

POWERTRIP®

TRANSIENT VOLTAGE SURGE SUPPRESSOR

Model PT-LSEA

240 kA Per Phase
Non Tracking Model

The PT-LSEA Series TVSS Device is designed for AC Power protection for Commercial services, in particular, commercial applications with a high level of computer controlled equipment such as office buildings, schools, banks, and other businesses that depend on reliable operations of their computer systems and networks for their day to day operations. The PT-LSEA is best used for installation to commercial service entrances, sub-panels and critical load panels supplying power to dedicated equipment such as elevators, refrigeration units, etc.

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: Optimal Response Circuitry™ circuit design incorporating component-level, thermal fusing and Patent Pending internal, circuit board mounted, over-current fusing; and discrete "All Mode" protection (10 modes for 3 phase Wye units). All protection circuits are encapsulated in our high dielectric compound to assure long component life and complete protection from the weather and vibration.

Protection Modes: Industry-best practice of true all mode 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°C

Response Time: ≤ 1 ns

Standard Enclosure: NEMA 4 ABS Composite - UL94-5VA (gasket kit P/N: GA001)

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

Circuit Interrupt: Internal component-level, thermal fusing and patent pending, circuit board mounted, over-current fusing.

UL Short Circuit Current Rating: 200 kAIC
(UL's Highest Rating)

Product Qualifications: UL Lightning Protection System Certified Component Secondary Surge Arrestor (Q option) UL1449 2nd Edition, UL1283, cUL, and CE Compliant ISO 9001 Certified Manufacturing Facility.

Warranty: 25 Years Unlimited Free Replacement

KEY FEATURES

- Discrete "All Mode" Circuitry: Directly Connected Protection Elements in "All Modes" (10 modes for 3 phase, 4 wire Wye circuits) as recommend by NEMA LS-1 and IEEE Std. 1100-1999
- Industry Leading Measured Limiting Voltage (let-through) Performance
- Local & Remote Diagnostics
- Independent Verification of Performance and Safety
- Component-Level, Thermal Fusing
- Patent Pending, Internal, Circuit Board Mounted, Over-Current Fusing



LISTED 1449
Second Edition



MADE IN THE U.S.A.

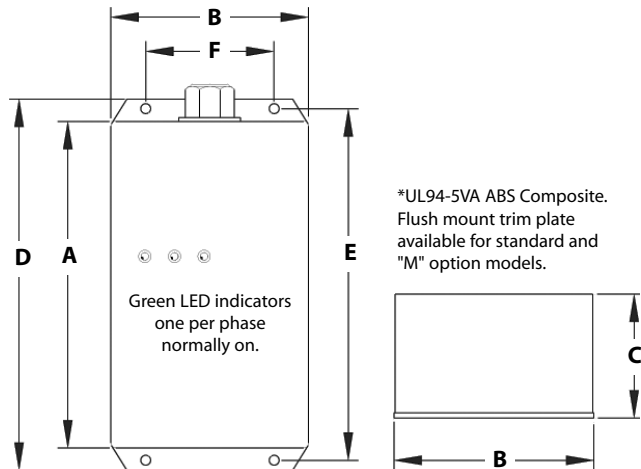
SECTION M POWERTRIP TVSS PRODUCTS

MODEL PT-LSEA VOLTAGE PERFORMANCE AND ELECTRICAL SPECIFICATIONS						
Model	Circuit Type	MCOV	Mode	* Let-through Voltage Test Results		
				* A3	* B3/C1	* C3
PT-LSEA1S1	120/240 V 1Ø (Split) (3 wire + ground)	150 V L-N 300 V L-L 150 V L-G 150 V N-G	L-N L-L L-G N-G	289 V 436 V 296 V 570 V	393 V 543 V 364 V 668 V	938 V 1,153 V 824 V 860 V
PT-LSEA3Y1	120/208 V 3Ø Wye (4 wire + ground)	150 V L-N 300 V L-L 150 V L-G 150 V N-G	L-N L-L L-G N-G	289 V 436 V 296 V 570V	393 V 543 V 364 V 668 V	938 V 1,153 V 824 V 860 V
PT-LSEA1P2	240V, Single Ø (2 wire + ground)	320 V L-N 320 V L-G 320 V N-G	L-N L-G N-G	450 V 450 V 940 V	588 V 588 V 1045V	1070 V 1029 V 1320 V
PT-LSEA3Y2	277/480 V 3Ø Wye (4 wire + ground)	320 V L-N 550 V L-L 320 V L-G 320 V N-G	L-N L-L L-G N-G	410 V 686 V 420 V 806V	529 V 777 V 533 V 1025 V	1,176 V 1,395 V 1,029 V 1,320 V
PT-LSEA3N2	240 V 3Ø Delta (NN) (3 wire + ground)	320 V L-L 320 V L-G	L-L L-G	420 V 420 V	533 V 533 V	1,153 V 1,153 V
PT-LSEA3N4	480 V 3Ø Delta (NN) (3 wire + ground)	550 V L-L 550 V L-G	L-L L-G	686 V 686 V	777 V 777 V	1,395 V 1,395 V

*Let-through Voltage Test Parameters: Positive Polarity, All voltages are peak (±10%). All tests are static except 150 V MCOV modes. Let-through voltages on static tests calculated by subtracting sinewave peak from let-through measured from zero. 150 V MCOV mode let-through voltages measured from the insertion point on the sinewave. (Scope Settings: Time Base = 20 microseconds, Sampling Rate = 250 Megasamples/sec. These settings assure Let-through voltages test results are accurate). All tests performed with 6" lead length (external to the enclosure), simulating actual installed performance.
Surge Current Testing: Single-pulse surge current testing for all modes at rated currents as recommended by NEMA LS1-1992. Single pulse surge current capacities of 200,000 amps or less are determined by testing all suppression components within each mode as a group. Present industry test equipment limitations require testing of individual suppression components or sub-assemblies within a mode for single-pulse surge capacities over 200,000 amps.

- * **Let-through Voltage Test Results** - ANSI/IEEE C62.41.1 & C62.41.2 (tested w/6" lead length external to the enclosure per UL 1449)
- * **A3** - 6kV, 200A, 100KHz Ring Wave @ 90° Phase Angle
- * **B3/C1** - 6kV, 3kA Impulse Wave @ 90° Phase Angle
- * **C3** - 20kV, 10kA Impulse Wave @ 90° Phase Angle

Enclosure Dimensions				
Dim. (in.)	Standard Model	Enclosure Options		
		M	W	X
A	8.25	10.00	10.00	12.00
B	5.00	8.00	8.00	10.50
C	3.00	4.00	4.00	6.00
D	9.37	11.50	11.50	12.50
E	8.87	10.75	10.75	12.00
F	3.37	6.00	6.00	8.00
Type	*NEMA 4 (ABS)	NEMA 12 (Steel)	NEMA 4 (Steel)	NEMA 4X (Composite)
Weight	5.0 lbs.	14.0 lbs	14.0 lbs.	11.0 lbs



- Options:**
- AC** = Internal Audible Alarm w/ test button, mute switch and red LED
 - C** = Form C dry relay contacts
 - D1** = Integral, non-fused disconnect switch (TVSS unit mounts inside)
 - D2** = External non-fused disconnect switch (TVSS mounts to outside)
 - D3** = Same as D1, except no external handle
 - E1** = Hub on side of enclosure
 - E2** = No hub, wires only exiting from side of enclosure
 - E3** = No hub, wires only exiting the end of the enclosure
 - F** = Internal, circuit board mounted over-current fuses
 - LP** = Remote LED indicators in individual NEMA 4X housings
 - M** = NEMA 12 Steel Enclosure
 - External Accessories:** EACS = Externally mounted diagnostic module, combines AC, C, and S options (Also available: EAC, EC, ECS, and ES)
 - N** = Removes neutral to ground Sinewave Tracking Circuit
 - P** = Flush Mount Plate
 - Q** = Labeled as a secondary surge arrester - UL category OWHX (Requires "F" option)
 - R1** = Remote lights on separate circuit board (no enclosure)
 - 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
 - XS** = NEMA 4X Stainless Steel Enclosure