
June 17, 2013

Resistive Imbalance vs. Current Imbalance vs. Thermal Imaging

It is well known that a high resistive imbalance on a three phase motor due to a hot spot, or a high resistance connection, may not immediately show up as a current imbalance. Well... it should be well known for those who read the PdMA Tip of the Week. As the high resistance connection worsens, eventually it does show up as a current imbalance. However, waiting for a current imbalance may result in advanced localized damage around the high resistance connection. Another technology well known for its early indication of developing high resistance connections is thermal imaging. If the motor is running and the high resistance connection is occurring in an exposed and accessible environment like the starter cabinet, thermal imaging can provide visual evidence of the high resistance identified through a de-energized resistive imbalance. Both precision resistive imbalance and thermal imaging will identify early indications of developing high resistance connections long before AC current is affected. Using them together to identify these defects early may prevent a current imbalance and prevent advanced levels of heat damage to localized components. To read a case study on a high resistance connection and the data associated with it go to <http://www.pdma.com/PdMA-articles.php> and click on the article titled *Multi-Technology Fault Identification*.

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.

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