NATIONAL
MOTORS

BUILT TO SERVE

UL LISTED

FIRE PUMP
MOTORS

OPEN DRIP PROOF

NEMA

NAFFCO
Email: info@naffco.com
www.national-motors.com | www.naffco.com

CAT.NO. NF/NM-ODP-UL/08/21

TECHNICAL DATASHEET

OPEN DRIP PROOF

Introduction

National Motors' NM Series consists of motors designed for fire pump applications as specified in NFPA 20. These three phase horizontal low-voltage squirrel-cage medium induction motors are constructed and manufactured as per the requirements of NEMA MG 1 standard Design B. With Open Drip Proof enclosures, they provide the best possible ventilation suitable for environments having minimal airborne contaminants and better cooling that contribute to the most efficient performance available from these motors.

> **INDOOR USE, BETTER COOLING & NEMA DESIGN STANDARD**

NM SERIES ODP MOTOR

2 POLE AVAILABLE RATINGS : 10 HP - 500 HP	
Rated Voltage	380-400-415v (50Hz), 208-230v* (60Hz), 380-400v (60 Hz), 440-460v (60Hz) & 575 (60Hz)
Rated Speed	2861 - 2985 RPM (50Hz) & 3429 - 3585 RPM (60Hz)
4 POLE AVAILABLE RATINGS : 10 HP - 400 HP	
Rated Voltage	380 - 415V (50Hz), 208 - 230v* (60Hz), 380-400v (60Hz), 460v (60Hz) & 575v (60 Hz)
Rated Speed	1440 - 1485 RPM (50Hz) & 1728 - 1785 RPM (60Hz)

STANDARD PRODUCT LINE FEATURES	
Cooling Type	IC 01
Phase	3
Degree of Protection	IP23
Service Factor	1.15
Rated Ambient Temperature	50°C
Insulation Class	F
Altitude	1000 m.a.s.l.

* Motors rated at this voltage are available only for power ratings from 15 to 100 Hp.

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Mounting	F1
Mounting Type	Foot-mounted
NEMA Design	B
Performance As per	NFPA 20
Approval Standard	UL 1004-5

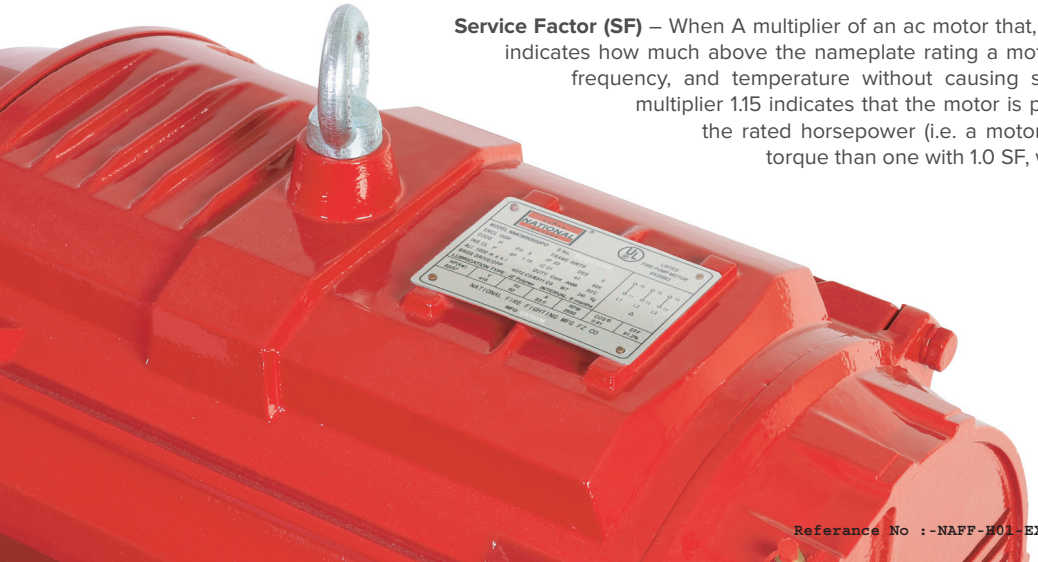
TERMINOLOGIES

Frame Size – The system for designating frames of motors and generators shall consist of a series of numbers in combination with letters. In a three-digit or higher frame number, the first two digits of the frame number are equal to four times the distance between the centerline of the motor shaft to the bottom of feet in inches. When this product is not a whole number, the first two digits of the frame number shall be the next higher whole number. The third and, when indicated, the fourth digit of the frame number is the column header number mentioned in the 'Machine Frame Numbering' table given in the NEMA MG-1 standard under which the value of the distance (in inches) between centerlines of the corresponding motor feet mounting holes (side view) is mentioned. The 'T' at the end of the frame size indicates that the motor is following the established standard dimensions and 'S' at the end of the frame size indicates that the motor has a "short shaft" dimension. These are smaller than the shafts associated with the normal frame size and are designed to be directly coupled to a load through a flexible coupling.

Continuous Duty (S1) – This indicates that the motor can be operated continuously at maximum constant load under prescribed conditions of load and within the limitations of established standards without exceeding the established temperature rise limitations.

Degree of Protection – This indicates the degree of protection provided by the motor enclosure against accidental direct contact with live parts and against the ingress of solid foreign objects or water. Degrees of protection provided by the integral design of National Motors are in line with IEC 60034-5 classification developed by the International Electrotechnical Commission (IEC) and subsequently incorporated into NEMA MG-1 standard which is an approved American National Standard and recommended by the National Fire Protection Association standard in their fire pump standard (NFPA 20).

Insulation Class – Insulation class describes motor's winding insulation ability to withstand the temperature developed under full load. These classes have been established in accordance with General Principles for Temperature Limits in the Rating of Electric Equipment and for the Evaluation of Electrical Insulation (IEEE Std 1) developed by Institute of Electrical and Electronics Engineers (IEEE) which is linked to NFPA 20 through reference in NEMA MG-1 standard. National Motors follows the motor design requirements specified in this standard.



Service Factor (SF) – When A multiplier of an ac motor that, when applied to the rated horsepower, indicates how much above the nameplate rating a motor can be loaded at the rated voltage, frequency, and temperature without causing serious degradation. For example, the multiplier 1.15 indicates that the motor is permitted to be overloaded to 1.15 times the rated horsepower (i.e. a motor with 1.15 SF can produce 15% greater torque than one with 1.0 SF, within temperature constraints).

Note: For further technical support, please contact factory.