PdMA CORPORATION A Leader in Electric Motor Testing

Tip Of The Week

July 1, 2013

Further Understanding Eccentricity Alarm Levels

Eccentricity alarm band levels are based on an average noise level of all three phases. To understand the philosophy behind the use of the average noise level of all three phases, rather than the average noise level of the corresponding phase, we'll use a balanced Wye phasor diagram as an analogy. In a balanced Wye phasor diagram, the sum of all three vectors is zero. Picture the Wye diagram at the center of the shaft of the motor with each phasor representing a force in the corresponding direction. If the forces in all three directions are balanced, the shaft will not experience any directional force – i.e., it is in balance. If one of the vectors is longer than the other forces (i.e., there is an unbalance), the shaft will experience a force in that direction and will "wobble". Using this same analogy, the noise floor, and thus, the alarm levels, in a balanced system should be equal between all three phases. Using the average of all three phases to calculate the alarm levels better allows us to detect an eccentric condition in the motor.

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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