

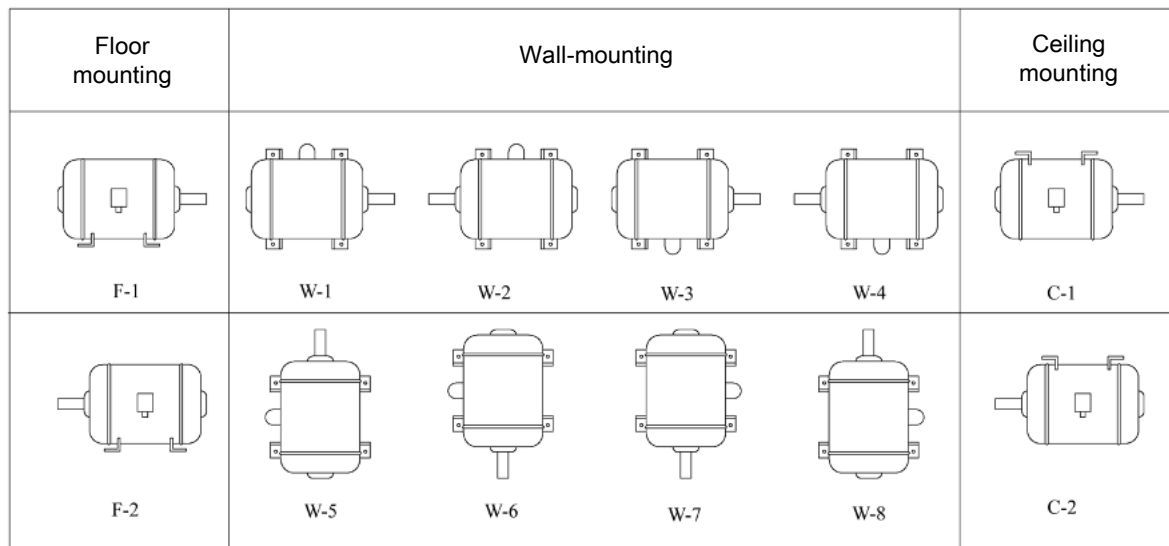


NEMA STANDARD - EXPLOSION PROOF THREE-PHASE INDUCTION MOTOR

1. General Description

This NEMA Explosion proof Motor is designed for hazardous location purpose applications. It is a totally enclosed fan cooled (TEFC) squirrel cage motor. The motor is protected with class F insulation

a. Illustration 1.1 – Mounting Types



Motors should be operated under the following conditions:

Hazardous location, Temp.Code. , Max. Amb.

Classes and Groups	Temp.Code	Max.Amb.	Frame
Class I, Division I, Group C & D	T3C	40°C,55°C	140~210
Class II, Division I, Group F & G	T3C	40°C	250~449
Class I, Division I, Group C & D	T2B	55°C	250~449

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 and 460 VAC
Connection:	Delta or Wye (see connection diagram in terminal box)
Duty:	Continuous
Service	Factor: 1.15 (1.0@50Hz)

2. Transportation and Storage

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

3. Checking Before Installation

- a. After opening the carton, remove any anti-corrosive coatings from the motor.
- b. Carefully check motor for any shipping related damage.
- c. Check the motor nameplate to determine if the motor meets the application requirements and to verify that the correct motor was shipped.
- d. Remove shaft locking device, if installed. Turn motor shaft by hand to check for smooth rotation.
- e. 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

- a. 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).
- b. Be sure the motor rotates in the same direction as the machine it drives.
- c. Motors with 9 leads are suitable for dual voltage wye connection starting and run (For the motors in frame size 140-180). Motors with 9 leads are suitable for dual voltage delta connection starting and run (For the motors in frame size 210-400). Motors with 6 leads are suitable for single voltage delta connection run (For the motors in frame size 440). 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-Frame 140~180

9 LEAD DUAL VOLTAGE FOR WYE				
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

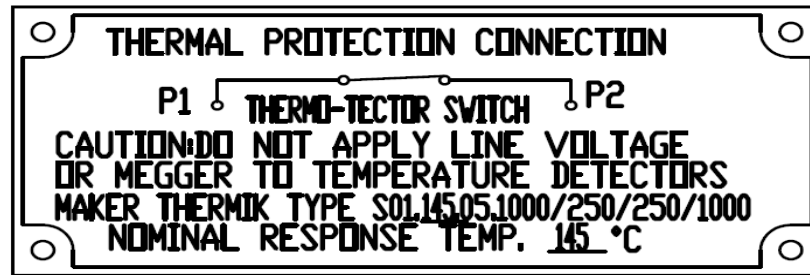
Table 4.2-Frame 210-400

9 LEAD DUAL VOLTAGE FOR DELTA				
VOLTAGE	L1	L2	L3	TOGETHER
LOW	T1,T6,T7	T2,T4,T8	T3,T5,T9	NONE
HIGH	T1	T2	T3	T4&T7,T5&T8,T6&T9

Table 4.3-Frame 440

6 LEAD SINGLE VOLTAGE				
VOLTAGE	L1	L2	L3	TOGETHER
WYE	T1	T2	T3	T4&T5&T6
DELTA	T1,T6	T2,T4	T3,T5	NONE

d. Connection Diagram for Thermostat with Relay:



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 $\pm 10\%$. Frequency should not deviate by more than $\pm 5\%$ from 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 cover more frequently to ensure proper air flow over motor.
- Explosion-proof motors have special features and manufactured in accordance with UL and carry its label. Therefore, it is recommended that repairs be made at a service Shop which has been authorized to make such repairs.

CAUTION:

A seal shall be installed within 50mm of the terminal box.

CAUTION:

Prohibit turning or moving the motor by the terminal box. (For the motors in frame size 140-180)

CAUTION:

Open circuit before removing cover.

CAUTION:

The Thermostat is controlled by UL certified Relay with the following electrical ratings:

Supply voltage: AC 240V $\pm 10\%$ 50/60Hz

Admissible ambient temp. : -30 to $+70^{\circ}\text{C}$

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