

POWERTRIP®**TRANSIENT VOLTAGE SURGE SUPPRESSOR****Model PT-CSEA****240 kA Per Phase
with Sinewave Tracking**

The PT-CSEA Series TVSS Device is designed for AC Power protection of Commercial services, in particular, commercial applications with a high level of computer controlled equipment such as office buildings, schools, banks, grocery stores, restaurants, and other businesses that depend on reliable operations of their computer systems and networks for their day to day operations. The built in sine wave tracking combined with fast response time and high current ratings make the PT-CSEA series the optimal unit for providing clean, protected power to computer networks and equipment.

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 combination Optimal Sinewave Tracking™ and 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: 50-60 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
- Multi-stage Hybrid Optimal Sinewave Tracking™ Circuit
- 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-CSEA VOLTAGE PERFORMANCE AND ELECTRICAL SPECIFICATIONS

Model	Circuit Type	MCOV	Mode	* Let-through Voltage Test Results		
				* A1	* B3/C1	* C3
PT-CSEA1S1	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	34 V 38 V 56 V 58 V	382 V 570 V 397 V 558 V	938 V 1,153 V 824 V 860 V
PT-CSEA1P2	240V, Single Ø (2 wire + ground)	320 V L-N 320 V L-G 320 V N-G	L-N L-G N-G	51 V 75 V 52 V	558 V 588 V 965 V	1070 V 1029 V 1320 V
PT-CSEA3Y1	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	35 V 38 V 56 V 55 V	382 V 570 V 397 V 558 V	938 V 1,153 V 824 V 860 V
PT-CSEA3Y2	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	51 V 111 V 75 V 52 V	558 V 892 V 588 V 965 V	1,176 V 1,395 V 1,029 V 1,320 V
PT-CSEA3N2	240 V 3Ø Delta (NN) (3 wire + ground)	320 V L-L 320 V L-G	L-L L-G	50 V 50 V	588 V 533 V	1,153 V 1,153 V
PT-CSEA3N4	480 V 3Ø Delta (NN) (3 wire + ground)	550 V L-L 550 V L-G	L-L L-G	50 V 50 V	892 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.

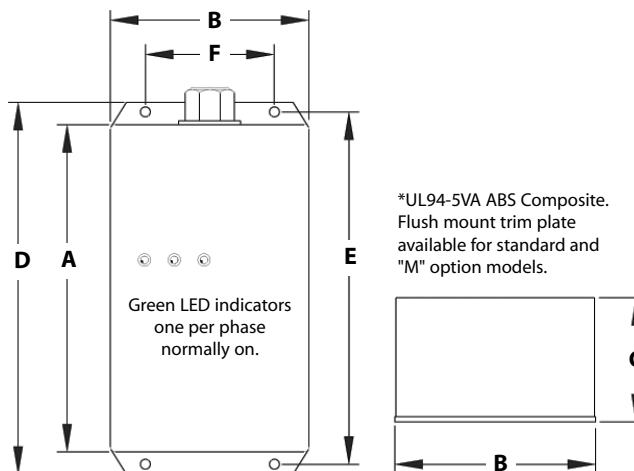
*** Let-through Voltage Test Results - ANSI/IEEE C62.41.1 & C62.41.2 (tested w/6" lead length external to the enclosure per UL 1449)**

*** A1 - 2kV, 67A/100KHz Ring Wave @ 270° 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	10.75	10.75	12.50
E	8.87	7.75	7.75	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

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

External Accessories: EACS = Externally mounted diagnostic module, combines AC, C, and S options (Also available: EAC, EC, ECS, and ES)