Low Voltage Motors

Three-Phase Severe Duty & Explosion Proof Motors
<table>
<thead>
<tr>
<th></th>
<th>W22 Severe Duty</th>
<th>W22 IEEE 841</th>
<th>W21Xd Explosion Proof</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GENERAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horsepower</td>
<td>0.5 - 800HP</td>
<td>0.5 - 400HP</td>
<td>0.5 - 500HP</td>
</tr>
<tr>
<td>Speed (60 Hz)</td>
<td></td>
<td>3600, 1800, 1200, or 900 RPM</td>
<td></td>
</tr>
<tr>
<td>Voltage (60 Hz)</td>
<td>200, 230/460, 460, or 575</td>
<td>460, or 575</td>
<td>230/460, 460, or 575</td>
</tr>
<tr>
<td>Frame Size</td>
<td>143T - 589</td>
<td>143T - 449</td>
<td>143T - 587</td>
</tr>
<tr>
<td>Enclosure</td>
<td>TEFC</td>
<td>TEFC</td>
<td>TEFC</td>
</tr>
<tr>
<td>Application Design</td>
<td>Severe Duty</td>
<td>Extra Severe Duty</td>
<td>Extra Severe Duty</td>
</tr>
<tr>
<td><strong>MECHANICAL FEATURES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cast Iron Frame</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Degree Of Protection</td>
<td>IP55</td>
<td>IP55+</td>
<td>IP55+</td>
</tr>
<tr>
<td>External Ground Provision</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Bi-directional Rotation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Automatic Condensation Drains, Both End Brackets</td>
<td>Yes (Rubber)</td>
<td>Yes (Stainless steel)</td>
<td>Yes - 254 frames &amp; above (Bronze)</td>
</tr>
<tr>
<td>Locked Bearings</td>
<td>Yes - 254 frames &amp; above</td>
<td>Yes</td>
<td>Yes - 254 frames &amp; above</td>
</tr>
<tr>
<td>L-10 Bearing Life Exceeding 100,000 Hours (Direct Coupled)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>L-10 Bearing Life Exceeding 40,000 Hours (Belt Drive)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Regreasable Bearings (Grease Type)</td>
<td>Mobil Polyrex EM</td>
<td>Mobil Polyrex EM</td>
<td>Mobil Polyrex EM</td>
</tr>
<tr>
<td>Grease Fittings</td>
<td>254 &amp; Larger: Grease fittings in DE &amp; NDE bearings</td>
<td>All frames: Seamless SS grease fitting &amp; extending tube / Carbon steel grease relief &amp; extending tube</td>
<td>254 &amp; Larger: Grease fittings in DE &amp; NDE bearings</td>
</tr>
<tr>
<td>Rotatable in 90° Increments</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Terminal Box Volume Per NEMA® Part 4</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Lead Terminal Lugs</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Shaft Runout 1/2 NEMA Standards</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Corrosion Resistant Hardware</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Motor Vibration Per IEEE 841-2009</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes - 364 frame &amp; larger</td>
</tr>
<tr>
<td>0.005” Verified Foot Flatness</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>304 SS Nameplate</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Paint System Surpassing 96 Hour Salt Spray Test</td>
<td>Yes, exceed 200hrs</td>
<td>Yes, exceeds 240hrs</td>
<td>Yes, exceed 200hrs</td>
</tr>
<tr>
<td>ELECTRICAL FEATURES</td>
<td>W22 Severe Duty</td>
<td>W22 IEEE 841</td>
<td>W21Xd Explosion Proof</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>-----------------</td>
<td>--------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Meets or Exceeds NEMA Premium® Efficiency</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Class F Insulation (Class H Magnet Wire &amp; Varnish)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Service Factor (60Hz)</td>
<td>1.25 (up to 100 HP) 1.15 (125 HP &amp; above) 1.15 (125 HP &amp; above) 1.15 (up to 450 HP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal Protection</td>
<td>No</td>
<td>No</td>
<td>Thermostat 155°C</td>
</tr>
<tr>
<td>Space Heaters</td>
<td>586 &amp; Larger</td>
<td>586 &amp; Larger</td>
<td>586 &amp; Larger</td>
</tr>
<tr>
<td>Low Loss Electrical Grade Core Steel (500°C Burnout) 326T &amp; Larger</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Inverter Rated</td>
<td>1000:1 for Variable Torque 20:1 Constant Torque up to 250HP 6:1 Constant Torque 300HP &amp; up * Insulated housing standard on L449T &amp; above 1000:1 for Variable Torque 20:1 for Constant Torque * Frame 586/7 250HP and up 6:1 CT and 1000:1 VT * Insulated housing standard on L447/9T and above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADDITIONAL NOTES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forged Shouldered Eyebolt With Blind Hole</td>
<td>182 &amp; Larger</td>
<td>182 &amp; Larger</td>
<td>143 &amp; Larger</td>
</tr>
<tr>
<td>Suitable for Hazardous Area</td>
<td>Class I Div 2, Groups A, B, C &amp; D Class II, Div 2, Groups F &amp; G Class I Div 2, Groups A, B, C &amp; D Class II, Div 2, Groups F &amp; G Class I, Div 1, Groups C &amp; D Class II, Div 1, Groups F &amp; G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Sound Power Level dBA, No Load</td>
<td>NEMA® Part 9</td>
<td>NEMA® Part 9</td>
<td>NEMA® Part 9</td>
</tr>
</tbody>
</table>
Three Phase General Purpose Motors

W22 - CAST IRON

Standard Features:

- 50/60 Hz rated (380V on nameplate - 400/415 available)
- Rated 50HZ at same horsepower up to 250HP 1.0 Service Factor for 2, 4 & 6 pole motors
- Rated 50Hz at same horsepower up to 125HP 1.0 Service Factor for 8 pole motors
- Class F insulation (impregnation resin and magnet wire are class H)
- F1 mounted (cast iron frames are F2 convertible). Frames 447T and up can easily be F2 converted by simply rotating the terminal box adapter
- Cast iron frames: regreasable ball bearings (frames 254T and up)
- Gasketed conduit box

Features that make a difference:

- All NEMA Premium® ratings have a 1.25 Service Factor (up to 100 HP) resulting in cooler operation and extended life of the motor
- All Cast Iron Construction, including Terminal Box and Fan Cover
- Solid feet for reduced vibration levels and impact absorption
- Optimized ventilation system for cooler operation and extended life
- High Grade FC200 cast iron provides superior mechanical strength and heat dissipation
- All WEG W22 motors are Totally Enclosed Fan Cooled with a true IP55 rating against dust and moisture. (IP56, IP65 and IP66 available as options)
- Exclusive W-Seal 364T and larger provides superior bearing protection
- Taconite Labyrinth seal 586 Frame and larger
- Exclusive WEG painting system exceed 200hrs ASTM 117 corrosion test (Exceeds IEEE 841 standard)
- Balanced to 0.08 inches per second vibration limits (Meets IEEE 841 standard)
- Four Bolt Conduit Cover with glued Neoprene Gasket
- Impregnation Resin and magnet wire are insulation class H
- Stainless Steel Nameplate - Laser etched with high contrast background
- Corrosion Proof Drains
- Inverter Duty per NEMA MG1, Part 31
- Certified Class I Div 2, Groups A, B, C & D, Class II, Div 2, Groups F & G
- Suitable for IEEE45 and USCG 259 – Marine Duty

Inverter Rated*:

1000:1 for Variable Torque
NEMA Premium®:
20:1 Constant Torque up to 250HP
6:1 Constant Torque 300HP and up
* Insulated NDE housing standard on L447/9T and above

*Cast iron fan cover available as an option on 143-215T frames
WEG's IEEE 841 motors are specially suited for Pulp & Paper mills, Steel mills, Petrochemical Plants and diverse demanding applications requiring severe duty long life motors.

WEG's W22 cast iron platform has an improved cooling system and solid feet for cooler operation and reduced vibration and noise extending the life of the motor.

**Standard Features:**
- Class F insulation (Impregnation Resin and magnet wire are class H)
- F1 Mounted (F2 convertible). Frames 447T and up can easily be F2 converted by simply rotating the terminal box adapter
- Stainless Steel Nameplate - Laser etched with high contrast background
- All frames with regreaseable ball bearings
- Class I, Div. 2, Groups A, B, C & D – T3, Class II, Div 2, Groups F & G – T3C

**Features that make a difference:**
- 1.25 Service Factor up to 100 HP
- InproSeal Bearing Isolators both ends
- Bearing protection meets IP56
- Rubber lead separator between terminal box and frame
- Vibration: 0.04 inches per second or less
- Guaranteed foot flatness to within 0.005”
- Bearing life 50,000 hours (L-10)
- Epoxy Paint system exceeds 250hrs Salt Spray test
- Interior surfaces are epoxy coated
- Non-sparking fan
- NPT Threaded terminal box
- Seamless copper lead lugs
- Seamless Stainless Steel grease extension tubes
- Automatic grease relief fittings
- IEEE 841 Test Report in conduit box
- Suitable for IEEE45 and USCG 259 – Marine Duty

**IEEE 841 - THREE PHASE**
**TEFC - NEMA Premium®**

Three-Phase General Purpose Motors

IEEE 841 motors have been tested to IEEE 841, ready for installation in Pulp & Paper mills, Steel mills, Petrochemical Plants, and other demanding applications.

*Inverter Rated:*
- 1000:1 for variable torque
- 20:1 for constant torque

* Frame 586/7 250HP and up 6:1 CT and 1000:1 VT

* Insulated bearing housing on the NDE standard on L447/T and above
WEG Explosion Proof motors are suitable for applications requiring UL or CSA certification for hazardous locations.

**Standard Features:**

- Class F insulation (Impregnation Resin and Magnet wire are class H)
- F1 Mounted
- Stainless Steel Nameplate - Laser etched with high contrast background
- Regreasable ball bearings (Frames 254T and up)
- CSA Approved - File LR50962
  - Class I, Division 1, Groups C & D Temperature Code T3C
  - Class II, Division 1, Groups F & G Temperature Code T3C
- UL Listed - File E87848
  - Class I, Division 1, Groups C & D
  - Class II, Division 1, Groups F & G
  - Frame (143T-326T) Temperature Code T3C
  - Frame (364T and up) Temperature Code T3C
- CSA Approved - File LR50962
  - Class I, Division 1, Groups C & D Temperature Code T3C
  - Class II, Division 1, Groups F & G Temperature Code T3C

**Features that make a difference:**

- NPT threaded terminal box
- Non-sparking fan
- Thermostats
- IP55 rated enclosure
- VFD Service 20:1 CT; 1000:1 VT (cCSAus and excludes frames 449T & 586/7)

**Explosion Proof Motors**

**Standard Features:**

- Class F insulation (Impregnation Resin and Magnet wire are class H)
- F1 Mounted
- Stainless Steel Nameplate - Laser etched with high contrast background
- Regreasable ball bearings (Frames 254T and up)
- CSA Approved - File LR50962
  - Class I, Division 1, Groups C & D Temperature Code T3C
  - Class II, Division 1, Groups F & G Temperature Code T3C
- UL Listed - File E87848
  - Class I, Division 1, Groups C & D
  - Class II, Division 1, Groups F & G
  - Frame (143T-326T) Temperature Code T3C
  - Frame (364T and up) Temperature Code T3C

1) Class II UL only available as IP54 Modification.
2) T4 Temperature Code available on sine wave power as mod Stock units are Class II only for cCSA_us

**Inverter Rated: 143T – 586/7**

UL Listed - (File E87848)  
CSA US - (Certificate 1629892)

**Constant Torque**

- 20:1 for frames 143T to 215T - Class I & II
- 6:1 for frames 254T to 326T – Class I & II
- 2:1 for frame 364/5T to 586/7T - Class I & II (Class I only for 449T)

**Variable Torque**

- 1000:1 for all frames excluding 449T - Class I & II
- 1000:1 for 449T - Class I only
The Superior Choice for HEAVY INDUSTRIAL Applications

Low and Medium Voltage Motors and Drives

Large end users demand WEG products by name because they know WEG meets or exceeds the toughest specifications for Heavy Industrial applications.

Transforming Energy Into Solutions
WEG Electric Corp. offers the following products, and more! With a full range of IEC/NEMA Global Certifications and a full line of products, WEG can supply the right solution for your needs anywhere in the world. To learn more about WEG’s products and solutions or to locate a Distributor near you, please call 1-800-ASK-4WEG or visit www.weg.net.

**Low Voltage Motors, Single and 3-Phase, 1/8 – 700HP**
- General Purpose Motors
- Explosion Proof Motors
- Crusher Duty Motors
- IEC Tru-Metric Motors
- Pump Motors including JP/JM
- P-Base Pump Motors
- Oil Well Pumping Motors
- Pool & Spa Motors
- Brake Motors
- Compressor Duty Motors
- Farm Duty Motors
- Poultry Fan Motors
- Auger Drive Motors
- IEEE 841 Motors
- Stainless Steel Wash Down Motors
- Saw Arbor Motors
- Cooling Tower Motors
- Commercial HVAC Motors
- Pad Mounted Motors
- Vector Duty Motors

**Large Electric Motors**
- Low Voltage 3-phase motors up to 2,500HP
- Induction Motors up to 70,000HP and 13,200V
- Wound Rotor Systems (including starters) up to 70,000HP and 13,200V
- Synchronous Motors up to 200,000HP and 13,200V
- Explosion proof motors (Ex-d) up to 1,500kW and 11kV
- Ex-n, Ex-e, Ex-p motors

**Variable Frequency Drives**
- Low Voltage 1/4 to 2500HP, 230V – 480V
- Medium Voltage 500-10,000HP
- Multi-pump systems
- NEMA 4X
- Dynamic braking resistors
- Line and load reactors
- Plug and play technology
- Network communications: Profinet-OP, DeviceNet, Modbus-RTU
- PLC functions integrated
- Complete line of options and accessories

**Soft Starters**
- 3-1500HP
- Oriented start-up
- Built-in bypass contactor
- Universal source voltage (230-575V, 50/60Hz)
- Network communications: Profinet-OP, DeviceNet, Modbus-RTU
- Complete Line of options and accessories
- MV Soft-starter: 3.3kV, 4.16kV: up to 3500HP, Withdrawable Power Stacks, & 8x PT100 Temperature monitoring

**Controls**
- Mini – Contactors
- IEC Contactors
- Thermal Overload Relays
- Manual Motor Protectors
- Molded Case Circuit Breakers
- Smart Relays
- Enclosed Starters: combination & non-combination
- Pushbuttons & Pilot Lights
- Timing & Motor Protection Relays
- Terminal Blocks

**Variable Frequency Drives**
- Custom configured to your specification.
- NEMA 1, 12, 3R, 4 and 4X cabinets
- Quick delivery of preconfigured drives and soft starters
- UL 508 certified
- Low Voltage (230–460)
- Made in the U.S.A.

**Generators**
- Brushless Synchronous Generators for diesel gen-sets up to 4,200kVA
- Hydro-generators up to 25,000kVA
- Turbo-generators up to 175,000kVA

**Power Transformers**
- Built and engineered in North America
- Voltages < 345kV
- Ratings 5-250MVA
- Station class, oil filled, round core, copper windings
- Special configurations and designs available!
- Ask your WEG Sales Representative for details.
- Custom Solution Package Sales
- WEG can package any of its products for ease of sale! Enjoy a single point of contact for the entire package of products and assistance from quote through after-sales support. Ask your WEG Sales Representative for details.