

May 20, 2013

Nameplate Speed vs. Actual Speed

Identifying the speed of the motor is important for proper data analysis in many predictive technologies like electric motor testing and vibration analysis. It is not uncommon to identify a slight difference between measured speed and nameplate rated speed at the listed nameplate full load amps (FLA). NEMA MG1 allows +/- 20% of the difference from synchronous speed to rated speed under rated conditions. Although technologies, like the PdMA MCEGold software, may provide a field calibration of the speed search algorithm to allow for these differences, we should not automatically dismiss them as inaccurate nameplates. Instead we should evaluate the possible anomalies that could result in speed changes to verify a problem does not exist. Examples of anomalies affecting the measured speed to FLA relationship include a rotor cage anomaly reducing the operating speed, reduced operating voltage increasing the current amplitude for a given load, and a frequency change, which directly affects the synchronous speed. Always assume the nameplate is correct, until you prove it is not.

Please note: In the United States on Memorial Day, which is the last Monday in May, we honor the men and women who died while serving in the United States Armed Forces. Our office will be closed May 27; therefore, there will be no Tip of the Week next week.

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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