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## Trouble Shooting Wound Rotor Motors

Wound rotor motors sound complex, but fundamentally are the same as your standard AC Induction motor. The rotor receives its power from an induction process and uses some form of variable external resistance to adjust start-up current and speed. The advantage to troubleshooting the wound rotor motor is that you can isolate the three basic components from each other to quickly isolate the root cause of any electrical anomaly. The three basic components are the stator, rotor, and resistor bank.

The relationship between the stator and rotor in a wound rotor motor is very much like a primary to secondary relationship in a transformer. Any variation in the secondary or rotor circuit, which includes the resistor bank, will be evident on the primary or stator. The opposite is true as well in that anomalies on the primary or stator will be reflected on the secondary or rotor circuit. Knowing this make sure you don't jump to a conclusion that the stator windings are defective when a high inductive imbalance is identified on the stator windings. Carbon tracking between slip rings, malfunctioning contacts, or failed resistors in the resistor bank can be the root cause of the high inductive imbalance measured on the stator windings.

To learn more about test considerations and data analysis of wound rotor motors, refer to the special applications section of the MCEMAX Data Interpretation Book. To purchase a copy of the book, contact PdMA at [pdma@pdma.com](mailto:pdma@pdma.com) or 813-621-6463,.

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).