# PREMIUM EFFICIENT MOTORS HIGH PERFORMANCE & ENERGY SAVINGS



## **INTERNATIONAL CERTIFICATIONS**

- Underwriters Laboratories Recognized component : 31
- Canadian Standards Association approved for most installations in <u>Canada</u>:
- CSA approved according to both US and Canadian standards : <sup>®</sup>
- European Union (EU) member states approved according to Low Voltage Directive : C€
- China Compulsory Certification @
- Brazil Alto Rendimento Certification
- Australian MEPS certification





# 60 Hz Line Frequency - SF 1.15

**230/460 - 3 phase:** 0.16 to 30 hp **460V - 3 phase:** 40 to 200 hp **575V - 3 phase:** 0.16 to 200 hp

## 50 Hz Line Frequency - SF 1.0

**230/400V - 3 phase:** 0.12 to 2.2 kW **400/690V - 3 phase:** 3 to 90 kW

Motor Type	P <sub>n</sub> Full Load Power		n <sub>n</sub> Full-Load Speed	I Full-Load Current			I <sub>a</sub> /I <sub>n</sub> Locked Rotor Current Ratio	NEMA Code Letter	T <sub>n</sub> Full-Load Torque	T <sub>a</sub> /T <sub>n</sub> Locked Rotor Torque Ratio	T <sub>k</sub> /T <sub>n</sub> Break Down Torque Ratio	pf Power Factor	η Full Load Efficiency	J <sub>m</sub> Rotor Inertia
	[hp]	[kW]	[rpm]	230V [A]	460V [A]	575V [A]	[%]		[lb-in]				[%]	[lb-ft²]
63 SP/4	0.16	0.12	1695	0.72	0.36	0.29	400%	D	5.95	3.4	3.3	0.62	68.5%	0.0057
63 LP/4	0.25	0.18	1705	1.08	0.54	0.43	430%	D	9.24	4.1	3.9	0.57	72.5%	0.0078
71 SP/4	0.33	0.25	1725	1.26	0.63	0.50	590%	F	12.1	3.7	3.9	0.67	75.8%	0.0204
71 LP/4	0.5	0.37	1725	1.62	0.81	0.65	610%	Е	18.3	3.3	3.6	0.72	78.0%	0.0261
80 SP/4	0.75	0.55	1735	2.30	1.15	0.92	610%	D	27.2	3.4	6.1	0.72	82.7%	0.0344
80 LP/4	1	0.75	1730	3.14	1.57	1.26	650	K	36.4	3.5	3.8	0.70	86.1	0.045
90 SP/4	1.5	1.1	1740	4.20	2.10	1.68	840	L	54.3	4.2	4.9	0.76	86.9	0.081
90 LP/4	2	1.5	1730	5.60	2.80	2.24	760	K	72.9	3.9	4.3	0.78	87.0	0.093
100 LP/4	3	2.2	1770	7.68	3.84	3.07	920	L	107	3.0	4.5	0.79	90.0	0.192
112 MP/4	5	3.7	1755	13.0	6.50	5.20	950	L	180	4.1	4.6	0.80	90.3	0.332
132 SP/4	7.5	5.5	1770	19.5	9.75	7.80	1020	М	267	4.7	5.0	0.77	91.7	0.759
132 MP/4	10	7.5	1765	26.7	13.4	10.7	960	М	357	4.7	5.0	0.77	91.7	0.831
160 MP/4	15	11	1770	35.6	17.8	14.2	880	K	534	3.2	3.8	0.84	92.5	1.59
160 LP/4	20	15	1775	47.6	23.8	19.0	1080	М	710	4.3	4.7	0.85	93.0	2.18
180 MP/4	25	18.5	1780	60.6	30.3	24.2	1010	L	885	3.9	4.0	0.82	93.6	3.80
180 LP/4	30	22	1780	69.6	34.8	27.8	880	K	1062	3.3	3.4	0.85	93.6	3.80
225 RP/4	40	30	1785	-	49.5	39.6	890%	K	1420	3.4	3.8	0.81	94.5%	11.63
225 SP/4	50	37	1785	•	59.7	47.8	880%	K	1752	3.0	3.7	0.82	94.6%	12.81
225 MP/4	60	45	1785	-	72.0	57.6	910%	K	2131	3.3	3.6	0.83	95.2%	15.90
250 WP/4	75	55	1785	-	84.4	67.5	920%	J	2604	2.9	3.2	0.86	95.4%	19.46

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# PREMIUM EFFICIENT MOTORS

# **HIGH PERFORMANCE & ENERGY SAVINGS**





#### **Mounting Styles**

- Integral motor for use with speed reducer
- NEMA C-face flange
- NEMA T-Frame footed motor mount
- DIN B5, IEC FF metric face flange mount
- DIN B14, IEC metric face flange mount
- DIN B3, IEC metric foot mount

# **Inverter Duty & Inverter Duty Options**

- Motors conform with NEMA MG-1-2006 Section 31.4.4.2
- Insulated with double coated magnet wire
- Speed range 5:1 constant torque from 60Hz to 12Hz
- 10:1 speed range: constant torque from 60Hz to 6Hz
- 20:1 speed range: constant torque from 80Hz to 4Hz
- 1000:1 speed range: constant torque from 60Hz to 0Hz
- Blower cooling fans
- Incremental encoder



- Ambient temperature of 40° C (104° F)
- 3300 feet of elevation without derating
- Class B temperature rise: 105° C (221° F)
- Class F insulation system: 155° C (311° F)
- IP55 enclosure protection
- Totally Enclosed Fan Cooled (TEFC)
- Low rotor inertia
- Ball bearings & high temperature bearing grease
- Squirrel cage rotor
- Dynamically balanced, anti-corrosion coated rotor
- Corrosion resistant aluminum alloy housing
- 1045 carbon steel shaft with shaft lip seals on both end bells
- Sealed stator to end bell connections
- Gasket sealed conduit boxes
- Four conduit box & threaded cable entry locations
- Double coated magnet wire insulation
- Insulation lined slots
- Inorganic insulation for tropical protection
- Phase paper & separators
- First turn winding protection
- Varnish dipped stator
- Non sparking low inertia fan
- Terminal block power connector
- Reverseable roatation direction

# **Product Options**

# **Thermal Winding Protection Options**

- Thermistat Sensor (TW)
- Thermistor Sensor (TF)

#### **Brakemotors**

- Ready to go...wired by factory
- Manual hand release lever included
- Downward adjustable torque is included, specification is required
- AC to DC voltage rectifier is included
- IP55 enclosure protection is included

## **Brakemotor Options**

- NSD+ severe duty protection
- Corrosion protection (RG)
- Dust protection (SR)
- Lockable hand release lever (FHL)
- Oversize & Undersize brake
- Inverter duty modifications
- Faster torque release enhancement
- Faster torque stopping enhancement
- Current sensing relay (IR)
- Heating circuit (BSH)
- Micro switch wear indicator
- IP 66 enclosure

# **Environmental Protection Options**

- NSD+ severe duty protection
- Encapsulated windings for IEEE45 Marine Duty
- IP66 enclosure
- End bell drain holes
- Drip cover (RD)
- Wind protected double drip cover (RDD)
- Space heater (SH)
- Epoxy coated interior surfaces

# **Other Options**

- Class H insulation system
- Over-running clutch (FK)
- Anti-rotation backstop (RLS)
- Extended motor shaft (WE)
- High inertia metal fan for soft start (Z)
- Quick power disconnect plug (MS1)



# **NORD Gear Corporation**

MEMBER OF THE NORD DRIVESYSTEMS GROUP info.us@nord.com

Waunakee, WI 800 NORD Drive Waunakee, WI 53597 Tel. 608.849.7300

Corona, CA 1180 Railroad St. Corona, CA 92882 Tel. 951.393.6565 Charlotte, NC 300 Forsyth Hall Dr. Charlotte, NC 28273 Tel. 980.215.7575 **NORD Gear Limited - Canada** 

MEMBER OF THE NORD DRIVESYSTEMS GROU info.ca@nord.com

Brampton, ON 41 West Drive Brampton, ON L6T4A1 Tel. 800.668.4378

