



## CERTIFICATE OF CONFORMANCE

### MIL-STD-188-125-1A Acceptance PCI Testing

**PROTOTYPE MPE HPS400-1#277 HEMP Power Line PPD (1x 400 A, 277 VAC)**

**PROTOTYPE MPE HPS400-1#250 HEMP Power Line PPD (1x 400 A, 250 VAC)**

MIL-STD-188-125-1A short (E1) and intermediate (E2) pulse acceptance pulsed-current injection (APCI) testing of MPE prototype HPS400-1#277 and HPS400-1#250 single line HEMP unrestricted power line filter / Point-of-Entry (PoE) Protective Devices (PPDs) has been performed by Jaxon Engineering and Maintenance. Based on the results of this testing, Jaxon Engineering and Maintenance hereby certifies that the MPE HPS400-1#277 and HPS400-1#250 meet the applicable wire-to-ground (WTG) short (E1) and intermediate (E2) pulse 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 prototype HPS400-1#277 and HPS400-1#250 single line HEMP PPDs are rated for 400 A at 277 VAC or 250 VAC (line-to-ground), respectively. Line-to-ground surge suppression is provided by a CKE Z60M751 metal oxide varistor (MOV), or equivalent, for the HPS400-1#277 and by a Hitech B60K275 MOV, or equivalent, for the HPS400-1#250.

MIL-STD-188-125-1A short pulse APCI testing of the HPS400-1#277 and the HPS400-1#250 was performed by applying E1 transients up to a maximum short-circuit current (Isc) injection level of 2500 A onto the dirty side of each PPD in the wire-to-ground (WTG) mode. For this testing, the clean side of each PPD was terminated into a 0.01  $\Omega$  (10 m $\Omega$ ) resistive WTG load. MIL-STD-188-125-1A short pulse APCI testing of multiple single line PPDs in the common mode (CM) configuration was not performed. MIL-STD-188-125-1A intermediate pulse APCI testing of the MPE HPS400-1#277 and the HPS400-1#250 was performed by applying E2 transients up to a maximum Isc injection level of 250 A onto each PPD in the WTG mode with the clean side of each terminated into a 50  $\Omega$  resistive WTG load.

The MPE HPS400-1#277 and HPS400-1#250 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 short pulse residual current waveforms in the WTG configuration were well below the applicable limits given in MIL-STD-188-125-1A as highlighted below.

SHORT PULSE NORM	WTG LIMIT	HPS400-1#277	HPS400-1#250
Peak Current (A)	10.0	4.4	3.1
Peak di/dt (A/sec)	1.0E+07	1.6E+05	1.2E+05
Root Action (A√sec)	1.6E-01	8.3E-02	6.0E-02

MPE HPS400-1#277 and HPS400-1#250  
Worst Case MIL-STD-188-125-1A E1 APCI Residual Current Norms