

Section 6

Surge Protective Devices (SPDs) and Easy
UPS 3SCommercial and Industrial
Applications

Surgelogic™ Type EMA



Surgelogic™ Type IMA



Surgelogic™ Type XDSE



Surgelogic™ NQ SurgeLoc

Residential & Light
Commercial Applications

Surgelogic™ Type SDSA



HEPD80

Square D™
QO/HOM PON
SPDs

Whole House SPDs



Easy UPS 3S

Externally Mounted SPDs	6-2
Overview	6-2
EMA Series SPDs	6-2
Replacement Modules	6-3
Internally Mounted SPDs	6-3
Overview	6-3
Internally Mounted—New Construction/Factory Assembled	6-4
Internally Mounted SPDs—Retrofit/Ready to Install	6-5
Internally Mounted—Retrofit/Ready to Install	6-5
Surgelogic™ SurgeLoc for NQ Panelboards	6-6
OEM/Assembler Kits	6-7
Nipple-Mounted SPDs	6-8
XDSE Surge Protective Devices	6-8
Surgelogic™ Type XDSE Surge Protective Devices	6-8
HWA SPDs	6-9
XR Surge Protective Devices	6-9
SDSA1175 and SDSA 3-Phase SPDs	6-10
Residential SPDs	6-11
Whole House SPDs	6-11
Surgebreaker Plus Whole House Accessories	6-11
Surgebreaker Plus Whole House Accessories	6-11
HEPD Whole Home Surge Protective Devices	6-12
Whole Home Surge Protection	6-12
Plug on Neutral QO™ and Homeline™ Load Center SPDs	6-12
QO™, NQ, and Homeline™ Load Center Surge Protective Devices	6-12
Square D™ Easy UPS 3S	6-13
Square D Easy UPS 3S (UL 208 V)	6-13

Externally Mounted Surge Protective Devices SurgeLogic™ Type EMA

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

US and Canadian UL® Listed to the UL 1449 standard. 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.



EMA Series SPDs

Remote Monitor

- 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 1 to be used in both Type 1 and Type 2 applications
- **Standard.** 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.
- **Remote Monitor.** This option displays the alarm status of the surge protective device up to 1000 feet from the unit.

SurgeLogic™ Type EMA Series SPD

EMA SPD products feature a design based on replaceable 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.

EMA SPD Options:

- **Enhanced Filtering Module.** Sine wave tracking 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.
- **Disconnect 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.

External Modular Options ()	
(D) [1]	Disconnect Switch
(F)	Enhanced Filtering Module (not applicable for Delta, HRG or HLD)
(DF) [1]	Disconnect Switch and Enhanced Filtering Module (not applicable for Delta, HRG or HLD)

Accessory Description	Cat. No.
Remote Monitor	TVS12RMU

Table 6.1: EMA SPDs

Service Voltage	Peak Surge Current Rating per Phase (kA)	NEMA 1 Cat. No.	NEMA 4X Stainless Steel Cat. No.
120/240 V, 1-phase, 3-wire + ground [2]	120	SSP01EMA12()	SSP01EMA12S()
	160	SSP01EMA16()	SSP01EMA16S()
	240	SSP01EMA24()	SSP01EMA24S()
	320	SSP01EMA32()	SSP01EMA32S()
	480	SSP01EMA48()	SSP01EMA48S()
208Y/120 V, 3-phase, 4-wire + ground [3] [4] [2] Wye	120	SSP02EMA12()	SSP02EMA12S()
	160	SSP02EMA16()	SSP02EMA16S()
	240	SSP02EMA24()	SSP02EMA24S()
	320	SSP02EMA32()	SSP02EMA32S()
	480	SSP02EMA48()	SSP02EMA48S()
240/120 V, 3-phase, 4-wire + ground [2] High-leg Delta	120	SSP03EMA12()	SSP03EMA12S()
	160	SSP03EMA16()	SSP03EMA16S()
	240	SSP03EMA24()	SSP03EMA24S()
	320	SSP03EMA32()	—
	480	SSP03EMA48()	—
240 V, 3-phase, 3-wire + ground Delta	100	SSP06EMA10()	SSP06EMA10S()
	120	SSP06EMA12()	SSP06EMA12S()
	160	SSP06EMA16()	SSP06EMA16S()
	200	SSP06EMA20()	SSP06EMA20S()
	240	SSP06EMA24()	SSP06EMA24S()
480Y/277 V, 3-phase, 4-wire + ground [4] [5] [2] Wye	320	SSP06EMA32()	SSP06EMA32S()
	480	SSP06EMA48()	SSP06EMA48S()
480 V, 3-phase, 3-wire + ground [6] Delta	120	SSP04EMA12()	SSP04EMA12S()
	160	SSP04EMA16()	SSP04EMA16S()
	240	SSP04EMA24()	SSP04EMA24S()
	320	SSP04EMA32()	SSP04EMA32S()
	480	SSP04EMA48()	SSP04EMA48S()
480 V, 3-phase, 3-wire + ground [6] Delta	100	SSP05EMA10()	SSP05EMA10S()
	120	SSP05EMA12()	SSP05EMA12S()
	160	SSP05EMA16()	SSP05EMA16S()
	200	SSP05EMA20()	SSP05EMA20S()
	240	SSP05EMA24()	SSP05EMA24S()
600Y/347 V, 3-phase, 4-wire + ground, [2] [4] WYE	320	SSP05EMA32()	SSP05EMA32S()
	480	SSP05EMA48()	SSP05EMA48S()
600 V, 3-phase, 3-wire + ground [7] Delta	120	SSP08EMA12()	SSP08EMA12S()
	160	SSP08EMA16()	SSP08EMA16S()
	240	SSP08EMA24()	SSP08EMA24S()
	320	SSP08EMA32()	SSP08EMA32S()
	480	SSP08EMA48()	SSP08EMA48S()
600 V, 3-phase, 3-wire + ground [7] Delta	100	SSP09EMA10()	SSP09EMA10S()
	120	SSP09EMA12()	SSP09EMA12S()
	160	SSP09EMA16()	SSP09EMA16S()
	180	SSP09EMA18()	SSP09EMA18S()
	240	SSP09EMA24()	SSP09EMA24S()
	320	SSP09EMA32()	SSP09EMA32S()

[1] Not available in stainless steel for 320 and 480 kA.

[2] Do not use on ungrounded systems. Systems must be solidly grounded.

[3] 208Y/120 series also applies to the following voltage 220Y/127.

[4] Can be used on 4-wire or 3-wire grounded wye systems with or without neutral.

[5] 480Y/277 series applies to the following voltages 380Y/220, 400Y/230, and 415Y/240.

[6] 480 V Delta series also applies to the following voltage 480Y/277V HRG.

[7] 600 V Delta series also applies to the following voltage 600Y/347V HRG.



MA Replacement Module

SurgeLogic™ MA Replacement Modules

All module assemblies are US and Canadian UL® Recognized to UL 1449 standards. Complies with requirements of NEC® Article 285 and CSA C22.2 No. 8-M1986 as appropriate.

Table 6.2: MA Replacement Modules

System Voltage	Peak Surge Current Rating (kA)	Catalog Numbers [8]		
		Phase A	Phase B	Phase C
120/240 V, 1-phase, 3-wire + ground	120	MA11MA12	—	MA11MA12
	160	MA11MA16	—	MA11MA16
	240	MA11MA24	—	MA11MA24
208Y/120 V, 3-phase, 4-wire + ground [9] Wye	120	MA11MA12	MA11MA12	MA11MA12
	160	MA11MA16	MA11MA16	MA11MA16
	240	MA11MA24	MA11MA24	MA11MA24
240/120 V, 3-phase, 4-wire + ground [10] High-Leg Delta	120	MA11MA12	MA31MA12	MA11MA12
	160	MA11MA16	MA31MA16	MA11MA16
	240	MA11MA24	MA31MA24	MA11MA24
240 V, 3-phase, 3-wire + ground Delta	100	MA61MA10	MA61MA10	MA61MA10
	120	MA61MA12	MA61MA12	MA61MA12
	160	MA61MA16	MA61MA16	MA61MA16
	200	MA61MA20	MA61MA20	MA61MA20
	240	MA61MA24	MA61MA24	MA61MA24
	240	MA61MA24	MA61MA24	MA61MA24
480Y/277 V, 3-phase, 4-wire + ground [11] Wye	120	MA41MA12	MA41MA12	MA41MA12
	160	MA41MA16	MA41MA16	MA41MA16
	240	MA41MA24	MA41MA24	MA41MA24
480 V, 3-phase, 3-wire + ground [12] Delta	100	MA51MA10	MA51MA10	MA51MA10
	120	MA51MA12	MA51MA12	MA51MA12
	160	MA51MA16	MA51MA16	MA51MA16
	200	MA51MA20	MA51MA20	MA51MA20
	240	MA51MA24	MA51MA24	MA51MA24
600Y/347 V, 3-phase, 4-wire + ground Wye	120	MA81MA12	MA81MA12	MA81MA12
	160	MA81MA16	MA81MA16	MA81MA16
	240	MA81MA24	MA81MA24	MA81MA24
600 V, 3-phase, 3-wire + ground [13] Delta	100	MA91MA10	MA91MA10	MA91MA10
	120	MA91MA12	MA91MA12	MA91MA12
	160	MA91MA16	MA91MA16	MA91MA16
	180	MA91MA18	MA91MA18	MA91MA18

[8] For UL 1449 Type 1 Modules, add suffix (1). Example: MA11MA121

[9] 208Y/120 series also applies to the following voltage 220Y/127.

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

[11] 480Y/277 series applies to the following voltages 380Y/220, 400Y/230, and 415Y/240.

[12] 480 V Delta series also applies to the following voltage 480Y/277V HRG.

[13] 600 V Delta series also applies to the following voltage 600Y/347V HRG.

Refer to Catalog **6671CT9701**

Internally Mounted Surge Protective Devices SurgeLogic™ Type IMA

Internally mounted surge protective devices are installed integrally to systems for service entrance and branch panel surge suppression. Internally mounted SPDs installed next to the supply bus provide maximum performance inside Square D™ systems. Built-in performance is the best way to ensure cost effective power quality and continuous operation (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 and UL 1283 standards. 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 Assembled

Factory installed integral/internal SurgeLogic™ 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 SurgeLogic™ 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



I-Line™ SurgeLogic™
SPD Unit



QMB SurgeLogic™
SPD Unit



Busway SurgeLogic™
SPD Unit



MCC SurgeLogic™
SPD Unit

Internally Mounted—Retrofit/Ready to Install

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

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

Table 6.3: Internally Mounted—Retrofit / Ready To Install

Voltage	Surge Current Rating	I-Line Branch Units [1]		QMB Branch Units [2]	Busway Units	Model 6 MCC Units [3]
		Cat. No.	Cat. No.	Cat. No.	Cat. No. [4]	Cat. No. [4]
120/240 V, 1-phase, 3-wire + ground	120 kA	HL1IMA12C()	HR1IMA12C()	QMB1IMA12	—	—
	160 kA	HL1IMA16C()	HR1IMA16C()	QMB1IMA16	—	—
	240 kA	HL1IMA24C()	HR1IMA24C()	QMB1IMA24	—	—
208Y/120 V, 3-phase, 4-wire + ground [5] Wye [6]	120 kA	HL2IMA12C()	HR2IMA12C	QMB2IMA12	—	MCC2IMA12
	160 kA	HL2IMA16C()	HR2IMA16C()	QMB2IMA16	PIU2IMA16	MCC2IMA16
	240 kA	HL2IMA24C()	HR2IMA24C()	QMB2IMA24	PIU2IMA24	MCC2IMA24
240/120 V, 3-phase, 4-wire + ground High-leg Delta	120 kA	HL3IMA12C()	HR3IMA12C()	QMB3IMA12	—	MCC3IMA12
	160 kA	HL3IMA16C()	HR3IMA16C()	QMB3IMA16	PIU3IMA16	MCC3IMA16
	240 kA	HL3IMA24C()	HR3IMA24C()	QMB3IMA24	PIU3IMA24	MCC3IMA24
240 V, 3-phase, 3-wire + ground, Delta	120 kA	HL6IMA12C()	HR6IMA12C()	—	—	—
	160 kA	HL6IMA16C()	HR6IMA16C()	—	—	—
	240 kA	HL6IMA24C()	HR6IMA24C()	—	—	—
480Y/277 V, 3-phase, 4-wire + ground [5] Wye [7]	120 kA	HL4IMA12C()	HR4IMA12C()	QMB4IMA12	—	MCC4IMA12
	160 kA	HL4IMA16C()	HR4IMA16C()	QMB4IMA16	PIU4IMA16	MCC4IMA16
	240 kA	HL4IMA24C()	HR4IMA24C()	QMB4IMA24	PIU4IMA24	MCC4IMA24
480 V, 3-phase, 3-wire + ground, Delta [8]	120 kA	HL5IMA12C()	HR5IMA12C()	—	—	—
	160 kA	HL5IMA16C()	HR5IMA16C()	—	—	—
	240 kA	HL5IMA24C()	HR5IMA24C()	—	—	—
600Y/347 V, 3-phase, 4-wire + ground [5] Wye	120 kA	—	HR8IMA12C()	QMB8IMA12	—	MCC8IMA12
	160 kA	—	HR8IMA16C()	QMB8IMA16	PIU8IMA16	MCC8IMA16
	240 kA	—	HR8IMA24C()	QMB8IMA24	PIU8IMA24	MCC8IMA24
600V, 3-phase, 3-wire + ground, [9] Delta	120 kA	—	HR9IMA12C()	—	—	—
	160 kA	—	HR9IMA16C()	—	—	—
	180 kA	—	HR9IMA18C()	—	—	—

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

[1] Requires 13.5-inch mounting height.
 [2] Requires 9-inch mounting height.
 [3] Requires 6-inch mounting height.
 [4] PE7 Discount Schedule.
 [5] Can be used on 4-wire or 3-wire grounded wye systems with or without neutral.
 [6] 208Y/120 series also applies to the following voltage 220Y/127.
 [7] 480Y/277 series applies to the following voltages 380Y/220, 400Y/230, and 415Y/240.
 [8] 480 V Delta series also applies to the following voltage: 480Y/277V HRG.
 [9] 600 V Delta series also applies to the following voltage: 600Y/347V HRG.



SurgeLogic™ SurgeLoc

SurgeLogic™ SurgeLoc for NQ Panelboards

SurgeLogic™ SurgeLoc is the industry's first Field Installable Internally Mounted SPD in NQ panelboards - fully installed in approximately 2 minutes. SurgeLogic (TM) SurgeLoc can be ordered as factory assembled in NQ Panelboards or can be ordered from your local Schneider Electric distributor for retrofit opportunities for NQ panelboards.

US and Canadian UL® Recognized to UL 1449 and UL 1283 standards. 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.

- Retrofit into existing NQ Panelboards
- 10 year product warranty
- 10 modes of protection
- 200 kA SCCR
- Audible alarm with enable/disable switch, dry contacts and surge counter standard
- Indicator LEDs; normal (green) and fault condition (red) for each phase

**** FOR SURGELOC PART NUMBERS, PLEASE REFERENCE Table 6.4 Internally Mounted—Retrofit / Ready to Install, page 6-6.**

Table 6.4: Internally Mounted—Retrofit / Ready to Install

Voltage	Surge Current Rating	NQ Panelboard Units—SurgLoc [10]
		Cat. No.
120/240 V, 1-phase, 3-wire + ground	80 kA	SSP01SBA08D
	100 kA	SSP01SBA10D
	120 kA	SSP01SBA12D
	160 kA	SSP01SBA16D
	200 kA	SSP01SBA20D
	240 kA	SSP01SBA24D
208Y/120 V, 3-phase, 4-wire + ground [11] [12] Wye	80 kA	SSP02SBA08D
	100 kA	SSP02SBA10D
	120 kA	SSP02SBA12D
	160 kA	SSP02SBA16D
	200 kA	SSP02SBA20D
	240 kA	SSP02SBA24D
240Y/120 V, 3-phase, 4-wire + ground High-leg Delta	240 kA	SSP03SBA24D [13]

[10] Requires 12 circuit positions (6 adjacent mounting spaces per side).

[11] Can be used on 4-wire or 3-wire grounded neutral system.

[12] 208/120 series also applies to the following voltage 220Y/127.

[13] SSP03SBA24D will be available late 2021.



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 and UL 1283 standards. 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 6.5: OEM/Assembler Kits

Service Voltage	Peak Surge Current Rating per Phase (kA)	Cat. No. [14]
120/240 V, 1-phase, 3-wire + ground	120	TVS11MA120()
	160	TVS11MA160()
	240	TVS11MA240()
208Y/120 V, 3-phase, 4-wire + ground [15] [16] Wye	120	TVS21MA120()
	160	TVS21MA160()
	240	TVS21MA240()
240/120 V, 3-phase, 4-wire + ground High-leg Delta	120	TVS31MA120()
	160	TVS31MA160()
	240	TVS31MA240()
240 V, 3-phase, 3-wire + ground [15] [17] Delta	120	TVS61MA120()
	160	TVS61MA160()
	240	TVS61MA240()
480Y/277 V, 3-phase, 4-wire + ground [15] [17] Wye	120	TVS41MA120()
	160	TVS41MA160()
	240	TVS41MA240()
480 V, 3-phase, 3-wire + ground [18] Delta	120	TVS51MA120()
	160	TVS51MA160()
	240	TVS51MA240()
600Y/347 V, 3-phase, 4-wire + ground [15] Wye	120	TVS81MA120()
	160	TVS81MA160()
	240	TVS81MA240()
600 V, 3-phase, 3-wire + ground [19] Delta	120	TVS91MA120()
	160	TVS91MA160()
	180	TVS91MA180()

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

[14] Note the last character of the catalog number is the letter "O", not a zero.
 [15] Can be used on 4-wire or 3-wire grounded wye systems with or without neutral.
 [16] 208Y/120 series also applies to the following voltage 220Y/127.
 [17] 480Y/277 series applies to the following voltages 380Y/220, 400Y/230, and 415Y/240.
 [18] 480 V Delta series also applies to the following voltage: 480Y/277V HRG.
 [19] 600 V Delta series also applies to the following voltage: 600Y/347V HRG.

New!



XDSE Series

SurgeLogic™ Type XDSE Surge Protective Devices

SurgeLogic™ XDSE surge protective devices feature a compact design that allows surge suppression to be externally installed adjacent to electrical distribution equipment. XDSE systems are designed to provide high-quality surge suppression for a wide variety of commercial, industrial or institutional applications. XDSEs incorporate patented overvoltage technology innovations that provide superior overvoltage withstand capability for systems with unstable power, without compromising transient clamping performance.

US and Canadian UL Listed to the UL 1449 standard. Complies with requirements of NEC Article 285 and CSA 22.2 269.1 and 269.2 as appropriate. Complies with UL 96A 12th Edition Master Label requirements for Lightning Protection Systems

- LED light indicates operation status
- Short circuit current rating up to 200 kA
- Suitable for indoor and outdoor applications (NEMA Type 4X rated)
- Convenient lug connection inside enclosure
- -50db EMI/RFI filtering
- Audible alarm
- Dry contacts
- Optional flush mount kit: XDSEMKF

Table 6.6: XDSE Surge Protective Devices

Voltage	Surge Current per Phase	Modes of Protection	Configuration	Model Number	MCOV	I _n	L-N	L-G	L-L	N-G
120/240V	100	6	1Ø, 3-wire + ground	SSP01XDSE10A()	150V	20 kA	700V	700V	600V	1000V
208Y/120V [1]	100	10	3Ø, WYE, 4-wire + ground	SSP02XDSE10A()	150V	20 kA	700V	700V	600V	1000V
240/120 HLD	100	10	3Ø, HLD [2], 4-wire + ground	SSP03XDSE10A()	150/320V	20 kA	700/1200V	700V	600V	1000/2000V
480Y/277V [3]	100	10	3Ø, Wye, 4-wire + ground	SSP04XDSE10A()	320V	20 kA	1200V	1200V	1200V	2000V
480V Delta [4]	100	6	3Ø, Delta, 3-wire + ground	SSP05XDSE10A()	552V	20 kA	N/A	1800V	N/A	2000V
240V Delta	100	6	3Ø, Delta, 3-wire + ground	SSP06XDSE10A()	300/320V	20 kA	N/A	320 V	300 V	N/A
600Y/347V	100	10	3Ø, WYE, 4-wire + ground	SSP08XDSE10A()	420V	20 kA	1500V	1500V	1500V	2500V
600V Delta [5]	100	6	1Ø, 3-wire + ground	SSP09XDSE10A()	690V	20 kA	N/A	2500V	2500V	N/A
120/240 V	150	6	1Ø, 3-wire + ground	SSP01XDSE15A()	150V	20 kA	700V	700V	600V	1000V
208Y/120V [1]	150	10	3Ø, WYE, 4-wire + ground	SSP02XDSE15A()	150V	20 kA	700V	700V	600V	1000V
120/240V HLD	150	10	3Ø, HLD [2], 4-wire + ground	SSP03XDSE15A()	150/320V	20 kA	700/1200V	700/1200V	600V	1000/2000V
480Y/277V [3]	150	10	3Ø, WYE, 4-wire + ground	SSP04XDSE15A()	320V	20 kA	1200V	1200V	1200V	2000V
480V Delta [4]	150	6	3Ø, Delta, 3-wire + ground	SSP05XDSE15A()	552V	20 kA	N/A	1800V	N/A	2000V
240V Delta	150	6	3Ø, Delta, 3-wire + ground	SSP06XDSE15A()	300/320V	20 kA	N/A	320V	300V	N/A
600Y/347V	150	10	3Ø, WYE, 4-wire + ground	SSP08XDSE15A()	420V	20 kA	1500V	1500V	1500V	2500V
120/240V	200	6	1Ø, 3-wire + ground	SSP01XDSE20A()	150V	20 kA	700V	700V	600V	1000V
208Y/120V [1]	200	10	3Ø, WYE, 4-wire + ground	SSP02XDSE20A()	150V	20 kA	700V	700V	600V	1000V
240/120 HLD	200	10	3Ø, HLD [2], 4-wire + ground	SSP03XDSE20A()	150/320V	20 kA	700/1200V	700V	600V	1000/2000V
480Y/277V [3]	200	10	3Ø, Wye, 4-wire + ground	SSP04XDSE20A()	320 V	20 kA	1200V	1200 V	1200V	2000 V
480V Delta [4]	200	6	3Ø, Delta, 3-wire + ground	SSP05XDSE20A()	552V	20 kA	N/A	1800V	N/A	2000V
240V Delta	200	6	3Ø, Delta, 3-wire + ground	SSP06XDSE20A()	300/320V	20 kA	N/A	320V	300V	N/A
600Y/347V	200	10	3Ø, WYE, 4-wire + ground	SSP08XDSE20A()	420V	20 kA	1500V	1500V	1500V	2500V

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

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

[2] HLD= High-leg delta.

[3] 480Y/277 series also applies to the following voltages 380Y/220, 400Y/230, and 415Y/240.

[4] 480V Delta series also applies to the following voltage 480Y/277V HRG.

[5] 600 V Delta series also applies to the following voltages 600Y/347V HRG.



HWA Series

SurgeLogic™ 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 and UL 1283 standards. 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 6.7: HWA Surge Protective Devices

Service Voltage	Peak Surge Current Rating per Phase (kA)	NEMA 4X Cat. No.
120/240 V, 1-phase, 3-wire + ground [6]	50	TVS1HWA50X
	80	TVS1HWA80X
	100	TVS1HWA10X
208Y/120 V, 3-phase, 4-wire + ground [7] [8] [9]	50	TVS2HWA50X
	80	TVS2HWA80X
	100	TVS2HWA10X
240/120 V, 3-phase, 4-wire + ground [6] High-leg Delta	50	TVS3HWA50X
	80	TVS3HWA80X
	100	TVS3HWA10X
240 V, 3-phase, 3-wire + ground Delta	50	TVS6HWA50X
	80	TVS6HWA80X
	100	TVS6HWA10X
480Y/277 V, 3-phase, 4-wire + ground [7] [9] [6]	50	TVS4HWA50X
	80	TVS4HWA80X
	100	TVS4HWA10X
480 V, 3-phase, 3-wire + ground Delta	50	TVS5HWA50X
	80	TVS5HWA80X
	100	TVS5HWA10X
600Y/347 V, 3-phase, 4-wire + ground [6]	50	TVS8HWA50X
	80	TVS8HWA80X
	100	TVS8HWA10X
600 V, 3-phase, 3-wire + ground Delta	50	TVS9HWA50X
	80	TVS9HWA80X
	100	TVS9HWA10X

SurgeLogic™ XR Surge Protective Devices

The SurgeLogic™ Type XR surge protective device 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 and commercial applications for single-phase power systems.

US and Canadian UL® Listed as Type 1 SPD to the UL 1449 standard. 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 6.8: XR Nipple-Mounted Surge Protective Devices

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

[6] Do not use on ungrounded systems. Systems must be solidly grounded.

[7] Can be used on 4-wire or 3-wire grounded wye systems with or without neutral.

[8] 208Y/120 series also applies to the following voltage 220Y/127.

[9] 480Y/277 series applies to the following voltages 380Y/220, 400Y/230, and 415Y/240.



SDSA1175



SDSA 3-Phase

SDSA1175 and SDSA 3-Phase Surge Protective Devices

SurgeLogicTM SDSA1175 surge protective devices 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 and commercial 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.

SurgeLogicTM SDSA 3-Phase surge protective devices are designed and listed for indoor or outdoor installation and surge suppression for three-phase electrical services up to 600 Vac. The SDSA 3-Phase series is used extensively in service entrance panels to provide an efficient and economical means of surge suppression and also ideal for point of use applications for that added level of protection.

US and Canadian UL[®] Listed as Type 1 SPD to the UL 1449 standard. 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 (SDSA1175), 200 kA (SDSA 3-Phase)
- Suitable for indoor and outdoor applications (NEMA Type 4X rated)
- Convenient back-nipple mounting
- Optional mounting bracket QOSAMK (for SDSA1175/SDSA1175T)

Table 6.9: SDSA1175 and SDSA 3-Phase Surge Protective Devices

System Voltage	Peak Surge Current Rating per Phase (kA)	Cat. No.
SDSA1175		
120/240 V, 1-phase, 3-wire	36	SDSA1175
120 V, 1-phase, 2-wire	36	SDSA1175T
SDSA 3-Phase		
208Y/120 V, 3-phase, 4-wire [10] [11]	40	SDSA2040
240 V Delta, 3-phase, 3-wire [12]	40	SDSA2040D
480Y/277 V, 3-phase, 4-wire [13] [10]	40	SDSA4040
480 V Delta, 3-phase, 3-wire	40	SDSA4040D
600Y/347 V, 3-phase, 4-wire [10]	40	SDSA3650
600 V Delta, 3-phase, 3-wire	40	SDSA3650D

[10] Do not use on ungrounded systems. Systems must be solidly grounded.
[11] Applicable voltages: 220Y/127V, 208Y/120V.
[12] Applicable voltages: 240V Delta, 240/120V High-Leg Delta.
[13] Applicable voltages: 480Y/277V, 415Y/240V, 400Y/230V, 380Y/220V.



SDSB80111

Surgebreaker Plus Whole House Surge Protective Device

The Surgebreaker Plus Whole House device is 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. This Whole House system incorporates 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 the UL 1449 standard. 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 one RJ45 cable up to four lines.
- Coaxial surge suppression module supports one line of video/data
- Network suppression module supports one RJ45 modem/fax/DSL

Table 6.10: Whole House Surge Protective Devices

Description	Included Modules	Cat. No.
Whole House NEMA 1	AC, Telephone, Coax, Network	SDSB80111

Table 6.11: SDSB80111 Replacement Modules

Description	Cat. No.
Telephone Suppression Module	PTL2R
Video Suppression Module	PVR
Network Suppression Module	PNETR6
Home Electronics Protective Device	HEPD80

** To purchase Telephone, Video or Network Replacement Modules - go online to:
<http://www.apc.com/products/family/index.cfm?id=219>

Surgebreaker Plus Whole House Accessories

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

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



HEPD50



HEPD80



HEPD58MKF

Whole Home Surge Protection

HEPD Whole House devices are designed to deliver superior AC surge protection for the entire AC power system in a home. HEPDs are compact in size and are designed to protect AC wires in the home from surges that could affect home electronics and appliances not connected to surge strips.

cULus Listed to the latest UL 1449 standard, UL Type 1 SPD, CSA C22.2 No. *-M1986, C233.1-87.

- 120/240 Vac
- Max surge current ratings available: 50 and 80 kA
- NEMA 4X rate for indoor or outdoor applications
- LED status indicators
- Compatible with all brands of load centers
- Flush Mount Kit sold separately - see table below
- HEPD50: 3 year/\$50,000 connected equipment warranty
- HEPD80: 5 year/\$75,000 connected equipment warranty

Table 6.12: HEPD Whole House Surge Protective Devices

Description	Surge Current Rating	Cat. No.
50kA Home Electronic Protective Device	50 kA	HEPD50
80kA Home Electronic Protective Device	80 kA	HEPD80
Flush Mount Kit for HEPD50/HEPD80		HEPD58MKF

Plug-on Neutral QO™ and Homeline™ Load Center Surge Protective Devices

The industry's first exclusive Plug on Neutral (PoN) Surge Protective Device (SPD). Square D™ load center PoN SPDs are a simple and quick installation. It's as easy as snap, click, done! PoN SPDs are easier to install than a standard circuit breaker. No wires are needed for installation. The PoN SPD simply plugs on to the bus and neutral bar. The surge suppressors use two-pole spaces in a QO™ or Homeline™ load center.

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

- Industry First: No wires or tools required for installation
- Installation Flexibility: Works on Plug-on Neutral design QO or HOM loadcenters using two-pole spaces
- Whole House Protection: 50 kA surge current capacity per phase
- LED indicates operational status
- Peace of mind: 5 year/ \$50,000 connected equipment warranty

Table 6.13: QO™, NQ, and Homeline™ Load Center Surge Protective Device

Description	Cat. No.
Plug on Neutral QO™ Surgebreaker	QO250PSPD
Plug on Neutral Homeline™ Surgebreaker	HOM250PSPD

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 the UL 1449 standard. 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
- Requires two pole spaces
- LED indicates operational status
- 22.5 kA per phase

Table 6.14: QO™, NQ, and Homeline™ Load Center Surge Protective Devices

Description	Cat. No.
QO™ Surgebreaker for QO and NQ	QO2175SB
Homeline™ Surgebreaker	HOM2175SB



QO250PSPD



HOM250PSPD



QO2175SB



HOM2175SB



UPS



Battery String



Modular Battery Cabinet

Square D™ Easy UPS 3S (UL 208 V)

The **Square D Easy UPS 3S** is an easy-to-install, easy-to-use and easy-to-service **10-40 kVA** 3-phase 208 V UPS ideal for non-IT applications. Easy UPS 3S combines power stability with robust electrical specifications and long-lasting performance to ensure your business continuity.

- **US listed to the UL 1778 standard**
- **Complies with the requirements of CSA C22.2 No. 107.3-14 + GI1**
- **IP20 rated**
- **Optimize efficiency**
 - Double Conversion Mode (up to 94%)
 - ECO Mode (98% efficiency)
- **1.0 power factor kVA = kW**
- **Parallel up to 4 units for 10-30 kVA. Parallel 3 units for 40 kVA.**
- **Robustness against harsh environment**
 - Conformal coating on PCBA
 - Replaceable dust filter
 - 60s @ 150% overload, 10 min. @ 125% overload.
 - Operating temperature: 32 - 104°F
- **Flexibility for wider application**
 - Modular battery cabinet for longer runtime
 - SNMP / Modbus TCP/IP / dry contact for connectivity
 - 5 years lifespan battery module
- **Connectivity**
 - Startup service included with every UPS
 - EcoStruxure™ ready
 - Network management card to remotely monitor and control

Please Note: Batteries are not included with the UPS. Use the selection tables below to determine number of batteries.

Using the selection table, choose what percentage of the total kVA will be backed up. Then, choose the runtime.

Example: A 20 kVA UPS backing up 75% of its kVA for a runtime of 1 hour will require (1) **E3SUPS20KFBS**, (1) **E3SXR7**, and (12) **E3SFBTH2**. Then, choose accessories if needed.

The maximum number of battery strings that can be installed in a modular battery cabinet (E3SXR7) is 12.



Square D Easy UPS 3S is configurable in SE Advantage. Access via MySE homepage.
<https://www.myseus.schneider-electric.com/mySchneider/#!/login>

Table 6.15: Selection Table for 10 kVA UPS

Part Number	Measurement	% Load			Battery Strings E3SFBTH2
		50%	75%	100%	
E3SUPS10KFBS + (#) of battery strings needed E3SFBTH2	KW	5	7.5	10	—
	kVA	5	7.5	10	—
	Runtime (Minutes)	10.5	5.8	—	1
		26.5	15.5	10.5	2
E3SUPS10KFBS + 1 modular battery cabinet E3SXR7 + (#) of battery strings needed E3SFBTH2	Runtime (Minutes)	44.5	26.5	18	3
		—	—	—	—
	Runtime (Minutes)	5	7.5	10	—
		5	7.5	10	—
		63.5	38.5	26.5	4
		83.5	51	35	5
		100	63.5	44	6
		125	77	53.5	7
		145	90.5	63	8
		170	100	73	9
		190	115	83	10
		215	130	93	11
		240	145	100	12
		265	160	110	13
		285	175	120	14
		300	190	135	15

Table 6.16: Selection Table for 15 kVA UPS

Part Number	Measurement	% Load			Battery Strings E3SFBTH2
		50%	75%	100%	
E3SUPS15KFBS + (#) of battery strings needed E3SFBTH2	KW	7.5	11.25	15	—
	kVA	7.5	11.25	15	—
	Runtime (Minutes)	5.8	—	—	1
		15.5	8.9	5.7	2
		26.5	15.5	10.5	3
E3SUPS15KFBS + 1 modular battery cabinet E3SXR7 + (#) of battery strings needed E3SFBTH2	KW	7.5	11.25	15	—
	kVA	7.5	11.25	15	—
	Runtime (Minutes)	38.5	23	15.5	4
		51	30.5	21	5
		63.5	38.5	26.5	6
		77	46.5	32.5	7
		90.5	55	38	8
		100	63.5	44.5	9
		115	72	50.5	10
		130	81	57	11
		145	90	63.5	12
		160	99.5	70	13
		175	105	76.5	14
		190	115	83	15
	KW	7.5	11.25	15	—
	kVA	7.5	11.25	15	—
E3SUPS15KFBS + 2 of E3SXR7 + (#) of battery strings needed E3SFBTH2	Runtime (Minutes)	205	125	90	16
		225	135	97	17
		240	145	100	18
		255	155	110	19
		270	165	115	20
		285	175	125	21
		300	185	130	22
		300	195	135	23
		300	205	145	24
		300	215	150	25
		300	225	160	26
		300	235	165	27

Table 6.17: Selection Table for 20 kVA UPS

Part Number	Measurement	% Load			Battery Strings E3SFBTH2
		50%	75%	100%	
E3SUPS20KFBS + (#) of battery strings needed E3SFBTH2	KW	10	15	20	—
	kVA	10	15	20	—
	Runtime (Minutes)	10.5	5.8	—	1
		18.5	10.5	6.9	2
		—	—	—	3
E3SUPS20KFBS + 1 of E3SXR7 + (#) of battery strings needed E3SFBTH2	KW	10	15	20	—
	kVA	10	15	20	—
	Runtime (Minutes)	27	15.5	10.5	4
		36	21	14	5
		45	26.5	18	6
		54.5	32.5	22.5	7
		64.5	38.5	26.5	8
		74.5	44.5	31	9
		84.5	51	35.5	10
		95	57.5	40	11
		105	63.5	44.5	12
		115	70.5	49	13
		125	77	53.5	14
		135	83.5	58.5	15
	KW	10	15	20	—
	kVA	10	15	20	—
E3SUPS20KFBS + 2 of E3SXR7 + (#) of battery strings needed E3SFBTH2	Runtime (Minutes)	145	90.5	63.5	16
		160	97.5	68.5	17
		170	100	73	18
		180	110	78	19
		195	115	83.5	20
		205	125	88.5	21
		215	130	93.5	22
		230	140	98.5	23
		240	145	100	24
		255	155	105	25
		265	160	110	26
		280	170	120	27

Table 6.18: Selection Table for 30 kVA UPS

Part Number	Measure- ment	% Load			Battery Strings E3SFBTH2		
E3SUPS30KFBS + (#) of battery strings needed E3SFBTH2	KW	15	22.5	30	—		
	kVA	15	22.5	30	—		
	Runtime (Minutes)	—	—	—	1		
		5.9	—	—	2		
		10.5	5.9	—	3		
		16	9.1	5.8	4		
		21.5	12.5	8.2	5		
		27.5	16	10.5	6		
E3SUPS30KFBS + 1 of E3SXR7 + (#) of E3SFBTH2 below	KW	15	22.5	30	—		
	kVA	15	22.5	30	—		
	Runtime (Minutes)	33.5	19.5	13	7		
		39.5	23.5	16	8		
		45.5	27	18.5	9		
		52	31	21	10		
		58.5	35	24	11		
		65	39	27	12		
		72	43	30	13		
		79	47.5	33	14		
		85.5	51.5	36	15		
		92.5	56	39	16		
		100	60.5	42	17		
		105	64.5	45	18		
		E3SUPS30KFBS + 2 of E3SXR7 + (#) of E3SFBTH2 below	KW	15	22.5	30	—
			kVA	15	22.5	30	—
			Runtime (Minutes)	110	69	48	19
				120	73.5	51.5	20
125	78			54.5	21		
135	82.5			57.5	22		
140	87.5			61	23		
150	92			64	24		
155	96.5			67.5	25		
165	100			71	26		
170	105			74	27		
180	110			77.5	28		
190	115			81	29		
195	120			84.5	30		
E3SUPS30KFBS + 3 of E3SXR7 + (#) of E3SFBTH2 below	KW	15	22.5	30	—		
	kVA	15	22.5	30	—		
	Runtime (Minutes)	205	125	88	31		
		210	130	91.5	32		
		220	135	95	33		
		230	140	98.5	34		
		235	145	100	35		
		245	150	105	36		
		250	155	105	37		
		260	160	110	38		
		270	165	115	39		
		275	170	115	40		
		285	175	120	41		
		295	180	125	42		

Table 6.19: Selection Table for 40 kVA UPS

Part Number	Measurement	% Load			Battery Strings E3SFBTH2	
		50%	75%	100%		
E3SUPS40KFBS + (#) of battery strings needed E3SFBTH2	KW	20	30	40	—	
	kVA	20	30	40	—	
	Runtime (Minutes)	—	—	—	1	
		—	—	—	2	
		7.2	—	—	3	
		11	5.9	—	4	
		15	8.4	5.3	5	
19	10.5	7.1	6			
E3SUPS40KFBS + 1 of E3SXR7 + (#) of battery strings needed E3SFBTH2	KW	20	30	40	—	
	kVA	20	30	40	—	
	Runtime (Minutes)	23	13.5	8.9	7	
		27.5	16	10.5	8	
		32	19	12.5	9	
		36.5	21.5	14.5	10	
		41	24.5	16.5	11	
		46	27.5	18.5	12	
		51	30.5	20.5	13	
		55.5	33.5	23	14	
		60.5	36.5	25	15	
		65.5	39.5	27	16	
		70.5	42.5	29.5	17	
		76	45.5	31.5	18	
		KW	20	30	40	—
		kVA	20	30	40	—
		Runtime (Minutes)	81	49	34	19
86	52		36	20		
91.5	55.5		38.5	21		
97	58.5		40.5	22		
100	62		43	23		
105	65		45.5	24		
110	68.5		48	25		
115	72		50	26		
120	75.5		52.5	27		
125	79		55	28		
135	82		57.5	29		
140	85.5		60	30		

Table 6.19 Selection Table for 40 kVA UPS (cont'd.)

Part Number	Measurement	% Load			Battery Strings E3SFBTH2
		50%	75%	100%	
E3SUPS40KFBS + 3 of E3SXR7 + (#) of battery strings needed E3SFBTH2	KW	20	30	40	—
	kVA	20	30	40	—
	Runtime (Minutes)	145	89	62.5	31
		150	92.5	65	32
		155	96	67.5	33
		160	100	70	34
		165	100	72.5	35
		175	105	75	36
		180	110	77.5	37
		185	110	80	38
		190	115	82.5	39
		195	120	85	40
		205	125	88	41
		210	125	90.5	42
	KW	20	30	40	—
	kVA	20	30	40	—
	Runtime (Minutes)	215	130	93	43
		220	135	95.5	44
		225	140	98.5	45
		235	140	100	46
		240	145	100	47
		245	150	105	48
		250	155	105	49
		260	155	110	50
		265	160	110	51
		270	165	115	52
		275	170	120	53
		285	170	120	54

Table 6.20: Accessories

Part Number	Description
E3SBPSU10K20F	Easy UPS 3S Maint Bypass Panel, 10-20 kVA 208 V
E3SBPSU30K40F	Easy UPS 3S Maint Bypass Panel, 30-40 kVA 208 V
E3SBPAR10K40F	Easy UPS Parallel MBP for 3 UPS, 10-40 kVA 208 V
E3SXR7	Easy UPS 3S Modular Battery Cabinet 208 V
E3SFBTH2	Easy UPS 3S High Capacity Battery String 208 V
E3SOPT010	Easy UPS 3S Dry Contact Card
E3SOPT014	Easy UPS 3S Cold Start Kit 15-40 kVA 208 V
E3SOPT015	Easy UPS 3S Kirk Key Kit
E3SOPT001	Easy UPS 3S Series Network Card
E3SOPT002	Easy UPS 3S Parallel Kit



Maint Bypass Panel



Modular Battery Cabinet



Battery String



Dry Contact Card



Cold Start Kit



Kirk Key Kit


Series Network
Card


Parallel Kit