

# Cat® Electric Motor for Gas Compression

# CN5086

- 5000 bhp, 3728 kW @ 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 .....	895 rpm	Temperature Rise ....	Class B at rated load. Refer to service factor
Voltage/Frequency .....	4160V ± 10%/60 Hz	Connection of Stator Winding .....	Star
Hazardous Area Rating .....	Class 1 Division 2	Full Load Current .....	643 Amps
	Group A,B,C,D T3 (NEC or CEC)	Locked Rotor Amps .....	560% Code F
Mounting Designation .....	F1 or F2	Locked Rotor Torque .....	70%
Enclosure Type/Method of Cooling .....	WP-II	Breakdown Torque .....	210%
Insulation .....	Class F	No Load Current .....	220 Amps
Service Factor at Class B Temperature Rise ..	1.0 SF (DOL and VFD)	Rated Torque .....	29,351 lb-ft (39815 N•m)
Service Factor at Class F Temperature Rise ..	1.15 SF * (DOL)	Shaft .....	8.5 in (216 mm)**
Standards .....	NEMA MG1		
Max Ambient Temperature Before Derate .....	104°F (40°C)		

\*optional blower required  
 \*\*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

## CN5086 Performance Ratings

	Load %	Current Amps	Efficiency %	Power Factor
<b>Load Characteristics</b>	100	643	96.6	0.83
	75	498	96.7	0.81
	50	369	96.4	0.73
<b>Direction of Rotation</b>	Bi-directional			
<b>Sound Pressure Level (sinus supply, no load, with blower)</b>	88 dB (A), tol + 3 dB (A), 3ft			
<b>Weight of Rotor</b>	7848 lb (3560 kg)			
<b>Total Weight of Motor</b>	24,074 lb (10,920 kg)***			
<b>Inertia Rotor/Load</b>	Approx. 5205 lb-ft <sup>2</sup> /767.7 lb-ft <sup>2</sup> (219 kg-m <sup>2</sup> /32.4 kg-m <sup>2</sup> )			
<b>Bearings</b>	Sleeve self-lubricated			
<b>Maximum Stalling Time</b>	11.2 s (warm)			
<b>Starting Time</b>	0.6 s (V=100%), 1.3 s (V=80%)			
<b>Number of Consecutive Starts per Hour (evenly spaced intervals)</b>	3/2 (cold/warm)			
<b>Maximum Number of Starts</b>	1000/year			
<b>Speed Range</b>	450-900 rpm w/blower			

\*\*\*± 5%

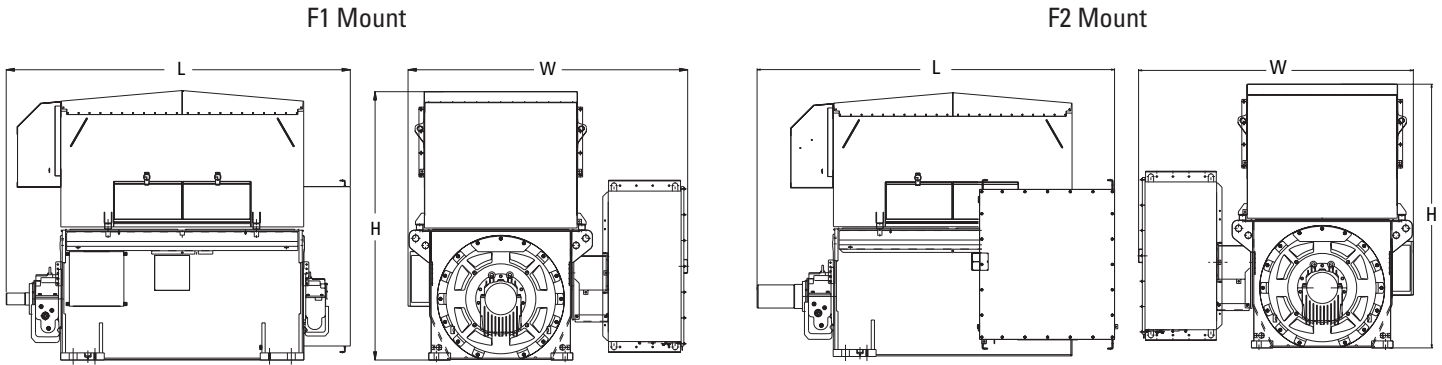


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## Cat® Electric Motor for Gas Compression

5000 bhp

### Dimensions

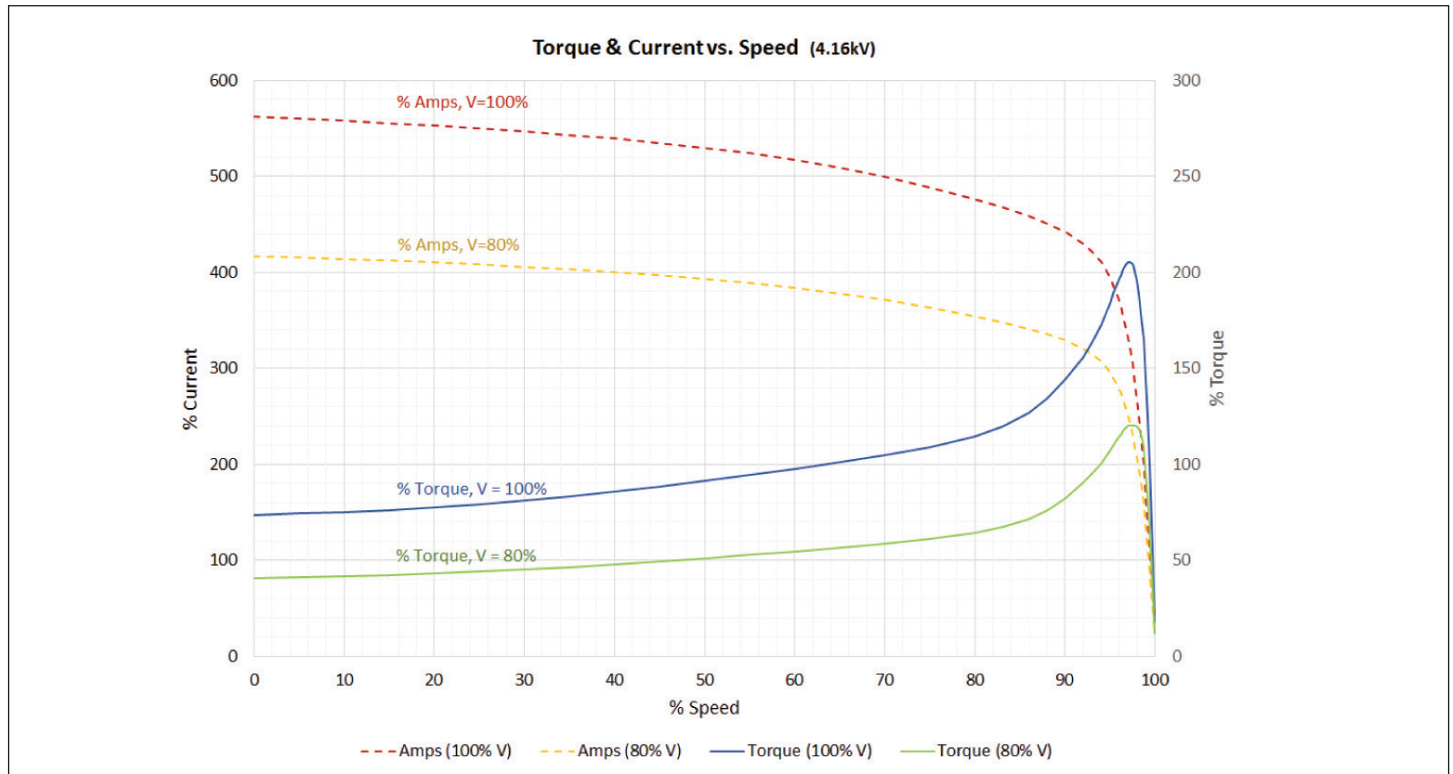


Standard Terminal Box Shown

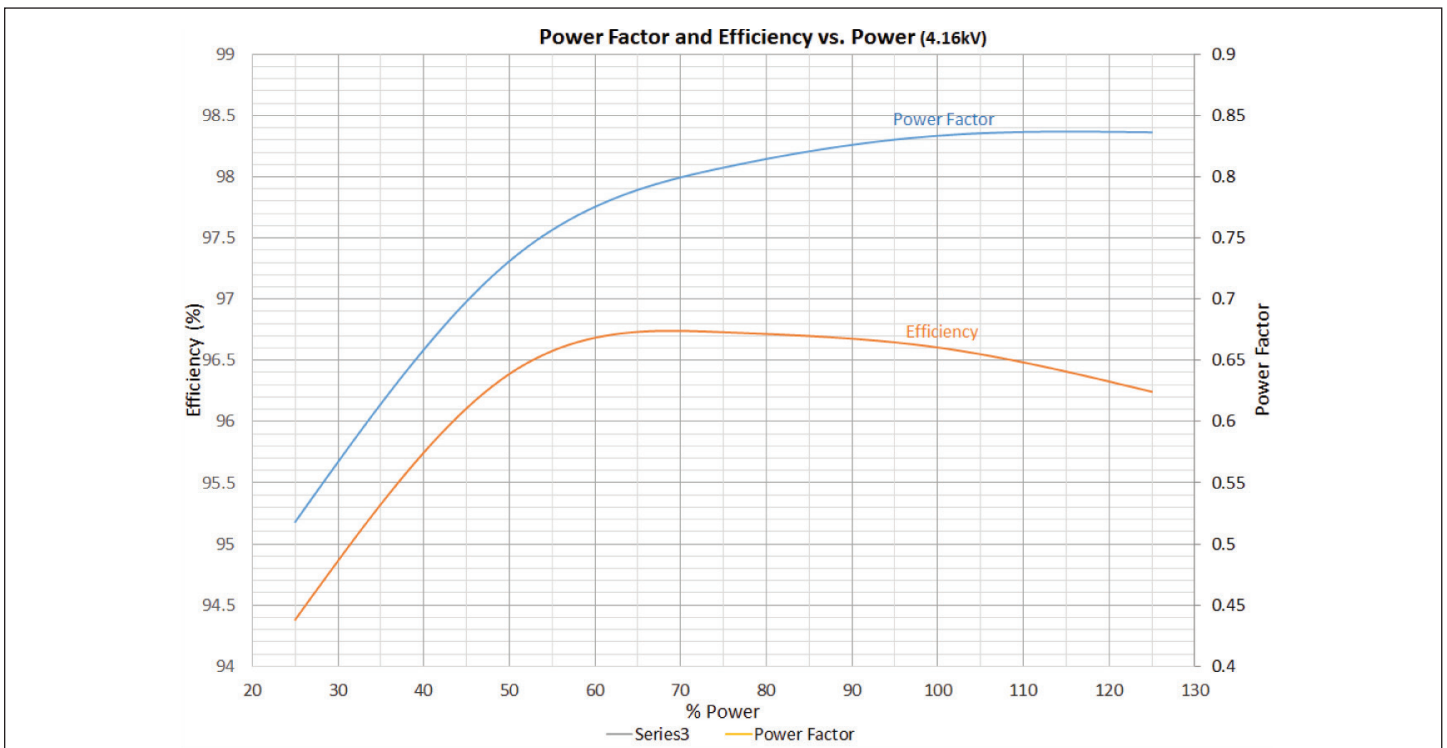
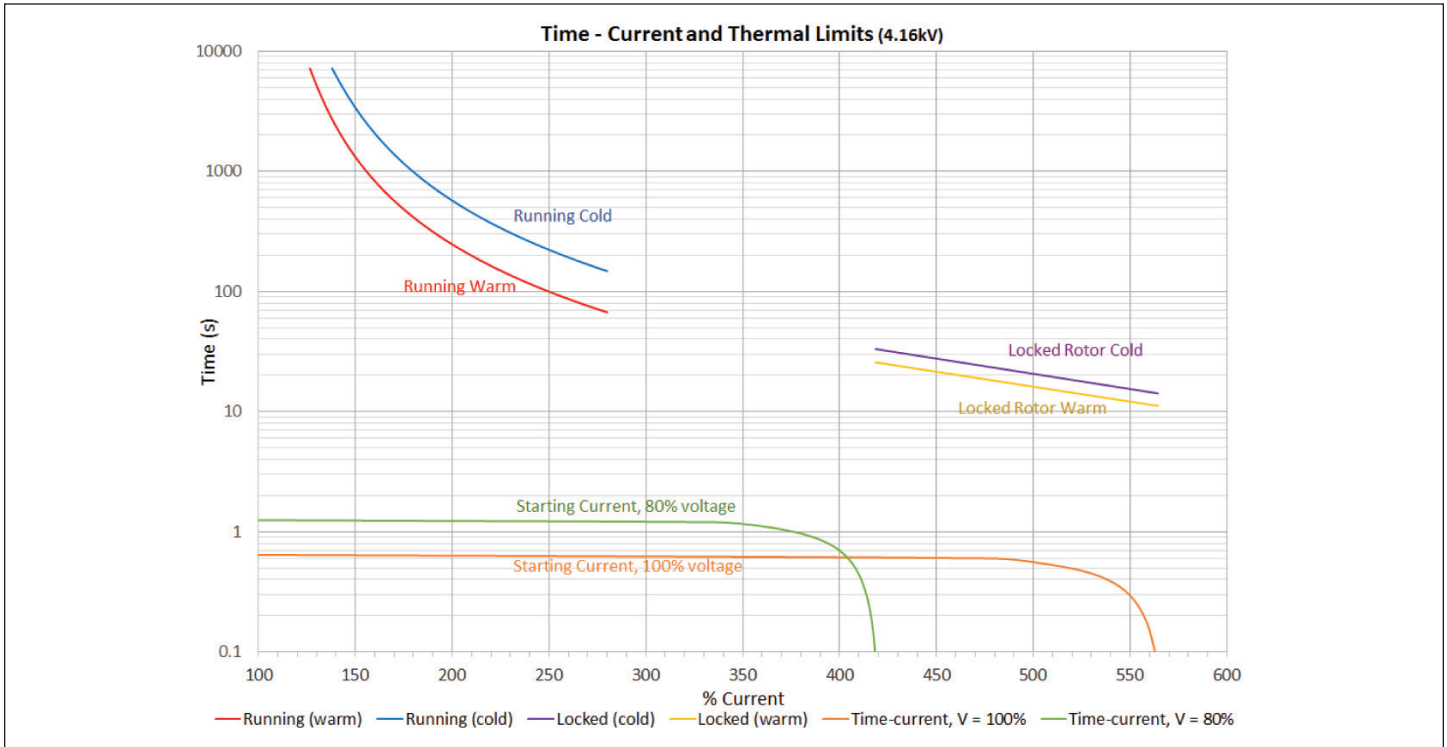
Length	132.68 in (3770 mm)
Width	101.57 in (2580 mm)
Height	97.05 in (2465 mm)
Weight	21,429 lb (9720 kg)

approximate dimensions

### Performance Curves



### Performance Curves continued



LEHW0255-05

