

Cat® Electric Motor for Gas Compression

CN3086

• 3000 bhp, 2237 bkW @ 900 rpm

Specifications

| | | | |
|---|---|-----------------------------------|---------------------------|
| Motor Type..... | Squirrel Cage Induction Motor | Max Altitude Before Derate | 3300 ft (1000 m) |
| Number of Poles..... | 8 | Duty | Continuous |
| Full Load Speed..... | 892 rpm | Temperature Rise..... | Class B at rated load |
| Voltage/Frequency..... | 4000V ± 10%/60 Hz | Connection of Stator Winding..... | Star |
| Hazardous Area Rating..... | Class 1 Division 2 Group A,B,C,D T3 (NEC or CEC) | Full Load Current | 390 Amps |
| Mounting Designation..... | F1 or F2 | Locked Rotor Amps | 490% Code D |
| Enclosure Type/Method of Cooling | WP-II | Locked Rotor Torque | 50% |
| Insulation | Class F | Breakdown Torque..... | 190% |
| Service Factor..... | 1.15 SF (1.0 VFD) | No Load Current | 108 Amps |
| Standards..... | NEMA MG1 | Rated Torque | 17,658 lb-ft (23,941 N•m) |
| Max Ambient Temperature Before Derate | 104°F (40°C) | Shaft..... | 8.5 in (216 mm)* |

*minimum diameter up to NDE bearing

Standard Features

Bearings

- Self-lubricated sleeve bearings
- Insulated non-drive end bearings to reduce bearing currents
- Bearing RTDs for temperature monitoring

Rotors

- Designed for minimal vibration
- Dynamic balancing at full operational speed
- Fabricated copper squirrel cage
- Forged, keyless shaft
- AISI 4140/DIN 42CrMo4 shaft

Stators

- Radial air ducts ensure uniform and efficient cooling
- Vacuum pressure impregnated with a specially formulated epoxy resin
- 2x RTDs per phase
- Space heater
- Welded and machined stator core retains its rigidity throughout motor life to ensure a sealed and homogeneous insulation system that results in high dielectric strength, excellent heat transfer and the elimination of hazardous internal partial discharges
- Magnetic slot wedges enhance the power factor and operating efficiency
- VFD ready

Performance Ratings

| | Load % | Current Amps | Efficiency % | Power Factor |
|--|--|--------------|--------------|--------------|
| Load Characteristics | 100 | 390 | 96.2 | 0.86 |
| | 75 | 297 | 96.4 | 0.85 |
| | 50 | 212 | 96.1 | 0.79 |
| Direction of Rotation | Bi-directional | | | |
| Sound Pressure Level (sinus supply, no load) | 82 dB(A), tol. + 3 dB(A), 3 ft (1 m) | | | |
| Weight of Rotor | 6217 lb (2820 kg) | | | |
| Total Weight of Motor | 20,547 lb (9320 kg)** | | | |
| Inertia Rotor/Load | Approx. 3674 lb-ft ² /346 lb-ft ² (155 kg-m ² /15 kg-m ²) | | | |
| Bearings | Sleeve self-lubricated | | | |
| Maximum Stalling Time | 17.8 s (warm) | | | |
| Starting Time | 0.9 s (V=100%), 1.8 s (V=80%) | | | |
| Number of Consecutive Starts per hour (evenly spaced intervals) | 3/2 (cold/warm) | | | |
| Maximum Number of Starts | 1000/year | | | |
| Speed Range | 450-900 rpm w/blower, 765-900 rpm w/o blower | | | |

**± 5%



CN3086

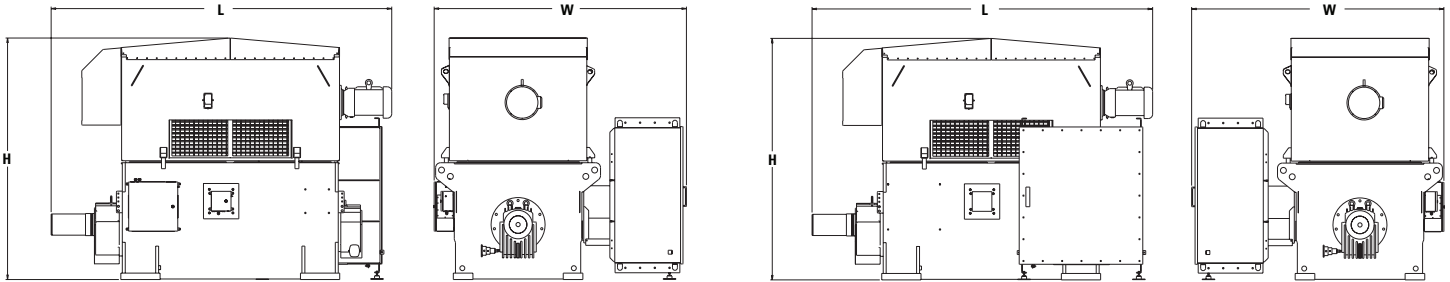
Cat® Electric Motor for Gas Compression

3000 bhp

Dimensions

F1 Mount

F2 Mount

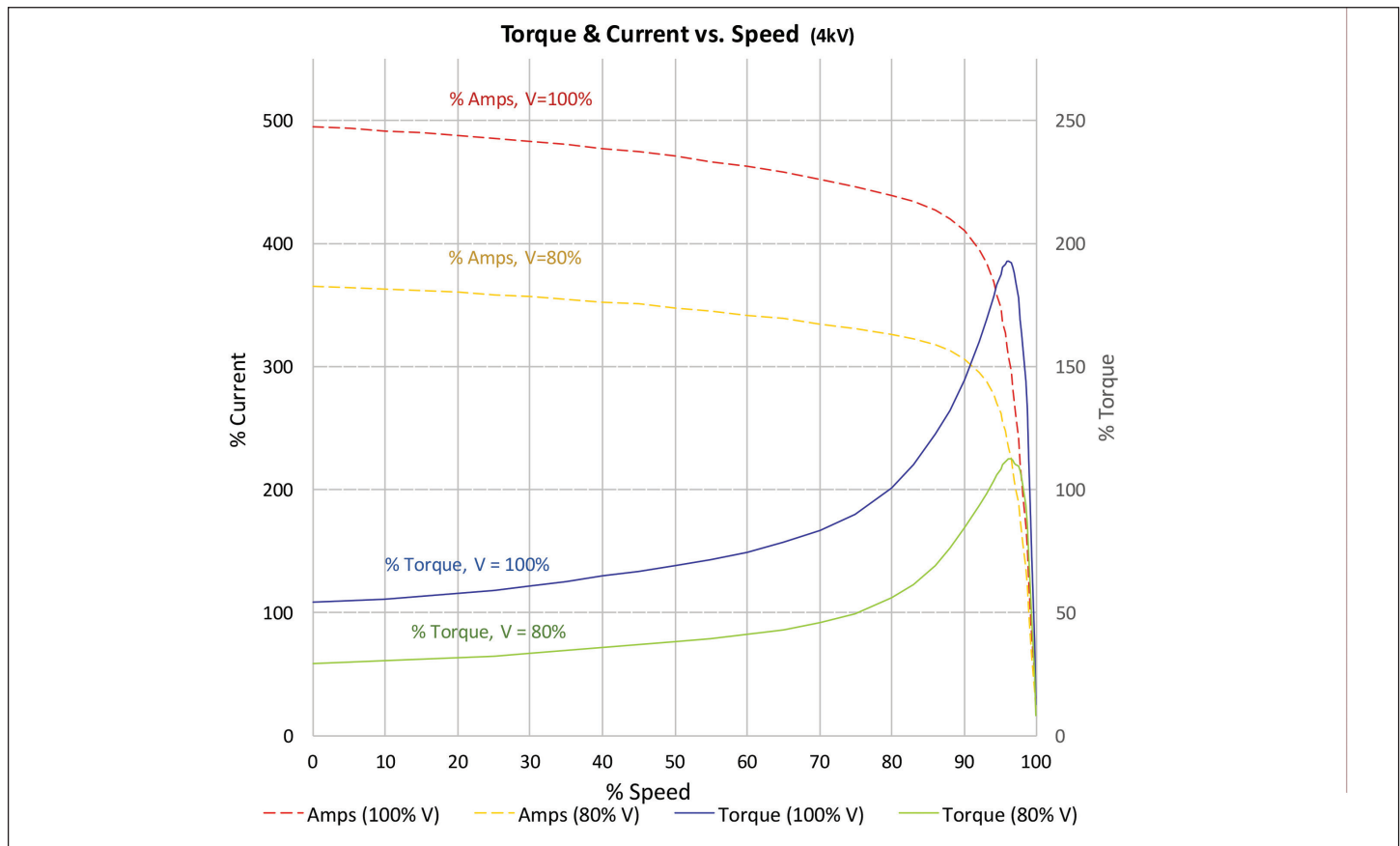


Standard Terminal Box Shown

| | |
|--------------|---------------------|
| Length | 136.61 in (3470 mm) |
| Width | 101.18 in (2570 mm) |
| Height | 96.87 in (2461 mm) |
| Weight | 17,130 lb (7770 kg) |

approximate dimensions

Performance Curves



Performance Curves continued

