

Horizontal A.C. Motors

Definite Purpose Inverter Duty



- Horsepower:** 1/4 – 400 HP, ODP
1/4 – 200 HP, TEFC
1/4 – 200 HP, TEBC & Vector
1/4 – 30 HP, TENV & Vector
1/4 – 20 HP, ACCU-Torq®

- Speed Range:** 10:1 – Variable Torque
5:1 – Constant Torque
30:1 – TEBC & TENV
1000:1 – Vector Duty
2000:1 – ACCU-Torq®

Totally Enclosed Fan Cooled and Open Dripproof

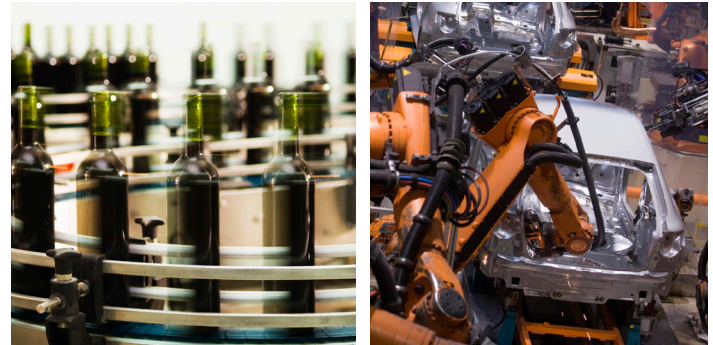
- Inverter Duty, Exceeds NEMA MG1-Part 31
- For use on applications powered by variable frequency drives
- ALLGUARD® Motor Quality System
- 3 Year Warranty applies for inverter and sine wave power applications

Product Overview and Options

U.S. MOTORS® brand Inverter Duty motors are used on applications powered by adjustable frequency drives, such as:

- Pumps
- Fans
- Blowers
- Other inverter powered applications having variable torque load profiles
 1. Conveyors
 2. Extruders
 3. Winders
 4. Other constant torque applications

Inverter Duty motors are designed with a 1.15 service factor (1.15 on sine wave power) and 40°C ambient conditions. NEMA Design B is standard (NEMA Design A on vector). These special motors have insulation designed to withstand the steep-wave-front voltage impressed by the VFD waveform, and are redesigned to run smoother and cooler on inverter power supplies.



Premium efficiency levels are standard on the inverter duty product. This allows the motor to run cooler and more effectively, whether powered by sine wave or inverter power. An INVERTER GRADE® insulation system protects the windings from voltage spikes caused by inverter power. It consists of:

- Insulife 2000 – double dip and bake with 100% solids polyester varnish
- Extra slot, cell and phase insulation
- Extra end turn bracing

Custom and Conversion Motors

- Dynamically balanced rotor to ½ NEMA
- Inverter information on the nameplate
- Three normally closed thermostats
- Premium Efficient Design

NEMA MG1 Standards

U.S. MOTORS brand Inverter Duty/Inverter Grade® insulated motors exceeded NEMA®† MG-1 Part 30 & 31 before the standards



ODP



Unimount®



Hostile Duty



ACCU-Torq®

Product Overview and Options *continued*

were established. We are a leader in the development of electric motors to withstand pulse width modulated (PWM) drives evolution from power transistors to higher switching frequency insulated gate bipolar transistors (IGBTs).

The Inverter Grade insulation system in our Inverter Duty motors has been tested in the field for more than a decade. This system guarantees consistent performance for better process control. A double dip and bake treatment seals the windings and protects them from moisture and dirt. Extra end-turn bracing, more phase paper, and pulse resistant magnet wire assures superior reliability.

All Inverter Duty motors meet the demands of adjustable frequency controls and come standard with a thermostat to avoid thermal overload. A high thermal margin provides torque at 5:1 constant and 10:1 variable torques.

Large Product Offering

U.S. MOTORS brand inverter grade products can be found in the following designs:

- TEFC
- ODP
- TEBC
- TENV
- Explosion Proof (UL Listed)
- Vector Duty
- ACCU-Torq®
- Automotive Duty
- Washdown Duty

Features

Mechanical Features

- F-1 assembly
- Special balanced to .08 ips peak for 2-6 pole and .06 ips peak for 8 pole and slower.
- Footed construction
- Diagonally split conduit box with four position conduit entrance

Electrical Features

- Meets performance standards established in NEMA MG-1 Part 31
- Inverter Grade® Insulation System
- 1.0 Service Factor on inverter power
- 1.15 Service Factor on sine wave power
- 230/460 Volt (460V only on 405-449 frame)
- Meets or exceeds EISA Federal efficiency standards
- NEMA Design B

Horizontal Motors	<ul style="list-style-type: none"> • .25 through 4000 HP • Constant and variable torque ratings • 2,4,6 and 8 poles • ODP, TEFC, CORRO-Duty®, explosion proof and automotive duty.
Vertical Motors	<ul style="list-style-type: none"> • 3 through 5000 HP • Variable torque • HOLLOSHAFT® and solid shaft designs • 2, 4, 6 and 8 poles • WPI, WP11, TEFC and explosion proof
Vector-Controlled Motors	<ul style="list-style-type: none"> • .25 through 200HP; 140 through 440 frame sizes • Constant torque to 60Hz • 1024 ppr, 5-28V encoder standard • 2, 4, 6 and 8 poles • TENV and TEBC designs
Blower-Cooled Motors	<ul style="list-style-type: none"> • 1/3 through 200HP, 140 through 440 frame sizes • 30:1 constant torque operating range • 2, 4, 6 and 8 pole • Auxiliary blower for cooling

Contact your Nidec Motor Corporation sales representative or refer to our Full Line Standard Motor Catalog (FL600) for additional information on U.S. MOTORS® brand Inverter Duty motors.

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