

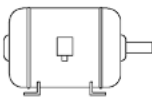
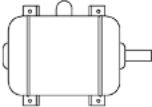
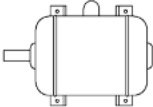
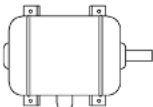
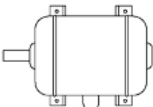
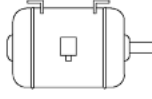
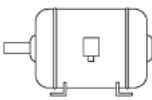

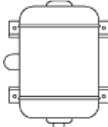
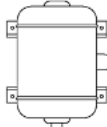
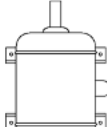
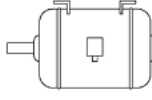


NEMA STANDARD THREE-PHASE INDUCTION MOTOR

1. General Description

This NEMA Standard Motor is designed for general purpose applications (design B and C) and oil well pump applications (Design D). It is a totally enclosed fan cooled (TEFC) or an open drip proof with WP-1 protection (ODP) squirrel cage motor. The motor is protected with Class F insulation

a. Illustration 1.1 – Mounting Types

Floor mounting	Wall-mounting					Ceiling mounting
 F-1						C-1
						C-2

Motors should be operated under the following conditions:

Ambient temperature:	-15°C~+40°C
Temperature Rise:	<80 °C @ 1.0 SF & <105 °C @ 1.15 SF
Altitude:	Not to exceed 3300 feet (1000 meters)
Frequency:	60 Hz (re-ratable to 50 Hz)
Voltage:	208-230/460 VAC ,460 VAC,230/460/796VAC and 460/796VAC
Connection:	Wye or Delta (see connection diagram on nameplate)
Duty:	Continuous
Service Factor:	1.15 (1.0 @ 50 Hz)

2. Transportation and Storage

- The motor should be kept upright during transportation and storage. DO NOT DROP. Unpack carefully.
- The motor should be kept dry and free from sudden change in ambient temperature during storage.
- Stack cartons for effective ventilation.

3. Checking Before Installation

- After opening the carton, remove any anti-corrosive coatings from the motor.
- Carefully check motor for any shipping related damage.
- Check the motor nameplate to determine if the motor meets the application requirements and to verify that the correct motor was shipped.
- Remove shaft locking device, if installed. Turn motor shaft by hand to check for smooth rotation.
- Check the insulation resistance using a 500 volt megger. The reading should be no less than 0.46 megohms. If the insulation resistance is lower than the above value, place the stator into an oven and dry it until the insulation resistance is correct. The temperature of the oven should not exceed 120 °C. If no oven is available, the short circuit current drying method or other drying methods may be used under the guidance of experienced personnel.

4. Installation and Wiring

- The motor is designed to drive couplings, gears, and pulleys. If the application is belt driven, the shaft center line of both motor and machine must be parallel. If the motor is connected to the load with a coupling, be sure both shafts are aligned (see NEMA MG1-14).
- Be sure the motor rotates in the same direction as the machine it drives.
- Frame 140~500, Design B and C, motors with 12 leads are suitable for double- voltage wye connection starting and delta connection run. Motors with 9 leads are suitable for double-voltage direct starting and run. Motors with 6 leads are suitable for single voltage wye connection starting, part winding starting (PWS) and delta connection run.

Frame 586/587, Design C, motors with 12 leads single voltage are suitable for Wye connection starting and delta connection run.

Design D motors with 12 leads and 6 leads are suitable for wye connection starting and delta connection run.

Terminal markings are in accordance with NEMA MG1-2.62. A grounding screw is furnished inside of the terminal box. The following diagram shows proper terminal connections for our motors

Table 4.1-Design B and C

12 LEAD TRI-VOLTAGE					
VOLTAGE	CONN.	L1	L2	L3	TOGETHER
LOW	WYE	T1,T7	T2,T8	T3,T9	T4&T5&T6, T10&T11&T12
	DELTA	T1,T6, T7,T12	T2, T4, T8,T10	T3,T5, T9,T11	NONE
HIGH	WYE	T1	T2	T3	T4&T7,T5&T8,T6&T9, T10&T11&T12
	DELTA	T1,T12	T2,T10	T3,T11	T4&T7,T5&T8,T6&T9

Table 4.2-Design B and C

9 LEAD TRI-VOLTAGE				
VOLTAGE	L1	L2	L3	TOGETHER
LOW	T1,T7	T2,T8	T3,T9	T4,T5,T6
HIGH	T1	T2	T3	T4&T7,T5&T8, T6&T9

Table 4.3-Design B and C

6 LEAD SINGLE VOLTAGE				
CONN.	L1	L2	L3	TOGETHER
PWS	T1	T2	T3	NONE
WYE	T1	T2	T3	T4&T5&T6
DELTA	T1,T7	T2,T8	T3,T9	NONE

Table 4.4- Design C-Frame 586/7

12 LEAD SINGLE VOLTAGE				
CONN.	L1	L2	L3	TOGETHER
WYE	T1,T7	T2,T8	T3,T9	T4&T5&T6&T10&T11&T12
DELTA	T1,T6,T 7,T12	T2,T4, T8,T10	T3,T5, T9,T11	NONE

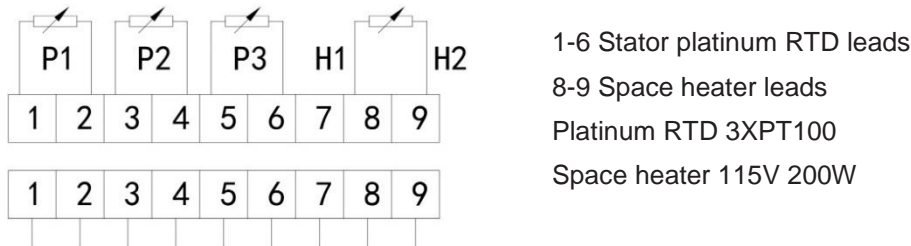
Table 4.5-Design D

12 LEAD TRI-VOLTAGE				
VOLTAGE	L1	L2	L3	TOGETHER
LOW	T1,T6,T 7,T12	T2,T4,T 8,T10	T3,T5,T 9,T11	NONE
MEDIUM	T1,T12	T2,T10	T3,T11	T4&T7,T5&T8,T6& T9
HIGH	T1	T2	T3	T4&T7,T5&T8, T6&T9,T10&T11& T12

Table 4.6-Design D

6 LEAD DUAL VOLTAGE				
VOLTAGE	L1	L2	L3	TOGETHER
LOW	T1,T6	T2,T4	T3,T5	NONE
HIGH	T1	T2	T3	T4&T5&T6

- d. All 586/7 frame motors are equipped with platinum RTDs and space heaters. The connection diagrams and specifications for these features are as follows:



5. Running

- Connect motor to power source for no-load bearing examination. Check the motor for the following premature bearing failures: (1) loose/tight fit (2) heat (3) grease see page 4 (4) abnormal noise, if any of these failures occur, immediately remove the motor and correct the problem.
- During motor operation, source voltage should not deviate from the rated value by more than 10%. Frequency should not deviate by more than $\pm 5\%$ from the rated value. The absolute value of both voltage and frequency should not deviate from the rated value by more than $\pm 10\%$.
- Under full or no-load operation, no intermittent noise or vibration should occur, nor should the bearing temperature exceed 95°C .

6. Maintenance

- For best results, operate motor in a dry environment with the fan-end of the motor away from blowing sand, dust or other contaminants.
- Under normal operation, replenish or replace bearing grease every 5,000 hours. Recommended grease is Mobil Polyrex EM.
- Motor should be inspected and cleaned every 6 months. In severe environments, clean fan covers more frequently to ensure proper air flow over motor.

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