MIL-STD-188-125-1 ACCEPTANCE PCI TESTING SUMMARY
MPE 25/829510-4 PROTOTYPE HEMP Filter (4X 1200 A, 250 VAC)

Jaxon Engineering and Maintenance (JEM) has performed MIL-STD-188-125-1 short (E1) pulse acceptance pulsed-current injection (PCI) testing on a single prototype HEMP PPD (**P**oint-of-Entry **P**rotective **D**evice) PN 25/829510-4 manufactured by MPE of Liverpool, UK. The prototype 25/829510-4 is a four-line filter rated at 1200 A and 250 VDC with surge protection on each line provided by a single Epcos B60K275 (metal-oxide varistor).

The MPE 25/829510-4 was classified as an unrestricted intersite commercial power line PPD as defined in MIL-STD-188-125-1. The short (E1) pulse acceptance PCI testing of the DS33632 was performed IAW MIL-STD-188-125-1 with separate 0.21 Ω dummy resistive loads applied between each clean-side terminal and the filter ground terminal. The unit tested met all applicable acceptance PCI performance requirements given in MIL-STD-188-125-1. There was no evidence of filter or MOV damage or degradation resulting from application of the short pulse transients. Furthermore, the peak, derivative and root action norms of the measured short pulse residual current waveforms were well below the applicable limits given in MIL-STD-188-125-1 as highlighted below.

SHORT PULSE NORM	LIMIT	WORST CASE
Peak Current	10 A	7.2 A
Peak di/dt	1E7 A/sec	1.5E6 A/sec
Root Action	1.6E-1 A√sec	6.8E-2 A√sec

MPE 25/829510-4 – MIL-STD-188-125-1 Acceptance PCI – Worst Case E1 Residual Current Norms

A typical residual current waveform obtained during the short pulse MIL-STD-188-125-1 acceptance PCI testing of the MPE 25/829510-4 with Epcos B60K275 MOVs is shown below. The residual current waveform and corresponding norms shown are that for the 2500 A injection onto the NEUTRAL line of the prototype unit and represent the worst-case results measured during the short pulse acceptance PCI testing of the MPE 25/829510-4.