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## The MCEMAX Trilogy – Part 3

To properly apply the MCEMAX technology for maximum electric motor reliability it must be utilized in three different general applications over the life of a motor. These three general applications are *Quality Control*, *Trending*, and *Troubleshooting*, and are often applied in different environments and locations throughout the electrical distribution. Previously in Part 1 we discussed Quality Control, last week in Part 2 we discussed Trending. This week we discuss Troubleshooting.

### **Troubleshooting:**

As with everything an eventual end is inevitable. Although proper quality control and trending will reduce the frequency of troubleshooting and increase the life expectancy of your electric motors, there will be times where the end of life or symptoms of the end of life will appear. We should always expect these unexpected events to occur when we least expect them...like on a Saturday morning. A critical electric motor trips...probably twice. What actions are taken from your electrical reliability staff? Will they perform a third start or a fuse inspection? Is your reliability program equipped with technology, like an MCEMAX, and processes to quickly and efficiently overcome a sudden electrical motor troubleshooting event? Immediate actions following a critical motor trip should be well communicated, trained, and practiced before a trip occurs to reduce troubleshooting time and return production to a money making operation. Is it the motor, drive, distribution or application that is the culprit behind the trip? A well orchestrated troubleshooting plan taking into account the age of the motor, history of failures and repairs, availability of test access panels (MTAP2/3) and ease of access to the starter or motor connection box will optimize the efficiency of your team. Depending on the risk factors and available trip information, an EMAX three-phase Start-Up test may provide quick, non-intrusive data that may isolate the fault. However, a de-energized MCE test similar to those discussed in Part 1 may be the best start to clear the motor first before pushing the start button again. If in doubt, de-energized testing with an MCE is always the safe approach to prevent secondary damage if the motor has experienced a turn-to-turn short. Of course the troubleshooting can be greatly improved if you have historical data for comparison (trending) as stated in Part 2 of this trilogy.

For more information on the MCEMAX, go to <http://www.pdma.com/PdMA-MCEMAX.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).