Model: ST-SMLx

300 kA Per Phase*
ANSI/UL 1449-2006 Third Edition

A = Type 2 SPD, I_n 10 kA
B = Type 2 SPD, I_n 20 kA
C = Type 1 SPD, I_n 10 kA
D = Type 1 SPD, I_n 20 kA

* Based on 3 Phase Wye, 4 Wire and Ground, I_n = Nominal Discharge Current per ANSI/UL 1449-2006

Key Features

- **Discrete *"All Mode"* Circuitry: Directly Connected Protection Elements in *"All Modes"* (10 modes for 3 phase Wye circuits) as recommended by IEEE Std. 1100-2005**
- **Industry Leading Measured Limiting Voltage (let-through) Performance**
- **Local & Remote Diagnostics**
- **Independent Verification of Performance and Safety**
- **No moving parts or springs - No mechanical or electro-mechanical thermal/over-current protection**
- **Component-Level, Thermal Fusing**
- **Patented Internal, Circuit Board Mounted, Over-Current Fusing**
- **25 Year Unlimited Free Replacement Warranty**

Advantage® Series

SineTamer

"we ARE the standard!"

Application: The ST-SMLx series was developed to answer a broad variety of demands from our customers. This device is robust enough to handle the punishment of service entrance applications while providing protection from transients that are generated inside the facility. The constant bombardment of this combination of transients can damage valuable equipment and waste budget dollars.

ANSI/IEEE C62.41.1 & C62.41.2-2002 environments: Suitable for Categories: A, B & C (Most Severe Electrical Environments)

IEC Environments: Suitable for use in IEC 61643-11 environments

Circuit Topology: Parallel configured **Voltage Responsive Circuitry c**ircuit design incorporating component-level, thermal fusing and circuit board mounted, ***Patented*** internal over-current fusing methodology with discrete ***"All Mode"*** protection (10 modes for 3 phase Wye units). All protection circuits are encapsulated in our high-dielectric compound to promote long component life and protection from the weather and vibration.

Protection Modes: Industry-best practice of dedicated protection components for all operational modes of the electrical system. **Discrete L-N, L-L (Normal Mode) and L-G, N-G (Common Mode)** Example: Directly Connected Protection Elements in All 10 modes for a 3 phase, 4 wire, Wye system, (i.e. 3 L-N modes, 3 L-L modes, 3 L-G modes and 1 N-G mode).

Input Power: 50-400 Hz (60 Hz nominal)

Temperature Rating: Up to 80℃

Insertion Loss Data: (L-N)

Frequency:	280 kHz	1 MHz	Max Attenuation & Freq.
Attenuation:	3 dB	17 dB	40 dB @ 135 kHz

Standard Enclosure: NEMA 1 Rated Standard Enclosure
(Other enclosure options available see pg. 2)

Nominal Discharge Current (I_n) Rating: 20 kA (ST-SMLB, ST-SMLD) 10 kA (ST-SMLC, ST-SMLA)

Diagnostics: Green LED's, one per phase, normally on. A wide range of optional diagnostics is available (see page two for details).

Circuit Interrupt: Internal component-level, thermal fusing and patented circuit board mounted, over-current fusing. No external over-current protection required.

Short Circuit Current Rating: 200 kAIC

Product Qualifications:
Listed to ANSI/UL 1449-2006 3rd Edition by UL (E340498), CSA (MC#241804); UL1283 and CE Compliant (*Type 2 SPDs only)*
ISO 9001-2008 Certified Manufacturing Facility
2004/2006 TVSS Customer Value Enhancement Award from Frost & Sullivan

Voltage Code	ANSI/UL 1449-2006 (Third Edition) Voltage Protection Rating (VPR)						
	L-N	HL-N	L-G	HL-G	N-G	L-L	HL-L
1S1	500	-	500	-	500	1000	-
3Y1	500	-	500	-	500	1000	-
3D1	500	1000	500	1000	500	1000	1000
3Y2	1000	-	1000	-	1200	1800	-
3N2	-	-	1000	-	-	1000	-
3N4	-	-	1800	-	-	1800	-

Made in USA

ISO 9001 MANUFACTURER ISO 9001:2008

2004 2006 FROST & SULLIVAN Transient Voltage Surge Suppressors Customer Value Enhancement Award

ST-SMLx

ST-SMLx

Voltage Code*	Circuit Type	Peak Surge Current	MCOV	ANSI/IEEE C62.41.1™-2002, C62.41.2™-2002, C62.45™-2002, and C62.62™-2010 Measured Limiting Voltages (tested with 6 inches of lead length external to the enclosure per Clauses 6.1.1 of C62.62™-2010 and 37.4.4 of ANSI/UL 1449-2006)		
				Test Mode	Cat A 30 Ω 100 kHz Ring Wave 6 kV 200 A @ 90° Phase Angle	Category C (High) 10 kA 8/20 Current Driven Test†
1S1	120/240 V 1Ø (Split) (3 wire + ground)	100 kA L-N 100 kA L-L 100 kA L-G 100 kA N-G 600 kA Total	150 V 300 V 150 V 150 V	L-N L-L L-G N-G	289 V 436 V 296 V 570 V	1,011 V 1,291 V 991 V 1,431 V
3Y1	120/208 V 3Ø Wye (4 wire + ground)	100 kA L-N 100 kA L-L 100 kA L-G 100 kA N-G 1,000 kA Total	150 V 300 V 150 V 150 V	L-N L-L L-G N-G	289 V 436 V 296 V 570 V	1,068 V 1,381 V 1,048 V 1,431 V
3D1	120/240 V 3Ø High-Leg Delta (4 wire + ground)	100 kA L-N 100 kA HL-N 100 kA L-L 100 kA L-G 100 kA HL-G 100 kA N-G 1,000 kA Total	150 V 320 V 300 V 150 V 320 V 150 V	L-N HL-N L-L L-G HL-G N-G	289 V 410 V 436 V 296 V 420 V 570 V	1,091 V 1,411 V 1,381 V 1,076 V 1,371 V 1,431 V
3Y2	277/480 V 3Ø Wye (4 wire + ground)	100 kA L-N 100 kA L-L 100 kA L-G 100 kA N-G 1,000 kA Total	320 V 550 V 320 V 320 V	L-N L-L L-G N-G	410 V 686 V 420 V 806 V	1,334 V 1,981 V 1,304 V 1,721 V
3N2	240 V 3Ø Delta (NN) (3 wire + ground)	100 kA L-L 100 kA L-G 600 kA Total	320 V 320 V	L-L L-G	420 V	1,381 V 1,304 V
3N4	480 V 3Ø Delta (NN) (3 wire + ground)	100 kA L-L 100 kA L-G 600 kA Total	550 V 550 V	L-L L-G	686 V	1,981 V 2,144 V

Measured Limiting Voltage (MLV) Test Parameters: Positive polarity, Category A: Line power applied, Category C: No line power applied, Voltages are peak (±10%). Measured Limiting Voltages are measured from the insertion point on the sine wave to the peak of the surge for powered tests. Each phase is the average of the modes within that mode of protection. In order to duplicate the results, the specified mode of protection must be tested in all modes (except N-G) and averaged together. *(*Individual mode or shot results may vary by more than 10%. *Scope Settings: Time Base = 10 microseconds per division, Sampling Rate = 2.5 Gigasamples/sec, Bandwidth = 400 MHz (200 MHz for Cat C), Probes: Tektronix P5100/P6015A. These settings help to assure MLV results are accurate).* ***All tests performed with 6" lead length (external to the enclosure), simulating actual installed performance.*** The MLVs reported above are certified by Third-Party, Independent Testing. Individual test reports are available upon request.

†Category C High, 10 kA is equivalent to the MLV recorded during the Nominal Discharge Current (I_n) Test from C62.62™-2010 and ANSI/UL 1449-2006.

*Other voltage configurations may be available. Contact your sales representative for additional assistance

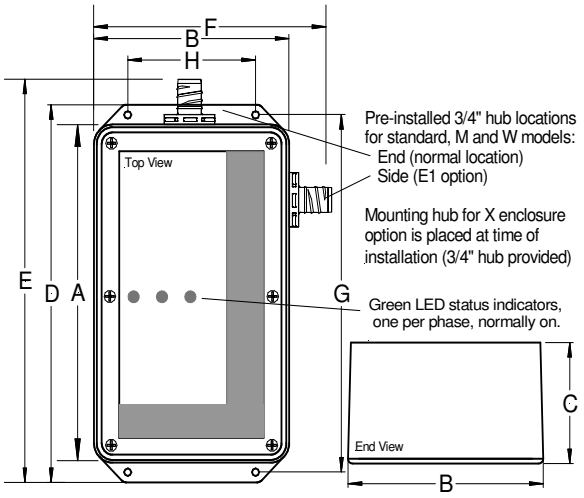
Model Number Example: ST-SMLC3Y2D3

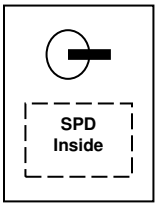
Base Model:	SPD Type and Nominal Discharge Current (I_n) Rating:		Voltage Code:	Options:
ST-SML	A = Type 2 SPD, I_n 10 kA B = Type 2 SPD, I_n 20 kA	C = Type 1 SPD, I_n 10 kA D = Type 1 SPD, I_n 20 kA	See Voltage Codes 3Y2	See Option codes D3

AC = Internal Audible Alarm w/ test button, mute switch and red LED
C = Form C dry relay contacts
C1 = Form C dry relay contacts with wires attached.
D1 *(CSA)* = Integral, non-fused disconnect switch (TVSS unit mounts inside)
D3 *(CSA)* = Same as ***D1***, except no external handle
E1 = Hub on side of enclosure
LP = Remote LED indicators in individual NEMA 4X housings
M = NEMA 12 Steel Enclosure
P = Flush Mount Plate
R2 = Remote lights on separate circuit board in separate enclosure
S = Surge counter w/ reset button
W = NEMA 4 Steel Enclosure
X = NEMA 4X Composite Fiberglass Enclosure (Box-in-box)
X3 = NEMA 4X Composite Enclosure
XS = NEMA 4X Stainless Steel Enclosure

External Accessories: EACS = Externally mounted diagnostic module, combines **AC**, **C**, and **S** options
(Also available: **EAC**, **EC**, **ECS**, and **ES**) *Other options may be available upon request.*

	Enclosure Dimensions				
Inches (mm)	Standard Model	Enclosure Options			
		M	W	X	X3
A	8.25 (210)	10.00 (254)	10.00 (254)	***12.00 (305)***	8.74 (222)
B	5.00 (127)	8.00 (204)	8.00 (204)	***10.50 (267)***	10.50 (267)
C	3.00 (77)	4.00 (102)	4.00 (102)	***6.00 (153)***	3.30 (84)
D	9.37 (238)	11.50 (293)	11.50 (293)	12.50 (318)	10.23 (260)
E	9.48 (242)	12.00 (305)	12.00 (305)	13.23 (337)	13.23 (337)
F	6.23 (159)	9.00 (229)	9.00 (229)	11.73 (299)	11.73 (299)
G	8.87 (226)	10.75 (274)	10.75 (274)	12.00 (305)	9.24 (235)
H	3.37 (86)	6.00 (153)	6.00 (153)	8.00 (204)	3.87 (98)
Type	**NEMA 1 ABS**	**NEMA 12 Steel**	**NEMA 4 Steel**	**NEMA 4X Composite**	**NEMA 4X Polycarbonate**
lbs (kg)	5 (2.27)	14 (6.36)	14 (6.36)	11 (4.99)	7 (3.18)





Integral Disconnect D1, D3 option configuration (Enclosure 12x10x6) (CSA)

Rev Date: 05/20/2014

Circuit Connection: #10 AWG wire (pre-installed)

Flush mount trim plate available for standard and "M" option models.

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