CERTIFICATE OF CONFORMANCE
MIL-STD-188-125-1A Acceptance PCI Testing
MPE HPS250-4#277 HEMP Power Line PPD (1x 250 A, 277 VAC)

MIL-STD-188-125-1A short (E1) and intermediate (E2) pulse acceptance pulsed-current injection (APCI) testing of an MPE HPS250-4#277 HEMP unrestricted power line filter / Point-of-Entry (PoE) Protective Device (PPD) has been performed by Jaxon Engineering and Maintenance. Based on the results of this testing, Jaxon Engineering and Maintenance hereby certifies that the MPE HPS250-4#277 meets the applicable E1 wire-to-ground (WTG) and common mode (CM), and E2 WTG, APCI performance requirements published in MIL-STD-188-125-1A. MIL-STD-188-125-1A long (E3) pulse APCI testing was not performed; E3 protection is not typically provided by a powerline PPD.

The MPE HPS250-4#277 is comprised of four discrete single line HEMP PPD modules, each rated at 250 A, 277 VAC, which are mounted into common dirty (exposed to HEMP energy) and clean side endcap housings. Dirty side line-to-ground surge suppression on each module is provided by a CKE Z60M751, or equivalent, metal oxide varistor (MOV).

MIL-STD-188-125-1A E1 WTG APCI testing of each of the four individual 250 A modules was performed by applying a series of E1 transients onto the dirty side of each module at up to a maximum short-circuit current (Isc) injection level of 2500 A. MIL-STD-188-125-1 E1 CM APCI testing was performed by applying a series of E1 transients simultaneously onto the dirty sides of all four modules at up to a maximum Isc level of 5000 A. For this testing, the clean side of each module was terminated into a 10 mΩ resistive WTG load. MIL-STD-188-125-1A E2 WTG APCI testing of each of the four individual HPS250-1#277 modules was performed by applying a series of E2 transients onto the dirty side of each module at up to a maximum Isc injection level of 250 A. For this testing, the clean side of each module was terminated into a 50 Ω resistive WTG load. Individual or combined residual currents flowing through the WTG or CM loads, respectively, were measured.

The MPE HPS250-4#277 met all applicable short and intermediate pulse APCI performance requirements levied by MIL-STD-188-125-1A. The test samples exhibited no evidence of degradation or damage resulting from the application of the E1 or E2 transients. Furthermore, the worst-case (maximum) peak, peak derivative, and root action norms of the measured E1 residual current waveforms in the WTG (four individual HPS250-1#277 modules) and CM (all four modules simultaneously) configurations were well below the applicable limits given in MIL-STD-188-125-1A as highlighted below.

SHORT PULSE NORM	WTG LIMIT	WTG MAX	CM LIMIT	CM MAX
Peak Current (A)	10.0	2.9	20.0	7.4
Peak dI/dt (A/sec)	1.0E+07	4.9E+04	1.0E+07	1.3E+05
Root Action (A√sec)	1.6E-01	5.8E-02	3.2E-01	1.3E-01

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Worst Case MIL-STD-188-125-1A E1 APCI Residual Current Norms