PdMA CORPORATION A Leader in Electric Motor Testing

Tip Of The Week

May 25, 2009

External Resistor Banks for Wound Rotor Motors

Last week we reinforced the need to isolate the Wound Rotor from the external resistor bank to properly test its resistance to the shaft in order to help prevent flash over in the vicinity of the slip rings. Many technicians simply lift the brushes to accomplish this isolation from the external resistor bank. That would be an excellent time to verify the condition of the external resistor bank and the multiple contactors used to change the rotor's circuit resistance. In some applications, there can be several "stepped" resistance settings allowing for speed control of the Wound Rotor Motor (WRM). Performing an MCE Standard test on the resistor bank for each of these stepped resistance settings allows you to easily verify the condition of the contacts in the circuit. For each set of contacts cutting in additional resistance the three phase resistive imbalance should be below 1.0%. Any readings above 1.0% should be investigated by inspecting the contact surfaces for proper seating, pitting, cracking, and operation. Any resistive imbalance in the external resistor bank will result in uneven currents through the rotor windings during operation and affect the performance of the motor.

Don't forget while checking the phase-to-phase resistances of the external resistor bank to ensure it also has satisfactory resistance-to-ground values.

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.