



ROTOR INFLUENCE TEST

IDENTIFIABLE FAILURE MODES

- Broken or cracked rotor bars
- Porosity in rotor castings
- Cracked shorting rings
- Shorted stator windings
- Uneven air gap and electrical misalignment.

DESCRIPTION

A low voltage AC test signal is applied to the stator windings and individual phase inductance readings are taken as the rotor is rotated through a pre-determined sequence.

The inductance readings are graphed to allow for interpretation to identify different faults.

ANALYSIS APPLICATION

Power factor capacitors and surge capacitors should be disconnected when performing a rotor influence test.

Variations in the peak amplitude in the same phase of the waveforms should be analysed to determine to severity of any dynamic air gap eccentricity.

Variations in the peak amplitude in different phases should be analysed to determine the severity of any static air gap eccentricity.

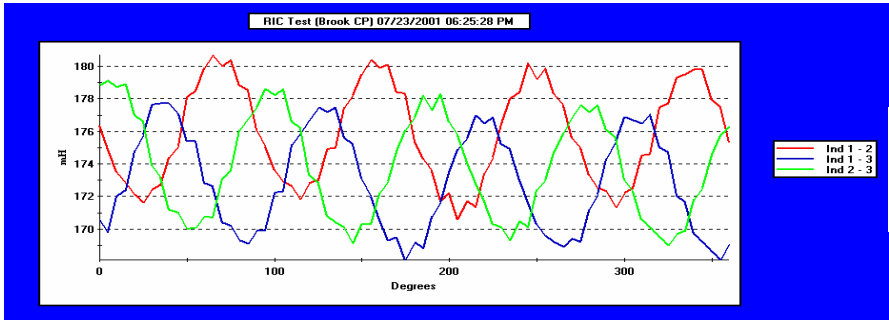
Erratic variations to the sinewave curve characteristics which occur on all 3 phases should be analysed to detect broken rotor bars or severe porosity.

A motor with an inductive imbalance reading with an upward trend should have a rotor influence check performed to determine if the cause of the imbalance is due to the stator or the rotor.

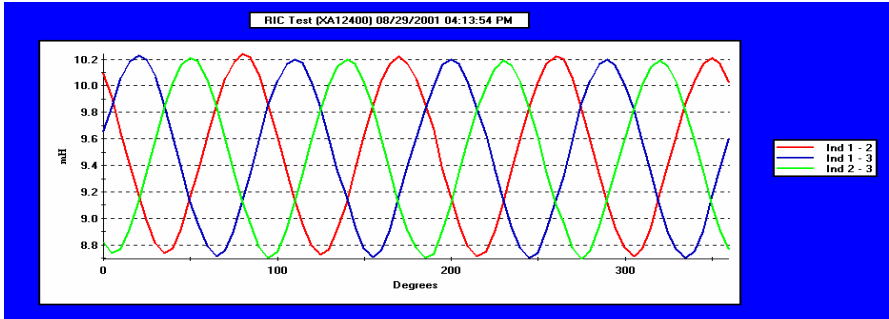
APPLICABLE STANDARD / ACCEPTANCE CRITERIA

There is no applicable standard for these tests.

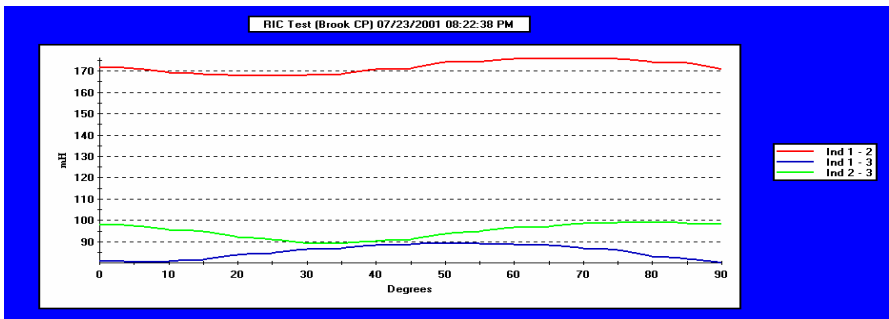
Test results need to be interpreted based on the motor characteristics.



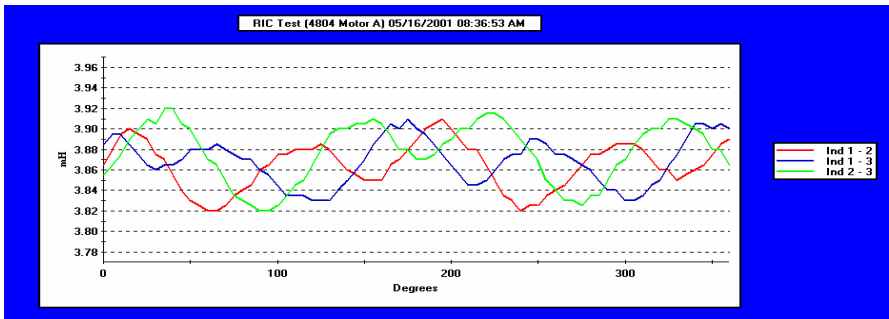
Rotor influence test from a motor with 1 broken rotor bar on 1 ending



A satisfactory RIC test



A RIC test on a shorted stator connected in star



A RIC test indicating broken bar and eccentricity problem.