWT1) ★ UL 1449 Type 1, Integral Switch and Sine Wave Tracking Module (not applicable for Delta or HRG)		1488.00
Accessory Description	Cat. No.	\$ Price
Remote Monitor	TVS12RMU	788.00
12-inch Flush Mount Kit	TVS12FMK	945.00
20-inch Flush Mount Kit	TVS20FMK	1103.00

★ Not available in stainless steel for 320 and 480 kA



External Modular L-L Enhanced SPD
with Sine Wave Tracking Module



External Brick Assembly SPD
with Integral Switch

External Modular L-L Enhanced SPDs

External modular Line-to-Line (L-L) Enhanced SPDs are parallel systems that provide 10 modes of protection and enhanced, discrete L-L suppression paths.

Table 6.2: L-L Enhanced SPDs

Service Voltage	Peak Surge Current Rating per Phase (kA)	NEMA 3R Cat. No.	\$ Price	NEMA 4X Stainless Steel Cat. No.	\$ Price
208Y/120 V, 3-phase, 4-wire + ground ▼ Wye	120	TVS2MEMA12A()	8810.00	TVS2MEMA12S()	10010.00
	180	TVS2MEMA18A()	10790.00	TVS2MEMA18S()	12657.00
	270	TVS2MEMA27A()	13760.00	TVS2MEMA27S()	15627.00
	360	TVS2MEMA36A()	16730.00	TVS2MEMA36S()	18597.00
480Y/277 V, 3-phase, 4-wire + ground Δ Wye	120	TVS4MEMA12A()	9023.00	TVS4MEMA12S()	10890.00
	180	TVS4MEMA18A()	11003.00	TVS4MEMA18S()	12870.00
	270	TVS4MEMA27A()	13973.00	TVS4MEMA27S()	15840.00
	360	TVS4MEMA36A()	16943.00	TVS4MEMA36S()	18810.00

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

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

External Modular L-L Enhanced Options ()		\$ Price
(1) UL 1449 Type 1		0.00
(SWT) Sine Wave Tracking Module		750.00
(SWT1) UL 1449 Type 1 and Sine Wave Tracking Module		750.00
Accessory Description	Cat. No.	\$ Price
Remote Monitor	TVS12RMU	788.00
20-inch Flush Mount Kit	TVS20FMK	1103.00

External Brick Assembly SPDs

External Brick Assembly (EBA) SPD products consist of a consolidation of phase modules into one solid brick casting and offered at a competitive price for those who want superior surge suppression on a limited budget.

Table 6.3: EBA SPDs

Service Voltage	Peak Surge Current Rating per Phase (kA)	NEMA 3R Cat. No.	\$ Price	NEMA 4X Stainless Steel Cat. No.	\$ Price
120/240 V, 1-phase, 3-wire + ground Wye	120	TVS1EBA12A()	3467.00	TVS1EBA12S()	4884.00
	160	TVS1EBA16A()	4208.00	TVS1EBA16S()	5625.00
	240	TVS1EBA24A()	6290.00	TVS1EBA24S()	7707.00
208Y/120 V, 3-phase, 4-wire + ground ▲ Wye	120	TVS2EBA12A()	3588.00	TVS2EBA12S()	5006.00
	160	TVS2EBA16A()	4388.00	TVS2EBA16S()	5805.00
	240	TVS2EBA24A()	6525.00	TVS2EBA24S()	7943.00
240/120 V, 3-phase, 4-wire + ground High-leg Delta	120	TVS3EBA12A()	3588.00	TVS3EBA12S()	5006.00
	160	TVS3EBA16A()	4388.00	TVS3EBA16S()	5805.00
	240	TVS3EBA24A()	6525.00	TVS3EBA24S()	7943.00
480Y/277 V, 3-phase, 4-wire + ground ■ Wye	120	TVS4EBA12A()	3743.00	TVS4EBA12S()	5160.00
	160	TVS4EBA16A()	4581.00	TVS4EBA16S()	5999.00
	240	TVS4EBA24A()	6827.00	TVS4EBA24S()	8244.00
600Y/347 V, 3-phase, 4-wire + ground ■ Wye	120	TVS8EBA12A()	3905.00	TVS8EBA12S()	5322.00
	160	TVS8EBA16A()	4787.00	TVS8EBA16S()	6204.00
	240	TVS8EBA24A()	7143.00	TVS8EBA24S()	8561.00

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

■ Can be used on 4-wire or 3-wire grounded neutral system.

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

External Brick Assembly Options ()		\$ Price
(1) UL 1449 Type 1		0.00
(I) Integral Switch		738.00
(SWT) Sine Wave Tracking Module (not applicable for Delta)		750.00
(I1) UL 1449 Type 1 and Integral Switch		738.00
(SWT1) UL 1449 Type 1 and Sine Wave Tracking Module (not applicable for Delta)		750.00
(ISWT) Integral Switch and Sine Wave Tracking Module (not applicable for Delta)		1,488.00
(ISWT1) UL 1449 Type 1, Integral Switch and Sine Wave Tracking Module (not applicable for Delta)		1,488.00
Accessory Description	Cat. No.	\$ Price
Remote Monitor	TVS12RMU	788.00
12-inch Flush Mount Kit	TVS12FMK	945.00
20-inch Flush Mount Kit	TVS20FMK	1103.00

Replacement Modules ★

All modules and brick assemblies are US and Canadian UL® Recognized to UL 1449 3rd Edition and UL 1283 5th Edition.

Complies with requirements of NEC® Article 285 and CSA C22.2 No. 8-M1986 as appropriate.

★ For UL 1449 Type 1 Modules, add suffix (1).
Example: MA11MA121



MA Replacement
Module



HRG Replacement
Module



Delta Replacement
Module



EBA Replacement Module



MA Replacement
Module



L-L Enhanced
Replacement Module

Table 6.4: EMA Replacement Modules

System Voltage	Peak Surge Current Rating (kA)	Catalog Numbers			
		Phase A	\$ Price	Phase B	\$ Price
120/240 V, 1-phase, 3-wire + ground	120	MA11MA12	906.00	—	—
	160	MA11MA16	1064.00	—	—
	240	MA11MA24	1229.00	—	—
208Y/120 V, 3-phase, 4-wire + ground ▲ Wye	120	MA11MA12	906.00	MA11MA12	906.00
	160	MA11MA16	1064.00	MA11MA16	1064.00
	240	MA11MA24	1229.00	MA11MA24	1229.00
120/240 V, 3-phase, 4-wire + ground ■ High-Leg Delta	120	MA11MA12	906.00	MA31MA12	906.00
	160	MA11MA16	1064.00	MA31MA16	1064.00
	240	MA11MA24	1229.00	MA31MA24	1229.00
240 V, 3-phase, 3-wire + ground Delta	120	MA61MA12	906.00	MA61MA12	906.00
	160	MA61MA16	1064.00	MA61MA16	1064.00
	240	MA61MA24	1229.00	MA61MA24	1229.00
480Y/277 V, 3-phase, 4-wire + ground ♦ Wye	120	MA41MA12	906.00	MA41MA12	906.00
	160	MA41MA16	1064.00	MA41MA16	1064.00
	240	MA41MA24	1229.00	MA41MA24	1229.00
480Y/277 V, 3-phase, 3-wire + ground ♦ High-Resistance Ground	120	MA41MA12H	906.00	MA41MA12H	906.00
	160	MA41MA16H	1064.00	MA41MA16H	1064.00
	240	MA41MA24H	1229.00	MA41MA24H	1229.00
480 V, 3-phase, 3-wire + ground Delta	120	MA51MA12	906.00	MA51MA12	906.00
	160	MA51MA16	1064.00	MA51MA16	1064.00
	240	MA51MA24	1229.00	MA51MA24	1229.00
600Y/347 V, 3-phase, 4-wire + ground Wye	120	MA81MA12	906.00	MA81MA12	906.00
	160	MA81MA16	1064.00	MA81MA16	1064.00
	240	MA81MA24	1229.00	MA81MA24	1229.00
600Y/347 V, 3-phase, 3-wire + ground High-Resistance Ground	120	MA81MA12H	906.00	MA81MA12H	906.00
	160	MA81MA16H	1064.00	MA81MA16H	1064.00
	180	MA81MA18H	1229.00	MA81MA18H	1229.00
600 V, 3-phase, 3-wire + ground Delta	120	MA91MA12	906.00	MA91MA12	906.00
	160	MA91MA16	1064.00	MA91MA16	1064.00
	180	MA91MA18	1229.00	MA91MA18	1229.00

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

■ High-leg delta (Phase B modules are different than Phase A and Phase C modules).

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

Table 6.5: EBA Replacement Modules

System Voltage	Peak Surge Current Rating (kA)	Catalog Numbers	\$ Price
120/240 V, 1-phase, 3-wire + ground	120	MA11BA12	2717.00
	160	MA11BA16	3189.00
	240	MA11BA24	3686.00
208Y/120 V, 3-phase, 4-wire + ground ▲	120	MA21BA12	2717.00
	160	MA21BA16	3189.00
	240	MA21BA24	3686.00
240/120 V, 3-phase, 4-wire + ground ■ High-leg Delta	120	MA31BA12	2717.00
	160	MA31BA16	3189.00
	240	MA31BA24	3686.00
480Y/277 V, 3-phase, 4-wire + ground ♦ Wye	120	MA41BA12	2717.00
	160	MA41BA16	3189.00
	240	MA41BA24	3686.00
600Y/347 V, 3-phase, 4-wire + ground Wye	120	MA81BA12	2717.00
	160	MA81BA16	3189.00
	240	MA81BA24	3686.00

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

■ High-leg delta (Phase B modules are different than Phase A and Phase C modules).

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

Table 6.6: L-L Enhanced MA (L-N, L-G) Replacement Modules

System Voltage	Peak Surge Current Rating (kA)	Catalog Numbers					
		Phase A	\$ Price	Phase B	\$ Price	Phase C	\$ Price
208Y/120 V, 3-phase, 4-wire + ground ▲ Wye	120	MA11MA12	906.00	MA11MA12	906.00	MA11MA12	906.00
	180	MA11MA16	1064.00	MA11MA16	1064.00	MA11MA16	1064.00
	270	MA11MA16	1064.00	MA11MA16	1064.00	MA11MA16	1064.00
	360	MA11MA24	1229.00	MA11MA24	1229.00	MA11MA24	1229.00
480Y/277 V, 3-phase, 4-wire + ground ■ Wye	120	MA41MA12	906.00	MA41MA12	906.00	MA41MA12	906.00
	180	MA41MA16	1064.00	MA41MA16	1064.00	MA41MA16	1064.00
	270	MA41MA16	1064.00	MA41MA16	1064.00	MA41MA16	1064.00
	360	MA41MA24	1229.00	MA41MA24	1229.00	MA41MA24	1229.00

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

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

Table 6.7: L-L Enhanced (L-L) Replacement Modules

System Voltage	Peak Surge Current Rating (kA)	Catalog Numbers					
		Phase A	\$ Price	Phase B	\$ Price	Phase C	\$ Price
208Y/120 V, 3-phase, 4-wire + ground ▲ Wye	120	MA21MA40LL	604.00	MA21MA40LL	604.00	MA21MA40LL	604.00
	180	MA21MA60LL	709.00	MA21MA60LL	709.00	MA21MA60LL	709.00
	270	MA21MA90LL	819.00	MA21MA90LL	819.00	MA21MA90LL	819.00
	360	MA21MA12LL	946.00	MA21MA12LL	946.00	MA21MA12LL	946.00
480Y/277 V, 3-phase, 4-wire + ground ■ Wye	120	MA41MA40LL	604.00	MA41MA40LL	604.00	MA41MA40LL	604.00
	180	MA41MA60LL	709.00	MA41MA60LL	709.00	MA41MA60LL	709.00
	270	MA41MA90LL	819.00	MA41MA90LL	819.00	MA41MA90LL	819.00
	360	MA41MA12LL	946.00	MA41MA12LL	946.00	MA41MA12LL	946.00

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

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

Internally Mounted Surge Protective Devices

Internally mounted surge protective devices are installed integrally to systems for service entrance and branch panel surge suppression. Internally mounted SPDs installed next to supply busses provide maximum performance inside Square D™ systems. Built-in performance is the best way to ensure cost effective power quality (especially important for critical power facilities).

US and Canadian UL® Recognized as a Type 2 (or 1 with optional suffix in catalog number) SPD Component Assembly to UL 1449 3rd Edition and UL 1283 5th Edition. Complies with requirements of NEC® Article 285 and CSA C22.2 No. 8-M1986 as appropriate. Complies with UL 96A 12th Edition Master Label requirements for Lightning Protection Systems.

Internally Mounted—New Construction

Factory installed integral/internal Surgelocic™ SPD products make adding surge suppression to new construction projects easy. Refer to the sections listed below to identify the correct product for your application or contact Surgelocic™ TAG at 1-800-577-7353 for assistance.

Panelboards
Refer to Section 9



NF

NQ

Switchboards and Switchgear
Refer to Section 11



PZ4



QED

Motor Control
Centers
Refer to Section 17



MCC

Integrated Power and
Control Centers
Refer to Section 10



IPAC2

Busway—Refer to Section 12

Internally Mounted—Retrofit

To ensure high-performance surge suppression at critical power locations, a variety of Surgelocic™ products have been designed specifically for retrofitting into commonly used Square D™ systems. The QMB fusible switch, 6 in. MCC bucket, I-Line and Busway plug-on units come with the SPD factory-installed. Retrofitting SPD units into I-Line, QMB, MCC, and Busway applications is simple.

- Audible alarm with enable/disable switch, dry contacts, and surge counter standard.
- 200 kA SCCR
- Indicator LEDs
- EMI/RFI filtering

Table 6.8: Internally Mounted—Retrofit

Voltage	Surge Current Rating	I-Line Branch Units ▲				QMB Branch Units ■		Busway Units		Model 6 MCC Units ♦	
		Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price▼	Cat. No.	\$ Price★
120/240 V, 1-phase, 3-wire + ground	120 kA	HL1IMA12C()	9518.00	FI1IMA12C()	10185.00	QMB1IMA12	6663.00	—	—	—	—
	160 kA	HL1IMA16C()	10455.00	FI1IMA16C()	11199.00	QMB1IMA16	7340.00	—	—	—	—
	240 kA	HL1IMA24C()	14100.00	FI1IMA24C()	15525.00	QMB1IMA24	10055.00	—	—	—	—
208Y/120 V, 3-phase, 4-wire + ground Δ □ Wye	120 kA	HL2IMA12C()	9893.00	FI2IMA12C()	10562.00	QMB2IMA12	6899.00	—	—	MCC2IMA12	6700.00
	160 kA	HL2IMA16C()	10872.00	FI2IMA16C()	11616.00	QMB2IMA16	7602.00	PIU2IMA16	4472.00	MCC2IMA16	8700.00
	240 kA	HL2IMA24C()	15423.00	FI2IMA24C()	16170.00	QMB2IMA24	10460.00	PIU2IMA24	6407.00	MCC2IMA24	12200.00
240/120 V, 3-phase, 4-wire + ground High-leg Delta	120 kA	HL3IMA12C()	9893.00	FI3IMA12C()	10562.00	QMB3IMA12	6899.00	—	—	MCC3IMA12	6700.00
	160 kA	HL3IMA16C()	10872.00	FI3IMA16C()	11616.00	QMB3IMA16	7602.00	PIU3IMA16	4472.00	MCC3IMA16	8700.00
	240 kA	HL3IMA24C()	15423.00	FI3IMA24C()	16170.00	QMB3IMA24	10460.00	PIU3IMA24	6407.00	MCC3IMA24	12200.00
240 V, 3-phase, 3-wire + ground, Delta	120 kA	HL6IMA12C()	9893.00	FI6IMA12C()	10562.00	—	—	—	—	—	—
	160 kA	HL6IMA16C()	10872.00	FI6IMA16C()	11616.00	—	—	—	—	—	—
	240 kA	HL6IMA24C()	15423.00	FI6IMA24C()	16170.00	—	—	—	—	—	—
480Y/277 V, 3-phase, 4-wire + ground Δ □ Wye	120 kA	HL4IMA12C()	10271.00	FI4IMA12C()	11342.00	QMB4IMA12	7137.00	—	—	MCC4IMA12	7200.00
	160 kA	HL4IMA16C()	11292.00	FI4IMA16C()	12039.00	QMB4IMA16	7868.00	PIU4IMA16	4740.00	MCC4IMA16	9200.00
	240 kA	HL4IMA24C()	16070.00	FI4IMA24C()	16818.00	QMB4IMA24	10868.00	PIU4IMA24	6792.00	MCC4IMA24	13200.00
480Y/277 V, 3-phase, 3-wire + ground ◇ High-Resistance Ground	120 kA	HL4HIMA12C()	10271.00	FI4HIMA12C()	10944.00	—	—	—	—	—	—
	160 kA	HL4HIMA16C()	11292.00	FI4HIMA16C()	12039.00	—	—	—	—	—	—
	240 kA	HL4HIMA24C()	16070.00	FI4HIMA24C()	16818.00	—	—	—	—	—	—
480 V, 3-phase, 3-wire + ground, Delta	120 kA	HL5IMA12C()	10271.00	FI5IMA12C()	10944.00	—	—	—	—	—	—
	160 kA	HL5IMA16C()	11292.00	FI5IMA16C()	12039.00	—	—	—	—	—	—
	240 kA	HL5IMA24C()	16070.00	FI5IMA24C()	16818.00	—	—	—	—	—	—
600Y/347 V, 3-phase, 4-wire + ground Δ Wye	120 kA	—	—	—	—	QMB8IMA12	7388.00	—	—	MCC8IMA12	7700.00
	160 kA	—	—	—	—	QMB8IMA16	8145.00	PIU8IMA16	4919.00	MCC8IMA16	9700.00
	240 kA	—	—	—	—	QMB8IMA24	11295.00	PIU8IMA24	7048.00	MCC8IMA24	14200.00
600Y/347 V, 3-phase, 3-wire + ground, High-Resistance Ground	120 kA	—	—	—	—	—	—	—	—	—	—
	160 kA	—	—	—	—	—	—	—	—	—	—
	180 kA	—	—	—	—	—	—	—	—	—	—
600V, 3-phase, 3-wire + ground, Delta	120 kA	—	—	—	—	—	—	—	—	—	—
	160 kA	—	—	—	—	—	—	—	—	—	—
	180 kA	—	—	—	—	—	—	—	—	—	—

▲ Requires 13.5-inch mounting height.
■ Requires 9-inch mounting height.
♦ Requires 6-inch mounting height.

★ PE4 Discount Schedule.
▼ PE7 Discount Schedule.
△ Can be used on 4-wire or 3-wire grounded neutral system.

□ 208Y/120 series also applies to the following voltage 220Y/127.
◇ 480Y/277 series applies to the following voltages 380Y/220, 400Y/230, and 415Y/240.

() For a Type 1 SPD, add a "1" suffix to the catalog number. *New!*



I-Line™ Surgelocic™
SPD Unit



QMB Surgelocic™
SPD Unit



Busway Surgelocic™
SPD Unit



MCC Surgelocic™
SPD Unit



OEM Kit

OEM/Assembler Kits

Surgelogic™ OEM/assembler kits allow manufacturers to add industry-leading surge suppression directly to customized equipment. Manufacturers benefit from shorter wire lengths that optimize the clamping voltage of the SPD. Products come with a backplane-mounted SPD, mounting hardware and diagnostic display with 36-inch cables. Audible alarm, silence switch, remote monitoring contacts, and surge counter are standard. Available as UL 1449 Type 2 (or 1 with optional suffix in catalog number).

US and Canadian UL® Recognized to UL 1449 3rd Edition and UL 1283 5th Edition. Complies with requirements of NEC® Article 285 and CSA 22.2 No. 8-M1986 as appropriate. Complies with UL 96A 12th Edition Master Label requirements for Lightning Protection Systems.

Table 6.9: OEM/Assembler Kits

Service Voltage	Peak Surge Current Rating per Phase (kA)	Cat. No. ▲	\$ Price
120/240 V, 1-phase, 3-wire + ground	120	TVS11MA12O()	4137.00
	160	TVS11MA16O()	4547.00
	240	TVS11MA24O()	6753.00
208Y/120 V, 3-phase, 4-wire + ground ■◆ Wye	120	TVS21MA12O()	4331.00
	160	TVS21MA16O()	4760.00
	240	TVS21MA24O()	7082.00
240/120 V, 3-phase, 4-wire + ground High-leg Delta	120	TVS31MA12O()	4331.00
	160	TVS31MA16O()	4760.00
	240	TVS31MA24O()	7082.00
New! 240 V, 3-phase, 3-wire + ground ■★ Delta	120	TVS61MA12O()	4331.00
	160	TVS61MA16O()	4760.00
	240	TVS61MA24O()	7082.00
480Y/277 V, 3-phase, 4-wire + ground ■★ Wye	120	TVS41MA12O()	4526.00
	160	TVS41MA16O()	4976.00
	240	TVS41MA24O()	7413.00
New! 480Y/277 V, 3-phase, 3-wire + ground ■★ High-Resistance Ground	120	TVS4H1MA12O()	4526.00
	160	TVS4H1MA16O()	4976.00
	240	TVS4H1MA24O()	7413.00
New! 480 V, 3-phase, 3-wire + ground Delta	120	TVS51MA12O()	4526.00
	160	TVS51MA16O()	4976.00
	240	TVS51MA24O()	7413.00
600Y/347 V, 3-phase, 4-wire + ground ■ Wye	120	TVS81MA12O()	4751.00
	160	TVS81MA16O()	5199.00
	240	TVS81MA24O()	7760.00
New! 600Y/347 V, 3-phase, 3-wire + ground ■ High Resistance Ground	120	TVS8H1MA12O()	4751.00
	160	TVS8H1MA16O()	5199.00
	180	TVS8H1MA18O()	7760.00
New! 600 V, 3-phase, 3-wire + ground Delta	120	TVS91MA12O()	4751.00
	160	TVS91MA16O()	5199.00
	180	TVS91MA18O()	7760.00

() For a Type 1 SPD, add a "1" suffix to the catalog number.

▲ Note the last character of the catalog number is the letter "O", not a zero.

■ Can be used on 4-wire or 3-wire grounded neutral system.

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

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

Nipple-Mounted Surge Protective Devices



SDSA3650



SDSA3650D

SDSA3650 Surge Protective Devices

SDSA3650 SPDs are designed and listed for indoor or outdoor installation and surge suppression for three-phase grounded electrical services up to 600 Vac, including delta services (SDSA3650D). The SDSA3650 series is used extensively in service entrance panels to provide an efficient and economical means of surge suppression.

US and Canadian UL® Listed as a Type 1 SPD to UL 1449 3rd Edition. Complies with requirements of NEC® Article 285, CSA 233.1-87, and CSA C22.2 No. 8-M1986 as appropriate.

- LEDs indicate operational status
- Short circuit current rating 200 kA
- Suitable for indoor and outdoor applications (NEMA Type 4X rated)
- Convenient back-nipple mounting

Table 6.10: SDSA3650 Surge Protective Devices

Description	Peak Surge Current Rating per Phase (kA)	Cat. No.	\$ Price
600 Vac Maximum, 3-phase, 4-wire▼	40	SDSA3650 ▲	248.00
New! 600 Vac Maximum, 3-phase, 3-wire Delta	40	SDSA3650D ▲	248.00

▼ Do not use on ungrounded systems. Systems must be solidly grounded.

▲ See Table 6.13 for QOSAMK mounting kit for installation in QO™ load centers.



HWA Series

HWA Surge Protective Devices

SurgeLogic™ HWA surge protective devices are compact, nipple-mounted parallel-connected surge suppressors that come in a variety of voltage configurations, including Delta. A surge suppression path is provided for each mode, and the product is rated NEMA Type 4X. Internal diagnostics continuously monitor the device status.

US and Canadian UL® Listed as a Type 2 SPD to UL 1449 3rd Edition and UL 1283 5th Edition. Complies with requirements of NEC® Article 285 and CSA C22.2 No. 8-M1986 as appropriate. Complies with UL 96A 12th Edition Master Label requirements for Lightning Protection Systems.

- LEDs indicate operational status
- Short circuit current rating 200 kA
- Suitable for indoor and outdoor applications (NEMA Type 4X rated)
- Convenient side-nipple mounting
- Compact design provides easy mounting inside or outside the equipment cabinets
- -54 dB EMI/RFI filtering
- Sine wave tracking
- Audible alarm indicates loss of suppression (does not contain alarm enable/disable switch)
- Dry contacts
- Optional flush-mount kit TVSHWAFMK

Table 6.11: HWA Surge Protective Devices

Service Voltage	Peak Surge Current Rating per Phase (kA)	NEMA 4X Cat. No.	\$ Price
120/240 V, 1-phase, 3-wire + ground	50	TVS1HWA50X	2385.00
	80	TVS1HWA80X	2660.00
	100	TVS1HWA10X	3401.00
208Y/120 V, 3-phase, 4-wire + ground ▲■	50	TVS2HWA50X	2544.00
	80	TVS2HWA80X	2810.00
	100	TVS2HWA10X	3611.00
240/120 V, 3-phase, 4-wire + ground High-leg Delta	50	TVS3HWA50X	2544.00
	80	TVS3HWA80X	2810.00
	100	TVS3HWA10X	3611.00
New! 240 V, 3-phase, 3-wire + ground Delta	50	TVS6HWA50X	2583.00
	80	TVS6HWA80X	2924.00
	100	TVS6HWA10X	3606.00
480Y/277 V, 3-phase, 4-wire + ground ▲◆	50	TVS4HWA50X	2640.00
	80	TVS4HWA80X	2907.00
	100	TVS4HWA10X	3853.00
New! 480 V, 3-phase, 3-wire + ground Delta	50	TVS5HWA50X	3052.00
	80	TVS5HWA80X	3393.00
	100	TVS5HWA10X	4075.00
600Y/347 V, 3-phase, 4-wire + ground	50	TVS8HWA50X	2915.00
	80	TVS8HWA80X	3171.00
	100	TVS8HWA10X	3853.00
New! 600 V, 3-phase, 3-wire + ground Delta	50	TVS9HWA50X	3052.00
	80	TVS9HWA80X	3393.00
	100	TVS9HWA10X	4075.00

▲ Can be used on 4-wire or 3-wire grounded neutral system.

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

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

SDSA1175 Surge Protective Devices

SDSA1175 SPDs are designed and listed for indoor or outdoor installation and surge suppression for single-phase three-wire 120/240 Vac or two-wire 120 Vac 60 Hz electrical services. This product is ideal for panel builders as well as manufacturers and integrators of instrumentation cabinets for industrial, commercial, and residential applications for single-phase power systems. Two SDSA1175 surge protection devices can be installed to provide suppression for 208Y/120 Vac three-phase four-wire services.

US and Canadian UL® Listed as Type 1 SPD to UL 1449 3rd Edition. Complies with requirements of NEC® Article 285, CSA 233.1-87, and CSA C22.2 No. 8-M1986 as appropriate.

- LED indicates operational status
- Short circuit current rating 25 kA
- Suitable for indoor and outdoor applications (NEMA Type 4X rated)
- Convenient back-nipple mounting



SDSA1175

Table 6.12: SDSA1175 Surge Protective Devices

System Voltage	Peak Surge Current Rating per Phase (kA)	Cat. No.	\$ Price
120/240 V, 1-phase, 3-wire	36	SDSA1175 ▲	92.00
120 V, 1-phase, 2-wire	36	SDSA1175T ▲	92.00

▲ See Table 6.13 for QOSAMK mounting kit for installation in QO™ load centers.

Mounting Brackets and Flush Mount Kits

The nipple products shown in this catalog provide a convenient means of incorporating surge suppression within a new or existing cabinet. The mounting bracket and flush-mount kits are designed for easy mounting of nipple products.

Table 6.13: Mounting Bracket for Enclosures

Description	Cat. No.	\$ Price
Mounting bracket for QO™ and Homeline™ load centers and other enclosures	QOSAMK	11.40
Flush-mount kit for XR SPDs	TVSXRFMK	58.00
Flush-mount kit for HWA SPDs	TVSHWAFMK	180.00



QOSAMK



XR Series

XR Surge Protective Devices

The XR SPD provides high-quality surge suppression in a compact and versatile package. This product is ideal for panel builders as well as manufacturers and integrators of instrumentation cabinets for industrial, commercial, and residential applications for single-phase power systems.

US and Canadian UL® Listed as Type 1 SPD to UL 1449 3rd Edition. Complies with requirements of NEC® Article 285, CSA 233.1-87, and CSA C22.2 No. 8-M1986 as appropriate.

- LEDs indicate operational status
- Short circuit current rating 25 kA
- Convenient side nipple mounting
- Suitable for indoor and outdoor applications (NEMA Type 4X rated)
- Optional flush mount kit TVSXRFMK

Table 6.14: XR Nipple-Mounted Surge Protective Devices

System Voltage	Peak Surge Current Rating per Phase (kA)	Cat. No.	\$ Price
120/240 V, 1-phase, 3-wire + ground	50	TVS120XR50S	315.00
	80	TVS120XR80S	515.00

Residential Surge Protective Devices



SDSB1175C



SDSB1175R

Whole House Surge Protective Devices

Whole House devices are designed to deliver surge suppression that addresses the entire home. AC modules are connected to the circuit breaker load center and provide suppression for all equipment connected to the power system. Whole House systems incorporate AC modules as well as modules for other metallic lines coming into the home including telephone/DSL and coaxial video/data.

US and Canadian UL® Listed as Type 2 SPD to UL 1449 3rd Edition. Complies with requirements of NEC® Article 285, CSA 233.1-87, and CSA C22.2 No. 8-M1986 as appropriate. Telephone and coaxial video modules US and Canadian UL® Recognized to UL 497A 4th Edition and UL 497B 4th Edition.

- 120/240 Vac, 80 kA/phase AC surge suppression
- LED status indicators for AC surge suppression
- Telephone surge suppression module supports four lines with tool-less Insulation Displacement Connectors (IDC)
- Coaxial surge suppression module supports one line of video/data

Table 6.15: Whole House Surge Protective Devices

Description	Included Modules	Cat. No.	\$ Price
Whole House NEMA 1 Basic	AC	SDSB1175CB	439.00
Whole House NEMA 1	AC, Telephone, Coax (1)	SDSB1175C	630.00
Whole House NEMA 3R Basic	AC	SDSB1175RB	546.00
Whole House NEMA 3R	AC, Telephone, Coax (1)	SDSB1175R	737.00
Home Electronics Protective Device	AC	HEPD80	185.00

Whole House Accessories

Add additional surge suppression or replace existing modules in Whole House products.

Coaxial and telephone modules: US and Canadian UL® Recognized to UL 497A 4th Edition and UL 497B 4th Edition.

AC Module: US and Canadian UL® Listed as Type 1 SPD to UL 1449 3rd Edition. Complies with requirements of NEC® Article 285, CSA 233.1-87, and CSA C22.2 No. 8-M1986 as appropriate.

Table 6.16: Accessories

Description	Cat. No.	\$ Price
4-Line telephone surge suppressor with tool-less IDC terminations	SDSA4P	101.00
Coaxial video surge suppressor	SDSA2V	90.00
Whole House AC Module (HEPD80) replacement kit	HEPD80RK	204.00

QO™, NQ, and Homeline™ Load Center Surge Protective Devices

Square D™ load center surge protective devices are easy to install plug-in units that install as quickly as a standard circuit breaker. The surge suppressors use two pole spaces in a QO™ or Homeline™ load center, or NQ panelboard.

US and Canadian UL® Listed as Type 2 SPD to UL 1449 3rd Edition. Complies with requirements of NEC® Article 285, CSA 233.1-87, and CSA C22.2 No. 8-M1986 as appropriate.

- QO2175SB for QO™ load centers, combination devices, and NQ panelboards
- HOM2175SB for Homeline™ load centers and combination devices
- Plug-on design requires two pole spaces
- LED indicates operational status
- 22.5 kA per phase

Table 6.17: QO™, NQ, and Homeline™ Panelboard Surge Arresters

Description	Cat. No.	\$ Price
QO™ Surgebreaker for QO and NQ	QO2175SB	159.00
Homeline™ Surgebreaker	HOM2175SB	159.00



QO2175SB



HOM2175SB