

Surge Energy Absorb & Transfer

SEAT Device for DC 30A

(Category C2 , With Surge Counter)



MDRT5-C2-30-60/310

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.

- 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 (1.2x50 μ s, 10KV / 8x20 μ s, 5KA) under ON-line condition with load.
- True series mode SPD (no ground is OK).

Features

- Wide operating voltage.
- Meet standard ANSI C62.41, level C2 (10KV/5KA), 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 with sensitive adjustment.

Surge-testing is done powered (on-line), under ungrounded condition and coupled with a 1.2 x 50 μ s, 10kV, 8 x 20 μ s, 5kA combination wave. (in accordance with ANSI/IEEE C62.41 category C2) SEAT absorbs surge energy and transfers it to DC waveform of loads. From the area marked in yellow in the diagram bellow, we can see that the DC wave is higher than 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	MDRT5		
	- C2 - 30-60	- C2 - 30-160	- C2 - 30-310
Material of Enclosed Case	Metal case with anode treatment and sand blasting		
Max. Current #	30A		
Working DC Voltage	5 ~ 60 Vdc	60 ~ 160 Vdc	160 ~ 310 Vdc
Max. DC voltage	70 Vdc	180 Vdc	350 Vdc
Connecting Terminals	Lin(+), Nin(-), Ground, Lout(+), Nout(-)		
Protective Mode	L (+) to N (-); L (+) to G; N (-) to G		
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	50 KA		
Module Temperature at Max Current	< 55 °C		
Surge Immunity Test	More than 3 times continuous in 20 sec interval, at 1.2x50µs, 10kV/ 8x20µs, 5kA combination wave surge		
Surge Energy Absorbing Rate	≥ 97% , at 1.2x50µs, 10kV / 8x20µs, 5kA , Combination wave surge (unground condition)		
DC Waveform Recovering Time After Surge invasion	< 10 mS , ON-line and with load conditions		
EMP Immunity Test & Absorbing Rate	≥ 93% , 4.5kV in 5x50ns , EFT (Burst) waveform (unground condition)		
Residue Voltage	650Vp ±20%		
System Ground Resistance Demand	None		
Operation Temperature / Humidity Range	-30 ~ +85°C / 35 ~ 95% (non-condensation)		
Applicable Standards	ANSI C62.41 Category C2*; 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		
Dimension	165 L x 127 W x 77 H , mm		
Weight	1.2 Kg		
Surge Counter with Sensitive Adjustment	Including to count & digital display number of times of surge invading interference, with sensitive adjustment		
LED Display	Action : to indicate surge invading (one flash when a surge counted) Status : to indicate Power ON/OFF or fail		
Suggest acceptance Surge Test	10kV/5kA combination wave, and 4.5kV, 5x50ns EFT wave. in ON-Line testing condition:		
Appearance			

Rated current 60A are on request.
Do not over current !

* Category C3 (1.2x50µs 20KV / 8x20µs 10KA) are on request