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## Standards Associated With Electric Motor Testing, Part 5

IEEE 1415 is a relatively new and powerful standard for predictive maintenance testing. Section 4.3.21 in the standard discusses phase balance measurement of a stator winding. Using low voltage AC signals, the inductance/impedance is measured between all three phases, which gives inductive imbalance (unbalance).

IEEE 1415 section 4.3.21 on phase balance discusses recording inductance measurements in 1 to 15 degree increments (of shaft rotation) across one pole-face or for one full rotation (360 degrees) and then graphing the results. PdMA's MCE Rotor Influence Check (RIC) automatically calculates the optimum increment (typically for 0.50 to 10 degrees of shaft rotation) across at least one pole-face, or up to a full rotation of the shaft. Using the MCE recommended increment and graphing the test results provides consistent, trendable results. The RIC test is very helpful in detecting broken rotor bars or air gap issues. Upon initial installation of a motor, a baseline RIC test should be performed for comparison with future RIC tests.

For more information on rotor and air gap analysis go to the MCE Fault Zone on our Web site. An in-depth discussion of this test may also be found at Influence of Residual Flux on the Measurement of Inductance. For more information on the IEEE 1415 standard go to IEEE Standards.

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).