September 2008

NEMA Premium

Horizontal A.C. Motors

Totally Enclosed Fan Cooled 841 Plus®

- Meets or Exceeds IEEE 841 Standard - 2001
- 5 Year Limited Warranty
- 1- 400 Horsepower
- 143 to 449 Frame Sizes
- 2, 4, 6, 8 Poles
- 460 and 575 Volts at 60 Hertz
- Meets Vibration Requirements of GM7E-TA

Designed to exceed the IEEE 841 Standard - 2001, Emerson's 841 PLUS motors are commonly used in severe duty environments for pumps, compressors, fans, blowers, and other material processing applications. These rugged motors are ideal for constant speed or inverter duty applications typically found in the petroleum, chemical, pulp and paper, wastewater, automotive and mining industries.

EMERSON. CONSIDER IT SOLVED.™

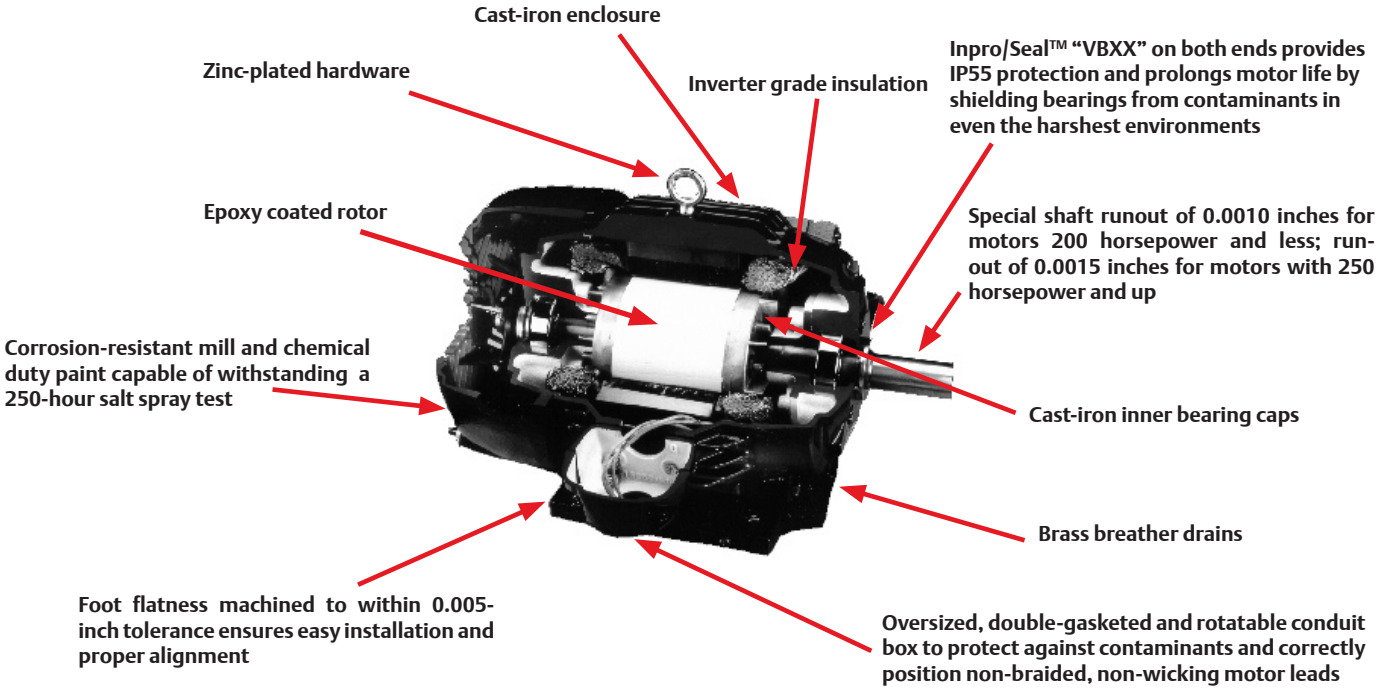
US MOTORS

EMERSON™
Motor Technologies

Product Overview

Emerson's team of engineers has applied more than 100 years of motor expertise and the Motor Technology Center's cutting-edge laboratories to design and test the 841 PLUS® motors. These motors are named not just for meeting the rigid IEEE 841 requirements, but for exceeding them through innovation. In addition, 841 PLUS® products carry the NEMA Premium® efficient rating due to the use of low-loss silicone steel and streamlined designs, which minimize operating temperatures and ultimately lower costs. The 841 PLUS® is designed to operate in ambient temperatures of -30 degrees C to 40 degrees C, in altitudes of up to 1,000 meters above sea level and with NEMA Design B torque-current characteristics.

All 841 PLUS® motors carry a five-year limited warranty for sine wave power and a three-year limited warranty on inverter duty applications *



841 PLUS®

The 841 PLUS® surpasses IEEE 841 requirements in many ways:

Product Features

Reliability and performance are built into each 841 PLUS® motor. In addition, inertia-load acceleration capabilities for the 841 PLUS® meet the stringent requirements of NEMA MG 1-1998, Section 12.54.

841 PLUS® motors feature:

- 1.15 Service Factor on sine wave power; 1.0 Service Factor on Inverter Duty
- Class B temperature rise at 1.0 Service Factor by resistance with sine wave power
- Class F insulation materials to increase motor life
- Polyurea grease
- Stainless-steel nameplate
- Variable frequency drive or full voltage, across-the-line starting
- Ground on frame
- AFBMA bearing numbers on nameplate
- Protective coating on each rotor and shaft from bearing journal to bearing journal

Inverter Duty

Emerson's patented inverter grade insulation system means the 841 PLUS® is capable of withstanding spike and transient voltages induced by insulated bipolar gate transistor drives, making it fully compliant with NEMA MG-1, Part 31. All of this is possible through:

- Pulse-resistant magnetic wire that provides protection against high-voltage spikes
- Additional lacing on the end turns improve coil rigidity
- Multiple bake cycles to help prevent coil-to-coil circuits
- Phase paper to help prevent phase-to-phase arcs
- Adjustable frequency of 5:1 constant torque or 10:1 variable torque

Options and Accessories

Emerson offers the following custom-design options on its 841 PLUS® products:

- SKF CARB™ roller bearings where applicable
- Horizontal or vertical mounting
- Vibration detectors
- Sealed insulation treatments, available on motors above 200 horsepower, to help shield motor windings
- Winding and bearing thermal protection for motors 250 horsepower and up
- VPI sealed insulation system on stator windings for motors 250 horsepower and up
- Division 2 non-listed per NEC article 500 (NFPA 70)
- Inpro/Seal™ grounding rings conversion available in 2007

Stock Motors	Custom & Conversion Motors
1-400 horsepower	1-500 horsepower
2, 4, 6 pole designs	2, 4, 6, 8 pole designs
460 and 575 volts	200, 230, 460 and 575 volts
Constant or variable torque	Constant or variable torque
1-10 hp C-Face Footless	C & D flange kits available 140-440 frame

Testing and Inspections

Emerson conducts extensive testing and inspections on each of its 841 PLUS® products.

- No load current, power and speed
- High-potential test on stator windings
- Insulation resistance test by megohmeter and polarization index
- Vibration levels 0.08 inches per second for 2,4 and 6 pole motors and 0.06 inches per second for 8 pole motors
- Optional complete test, including full load test

For additional information, please refer to Emerson's Full Line Standard Motor Catalog (FL600) or NEMA Horizontal Custom Motor Cataog (PB202), or simply contact your Emerson Representative.

**Five-year warranties last 60 months from installation to a maximum of 66 months from the manufacturing date. Three-year warranties last 36 months from installation to a maximum of 42 months from the manufacturing date.*

** NEMA Premium® is a registered trademark of the National Electrical Manufacturers Association.*

Emerson, a global leader in the design and manufacture of electrical motors, provides a complete line of general and special purpose electric motors from 1/200 through 5,000 horsepower. Brands such as Emerson®, U.S. Motors®, and Hurst® allow Emerson to support a wide variety of applications including commercial and industrial, appliance, hermetic, automotive, and HVAC. Emerson (NYSE: EMR), based in St. Louis, is a global leader in bringing technology and engineering together to provide innovative solutions to customers through its network power, process management, industrial automation, climate technologies, and appliance and tools businesses.

Emerson Motor Company
8100 West Florissant Ave.
St. Louis, MO 63136
Phone: 888-637-7333
Fax: 314-553-2087