PdMA® CORPORATION A Leader in Electric Motor Testing

Tip Of The Week

May 14, 2018

Rotor Evaluation Using MCEMAX® - Part 4

Six independent methods of rotor evaluation can be used from the MCEMAX technology to analyze the condition of a squirrel cage AC induction motor: Pole-pass frequency (Fp) sidebands around line frequency, 5th harmonic, demodulated Fp frequency, Rotor Influence Check (RIC), In/Rush-Start/Up, and average inductance. Over the next six tips we will discuss each of these methods in detail and provide examples.

Part 4

Performing a demodulation of the current signal and displaying it in the frequency domain provides a look into the electro-mechanical world of the electric motor. Previously hidden in the noise platform of the current spectrum, now peaks related to belts, gears, fans and other machine train components can be easily identified and band alarmed. A further advantage of the demodulated current spectrum is that the pole-pass frequency (Fp = #poles x slip) has proven to be far more sensitive and accurate as an indicator of rotor bar defects than just trending Fp sidebands around line frequency. Especially for large two pole motors.

To see and hear about the demodulated current spectrum watch the case study titled "*Two to Tango - How the MCEMAX® Diagnosed a Defective Rotor"* located on the PdMA Website at: http://www.pdma.com/PdMA-case-study.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. 166 or lou@pdma.com.