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## Testing Synchronous Machines

When testing synchronous machines, one should consider the control circuitry involved. Baseline current tests of both armature and field should be taken when the machine is operating in nominal condition or when it's first installed. Analysis of the current data should include a thorough review of the time domain waveforms to ensure there is full wave rectification (i.e. all rectifiers are working) in the field circuit. Baseline voltage and current measurements through a start-up and synchronization should also be performed to analyze the performance of the amortisseur windings and synchronizing regulation. Assuming a constant load, a steady state analysis of an RMS enveloped current on both the armature and field should be performed to ensure there is no abnormal variation in current. Should you need additional information on testing synchronous machines, please contact PdMA technical support for assistance.

Synchronous motors are commonly medium/high voltage machines. For additional test considerations read Medium/High Voltage Testing Application Note at <http://www.pdma.com/PdMA-application-notes.php>.

You are invited to submit an Electric Motor Testing Tip of your own and receive a free PdMA mug or hat if we publish it! Contact Lou at 813-621-6463 ext. 126 or [lou@pdma.com](mailto:lou@pdma.com).