



A Leader in Electric Motor Testing

Tip Of The Week

September 28, 2020

Back to the Basics - Part 2

After the easing of pandemic restrictions many of us are getting back to work as quickly as possible and might be feeling a little rusty putting back on the electric motor reliability hat. Over the next few weeks we will re-visit some basic electric motor reliability principles and try to help you get back on your feet. Part 1 of the Back to the Basics Series focused on Power Quality. Continuing the series we now focus on the Power Circuit Fault Zone.

Squirrel Cage AC Induction Fault Zone Analysis - Part 2

The Power Circuit describes the conductive path that connects the power supply to the motor. In the world of three phase electricity the conductive path of each phase should have a balanced resistance. A study performed by the Electric Power Research Institute (EPRI) indicated that 46% of the problems reducing motor efficiency are caused by the power circuit. Precision resistance, like that performed by the MCE® technology, can provide an early indicator of high resistance connections long before overheating and damage influences the current signal. Remember to maximize your test circuit by going as high in the power circuit as is safe, often the load side of the contactor. This will include any overloads and disconnects between the contactor and motor. If a high resistance is seen at the starter or switchgear, then move the test leads towards the motor till the resistance imbalance is cleared. If you get all the way to the motor and the resistance imbalance still exists then you may be dealing with a bad phase connection on the stator windings.

To learn more (without leaving your office) about the Fundamentals of MCEMAX® for power circuit measurements, read about our new web-based training opportunities at <https://www.pdma.com/pdfs/Training/Web%20Based%20Training%20Insert.pdf>.

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.

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