

Surge Energy Absorb & Transfer



AC SET 16A/250V Din-rail Style

Model No.: PAT5-C3-16-250

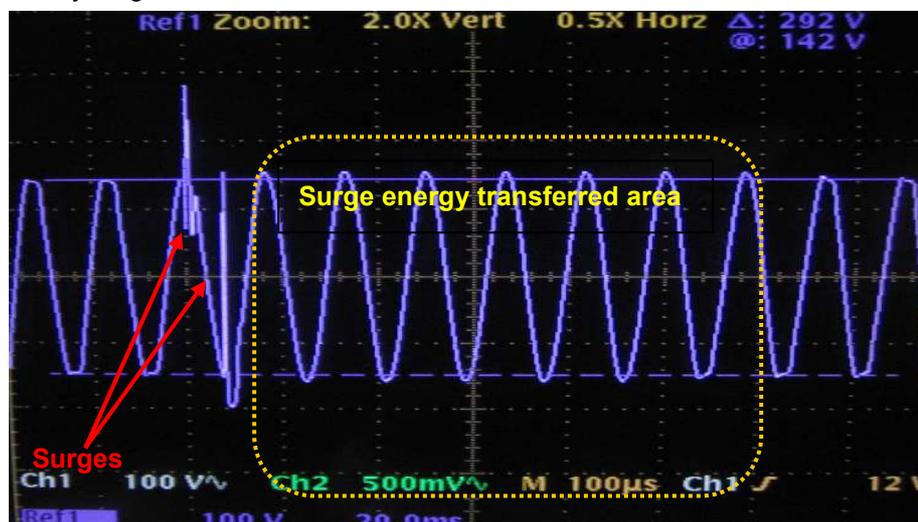
Surge interference only occurs when electrical loads are under working condition (i.e. there is a power supply) when loads are stored in a warehouse without a power supply, there is no interference problem. Therefore, a power source is required to prove that the surge protection device (SPD) can actually protect the loads when doing surge-testing and installing SPD. There are many SPD in the market that have undergone testing without a power source. This method neither proves whether SPD protects the loads nor does it ensure the loads will still function when there is surge interference.

We use our patented surge energy transfer circuits to produce various surge energy absorb and transfer (SAT) devices. It effectively suppresses interference sources such as lightning flash surges (LFS), power switching surges (PSS), switching inrush currents (SIC), electric magnetic pulses (EMP) etc. Even under poor ground resistance condition, giving the loads perfect protection.

We test our SAT devices are under a powered (on-line) condition and connect it to a laptop. This method ensures that SAT does increase the facilities' immunity to interference and that the loads can thus function normally with the presence of interference.

How does SEAT protect important loads? We can see how it works from the waves produced when SEAT is operating.

Surge-testing is done powered (on-line), under **ungrounded** condition and coupled with a 1.2x50 μ s, 10kV, 8x20 μ s, 5kA combination wave. (in accordance with ANSI/IEEE C62.41 category C3) SET absorbs surge energy and transfers it to AC waveform of loads. From the area marked in yellow in the diagram below, we can see that the peaks of the AC wave is approximately 6% higher than the peaks before surge coupling. Also note that the duration time affected by surge is less than 10 ms.



SPECIFICATIONS

Types of surge suppressed: Lightning Flash Surges (LFS), Power switching surges (PSS), Switching Inrush Current (SIC), and Electric Magnetic Pulse (EMP).

Method of handling surge energy: Series mode surge energy absorbed and transferred to voltage.

Case: Plastic case IP68.

Install : Din-rail style and terminal blocks.

Devices condition diagnoses: Temperature of casing diagnoses (Normal condition: temperature is $45-55^{\circ}\text{C} \pm 5\%$. and fault condition: is room temperature.

Suitable AC voltage: AC 100V-250V 50/60Hz $\pm 5\%$. (Maximum 300V)

Max. load current allowed: $1\psi 4\text{KW } 16\text{A} \pm 5\%$.

Input Impedance (R) without loads: $>10\text{M}\Omega$.

Core module temperature of 16A load: Less than $55^{\circ}\text{C} \pm 5\%$.

Surge immunity: $1.2 \times 50\mu\text{s}, 10\text{kV}$; $8 \times 20\mu\text{s}, 10\text{kA}$ combination wave, 60 sec interval, at least 2 times.

Surge energy absorbing rate: $1.2 \times 50\mu\text{s}, 10\text{kV}$; $8 \times 20\mu\text{s}, 5\text{kA}$ combination wave, $98\% \pm 2\%$ (ungrudging condition).

After surge invasion, AC waveform recovering time: Less than 10ms.

After surge invasion, AC waveform correction ability: 1-3A load condition, more than 2 cycles.

EMP(fast transient/burst) immunity: $4.5\text{kV}, 5 \times 50\text{ns}$ EFT waveform, $95\% \pm 2\%$ (ungrudging condition).

Loads remnant voltage AC 250V model: $650\text{V} \pm 20\%$ under combination wave tested.

Loads remnant voltage AC 300V model: $770\text{V} \pm 20\%$ under combination wave tested.

Load protection mode: L-N, L-G, N-G.

System ground resistance demand: None.

Operation temperature range and humidity range: -40 to $+85^{\circ}\text{C}$, 35 to 95% relative humidity (no dew).

Dimension: 78mm (L)/41mm(W)/39.5mm(H) $\pm 1\%$.

Weight: 190g $\pm 5\%$.

Confirm standards: ANSI C62.41、IEC 61000-4-5、IEC 61000-4-4、IEC 61643-1、ANSI C37.90.1etc.

Surge-testing: On-line condition, tested by $10\text{kV}/5\text{kA}$ combination wave, $4.5\text{kV}, 5 \times 50\text{ns}$ EFT wave.

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