Sensotorq® - Condition monitoring for motor health

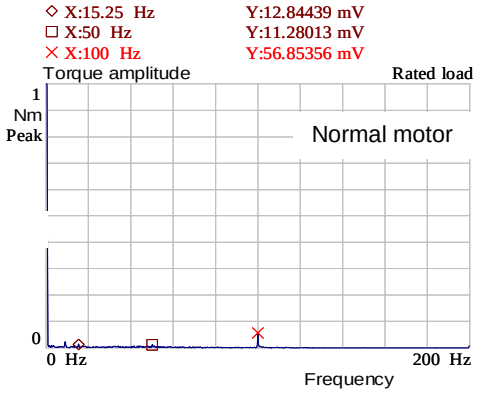
Sensotorq® determines the condition of 3 phase motors

Modern Utility and Process Industry plants have an increasing need to know the condition of production critical equipment. Few types of equipment are more critical than large rotating machines such as pumps, compressors, screw feed conveyors or motor operated valves. Unfortunately, these examples are also the components that are most subject to wear and tear from continuous use. For these reasons Sensotorq® is extremely valuable in predicting the service life and condition of the critical drive component common to all of the equipment listed above, the motor.

Damage from winding turn to turn fault

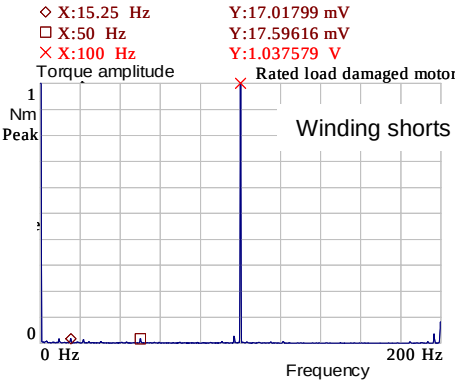
Motor Health - stator condition

Recent studies published by General Electric, one of the world's largest manufacturers of AC motors, indicate that nearly 85% of the electrical failures in AC motors are a result of turn-to-turn or phase-to-phase winding faults. Motors operated in temperatures higher than their rating are dramatically affected, with equipment life cut in half for every 10° C. Phase-to-Phase and turn-to-turn current leakage as a result of insulation break-down is detected by the Sensotorq®. The indication is expressed as severity on a scale of 1-100 where; 0-20 is normal operating condition, 21-80 is suspicious requiring further monitoring and 81 and above indicates critical condition, approaching motor failure.



Motor Health – rotor condition

Another contributor to electrical failure of AC motors is cracked or broken rotor bars. Rotor bar failure causes a torque vibration at the pole passing frequency of the motor. Because the Sensotorq® measures torque with an accuracy of +/- 2%, it can easily detect rotor bar breakdown. The indication is expressed as severity on a scale of 1-100 where; 0-20 is normal operating condition, 21-80 is suspicious requiring further monitoring and 81 and above indicates critical condition, approaching motor failure. Sensotorq® identifies winding shorts and broken rotor bars at a very early stage. These unique capabilities make it a valuable tool to protect the capital investment in your critical rotating equipment.



How the Sensotorq® works

The Sensotorq® is a digital torque and power instrument specifically developed for 3-phase motors. From the measured current and voltage on the electrical leads of the motor, the instrument determines torque, speed, power and motor health without using any additional sensor. Sensotorq® connects at the Motor Control Center for both portable and on-line monitoring. These characteristics make Sensotorq® easy to install and easy to use with results in minutes. Motor health is only one of the uses for Sensotorq® please visit our website to learn more.

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