Surge Energy Absorb & Transfer

SEAT Device for AC

Category C3 of IEEE/ANSI C62.41

MAT5-C3-30-250

SEAT device is a unique surge protection device (SPD). 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 system is required to prove that the installed surge protection device (SPD) can actually protect the loads when doing surge-testing and in service. There are many SPD in the market that have undergone testing without a power source. Then it neither prove SPD protect the load nor to ensure the load will still function well when surge interference invading.

Thanks to new patented *surge energy absorb and transfer circuits* (SEAT) to produce various surge SEAT devices. It effectively suppresses interference sources such as lightning flash surges (LFS), power switching surges (PSS), switching inrush current (SIC), electric magnetic pulses (EMP) etc. Even under poor ground resistance condition, giving the load perfect protection.

We test SEAT device under a powered (on-line) condition and connect it to a laptop or PC as a load. This method ensures that SEAT does increase the facilities' immunity to interference and the loads can thus function normally with the presence of interference.

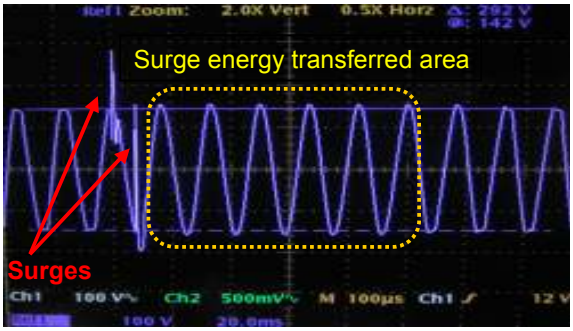
Features :

- Applicable for ON-line surge test.
- Surge Protection for EMP, LFS, PSS and SIC.
- Excellent surge protection even in poor ground resistance.
- Tested by combination wave surge (1.2x50μs,20KV / 8x20μs, 10KA) under ON-line condition with load.
- True series mode SPD.
- Wide operating voltage.
- Meet standard ANSI C62.41, level C3 (20KV/10KA), and IEC 61000-4-4, IEC 61000-4-5, IEC 61643-1, CNS 14676-4, CNS 14676-5.
- Enclosed metal case gives good EMI protection & high quality appearance.
- Surge Counter (MART) with sensitive adjustment.

Surge-testing is done powered (on-line), under ungrounded condition and coupled with a 1.2 x 50μs, 20kV、8 x 20μs, 10kA combination wave. (in accordance with ANSI/IEEE C62.41 category C3) SEAT absorbs surge energy and transferres it to AC waveform of loads. From the area marked in yellow in the diagram bellow, 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.

How does SEAT protect important loads?

We can see how it works from the waves produced when SEAT is operating.



SPECIFICATIONS

Model	MAT5		MAT6	MART5		MART6
	- C3 - 15-250	- C3 - 30-250	- C3 - 60-250	- C3 - 15-250	- C3 - 30-250	- C3 - 60-250
Material of Enclosed Case	Metal case with anode treatment and sand blasting			Metal case with anode treatment and sand blasting		
Max. Current #	15A, 1ph 3W	**30A, 1ph 3W**	**60A**, 1ph 3W	**15A**, 1ph 3W	**30A**, 1ph 3W	**60A**, 1ph 3W
AC Power Voltage	**100V ~ 250V ,**					
Freqency	50Hz / 60Hz					
Max. Power Capacity	3.75KW	**7.5KW**	15KW	3.75KW	7.5KW	15KW
Method of Handling Surge Energy	Series Connection Surge Energy Absorb and Transfer					
Suppressing Surges	Lightning Flash Surge (LFS) ; power switching surges (PSS) ; Switching Inrush Current (SIC) ; Electric Magnetic Pulse (EMP)					
Max. Surge Current Ability	50KA					
Module Temperature at Max Current	< 40 °C	**< 55 °C**	< 65 °C	< 40 °C	< 55 °C	< 65 °C
Surge Immunity Test	More than 3 times continuous in 20 sec interval, at 1.2x50μs,20kV / 8x20μs,10kA Combination wave surge					
Surge Energy Absorbing Rate	≥ 97% , at 1.2x50μs,20kV / 8x20μs, 10kA , Combination wave surge (unground condition)					
AC Waveform Affected by Surge	≤ 10 mS, on-line and with load conditions					
AC Waveform Correction Ability	≥ 3 cycles , at 1-3A load current					
EMP Immunity Test & Absorbing Rate	≥ 93% , 4.5kV in 5x50**ns** waveform (unground condition)					
Residue Voltage	660V ±20%					
System Ground Resistance Demand	None					
Protective Mode	Line – Neutral 、 Line – Ground 、 Neutral – Ground					
Operation Temperature / Humidity Range	-10 ~ +85°C / 35 ~ 95% (non-condensation)					
Dimension, mm	116L 80 W 36 H	**116 L 80 W 36 H**	116 L 80 W 61 H	165 L 127 W 77 H	165 L 127 W 77 H	165 L 127 W 77 H
Weight, gram	320	**320**	470	1200	1200	1400
Applicable Standards	ANSI C62.41 Category **C3** ; ANSI C37.90-1 ; IEC 61643-1 X level of IEC 61000-4-4 ; IEC 61000-4-5 ; CNS 14676-4 and CNS 14676-5					
Number of Connecting Terminals	**5 (L_{IN}, N_{IN}, G , L_{OUT}, N_{OUT})**		6 (L_{IN}, G, N_{IN} L_{OUT},G,N_{OUT})	5 (L_{IN}, N_{IN}, G, L_{OUT}, N_{OUT})		6 (L_{IN}, G, N_{IN} L_{OUT},G,N_{OUT})
Surge Counter with Sensitive Adjustment	**Not include**			**Include**		
Appearance						

Do not over current !