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Tip Of The Week

November 3, 2014

Tripping...What a Nuisance

Have you ever been told “Every once in a while the motor fails to start.” and then provided no additional details? Where do you begin? Most circuits will have instantaneous, short term and long term over load protection. If the circuit includes instantaneous trip devices which react in less than a single AC cycle such as magnetic-only circuit protectors, this could be the cause of the nuisance tripping your plant operators have commented about.

During a motor start-up there are two components that make up the starting current, the instantaneous peak in-rush and the locked rotor current (LRC). The instantaneous peak in-rush is the momentary transient that occurs immediately (within half an AC cycle) after the contacts close. LRC follows the instantaneous current through acceleration to steady state. The M-Series EMAX performing an In-Rush/Start-Up test using the latest MCEGold® software displays both current transients to assist you in determining the possible cause of these random trips. After completion of an In-Rush test, all three phases of RMS current will be displayed as well as the instantaneous peak current. Then you can take the values and compare them to the trip settings of the circuit’s over current protection. If the data leads you to suspect that the nuisance tripping is due to improperly set instantaneous circuit protection devices you may need to reset them. For guidance on increasing the instantaneous trip level to avoid nuisance tripping refer to Section 430 of the latest National Electrical Code.

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.