



## GLOSSARY OF TERMS **GUIDE**

TECHNICAL INFORMATION EDUCATION SERIES



**Ambient temperature**—The temperature of the surrounding cooling medium. Commonly known as room temperature when the air is the cooling medium in contact with the equipment.

**Base line**—A measurement taken when a machine is in good operating condition that is used as a reference for monitoring and analysis.

**Breakdown torque**—The maximum torque that an AC motor will develop with rated voltage applied at rated frequency without an abrupt drop in speed. Also termed pull-out torque or maximum torque.

**Efficiency**—The ratio between useful work performed and the energy expended in producing it. It is the ratio of output power divided by the input power.

**Full-load speed**—The speed at which any rotating machine produces its rated output.

**Full-load torque**—The torque required to produce rated power at full-load speed.

**General purpose motor**—AC induction motor of 500 horsepower or less, open or enclosed construction, continuous duty, designed in standard ratings with standard characteristics for use under service conditions without restriction to a particular application (see NEMA MG 1-1998, I.6.1).

**Hertz (Hz)**—The preferred terminology for cycles per second (frequency).

**Horsepower**—A unit for measuring the power of motors or the rate of doing work. One horsepower equals 33,000 foot-pounds of work per minute (550 ft•lbs per second) or 746 watts.

**Insulation**—Nonconducting materials separating the current-carrying parts of an electric machine from each other or from adjacent conducting material at a different potential.

**Kilowatt (kW)**—A unit of electrical power. Also, the output rating of motors manufactured and used off the North American continent.

**Locked-rotor current**—Steady-state current taken from the line with the rotor at standstill and at a rated voltage and frequency.

**Locked-rotor torque**—The minimum torque that a motor will develop at standstill for all angular positions of the rotor with rated voltage applied at rated frequency.

**Megohmmeter**—An instrument for measuring insulation resistance.

**NEMA**—National Electrical Manufacturers Association.

**Poles**—The magnetic poles set up inside an electric machine by the placement and connection of the windings.

**Rated temperature rise**—The permissible rise in temperature above ambient for an electric machine operating under load.

**Rotor**—The rotating element of any motor or generator.

**Slip**—The difference between synchronous and operating speeds, compared to synchronous speed, expressed as a percentage. Also the difference between synchronous and operating speeds, expressed in rpm.

**Soft foot**—The condition where the mounting feet of a motor and the pads of the base are not all in the same plane.

**Stator**—The stationary part of a rotating electric machine. Commonly used to describe the stationary part of an AC machine that contains the power windings.

**Synchronous speed**—The speed of the rotating machine element of an AC motor that matches the speed of the rotating magnetic field created by the armature winding.

$$\text{Synchronous speed} = (\text{Frequency} \times 120) / (\text{Number of poles})$$

**Torque**—The rotating force produced by a motor. The units of torque may be expressed as pound-foot, pound-inch (English system), or newton-meter (metric system).

**Trending**—Analysis of the change in measured data over at least three data measurement intervals.



Source: How to Get the Most Out of Your Electric Motors  
Electrical Apparatus Service Association



**TECHNICAL INFORMATION EDUCATION SERIES**

