



# **POWERCLAMP SERIES 10**

**HYBRID MULTI-STAGED HIGH ENERGY  
TRANSIENT VOLTAGE SURGE SUPPRESSOR**



**For transmitter sites,  
studios in high lightning areas**



**200,000 amp rating  
20 µsec surge per phase**

***POWERCLAMP*** is a sophisticated surge suppression unit that provides the ultimate in transient protection with much lower clamping levels than any other TVSS device.

***POWERCLAMP*** Series 10 wire-in PARALLEL TVSS devices are ideally suited for radio and TV broadcast transmitters, microwave sites and studio facilities. They are rated at 200,000 surge amps per phase, and will suppress lightning induced transients, massive high energy surges, and power line spikes. ***POWERCLAMP*** Series 10 units prevent power surges from damaging transmitters, studio equipment, computers, and other sensitive equipment. Their superior surge suppression will greatly reduce equipment failures and computer lock-ups that are caused by power line disturbances. Operation is *not* affected by the power requirements of the load. Each line phase is fused, with a fuse status lamp. An unlikely failure will *not* interrupt power to the load. The Series 10 offers optional remote failure detection to monitor the suppression integrity of the device from a remote location. A Series 10 unit should be installed at the main entry electrical panel in any environment where frequent and severe lightning occurs.

## ***HOW POWERCLAMP OPERATES***

***POWERCLAMP*** Transient Voltage Surge Suppressor (TVSS) device is a passive, multi-staged hybrid high energy parallel device designed to react to the onset of surges with fast rise times and high amplitude ranges such as those which follow sags or other external or atmospheric induced impulses. ***POWERCLAMP*** senses the fast ramp of the transient and automatically fixes on the peak of the line voltage waveform. The unit incorporates *sine wave tracking*, to 'float' the clamping threshold with the rise and fall of the peak of the AC waveform without creating wave shape distortion. Response times are within 1-2 nanoseconds. ***POWERCLAMP*** will clamp many transients to within 2 volts of the AC waveform. Units operate at up to 120% of the normal line voltage.

## ***FEATURES AND BENEFITS:***

- 200,000 Surge Amps Per Mode
- Sine Wave tracking
- Non-degrading
- Maintenance Free
- Meets ANSI/IEEE C62-41 1980
- Fault Indicating lamps
- Meets UL-1449-1994
- Full Voltage Range
- 1-2 Nanosecond Response Time
- Voltage Reactive
- 2 Volt Clamping Level
- 5 Year Warranty
- Parallel Wire-in Design
- Passive System
- Simple Installation
- High Energy Dissipation

**CLAMPS MOST TRANSIENTS TO WITHIN 2 VOLTS OF THE AC WAVEFORM.**

# **POWERCLAMP SERIES 10**

## **HYBRID MULTI-STAGED HIGH ENERGY TRANSIENT VOLTAGE SURGE SUPPRESSOR**

### **TECHNICAL SPECIFICATIONS**

**POWERCLAMP** is a sophisticated surge suppression unit that offers the ultimate in transient protection with **ULTRA-LOW CLAMPING LEVELS**. Its **PARALLEL INSTALLATION** provides these benefits:

- **No chance of power interruption**
- **No need to match load power**
- **No insertion power loss**

*When tested to the ANSI/IEEE C62.41-1991/UL-1449 Standard, its hybrid multistage circuitry will suppress (clamp) transient surges and spikes in all modes and bi-directionally, as listed below.*

Category A waveform (6kV, 200 amps, 0.5us, 100kHz): TWO (2) VOLTS of the peak of the sine wave. Measured from the baseline at the 90° point of the power sine wave (@ WAVEFORM PEAK).

Category B ringwave (6kV, 500 amps, 0.5us, 100kHz): TEN (10) VOLTS of the peak of the sine wave. Measured from the baseline at the 90° point of the power sine wave (@ WAVEFORM PEAK).

Category B impulse (6kV, 1.2/50us, 3,000 amps): THIRTY (30) VOLTS of the peak of the sine wave. Measured from the baseline at the 90° point of the power sine wave (@ POSITIVE WAVEFORM PEAK).

Category C Impulse (20kV, 1.2/50us, 10,000 amps): TWO HUNDRED TWENTY (220) VOLTS of the peak of the sine wave. Measured from the baseline at the 90° point of the power sine wave (@ WAVEFORM PEAK).

<b>Unit Model Number</b>	<b>Type Service 40-420Hz</b>	<b>Surge Joules Per Ø</b>	<b>Surge Amps 20 microsec</b>	<b>**Modes of Protection</b>	<b>Connecting Wires</b>
HP1001	120/240V 1Ø	3360	200,000	L-L/L-N/L-G	2-L, 1-G
*HP1002	120/240V 1Ø	3360	200,000	L-L/L-N/L-G/N-G	2-L, 1-N, 1-G
HP1003	120/208V 3Ø WYE	3360	200,000	L-L/L-N/L-G	3-L, 1-G
*HP1004	120/208V 3Ø WYE	3360	200,000	L-L/L-N/L-G/N-G	3-L, 1-N, 1-G
HP1005	240V 3Ø DELTA	13770	200,000	L-L/L-G	3-L, 1-G
HP1006	480V 3Ø DELTA	10314	200,000	L-L/L-G	3-L, 1-G
HP1007	277/480V 3Ø WYE	10314	200,000	L-L/L-N/L-G	3-L, 1-G
*HP1008	277/480V 3Ø WYE	27540	200,000	L-L/L-N/L-G/N-G	3-L, 1-N, 1-G
HP1009	120/208 3Ø WYE HL	3360	200,000	L-L/L-N/L-G	3-L, 1-G

\*Common mode: Neutral to Ground, needed when not installed at main panel where Neutral and Ground are tied.

\*\* L-L = line to line; L-N = line to neutral; L-G = line to ground; N-G = neutral to ground common mode

- Response time: 1-2 nanoseconds
- Maximum leakage current: 3mA
- Fusing: one fuse per phase with failure indicator lamps
- Minimum Humidity Range: 5% to 97%
- Operating temperature: -20°C (-68° F) to 70° C (158° F) ambient temperature
- Dimensions: 10" wide, 12" high, 5" deep (120/240V) 8" wide, 8" high, 4" deep
- Shipping weight: approximately 25 lbs. (120/240V) 10 lbs. (including packaging)
- 5 Year pro-rated Limited Replacement Warranty

**SINE CONTROL TECHNOLOGY INC.**

**503 KEY VISTA DRIVE  
SIERRA MADRE, CA 91024**

**TEL: 626-355-3656**

**FAX: 626-355-0077**

**[www.sinecontrol.com](http://www.sinecontrol.com)**

Specifications subject to change without notice.