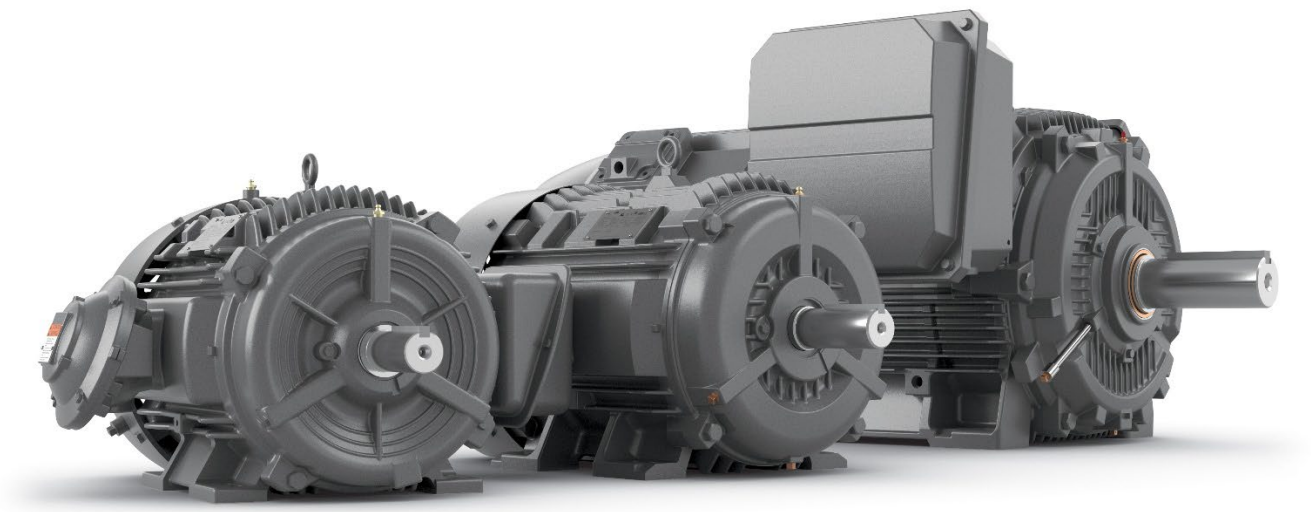
CATALOG | JANUARY 2024

Low Voltage NEMA Motors

Horizontal and vertical induction motors

Motor type GP, SD, XP, DP
Selection and Pricing Catalog



Licensed motors have NEMA Premium® on their Nameplate

Buy with confidence

Buying a motor can be a difficult process. Is it the right size for the application? Is it the right design? Is it going to last? Is it going to perform to its specifications? Will it meet efficiency claims? The last question is easy to answer if NEMA Premium is on the label.

NEMA Premium Licensees meet a higher standard

All motor manufacturers are required to submit efficiency test data to the US Department of Energy to receive their Certificate of Compliance. Data must be compiled at any qualified testing facility, including the manufacturer's own test laboratory. It takes extra to wear the NEMA Premium label. A NEMA Premium Licensee has agreed to go beyond minimum US DOE requirements.

NEMA Premium Licensees must prove efficiency claims

What is on the nameplate is not what you always get when it comes to efficiency. Most manufacturers will attempt to ship what is on the nameplate, but do not always deliver. If you want assurance that a motor meets its efficiency claims, look for a NEMA Premium certified motor.

NEMA Premium Licensees must submit to third-party testing

NEMA Premium Licensees are required to ship randomly selected motors from distributors' inventory to a third-party qualified laboratory for efficiency verification testing on a regular schedule.

You can buy with confidence when NEMA Premium is on the nameplate.

Table of Contents

1. Introduction

General information regarding the range of motor, efficiency, warranty, cancellation, and tools

1.1. Wide selection of motors

Wide selection

Providing value also means having the right motor for the job. At ABB, we strive to offer a wide variety of motor types, in all frame sizes and power ratings with a comprehensive set of options and quick modifications.

Our ABB NEMA motor portfolio consists of motors with power ratings of 1HP up to 800HP with a variety of voltages up to 600V, stocked to meet the needs of the North American market.

Need a motor for a special project? ABB has that covered as well with a wide selection of modification and custom options available and a highly skilled quotation team to help ensure that the best selection for the job is offered.

Our highly qualified research and development group is working to add to this selection as part of our commitment to become your single source for motors.

The world's most energy efficient line of motors

Lower your energy costs today with the world's most energy efficient line of motors. New regulatory standards and rising energy costs create increasing pressure to maximize energy efficiency and reduce your carbon footprint.

To meet your cost of ownership and motor management needs, ABB offers several levels of energy efficiency in many of its low voltage NEMA motors:

– NEMA Premium® (MG1 Table 12-12)

– NEMA Super Premium® (IE4)

Total customer support

ABB is known as a global leader in technology who offers outstanding collaboration with partners and ensures the success of customers. A dedicated sales force with in-depth product knowledge and training is only a phone call away, and they are available customers with a complete solution. Dedicated Application and Project Support teams have the customers' best interest in mind while reviewing technical content and offering competitive quotations.

The ABB NEMA Motors Order Management team focuses on and takes great pride in putting customers first. Fielding questions, providing order status updates, and expediting shipments are just a few examples of this team's expertise and support.

Availability

ABB has hundreds of distributor stocking locations throughout North America with a wide selection of low voltage NEMA frame sizes and ratings. Motors are available same day from a local source you can trust.

Need something special? Our modification centers have complete motor modification capabilities to help you get the exact motor you need when you need it.

Iron-clad quality

The quality of our motors begins with our more than 100 years of design experience. We build on this experience every day with new designs that incorporate the latest materials and techniques to provide even higher levels of performance, operating efficiency, and reliability.

These advanced motor designs are manufactured in a state-of-the-art, ISO 9001 certified facility. Here, our manufacturing technicians subject each motor to more than 100 separate quality inspections before it leaves our plant, ensuring it meets the high standards our customers expect.

1.2. Electric motor energy efficiency

U.S. Dept. of Energy Integral Horsepower Motor Rule Effective June 1, 2016

The United States Department of Energy passed a final rule in 2014 that covers 1-500 HP (0.75 – 370 kW) 3-phase electric motors. The new law superseded the Energy Independence & Security Act (EISA) of 2007 and became effective June 1, 2016. For reference and complete wording of the law, refer to: https://www.regulations.gov/document?D=EERE-2010-BT-STD-0027-0117.

The most recent legislation broadens the number of motor types covered and closes most of the loopholes that permitted exceptions in both EPAct 1992 and EISA 2007 legislation. In essence, most 3-phase industrial motors manufactured are now required to meet the efficiencies listed in NEMA MG-1, table 12-12 (reference NEMA Premium® efficiency).

Additional motor types covered include, but are not limited to:

- 200-500 HP (previously 1- 200 HP)
- Footless (C-face & D-flange)
- Vertical (HP & LP)
- 8-pole (900 RPM)
- Brake motors (integral and add-on)
- Motors with customer special shafts, flanges, and mountings

Motors that are not covered by mandated efficiency regulations are:

- Multi-speed
- Inverter duty only

1.3. Warranty and support

ABB Low Voltage NEMA Motors

Warranty procedure

Standard terms and conditions of sale

ABB (“Company”) warrants that on the date of shipment to purchaser the goods will be of the kind and quality described herein, merchantable, and free of defects in workmanship and material.

If within one year from date of operation, but not more than eighteen months from date of shipment by Company, of any item of the goods, purchaser discovers that such item was not as warranted above and promptly notifies Company in written thereof, Company shall remedy such defect by, at Company's option, adjustment, repair, or replacement of the item and any affected part of the goods.

The purchaser shall assume all responsibility and expense for removal, reinstallation, and freight in connection with the foregoing remedy. The same obligations and conditions shall extend to replacement items furnished by Company here under. Company shall have the right of disposal of items replaced by it. The purchaser shall grant Company to determine any defect in the goods. If adjustment, repair, or replacement does not remedy the defect, Company and Purchaser shall negotiate in good faith an equitable adjustment in the contract price.

Company's responsibility does not extend to any item of the goods which have not been manufactured and sold by Company. Such an item shall be covered only by express warranty, if any, of the manufacture thereof. Company and its suppliers shall also have no responsibility if the goods have been improperly stored, handled, or installed or if the goods have not been operated or maintained according to their ratings or according to instructions in Company or supplier furnished manuals, or if unauthorized repairs or modifications have been made to the goods.

This warranty is expressly in lieu of all other warranties (except title), including but not limited to implied warranties of merchantability and fitness, and constitutes the only warranty of Company with respect to the goods.

The foregoing states Purchasers exclusive remedy against Company and its suppliers for any defect in the goods or for failure of the goods to be as warranted, whether Purchaser's remedy is based on contract, warranty, failure of such remedy to achieve its essential purpose, tort (including negligence), indemnity or any other legal theory, and whether arising out of warranties, representations, instructions, or defects from any cause.

Service calls and overtime are not covered under the ABB NEMA Motors warranty policy.

ABB Low Voltage NEMA Warranty type		
A	GP100, GP100A	12 months in service or 18 months after shipment, whichever comes first
	SD10MS, SD100, XP100, XP 100 ID1, HP100, LP100, SD200, DP200 HPS	3 Years, after shipment
	SD100 IEEE841, SD661, SD200 841	5 Years, after shipment
B	Remedy	ABB option to repair or replace
C	Purchaser's responsibility	Transportation damage claims, order management, removal, and freight
D	Exclusions	Improper storage, In and out costs, disassembly and installation, transportation damages
E	Shipment normal	FOB our dock, freight allowed

Reference notes

1. After the inspection, submit inspection report with all supporting documentation to ABBGDLWarranty@us.abb.com for authorization of repair or replacement. **Unapproved repairs will be denied.**

2. Removal, installation, freight, and service calls are NOT covered by warranty.

3. A standard EASA Warranty report must be filled out and an ABB purchase order # issued. If the motor is scrapped in the field, a clear picture of the nameplate cut in half, in addition to the invoice, must be submitted to ABBGDLWarranty@us.abb.com.

4. Replacement parts will be furnished at no charge from the factory, i.e., bearings fans, etc.

5. Replacement motors will be furnished at no charge from the factory. Should it be necessary for the service shop to replace a motor from their stock, a replacement motor will be furnished at no charge from the factory, shipped freight allowed.

6. Defective parts, i.e., bearings, are subject to return upon request to the factory for inspection and approval for reimbursement.

Date coding

ABB low voltage NEMA motors are date coded with the serial number on the nameplate.

Serial numbers beginning with “J” will have date codes using six digits in format YY MM DD.

Serial numbers beginning with “Q2” will have date codes using three digits. The first digit represents the month and is alphabetic beginning with A as January and ending with M as December (“I” is skipped in the sequence). The second and third digits are numeric and are the last two digits of the year.

IMPORTANT NOTICE

Mail or e-mail a proper warranty repair report and supporting evidence of failure to the warranty administrator. If ABB is to be billed for overtime, authorization must be obtained from the warranty administrator before overtime work is performed. Material and services are purchased for resale and are exempt from state and local sales and use tax.

1.4. Cancellation charges and change notices

Cancellation charges

Note: A minimum charge of $100 will be assessed for any order cancellation for modified or custom motors.

Stock motors and spares

- No charges will be incurred if an order is cancelled prior to shipment.
- A stock motor is returnable (freight paid by purchaser) immediately after shipment if returned in "new" condition (original, undamaged packaging) for a minimum restocking charge of 20% of the motor net price.

Non-stock motors

- The following table is used to determine cancellation charges after a non-stock motor order is received and entered at the factory. Completion week will be determined by an ABB Customer Service Representative.
- A charge of 15% of the total net motor price will be assessed if an order is cancelled after it has been released for engineering and drafting whether the drawings have been completed and/or submitted for approval or not.

Change notice

All change notices applied to in-process orders logged into the ABB customer service department and requiring a product change will be subject to a $100 net charge plus the applicable modification adder. Delivery dates will be adjusted according to the type of change/modification requested. This policy does not pertain to commercial changes such as "ship to" or "bill to" addresses.

Motor Cancellation Charges

<table>
<tr><th>Week</th><th>Contract A1</th><th>Contract A2</th><th>Contract B</th></tr>
<tr><td>1</td><td>0%</td><td>0%</td><td rowspan="2">0%</td></tr>
<tr><td>2</td><td>50%</td><td>25%</td></tr>
<tr><td>3</td><td>95%</td><td>50%</td><td>25%</td></tr>
<tr><td>4</td><td rowspan="7">100%</td><td>90%</td><td>50%</td></tr>
<tr><td>5</td><td rowspan="6">100%</td><td>75%</td></tr>
<tr><td>6</td><td>90%</td></tr>
<tr><td>7</td><td rowspan="4">100%</td></tr>
<tr><td>8</td></tr>
<tr><td>9</td></tr>
<tr><td>10</td></tr>
<tr><td>>10</td></tr>
</table>

2. Next Generation Low Voltage NEMA Motors

Technical details, options, motor selection, and pricing

SD200, SD200 841, DP200 HPS

2.1. Technical details

2.1.1. MLFB Structure – Option Codes

MLFB Structure	1	2	3	4	5	6	7	–	8	9	10	11	12	–	13	14	15	16	-Z
Motor Series	**1**	**2**	**3**					–						–					
Standard GP, SD Motors	1	L	E					–						–					
Definite Purpose Motors	1	P	C					–						–					
Main Series				**4**				–						–					
Next Generation NEMA Motors				6				–						–					
Motor Type/Enclosure/ Efficiency					**5**	**6**	**7**	–						–					
SD200	1	L	E	6	3	2	1	–						–					
SD200 841	1	L	E	6	3	2	2	–						–					
DP200 HPS	1	P	C	6	5	2	1	–						–					
Motor HP and Frame								–	**8**	**9**		**11**		–					
Ball Bearing Long Shaft 444-445T									4	B		*							
Ball Bearing Long Shaft 447-449T									4	C		*							
Ball Bearing Long Shaft L449T									4	D		*							
Ball Bearing Long Shaft 509-5011									5	A		*							
Ball Bearing Long Shaft L5011-5013									5	B		*							
Ball Bearing Short Shaft 444-445TS									4	F		*							
Ball Bearing Short Shaft 447-449TS									4	G		*							
Ball Bearing Short Shaft L449TS									4	H		*							
Ball Bearing Short Shaft 509-5011S									5	E		*							
Ball Bearing Short Shaft L5011-5013S									5	F		*							
Roller Bearing Long Shaft R444-R445T									4	S		*							
Roller Bearing Long Shaft R447-R449T									4	T		*							
Roller Bearing Long Shaft RL449T									4	U		*							
Roller Bearing Long Shaft R509-R5011									5	R		*							
Roller Bearing Long Shaft RL5011-R5013									5	S		*							
Number of Poles (Speed)								–			**10**			**–**					
2 Pole (3000/3600 RPM)								–			A			**–**					
4 Pole (1500/1800 RPM)								–			B			**–**					
6 Pole (1000/1200 RPM)								–			C			**–**					
8 Pole (750/900 RPM)								–			D			**–**					
Winding Design/Voltage/Frequency								–					**12**	–	**13**				
Mounting								**–**							–	**14**			
Winding Protection								**–**							**–**		**15**		
Terminal Box Position								**–**							**–**			**16**	
With Additional Options								**–**							**–**				**-Z**

2.1.2. Technical Information

2.1.2.1. Voltage and Connection

			440-L449 Frames	500 Frame
MLFB DIGITS 12 & 13	12	460V	12 Lead Delta / 6 Lead Delta1 Fig. 1.4 / Fig. 1.1	12 Lead Delta Fig. 1.4
	13	575V	6 Lead Delta Fig. 1.1	12 Lead Delta Fig. 1.4
	22	PWS 460V 60Hz	Part Winding Start Fig. 1.5	Part Winding Start Fig. 1.5
	23	PWS 575V 60HZ	Part Winding Start Fig. 1.3	Part Winding Start Fig. 1.5
	32	Y/D 460V 60Hz	12 Lead Wye-Start Delta-Run Fig. 1.6	12 Lead Wye-Start Delta-Run Fig. 1.6
	33	Y/D 575V 60HZ	6 Lead Wye-Start Delta-Run Fig. 1.3	6 Lead Wye-Start Delta-Run Fig. 1.3
	90	Special Winding (M6Y)	As Specified	

1. SD200 841 Pricing

Voltage

Low voltage NEMA motors can operate from 200-600V according to the winding selection. Windings up to 230V can only be applied to motors with 75HP or less.

Part-Winding-Start and Wye-Start/Delta-Run are special windings that help to limit the amount of inrush current at startup. Both options require a special motor starter to operate correctly.

Special voltage, **M6Y**, can be used for any voltage within the voltage range listed for each.

Low voltage NEMA motors are designed with the following tolerances in accordance with NEMA MG-1:

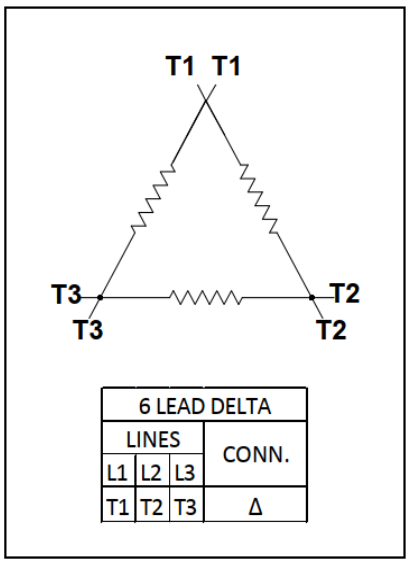
- Voltage tolerance: +/-10% of rated voltage
- Frequency tolerance: +/- 5% of rated frequency
- Voltage & frequency combined tolerance: +/-10% (sum of absolute values)

Winding connection

440 frames with 460V will have 12 lead connection as standard. When SD200 841 motors with 460 or 575V will have 6 lead connection with paired leads for flexibility in connection as seen in Figure 1.1.

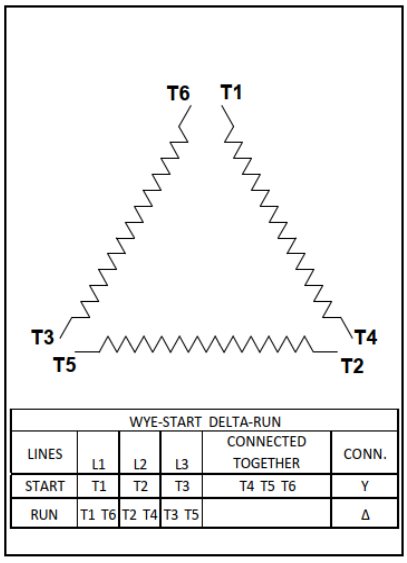
500 frames will have 12 lead connection as seen in Figure 1.4.

See Terminal Box and Leads section for additional information on motor leads.



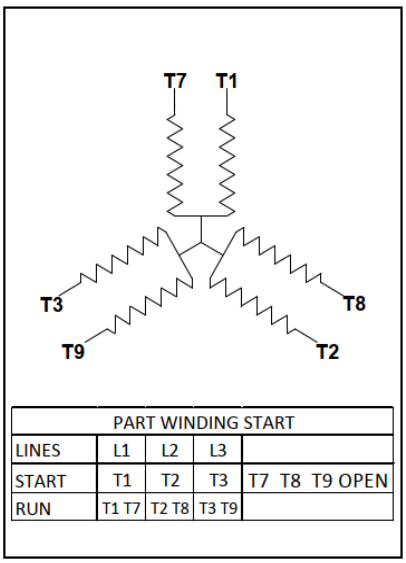
6 LEAD DELTA			
LINES			CONN.
L1	L2	L3	
T1	T2	T3	Δ

Figure 1.1



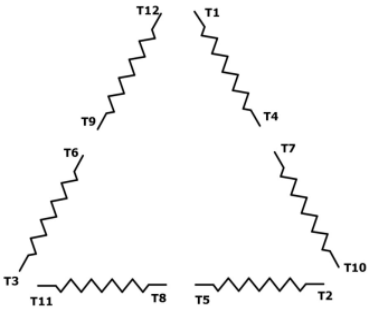
WYE-START DELTA-RUN					
LINES	L1	L2	L3	CONNECTED TOGETHER	CONN.
START	T1	T2	T3	T4 T5 T6	Y
RUN	T1 T6	T2 T4	T3 T5		Δ

Figure 1.2



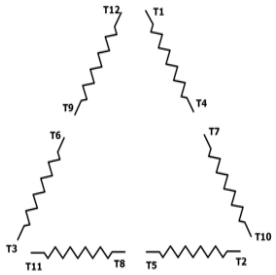
PART WINDING START				
LINES	L1	L2	L3	
START	T1	T2	T3	T7 T8 T9 OPEN
RUN	T1 T7	T2 T8	T3 T9	

Figure 1.3



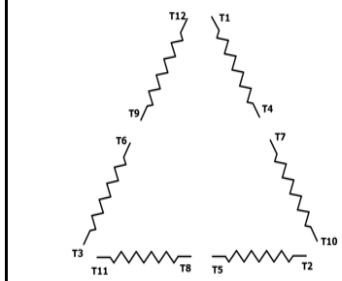
12 LEAD DELTA		
LINES	CONNECT TOGETHER	CONN.
L1	T12 -T7 - T6 - T1	ΔΔ
L2	T10 - T8 - T4 - T2	
L3	T11 - T9 - T5 - T3	

Figure 1.4



12 LEAD PART WINDING START				
	LINES			CONN.
	L1	L2	L3	
Start	T6-T1	T4-T2	T5-T3	Δ
Run	T12-T7-T6-T1	T10-T8-T4-T2	T11-T9-T5-T3	ΔΔ

Figure 1.5



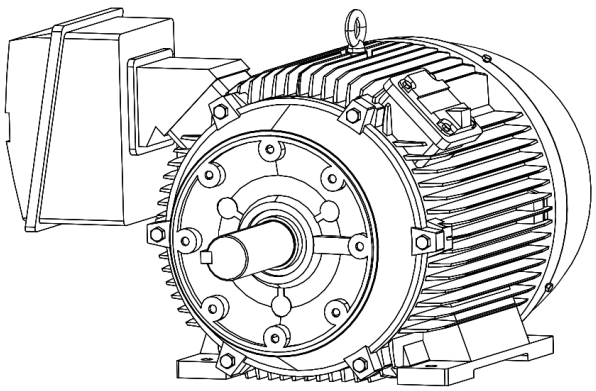
12 LEAD Y - Δ					
	LINES			CONNECTED TOGETHER	CONN.
	L1	L2	L3		
Start	T7-T1	T8-T2	T9-T3	T12-T6-T11-T5-T10-T4	YY
Run	T12-T7-T6-T1	T10-T8-T4-T2	T11-T9-T5-T5-T3		ΔΔ

Figure 1.6

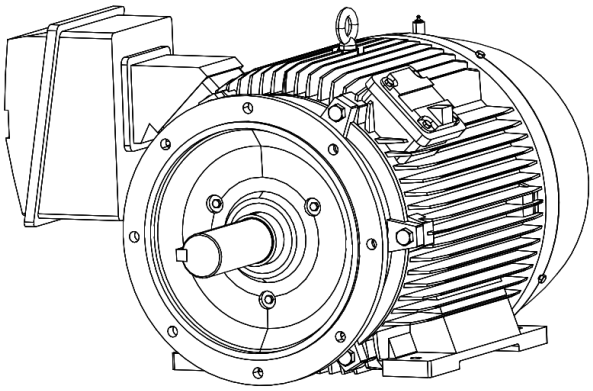
2.1.2.2. Mounting

	Codes	Description	1LE6	1PC6 HPS
MLFB DIGIT 14	A	Foot Mounted (Horizontal IMB3)	+	+
	C	Foot Mounted Vertical Shaft-down without Canopy (IMV5)	+	+
	D	Foot Mounted Vertical Shaft-up (IMV6)	+	+
	F	Footless D-Flange Horizontal (IMB5)	+	-
	G	Footless D-Flange Vertical Shaft-down w/o canopy (IMV1)	+	-
	H	Footless D-Flange Vertical Shaft-up (IMV3)	+	-
	J	Foot Mounted D-Flange Horizontal (IMB35 – F1/F2/F3)	+	+
	K	Footless C-Face Horizontal (IMB14)	+	-
	L	Footless C-Face Vertical Shaft-down w/o canopy (IMV19)	+	-
	M	Footless C-Face Vertical Shaft-up (IMV18)	+	-
	N	Foot Mounted C-Face Horizontal (IMB34 – F1/F2/F3)	+	+
	P	Foot Mounted C-Face Vertical Shaft-down w/o Canopy –(W6/W7/W12)	+	+
	Q	Foot Mounted C-Face Vertical Shaft-up – (W5/W8/W11)	+	+
	R	Foot Mounted D-Flange Vertical Shaft-down – (W6/W7/W12)	+	+
	S	Foot Mounted D-Flange Vertical Shaft-up – (W5/W8/W11)	+	+
	T	Foot Wall Mount Horizontal (MB6 – W2/W4)	+	+
	U	Foot Wall Mounted Horizontal (IMB7 – W1/W3)	+	+
	V	Foot Ceiling Mount Horizontal (IMB8 – C1/C2/C3)	+	+

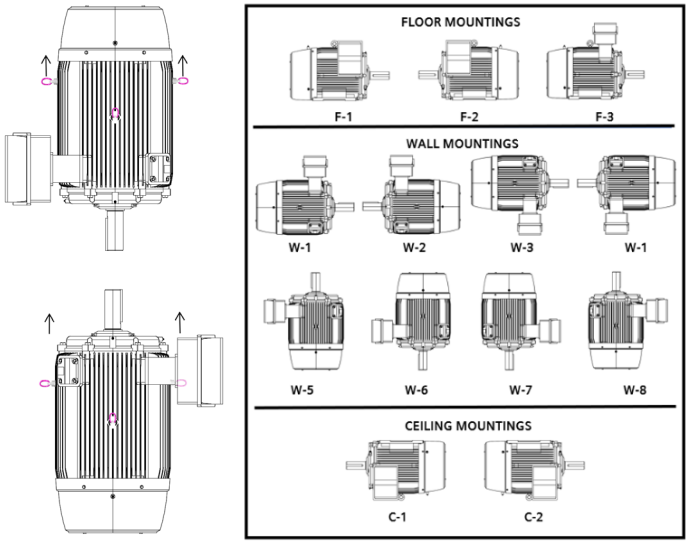
+ Available • Standard – Not Available Pricing



C-Face Foot Mount



D-Flange Foot Mount



Foot mounting (no flange)

Foot mount motors without a flange will have universal mounting feet with mounting holes to cover a range of sizes. Motors may be configured to mount in vertical, horizontal, wall, or ceiling mount. The proper configuration may be critical to ensure the motor has proper drain locations, lifting provisions, and bearing configuration. Next Generation low voltage NEMA motors configured for vertical mounting will have three-point lifting provisions included.

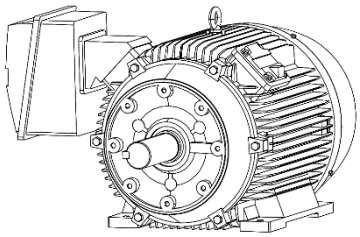
Flange mounting

The drive end bearing housing can be replaced with flange mounting for direct coupling to the driven equipment. Flanges can be supplied with or without feet (coming soon) and as vertical or horizontal as required by the application. L449 frame must use the motor feet as support with flange mounting in either vertical or horizontal mounting positions.

Foot mounted motors can be offered with self-supporting D-flange on request. Contact the ABB Low Voltage NEMA Motor Quotation Team for a quotation.

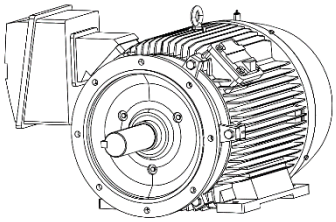
C-Face

The NEMA C-face has threaded holes in the flange and the mounting hardware will be introduced from the driven equipment side. The C-face can be added to a stock motor as a modification where applicable.



D-Flange

The NEMA D-flange will have through holes that are unthreaded. The D-Flange can be custom built with NEMA dimensions.



2.1.2.3. Winding Protection

	Codes	Description	1LE6	1PC6 HPS
MLFB DIGIT 15	A	No Protection	+	+
	B	PTC 3 Embedded (Trip), 1 Per Phase	+	+
	C	PTC 6 Embedded (Alarm & Trip), 2 Per Phase	+	+
	G	Thermostats Normally Closed, Temp Code T3C, 1 Per Phase	+	+
	J	Thermocouples Coil Head (Type J)	+	+
	K	Stator RTD's 100-Ohm Platinum with Aux Box-Terminal Strip 2 Per Phase	+	+
	L	Winding Protection - G + K	+	+
	P	PT1000, 2 Embedded Temperature Sensors	+	+
Short Codes	A46	Space Heaters 115V Single Phase, Max Temp 160ºC	+	+
	A47	Space Heaters 230V Single Phase, Max Temp 160ºC	+	+
	A48	Space Heaters 115/230V Single Phase, Max Temp 160ºC	+	+
	A90	Control Module for PTC Thermistors	+	+
	C01	Insulation Vacuum Pressure Impregnation (VPI)	+	+
	C03	Spike Resistant Wire	+	+
	C04	Insulation Moisture/Powerhouse (Extra Dip & Bake)	+	+
	C07	Insulation Fungus Protection - No UL	+	+
	C08	Insulation Tropicalization (Extra Dip & Bake + Fungus Spray) – No UL	+	+

+ Available • Standard – Not Available Pricing

Winding insulation

The ABB low voltage NEMA motor stator is random wound and insulated with Class F insulation system which is compliant with NEMA MG-1 part 31 and is rated for 155 deg C. Spike resistant wire, **C03**, can be used to meet those more stringent specifications that require part 31 to be exceeded. The stator is protected from moisture with acrylic impregnation though a dip and bake process. The stator is designed to have a temp rise no greater than class B at nameplate horsepower.

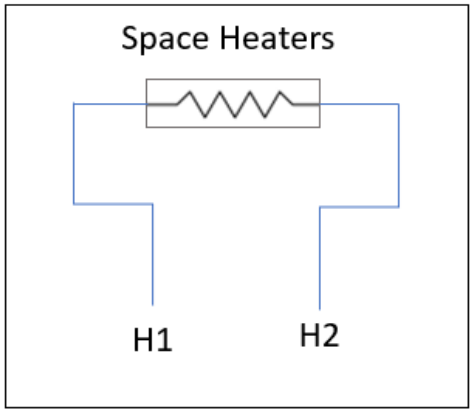
Class H insulation is rated for 180 deg C and is used to better protect the stator when the temp rise may be higher due to ambient conditions or harsher VFD applications. Frame size 440 to 500 will have Class H insulation as a standard feature.

Moisture Powerhouse (extra dip and bake), **C04**, adds an extra layer of varnish to the winding for added protection against moisture. Vacuum Pressure Impregnation (VPI), **C01**, is an alternative to the standard dip and bake process. VPI uses a vacuum system to pull the varnish into the winding to reduce air bubbles in the varnish. Fungus Protection, **C07, C08**, is an anti-fungal spray that is applied to the windings after the dip and bake process to help reduce fungus from growing on the windings during storage prior to operation.

Space heaters

Space heaters help to reduce the humidity inside the motor during idle times of operation and storage. ABB uses flexible silicone rubber space heaters that have been proven to provide long life which either meets or exceeds the overall life of ABB NEMA motors. Space heaters will have wattage corresponding to the voltage and motor size as seen in Table 3.1 and will have leads to the main box as standard or an aux box as an option with leads marked per Figure 3.1.

ABB offers low temp space heaters rated for a max surface temperature of 160 deg C for use in safe area or Division 2 areas. The heaters can be configured for operation on 115V supply, **A46**, 230V supply, **A47**, or 115/230V, **A48**.



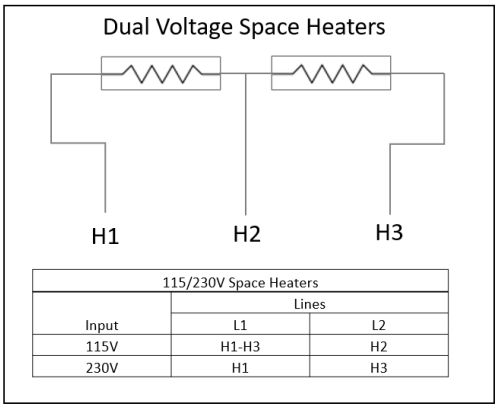


Figure 3.1.

Order Code	Frame	Voltage	Qty	Size (inches)	Watts
A46	400-S449	115	2	2.5 x 20	100
A47	400-S449	230	2	2.5 x 20	100
A48	400-S449	115/230	2	2.5 x 20	100
A46	FS500	115	2	2.5 x 20	100
A47	FS500	230	2	2.5 x 20	100
A48	FS500	115/230	2	2.5 x 20	100

Table 3.1.

Winding temperature protection

Thermostats, **MLFB Position 15 “G”**, are supplied as normally closed. When the temperature of the motor reaches the rated temperature of the device, the switch will open and cause a trip condition. Thermostats will have leads to the main box as standard or an aux box as an option with leads marked per Figure 3.2.

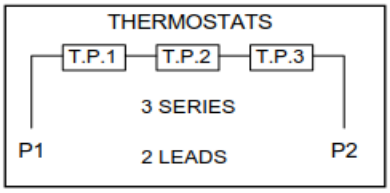


Figure 3.2

PTC (positive temperature coefficient) thermistors, **MLFB Position 15 "B or C"**, are resistive devices that increase in resistance as the temperature increases. They are set to jump to a very high resistance at a rated temperature. Options are available to have one per phase for trip only, "B", or two per phase for alarm and trip, "C". PTC thermistors will have leads to the main box as standard or an aux box as an option with leads marked per Figure 3.3 and Figure 3.4.

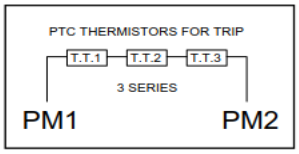


Figure 3.3

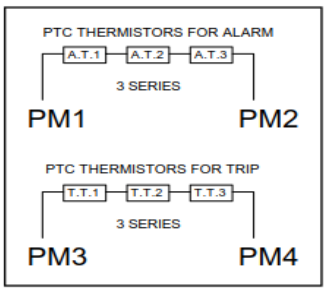


Figure 3.4

Stator RTDs, **MLFB Position 15 "K"**, are PT100 resistive thermal devices that can be used to monitor the temperature of the motor based on the measured resistance of the device. The resistance range will be 100 ohms at 0 degrees C and increase at a rate of .385 ohms per degree C. RTDs are supplied with two sets per phase (one set active and one set as spares) embedded in the DE end turn of the winding. This option also includes an aux box with a terminal strip with terminals marked per Figure 3.5.

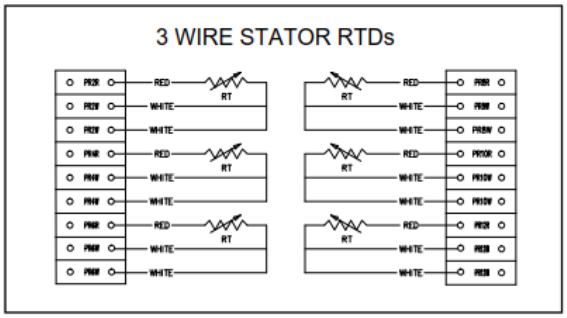


Figure 3.5

PT1000 sensors, **MLFB Position 15 "P"**, function like the PT100 stator RTDs. The resistance range for the PT1000 sensors is 1000 ohms at 0 degrees C and increases at a rate of 3.85 ohms per degree C. This option comes with two independent sensors (one active and one spare) embedded in the DE end turn of the winding. PT1000 sensors will have leads to the main box as standard or an aux box as an option with leads marked per Figure 3.6.

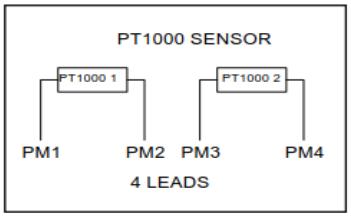


Figure 3.6

2.1.2.4. Terminal Boxes and Leads

	Codes	Description	1LE6	1PC6 HPS
MLFB DIGIT 16	1	LHS Mount - View from DE - Drive End	+	+
	2	RHS Mount - View from DE - Drive End Side	+	+
	3	Top Mounted Terminal Box from LHS - Drive End Side	+	+
	4	LHS Mount - View from DE - Non-Drive End Side	+	+
	5	RHS Mount - View from DE - Non-Drive End Side	+	+
	6	Top Mounted Terminal Box from RHS - Non-Drive End Side	+	+
Short Codes	J84	Conduit Box Orientation 90° CCW (Entry from DE)	+	+
	J85	Conduit Box Orientation 180° CCW (Entry from Top)	+	+
	J86	Conduit Box Orientation 270° CCW (Entry from NDE)	+	+
	K80	BURNDY HYDENT YA Type Terminals	+	+
	K81	Special Cable Leads, 60” Long	+	+
	K82	Special Cable Leads, 120” Long	+	+
	K83	Terminal Block - 3 Lead Only	+	+
	K89	Sealed Leads	+	+
	*Rx0	Cast Iron Aux Box for - Position 1 (F1 DE)	+	+
	*Rx1	Cast Iron Aux Box for - Position 2 (F2 DE)	+	+
	*Rx2	Cast Iron Aux Box for - Position 4 (F1 NDE)	+	+
	*Rx3	Cast Iron Aux Box for - Position 5 (F2 NDE)	+	+
	*Rx4	Condulet Box for - Position 1 (F1 DE)	+	+
	*Rx5	Condulet Box for - Position 2 (F2 DE)	+	+
	*Rx6	Condulet Box for - Position 4 (F1 NDE)	+	+
	*Rx7	Condulet Box for - Position 5 (F2 NDE)	+	+
	T00	Main Terminal Box – at 45° Angle	+	+
	T03	Main Terminal Box – Oversized Steel (Centered Cable Entry)	+	–
	T04	Steel Terminal Box - Oversized 20”X20”X16” with blank entry	+	+
	T05	Steel Terminal Box - Oversized 28.5”X24.4”X20” with blank entry	+	+
	T06	Steel Terminal Box - Oversized 18.5”X22”X7.5” with blank entry	+	–
	T10	Centered Terminal Box	+	–
	T11	Centered Retrofit Terminal Box	+	–
	T50	Dual Entry Hole Terminal Box	+	+
	Y96	Non-Standard NPT entry	+	+

+ Available • Standard – Not Available Pricing

DE = Drive End, NDE = Non-Drive End, LHS = Left Hand Side, RHS = Right Hand Side

Terminal leads

All low voltage NEMA motors come standard with flying leads (no terminal block) terminated using ring terminals. The leads are Class H insulated and identified with permanent marking. Terminal block, **K83**, is available as an option. **Note**: Option **K83** will prevent modifications from F1 to F2 due to reduced cable length.

As standard terminal leads will be of sufficient length to execute the termination to the power leads inside the terminal box or convert to one of the DE terminal box positions.

Special cable length can be supplied with leads extended to 60", **K81**, or 120", **K82**, outside the motor frame.

Main terminal boxes

The main conduit box is diagonally split with a single entrance hole (see drawing section for standard entry hole size) with internal grounding lug provided as standard. The standard terminal box will be cast iron and have a volume that is greater than required by NEMA/NEC. Terminal box will be supplied with a gasket between conduit box and frame and between cover and base.

Dual entry terminal box is available as an option, **T50**, and will have NPT size per drawings and dimensions section. Non-standard NPT, Y96, must be defined in the order and meet the criteria defined in Table 4.1. Options **T50** and **Y96** may be used in combination to achieve a non-standard dual entry.

Frame	Max single NPT	Max Dual NPT
444-447	4.5"	2 x 2.5"
449-L440	5"	2 x 4"
500	5"	2 x 4"

Table 4.1

ABB Next Generation low voltage NEMA motors have a variety of terminal box mounting options. There are 4 locations for L449-FS500 and 2 locations (DE only) for FS444-449 on the frame where the main box or auxiliary boxes can be mounted. The motors will come as standard with the box on the DE at a 90 deg angle and can be modified to 45 deg, **T00**, with a simple conversion. See figure 4.1 for illustrations of terminal box mounting possibilities.

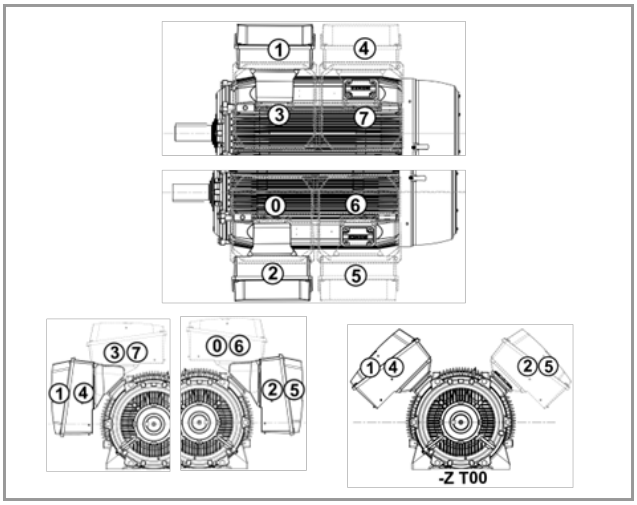


Figure 4.1

444-449 frame terminal box can be offered with options for centered box for retrofit applications.

Centering neck, **T10**, relocates the standard box to the center of the motor Figure 4-2. Centering neck with oversized box, **T11**, relocates the box to the center of the motor with an oversized cast iron box that places the entry hole closer to the vertical position of the SD100 Figure 4-3.

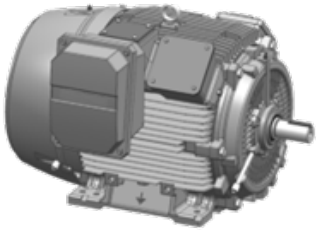


Figure 4.2

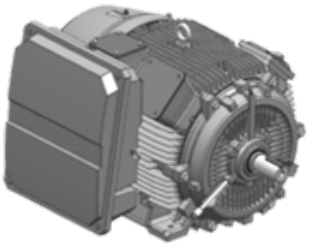


Figure 4.3

Oversized with the entry hole location centered between the foot holes for retrofit applications or where the centered box is desired. The oversized box is available as Steel, **T03**.

Oversized steel boxes, **T04, T05, T06**, are available in three sizes with the blank entry. See drawings and dimensions section for additional details.

The main terminal box position is defined by the 16th position of the MLFB as illustrated in Figure 4.1. The connection entry will be facing the motor feet as standard when supplied on the side of the motor or facing the F2 side when top mounted. The terminal box may be rotated in 90-degree increments in the field or by ordering with options **J84, J85, J86**.

Auxiliary terminal boxes

Auxiliary terminal boxes are available for accessories included in the motor selection. The auxiliary box can be attached to the motor frame or to the side of the main terminal box. Aux box, **Rx0, Rx1, Rx2**, Rx3 will be a cast iron auxiliary box. Condulet, **Rx4, Rx5, Rx6, Rx7** is an aluminum electrical condulet with a steel cover. The auxiliary box option should be selected according to the accessory that it will be paired with in the positions illustrated in Figure 4.7

Space Heaters and other thermal protection will route to main box unless aux box is selected.

If aux box/Condulet is configured in the same position as main box, the aux will be attached to the main, Figure 4.4.

Positions 4 and 5 will be attached to motor frame at 90 degrees with pipe nipple for frames 444-449, Figure 4.6, and attached to cover plate for frames L449-500, Figure 4.5.

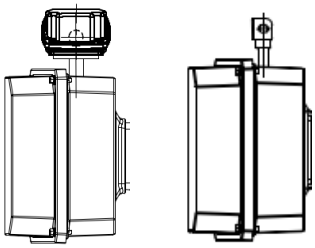


Figure 4.4

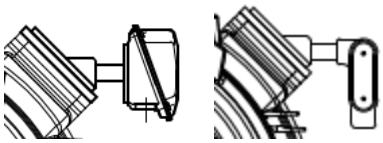


Figure 4.5

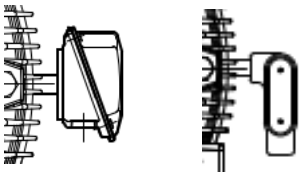


Figure 4.6

	Thermal Protection[1]	Space Heaters	All Accessories in the same box
Cast Iron Aux Box - Position 1 (F1 DE)	R00[2]	R10	R20[2]
Cast Iron Aux Box - Position 2 (F2 DE)	R01[2]	R11	R21[2]
Cast Iron Aux Box - Position 4 (F1 NDE)	R02[2]	R12	R22[2]
Cast Iron Aux Box - Position 5 (F2 NDE)	R03[2]	R13	R23[2]
Condulet Box - Position 1 (F1 DE)	R04[3]	R14	R24
Condulet Box - Position 2 (F2 DE)	R05[3]	R15	R25
Condulet Box - Position 4 (F1 NDE)	R06[3]	R16	R26
Condulet Box - Position 5 (F2 NDE)	R07[3]	R17	R27

2. No charge when Stator RTDs are included in MLFB Pos 15 as (K) or (L)
3. Condulet boxes cannot be used with stator RTDs

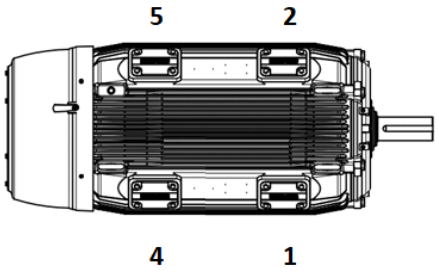


Figure 4.7

Stator RTDs will come with an aux box with a terminal strip included as standard. As standard the aux box will be on the same side as the main box. This box may be relocated using one of the cast iron thermal protection options at no additional charge. Bearing RTDs, **A51**, does not require an auxiliary terminal box, as it comes standard with terminal heads on each bearing housing.

2.1.2.5. Bearings and Lubrication

	Codes	Description	1LE6	1PC6 HPS
Short Codes	A50	Install BRG RTD's-100 Ohm Platinum- Both Ends & Terminal Heads/Block	–	+
	A51	Bearing RTD's-100 Ohm Platinum- Both Ends & Terminal Heads/Block	+	–
	L49	Automatic Grease Relief Fitting	+	+
	L50	Bearing Insulation for DE	+	+
	L51	Bearing Insulation for NDE	+	+
	L54	Provisions for Oil Mist	+	+
	L55	Oil Mist Ready	+	+
	L57	MOBIL 28 - High or Low Ambient – Special Grease	+	+
	L58	MOBILITH SHC 100 – Special Grease	+	+
	L61	Insulated Bearing – INSOCOAT (Both Ends)	+	+
	L62	Insulated bearing - INSOCOAT (on DE)	+	+
	L64	Insulated Bearing – INSOCOAT (NDE Only)	+	+
	L68	Sealed Ball Bearings (Both Ends)	+	–
	L69	Hybrid (Ceramic Ball) Bearings – Both Ends	+	+
	L70	Hybrid (Ceramic Ball) Bearings – NDE	+	+
	L71	Hybrid (Ceramic Ball) Bearings – DE	+	+

+ Available • Standard – Not Available Pricing

Lubrication

Standard lubrication for all low voltage NEMA motors is EXXONMOBIL POLYREX EM (Polyurea-based grease).

MOBIL 28 Grease, **L57**, has a wide temperature range with a clay base thickener ideal for low ambient conditions down to -50C. This option is supplied as standard for low ambient option codes **B27, B28**, and **B29**.

MOBILITH SCH 100, **L58**, is a Lithium base alternative to our standard POLYREX EM.

Grease inlet (Alemite fitting) is standard on all SD, and DP NEMA products. SD200 841 motors include Alemite and automatic grease relief fittings as standard, **L49** option is available for other severe duty motors.

Oil mist ready, **L55**, and Provisions for oil mist, **L54**, are possible on Severe Duty motors horizontal foot mount only. Bearings must be single shield ball bearings with shields to inboard side. Motor leads are sealed to prevent mist from entering conduit box and lead material used is resistant to oil mist.

Oil mist ready will only have enough grease in the bearings to complete the routine test.

Provisions for oil mist will include the required machining on the bearings housings to be switched to oil mist in the future. The motor will be supplied as a fully greased motor with standard re-greasing provisions. Hardware and instructions will be included with the motor to switch from grease lubrication to oil mist.

Sealed Bearings, **L68**, are greased for life bearings and will not require re-lubrication. When sealed bearings are supplied on SD200 841 motors, the motors will be marked as “IEEE Std 841-2021 features”. **Note**: Not possible for roller bearing or with other bearing or greasing options.

Bearings

Standard re-greaseable bearings for ABB low voltage NEMA motors have an L10 bearing life of 100,000 hours for direct coupled applications and 50,000 hours for belted applications when properly sized for the application and with proper maintenance. See Technical Tables section for standard bearings sizes.

Bearing temperature protection

Bearing RTDs, **A51**, included temperature monitoring on both the drive end and non-drive end bearing. The bearing housing is drilled and tapped for the temperature probe to rest on the outer race of the bearing with the leads in a terminal head on each end (Fig. 5.1). This allows for independent temperature monitoring for each bearing.

DP200 HPS motors will include provisions for bearing RTDs as standard. The installation of the RTDs, **A50**, can be added as a modification on this product.

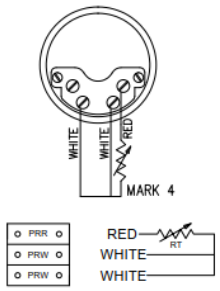


Figure 5.1

Overhung load/belted considerations

ABB recommends a roller bearing on the DE for overhung load applications. Roller bearing on DE is standard on R440 and R500 frame.

Belting details can be evaluated, **F09**, by ABB Engineering on request. The belting form can be requested through the Low Voltage NEMA Motor Quotation Team. Minimum criteria for belting evaluation are listed below and cannot be properly evaluated without this data. Refer to Figure 5.2 for dimension illustration.

- Operating application horsepower
- Operating RPM
- Frame size of selected motor
- Dr = Motor sheave diameter (see Table 5.1)
- Dn = Driven sheave diameter
- Number of belts
- Type of belts (e.g., 3V, 5V, 8V, A, B, C, etc.)
- C = Distance between sheaves (center to center)
- L = Center of motor sheave to end of shaft
- Orientation of motor
- Ws = Face width of motor sheave

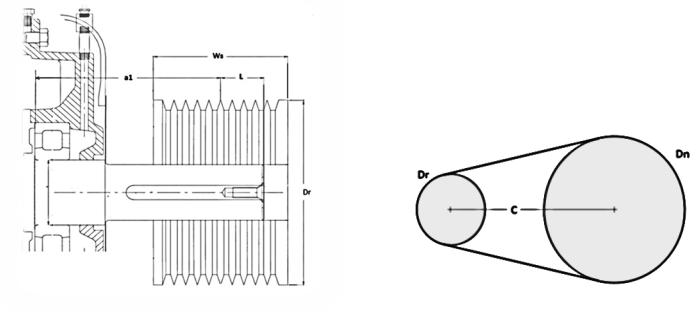


Figure 5.2

Recommended Sheave Diameters for V-belts

Frame	HP Synchronous RPM			Standard V Minimum Diameter (in.)	Narrow V Minimum Diameter (in.)
	1800	1200	900		
444T	–	–	75	10.5	9.5
444T	–	100	–	11.0	10.0
444T	125	–	–	11.0	9.5
445T	–	–	100	12.5	12.0
445T	–	125	–	12.5	12.0
445T	150	–	–	13.2	10.5
447T	200	–	–	15.8	13.2
449T	250	–	–	18.4	13.0
449T	300	–	–	24.8	15.4
L449L	350	–	–	–	15.8
L449L	400	–	–	–	18.0

Table 5.1

Notes:

- Narrow V Example: 3V, 5V, 8V.
- Standard V Example: A, B, C, D section
- Do not exceed belt service factor of 1.6.
- Maximum speed reduction of 5:1
- Shaft center distance approximately equal to diameter of largest sheave
- The motor sheave should be located as close as possible to the bearing (1/2" from shaft shoulder)
- The center of the belt system should never extend beyond the end of the motor shaft

VFD application considerations for bearings

Shaft currents caused by VFD supply can cause damage to bearings that can result in bearing failure. The shaft currents tend to increase as the frame size increases. ABB recommends the use of an insulated bearing on the NDE of frames 400 and larger to reduce the risk of the shaft current passing through the bearing.

Bearing Insulation, **L50** and **L51**, is a proprietary system that will use standard ball or roller bearings with an insulating composite compound between the shaft and bearing. The compound has a working temperature range of -50C up to 150C and will be permanently fixed to the shaft. **Note: Standard 6322 bearing will be reduced to 6222 with options L50 and/or L51.**

Hybrid ceramic bearings, **L69, L70** and **L71**, are a direct replacement for the standard bearing size and are fully regreasable. They utilize ceramic balls to eliminate the currents from passing through the bearings. **Note**: **Not available for roller bearing.**

INSOCOAT Bearings, **L61, L62, L64**, are a direct replacement for the standard bearing size and are fully regreasable. An insulated coating on the outer race of the bearing is used to reduce the risk of the currents passing through the bearing.

See Shafts and Seals for additional options to reduce bearing damage due to shaft currents.

2.1.2.6. Shafts and Seals

	Codes	Description	1LE6	1PC6 HPS
Short Codes	K41	Keyless Shaft	+	+
	K42	Retrofit S449 Shaft Extension	+	–
	L29	Shaft Grounding Brush	+	+
	L76	Shaft Slinger & O Ring	+	–
	L79	INPRO/SEAL Drive End	+	+
	L80	INPRO/SEAL Non-Drive End	+	+
	L81	INPRO/SEAL Both Ends	+	+
	L89	INPRO/SEAL MGS Shaft Grounding - Drive End	+	+
	M52	NEMA Std Long Shaft - Non-Drive End	+	–
	M53	NEMA Std Short Shaft - Non-Drive End	+	–
	M57	(C4140) Carbon Steel Shaft	+	+
	Y50	Special Shaft Dimensions on Drive End	+	+
	Y51	Special Shaft Dimensions on Non-Drive End	+	+

+ Available • Standard – Not Available Pricing

Shafts

The standard shaft material will be C1045 or C4140 as noted in Table 6.1. C4140 shaft material is available as a custom option, **M57**, on frames with C-1045 as standard. Low voltage NEMA motors are designed with the shaft dimensions and tolerances to meet the standards of NEMA MG-1 single shaft extension. Any exceptions will be noted on the motor drawings. DE shaft will have drill and tap shaft as standard as provisions for shaft locking device for shipment, see drawings and dimensions section for details.

Frame	Standard Shaft Material
444-L449	C-1045
500 (2 Pole)	C-4140
500 (4 & 6 Pole)	C-1045

Table 6.1

Motors in frame 444-449 can be custom built with a double shaft extension with NDE shaft according to NEMA MG-1. This can be offered as either long shaft, **M52**, or short shaft, **M53**. See drawings and dimensions section for reference.

Keyless DE shaft extension, **K41**, is available as a custom feature. All other shaft dimensions will remain in accordance with NEMA MG-1.

Motors can be custom built with a special shaft extension on DE, **Y50**, or NDE, **Y51**. These options can be used for special dimensions of N-W, U, and keyway only and will be limited to max dimensions noted in Table 6.2. If **Y50** and **Y51** are used together the combined N-W may not exceed value noted in Table 6.2.

Any special features to shaft (special drill and tap) must be quoted by the ABB NEMA Motor Quotation Team.

Frame	Max U dim	Max N-W dim	Max FU dim	Max FN-FW dim	Max N-W + FN-FW
444-L449	3.875”	15”	2.875”	15”	15”
500 (2 Pole)	3”	9”	3”	3”	9”
500 (4 & 6 Pole)	4.25”	CF	3”	CF	CF

Table 6.2 CF = Consult Factory

Seals

Shaft seals are used to protect the bearings from liquid and dust contaminates that lead to premature bearing failure. NEMA motor are equipped with v-ring shaft seals as standard on all severe duty motors unless otherwise noted. The v-ring shaft seal provides protection to meet IP55.

Labyrinth seals (Inpro Seals, **L79, L80**, and **L81**), are shaft rotating seals that provide extra ingress protection from water and dust while the motor is in operation. Motors that are noted to meet IEEE 841 or when IEEE 841 features, **K10**, will include labyrinth seals on both ends. The 500 frame motors will have a labyrinth seal on the DE as standard.

Shaft slinger and O-ring, **L76**, is used in shaft up applications to help reduce liquid from running down the shaft and settling in the seal area.

VFD application considerations for shaft grounding

Shaft grounding can reduce the risk of shaft currents from passing through the bearings.

This allows the current generated in the shaft to flow harmlessly to the frame and ultimately to ground bypassing the bearings in the process. Shaft grounding options are considered sparking devices and cannot be used in hazardous areas. When selected for SD products, the Division 2 information will be removed from the nameplate.

SGS™ Motor Grounding Brush & Ring Systems, **L29**, mount on the fan housing with a carbon brush that contacts the motor shaft. The carbon brush is rated at 100,000 hours before being changed. **Note: Not possible in combination with** G05, G06, H04, M08**, or** Y51.

Bearing Isolator + grounding brush, (MGS INPRO Seal, **L86**), uses the labyrinth sealing protection of an INPRO Seal combined with shaft grounding brushes that rest on the shaft behind the sealing mechanism. The brushes reduce the shaft currents from passing through the bearings while the seal reduces contamination build up on the grounding brushes and in the bearing. **Note: This option may reduce the usable shaft length.**

2.1.2.7. Frame

	Codes	Description	1LE6	1PC6 HPS
Short Codes	K33	Drip Cover	+	+
	K38	Provisions for Dowel Holes	+	•
	K70	Rotation Arrow Bi-directional	+	+
	K71	Rotation Arrow Clockwise (from NDE)	+	+
	K72	Rotation Arrow Counterclockwise (from NDE)	+	+
	L22	Stainless Steel Hardware (Includes T Drain SS, and eyebolt)	+	+
	L27	Ground Bolts - Qty 2	+	+
	L45	SS T-Slot Breather Drain	+	+
	L46	CROUSE HINDS UL Approved Breather/Drain	+	+
	L91	IP56 Ingress Protection	+	–
	M10	Bronze Fan	+	–
	M39	Vertical Jacking Provisions	+	+

+ Available • Standard – Not Available Pricing

Feet

Motors with cast iron frame will have cast feet as standard.

Provisions for dowel holes, **K38**, provides a hole drilled at an angle in each of the motor feet. The holes will be used as a guide for drilling the mounting plate for the addition of the dowel once the motor is aligned to the driven equipment. Dowels can be used to pinpoint the alignment of the motor to the driven equipment when the motor is taken out for service. Provisions for dowels is a standard feature on the SD200 500 frame motors.

Motors will be delivered as standard with dual/tri drilled mounting holes in the feet for increased flexibility in mounting.

Provisions for vertical jacking, **M39**, provides threads in the non-mounting holes on the feet in order that a bolt may be added for leveling of the motor during installation. Jacking provisions are required on motors that exceed 500 lbs to meet API610 requirements for horizontal pump applications.

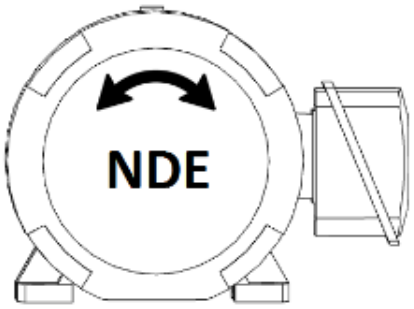
Lifting

Horizontal cast iron motors up to L449 will be supplied with an eye bolt located in the center line of the center of gravity on the motor frame. 500 frame motors are provided with two lifting eye bolts located at opposite corners of the motor frame. They will also include alternate locations on the motor where the eye bolts can be relocated. Foot mounted motors configured for Vertical orientation, as defined in position 14 of the MLFB, will include three swivel lifting hoist ring to provide safer movement of the motor.

Fan and fan cover

The standard bidirectional cooling fan is non-sparking polypropylene design, unless otherwise noted. Directional fans will have polypropylene blades with metallic mounting. Bronze fans, **M10**, are non-sparking and may be used on bi-directional motors.

Bi-directional arrow, **K70**, or Unidirectional rotation arrows, **K71, K72**, can be added to the fan housing when a single direction of rotation is desired. Direction of rotation will be as viewed from the NDE.
Note**: Unidirectional arrows do not change the fan to unidirectional fan.**



Metallic fan cover will be included as standard on all SD motors.

Drip cover, **K33**, can be added to the fan cover of motors used in vertical shaft down applications in order to protect the motor from water or liquids from falling directly into the fan housing. See Drawings and Dimensions section for drip cover dimensions.

Hardware

Standard hardware is grade 5 zinc plated corrosion resistant hardware. Stainless steel hardware, **L22**, includes all external nuts and bolts as well as the T-Drain and eyebolt(s). Stainless steel hardware is included with options for low ambient temperature, **B29**. Stainless steel T-drain, **L45**, will include only the drain as stainless steel.

All low voltage NEMA motors will include tapped holes on each side of the frame near the feet for frame grounding. Bronze ground bolts, **L27**, can be added (one on each side) for additional provisions.

Drain plugs require the user to unscrew the plug to allow the moisture to escape during times of idle use. T-slot drains allow for moisture to drain from the motor freely without user intervention. Crouse Hinds drains, **L46**, are UL approved breather/ drains that can be added.

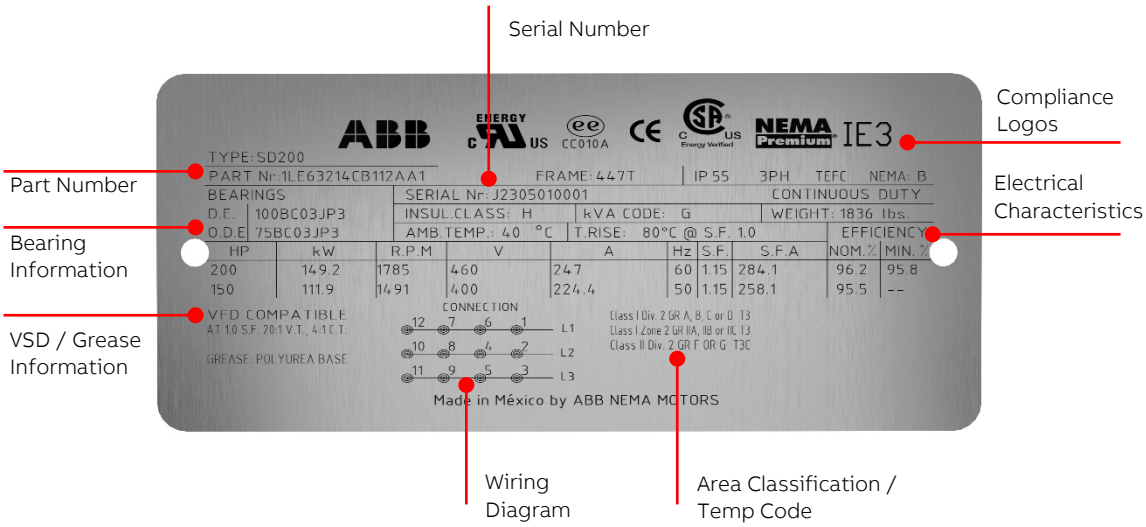
Ingress Protection

The ingress protection (IP) rating is the protection grade against water and dust. The IP rating on the nameplate applies to completed motor, including shaft seals, bearing housing fits, and terminal box.
The first number designation in the IP rating, IP_*, relates to the protection against water. The second number designation in the IP rating, IP*_, relates to the protection against dust. SD200 motors will have IP55 rating. Additional features can be added to increase to IP56, **L91**. SD200 841 will have IP56 as a standard feature.

2.1.2.8. Rating Plates and Tagging

	Codes	Description	1LE6	1PC6 HPS
Short Codes	M21	Additional Nameplate (Without Logos)	+	+
	M25	Class II, Divisions 2, Aux Tag	+	+
	Y80	Derate-Altitude-Ambient (Nameplate Change)	+	+
	Y82	Auxiliary n/p Max. 40 Characters (Aux Tag)	+	+

+ Available • Standard – Not Available Pricing



Motor main nameplate

SD200 main nameplate will be provided with data as seen in Figure 8.1.

Motor main nameplate may be modified, **Y80**, for de-rate, re-rate, deviated altitude, deviated ambient, or information added to the main nameplate. Information must be consistent with guidelines listed in catalog or applicable standards for de-rate or re-rate and within the limitations set in the ambient and altitude section. Consult the ABB NEMA Motor Quotation Team for special conditions.

Note: **ABB reserves the right to reject/ hold an order based on inconsistent information or the lack of information provided for option Y80. When additional information is requested on the nameplate, it may result in standard information being displaced or removed due to space restrictions.**

Auxiliary plate

Additional information can be provided on an auxiliary plate, **Y82**, for free text provided by customer in PO. This is often used for customer tagging or customer instructions. The tag has a character limit of 40 which includes spaces and special characters. **Note**: **ABB will not be held accountable for free text provided by customer that is provided in the PO that proves to be inconsistent with the motor design (unless specified in a custom quotation by the ABB NEMA Motor Quotation Team).**

Hazardous area classification

Next Generation Severe Duty low voltage NEMA motors up to L449 frame will include Class I, Division 2 and Class II, Division 2 information standard on the main nameplate. 500 frame motors will include Class I, Division 2 information on the main plate and may have Class II, Division 2 added with option **M25**. **Note:** M25 **will also include additional features required for compliance. Associated Zone 2 data will also be included.**

Division 2 information will not be included when one of the following options are selected: **H04, G05, G06, L29, L86** or any other feature that may be deemed as a sparking device.

Ambient and Altitude

	Codes	Description	1LE6	1PC6 HPS
Short Codes	B27	+40°C to -30°C Ambient Temp	+	+
	B29	+40°C to -50°C Ambient Temp	+	+

+ Available • Standard – Not Available Pricing

Standard ambient and altitude

ABB Severe Duty NEMA motors are suitable for operation at an altitude up to 3300 feet (1000 meters) above sea level with an ambient temperature range of -25°C to 40°C with 1.15 service factor as standard.

Increased ambient or altitude

Altitude can be adjusted up to 9900 feet or Ambient can be adjusted up to 55°C with a reduction in service factor to 1.0 using **Y80** option code.

Motors with Class H insulation may be re-nameplated for up to 50°C ambient with 1.15SF and Class F temp rise.

Altitude may also be increased with reduction in ambient per Table 9.1.

For altitude above 9900 feet or ambient above 55°C please contact the ABB NEMA Motor Quotation Team.

Maximum Altitude	Maximum Ambient
3300 ft (1000m)	40°C (104°F)
6600 ft (2000m)	30°C (56°F)
9900 ft (3000m)	20°C (68°F)

Table 9.1

Ambient temperatures below -25°C can cause standard grease to become ineffective and some standard metals to become brittle leading to motor failure or damage. Features for low ambient conditions can be added as custom build, **B27** for down to -30°C, **B28** for down to -40°C, **B29** for down to -50°C, include special grease, external hardware, shaft material, lead material, and seals for suitability for the low temperatures.

Mechanical Design & Accessories

	Codes	Description	1LE6	1PC6 HPS
Short Codes	A67	Provision for Vibration Sensors	+	•
	A68	Metrix Sensors Installed on DE and NDE, top of the end shield	+	+
	G05	DYNAPAR Encoder HS35R 1024 PPR	+	+
	G06	C-Face Mounted SLIM Tach Encoder	+	+
	K10	IEEE 841 Features	+	+
	M08	Separately Driven Fan	+	+
	M69	Precision Balance	+	–
	M70	Extra Precision Balance	+	•

+ Available • Standard – Not Available Pricing

Vibration monitoring

Provisions for vibration sensors, **A67**, will provide 1/4"–28 UNF drilled and tapped holes on each bearing housing when selected with no additional instruction. This option can also be adapted to the required drill and tap required for a customer specified vibration sensor with quote from LOW VOLTAGE MOTOR quotation team. DP200 HPS motors in 500 frame will have provisions for vibration sensors as a standard feature.

Metrix vibration sensors, **A68**, includes the provisions and install of one ST5484E (4-20 MA) transmitter on each end of the motor.

Encoders

DYNAPAR HS35R, **G05**, is a hollow shaft rotary pulse 1024 PPR encoder with single output. It is mounted on an NDE shaft extension that extends beyond the fan housing. It is held in place with an arm that is attached to the fan housing. DYNAPAR SLIM Tach ST85, **G06**, is a c-face mounted 1024 PPR encoder with single output. **Note**: **Encoder options will remove hazardous area information from nameplate**.

Additional cooling for VFD applications

External Force cooling, **M08**, can be added to severe duty motors for increased turndown on VFD applications. The blower motor voltage & applicable order codes like a special paint, rotation arrow, box position, etc. will follow the drive motor. The blower kit will include a secondary connection box located on the fan housing. See Dimensions Section for added length.

Standards

IEEE 841 Features, **K10**, adds the applicable features of IEEE 841 to the motor. This option is only available for frame size 500 motors. Motors over 500 HP fall outside the scope of IEEE 841 and will be nameplated with "IEEE 841 Features."

Balance

SD200 motors up to L449 frame are dynamically balanced to commercial limits measure in accordance with NEMA MG1-12.06. Precision and Extra Precision balance, **M69, M70**, provides more stringent balancing guidelines. FS500 motors will have extra precision balance as standard. See Technical Tables for balance values.

Paint and Packaging

	Codes	Description	1LE6	1PC6 HPS
Short Codes	B07	Stackable Packing Crate	+	-
	B09	Export Packaging Sea freight – ABB Standard	+	+
	B11	Export Packaging Sea freight – ABB Standard + sensors	+	+
	N01	2 Part Epoxy (Industrial-Coastal Low Salt)	+	+
	N02	3 Part Epoxy (Industrial-Coastal Moderate Salt)	+	+
	N03	Primer Only	+	+
	N05	3 Part Epoxy (Coastal-Offshore High Salt)	+	+
	N06	2 Part Epoxy C4 (Industrial-Coastal Moderate Salt)	+	+
	N07	2 Part Epoxy C5I/C5M (Coastal-Offshore High Salt)	+	+
	Y60	Special color (Provide RAL#)	+	+
	Y61	Special color with Special Paint system (Provide RAL#)	+	+

+ Available • Standard – Not Available Pricing

Packaging

Frames 280 and larger will be bolted to an open wood pallet and wrapped in plastic to protect the finish. See standard packaging weights in dims in Drawing section.

Stackable crate packing, **B07**, will have supported wooden slates on all sides surrounding the motor. This packing is available for frames up to 449 and provides additional protection during transport and allows for the motors to be stacked on the floor in a warehouse.

Export packing, **B09**, the motor will be secured into a fully enclosed wood crate. See Export box weights and dimensions in Drawing section. Special packing, **B11**, will include B09+shock and tilt sensors.

Shipping weights and dimensions can be calculated using the standard packing weights and dimensions table combined with the motor information. The weights and dimensions listed in the tables do not include the weight and dimensions of the motor unless otherwise noted.

Paint

NEMA motors as standard are protected against corrosion (C2 category) and external influences with high-quality coatings based on (Alkyd Modified + Epoxy). If a higher corrosive class is required, a special paint system must be included.

Paint color will be Dark Chas standard. Special paint color, **Y60, Y61**, may be added for other RAL color. **Note**: **Y61** may only be used with one of the special paint systems (**N01, N02, N05, N06, N07**).

Motors can be provided with primer only, **N03**, to allow the customer to apply their own final paint in the field.

The 2 Parts Epoxy paint system, **N01**, offers excellent resistance to the corrosive action of chemical agents, prolonged weathering and to the action of direct sunlight.

The 3 Parts Epoxy paint system, **N02**, is an organic base of Epoxy Zinc, provides a high resistance to humid environments (saline or no-saline) but not for offshore ocean climate, excellent inhibitory capacity to corrosion, excellent resistance to abrasion, high temperatures (ambient temperatures >59°C) and to the most of industrial solvents (splashes). This Paint System is recommended to apply in high relative humidity environments (>60%).

2 Parts Epoxy paint system, **N06**, offers the same level of protection as **N02** at a reduced price and shorter process time.

The 3 parts epoxy (Coastal-Offshore High Salt) paint system, **N05**, is recommended for offshore installation, provides good chemical resistance to splash/spillage, fumes and immersion in neutral, fresh and salt water. Effectively protects the motor from corrosion resulting from industrial and marine exposures as it is safeguarding the environment.

2 Parts Epoxy paint system, **N07**, offers the same level of protection as N05 at a reduced price and shorter process time.

See Technical Tables for additional details.

2.1.2.9. Documentation

	Codes	Description	1LE6	1PC6 HPS
Short Codes	D05	Nameplate and Documentation in Spanish	+	+
	F00	Certificate of Compliance	+	+
	F01	Certificate of Origin - Stamped by Chamber of Commerce	+	+
	F03	Standard Performance Curve	+	+
	F04	Acceleration Time Calculation	+	+
	F05	Polarization Index	+	+
	F07	Curve Package at 100% and 80% voltage (S-T, PERF)	+	+
	F08	Shaft Torsional Analysis (includes shaft sketch)	+	+
	F09	Bearing L10 Calculation	+	+
	F40	Stall Time (Thermal Limit Curve)	+	+
	F42	Standard Dimension Sheet	+	+
	F43	Nonstandard Dimension Sheet	+	+
	F44	Conduit Box Dimension Sheet	+	+
	F45	Wiring Diagram	+	+
	F46	Instruction and Operation Manual	+	+
	F47	Renewal Parts	+	+
	F48	CAD Drawing (Dwg Format) Customer/Application Specific	+	+
	F49	Performance Data Sheets	+	+
	F50	Customer Specific Data Sheets	+	+
	F51	Shaft Profile Detail (included materials data)	+	+
	F60	Visual Inspection Proof (Max 8X Photos)	+	+
	F70	Inspection Test Plan	+	+
	F71	Paint Report (thickness and adherence)	+	+
	F81	Advanced Document Package	+	+
	F82	Project Document Package	+	+

+ Available • Standard – Not Available Pricing

ABB offers much of our documentation and certificates for download through our online configurator tool, ABB Motor Builder. This allows the data to be tailored to the motor configuration.

In addition to our online documentation, we also offer a wide variety of order specific documentation through order codes as individual documents or as documentation packages. Ordered documents be provided in ABB standard electronic format unless otherwise noted. Information that is proprietary to ABB will not be included in documentation supplied.

Drawings

Motor drawings can be provided in either pdf or CAD formats as specified in the purchase order.
The standard drawing, **F42**, can be used for a standard F1 configuration with no special options.
This drawing is also available for download through ABB Motor Builder at https://motorbuilder.abb.com.

The non-standard drawing in pdf format, **F43**, or in CAD format, **F48**, can be used for motors with mechanical modifications that would add on accessories or change the standard dimensions of the motor.

Conduit box drawing, **F44**, can be used for a standard conduit box drawing and auxiliary boxes.

Shaft Profile Detail, **F51**, provides a shaft profile drawing with limited dimensions and shaft material data.

Curves

Standard performance curves, **F03**, will include the motor calculated speed torque curve and calculated performance curve (Efficiency, Power Factor, and Amps Over percent of rated horsepower) at rated voltage. This curve is also available for download through ABB Motor Builder at https://motorbuilder.abb.com.

Stall Time Curve, **F40**, is a logarithmic curve of current (in present of full load) over time. The curve will be shown for both hot and cold conditions and graphically illustrates the safe stall time.

Curves at 100% and 80% voltage, **F07**, will include speed torque curve and performance curves.

Data Sheets

Typical data sheet, **F49**, will provide an electrical data sheet for the motor ordered in ABB standard format.

Customer specific data sheet, **F50**, provides the customer with the project data sheet filled out by ABB engineering. The customer data sheet must be supplied in excel format at the time the purchase order is placed.

Special calculations and reports

Acceleration time calculation, **F04**, will be calculated based on the load inertia value provided by the customer. The inertia value must be provided with the PO.

Polarization Index, **F05**, provides a reference winding impendence to gauge deterioration of the winding insulation.

Shaft Torsional Analysis, **F08**, provides motor shaft torsional data for each step on the shaft.

Bearing L10 calculation, **F09**, calculates the estimated life of the bearings based on customer supplied application details. See Bearings section for minimum application details required.

Other documentation

Documentation and nameplates can be provided in Spanish, **D05**. This option will also include NOM on the nameplate.

Certificate of compliance, **F00**, can be issued to certify compliance with ISO standards.

Certificate of origin stamped by the Chamber of Commerce, **F01**, can be required when motors are exported for select countries.

Inspection Test Plan, **F70**, provides formal documentation of the factory standard tests and inspections.

Wiring diagram, **F45**, will provide a pdf copy of the motor wiring diagram for the motor ordered. This document is also available for download through ABB's Motor Builder at https://motorbuilder.abb.com.

Instruction and Operation Manual, **F46**, is general instructions for installation, operation and maintenance for NEMA motors. This document is also available for download through ABB Motor Builder at https://motorbuilder.abb.com.

Replacement parts list, **F47**, will provide part numbers and general descriptions for the following spare parts:

– Bearings, Fan, Fan housing, Conduit Box, Bearing housings (flange if applicable), and seals.

Visual inspection Proof, **F60**, provides up to 8 photos of the motor prior to shipment. Photos will include nameplate and tagging, at least 3 views of overall motors, and detail special features.

Paint Report, **F71**, provides a measure of paint thickness and overall paint adherence.

Additional specialized documentation and calculations may be offered by the factory through the ABB NEMA Motor Quotation Team.

Documentation packages

Order specific documentation packages provide many of the common documents required for special projects and OEMs packaged into a zip file. Additional documentation options may be added with order codes as required by the project.

Advanced Document Package, **F81**, will include:

– (F46) Instruction Operation Manual
– (F00) Certificate of Compliance
– (F49) Data Sheet
– Nameplate Drawing
– (F45) Connection Diagram
– (F07) Speed vs Torque / Current Curve and Performance Curve (at 80% and 100% Voltage)
– (F47) Spare Parts List
– (F43) Outline Drawing (pdf)

Project Documentation Package, **F82**, will include:

– (F46) Instruction Operation Manual
– (F00) Certificate of Compliance
– (F49) Data Sheet
– Nameplate Drawing
– (F45) Connection Diagram
– (F07) Speed vs Torque / Current Curve and Performance Curve (at 80% and 100% Voltage)
– (F47) Spare Parts List
– (F43) Outline Drawing (pdf)
– (F48) CAD Dimension drawing
– Thermal Limit Curve (at 80% and 100% Voltage)
– (F44) Terminal box drawing
– (F50) Customer specific data sheets
– (F70) ITP
– Hazardous Area Certs (UL or CSA)
– Details of Paint System

Tests

	Codes	Description	1LE6	1PC6 HPS
Short Codes	F10	Routine Test Report	+	+
	F12	Routine Test Report (Witnessed)	+	+
	F15	Complete Test	+	+
	F17	Complete Test (Witnessed)	+	+
	F20	Routine Test + Vibration	+	+
	F22	Routine Test + Vibration (Witnessed)	+	+
	F27	Performance Load Test (Curve Report)	+	+
	F30	Noise Test	+	+
	F32	Noise Test (Witnessed)	+	+
	F36	Routine Test Report of Electrical Duplicate Design	+	+
	F37	Type Test Report of Electrical Duplicate Design	+	+

+ Available • Standard – Not Available Pricing

Routine test, F10, F12

Routine test consists of the following items tested in accordance with IEEE standard 112.

- No Load Current
- No Load Speed
- Nominal Current at Locked Rotor
- Winding Resistance
- High Potential
- Bearings/Vibration Check

Routine test with vibration, F20, F22

Includes all tests from standard routine test with additional records of vibration testing. A hard copy of the Routine Test with vibration is included on all IEEE 841 compliant motors, adding **F20** will get you the test report in electronic format.

Test report of routine test is based on IEEE Std. 112 Form A-1 and includes complete nameplate information.

Electrical Duplicate Routine Test, **F36**, is an electronic copy of a test report of the same electrical design as the motor on order.

Noise test, F30, F32

Motors are tested according to IEEE 85 standard in unloaded condition only. Test report will be provided with sound pressure (Lp) and sound power (Lw) in octave bands of 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, and 8kHz.

Complete test, F15, F17

Complete test consists of the following items tested in accordance with NEMA and IEEE-112 test standards.

- Full Load Heat Run
- Temperature Rise at F.L.
- Winding Resistance
- Rated F.L. Slip
- No Load Current
- Breakdown Torque
- Locked Rotor Torque-Amps
- High Potential Tests
- Efficiencies @ 100, 75, 50 Percent Load
- Power Factor @ 100, 75, 50 Percent Load

Test report of complete test is based on IEEE Std. Form A-2 and includes complete nameplate information.

Electrical Duplicate Complete Test, **F37**, is an electronic copy of a test report of the same electrical design as the motor on order.

Performance load test, F27

Performance Load Tests the motors at select points from 0-125% of the rated load recording speed, torque, current, power factor and efficiency, at rated voltage. Data is curve plotted, on ABB standard format.
Foot mounted motors only.

Calculations and Typical Control Settings

Conversion Calculations

Power:

$$\text{Power (kW)} = \frac{\text{Torque (Nm) x Speed (RPM)}}{9548.8}$$

$$\text{Power (HP)} = \frac{\text{Torque (Lb-Ft) x Speed (RPM)}}{5250}$$

kW = HP x 0.746

HP = kW x 1.341

Torque

Lb-Ft = Nm x .7376

Nm = Lb-Ft x 1.359

Temperature

°C= (°F - 32) x 5/9

°F= (°C x 9/5) + 32

Inertia

Lb. Ft.^{2} = kgm^2 x 23.73

Kgm^2 = Lb. Ft.^{2} ÷ 23.73

Lb. Ft.^{2} = GD2 (kgfm^2) x 5.933

Typical control settings for temperature monitoring devices

	Alarm	Trip
Winding RTDs	155°C	165°C
Bearing RTDs	110°C	120°C

2.2. Motor selection and pricing

2.2.1. Severe Duty Low Voltage NEMA Motors

Introduction

ABB Next Generation Severe Duty low voltage NEMA motors are designed and built to operate under harsh environments in the industry, including but not limited to petrochemical, pulp and paper mills and waste-water treatment. With expanded configurations and options, these motors are ideal for diverse applications, including fans, compressors, pumps, conveyors, hoists, and winders. These motors are designed to meet or exceed NEMA Premium® efficiency and are also available in NEMA Super Premium® efficiency[3] as well as the most stringent industry standards of IEEE 841. Built for long, trouble-free life, they are backed by a 3-year warranty for SD200 and 5-year warranty for SD200 841.

Performance Specification

		SD200	SD200 841
HP Range	3600 RPM	125-800 HP	125-400 HP
	1800 RPM	125-800 HP	125-400 HP
	1200 RPM	100-600 HP	100-300 HP
	900 RPM	75-250 HP	
Frame Size	440T - 500	444T-5013	444T-L449T
Standard Voltage (3 phase)	460V, 60HZ	75-800 HP	75-400 HP
	575V, 60HZ	75-800 HP	75-400 HP
Efficiency	NEMA Premium® (MG1-Table 12-12)	75-500 HP	
Service Factor	1.15 @ 40°C	75-800 HP	
Insulation	440 Frame	Class H	
	500 Frame	Class H	
Temperature Rise	Class B	@ 1.0SF	
	Class F	@ 1.15SF	
Conduit Box (Oversized)	Oversized	Cast Iron	
Fan Cover		Cast Iron	
Cooling Fan	Bi-Directional	Polypropylene	
Rotor	Die Cast Aluminum	FS 440-500	
Ingress Protection	NEMA	IP55	IP56
Hazardous Location	Gas[2]	CL 1, Div 2 Gr. A, B,C or D Temp. Code T3	
	Dust[4]	CL 2, Div 2 Gr. F & G Temp. Code T3C	
Inverter Duty[5]	Variable Torque VT 20:1	FS 440-500	
	Constant Torque CT 4:1	FS 444-449	
	Constant Torque CT 2:1	FS L449	
	Constant Torque CT 4:1	FS500, 4 Pole, 350-600HP	
	Constant Torque CT 3:1	FS500, 2 Pole, 400-600HP	
	Constant Torque CT 2:1	FS500, 4 Pole, 700-800HP FS500, 6 pole, 350-600HP	
	Constant Torque CT 35-60HZ	FS500, 2 Pole, 700-800HP	

1. IEEE841 Features above 500HP
2. FS 449 and FS L449: Temperature Code T2D
3. NEMA Super Premium® efficiency on request with special quote
4. FS500 with option M25
5. See Technical Tables for more details

Frame and end shields

ABB Severe Duty SD200 and SD200 841 NEMA motors feature cast iron frame, end shields, and an easy-to-access, diagonally-split, oversize terminal box. The terminal box is provided with a neoprene gasket and includes a heavy-duty ground lug and non-wicking clearly and permanently marked leads.
These characteristics, its high strength zinc-plated hardware, epoxy paint and stainless-steel nameplate provide exceptional structural integrity and resistance to rust and corrosion, making them suitable for severe duty applications in harsh environments.

Rotor and stator windings

A unique offset rotor bar design provides improved efficiency, while larger bars and end rings reduce resistance for lower rotor losses. Each die cast aluminum rotor assembly is dynamically balanced for extended bearing life and includes a high-strength carbon steel (C1045) shaft for maximum rotor performance.

The stator is manufactured with premium electrical C5 grade steel lamination and copper electrical magnet wire that furthers the reduction in losses.

Insulation

The proprietary Class H non-hygroscopic insulation system is rated for 180 deg C, NEMA Class B temperature rise, providing extra margin of thermal life. The varnish system application ensures maximum wire penetration to provide protection from moisture, corrosion, and electrical shock. This insulation system meets or exceeds NEMA MG1 Part 31 making the motors suitable for variable speed drives in constant torque (as noted) and variable torque (20:1). All windings are tested for CIV.

Cooling System

A non-sparking, bi-directional fan is locked and keyed to the shaft. Its low-inertia design reduces windage losses, improves airflow, reduces noise, and provides dependable cooling. Cast Iron fan covers are provided for all frames sizes.

Bearings

Single shielded bearings are used for better bearing protection against contaminants.

2.2.1.1. SD200

SD200 | Eff: NEMA Premium | 2 Pole | 460V | Ball Bearing | Short-Shaft
Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	3600	444TS	460	**1LE6321-4FA11-2AA1**	+	31,460	95.4	1462
150	3600	445TS	460	**1LE6321-4FA21-2AA1**	+	37,800	95.8	1557
200	3600	447TS	460	**1LE6321-4GA11-2AA1**	+	47,800	96.2	1819
250	3600	449TS	460	**1LE6321-4GA21-2AA1**	+	60,300	96.2	2061
300	3600	449TS	460	**1LE6321-4GA31-2AA1**	+	82,540	96.2	2183
350	3600	L449TS	460	**1LE6321-4HA11-2AA1**	+	84,820	96.2	2680
400	3600	L449TS	460	**1LE6321-4HA21-2AA1**	+	105,780	96.2	2797
400	3600	509S	460	**1LE6321-5EA11-2AA1**		111,300	96.5	4219
450	3600	5010S	460	**1LE6321-5EA21-2AA1**	+	113,560	96.5	4357
500	3600	5011S	460	**1LE6321-5EA81-2AA1**		115,060	96.5	4504
600	3600	5011S	460	**1LE6321-5EA01-2AA1**		128,400	96.7	4936
700	3600	5013S	460	**1LE6321-5FA71-2AA1**		147,760	95.8	5538
800	3600	5013S	460	**1LE6321-5FA81-2AA1**		155,160	96.2	5798

SD200 | Eff: NEMA Premium | 4 Pole | 460V | Ball Bearing | Long Shaft
Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	1800	444T	460	**1LE6321-4BB11-2AA1**	+	29,320	95.4	1543
150	1800	445T	460	**1LE6321-4BB21-2AA1**	+	34,100	96.2	1575
200	1800	447T	460	**1LE6321-4CB11-2AA1**	+	41,460	96.2	1830
250	1800	449T	460	**1LE6321-4CB21-2AA1**	+	52,020	96.2	2138
300	1800	449T	460	**1LE6321-4CB31-2AA1**	+	60,680	96.2	2250
350	1800	L449T	460	**1LE6321-4DB11-2AA1**	+	78,780	96.2	2598
400	1800	L449T	460	**1LE6321-4DB21-2AA1**	+	98,280	96.2	2670
400	1800	509	460	**1LE6321-5AB11-2AA1**		108,760	96.5	4105
450	1800	5010	460	**1LE6321-5AB21-2AA1**	+	112,240	96.5	4302
500	1800	5011	460	**1LE6321-5AB81-2AA1**	+	113,920	96.7	4509
600	1800	5011	460	**1LE6321-5AB01-2AA1**		128,840	96.7	4993
700	1800	5013	460	**1LE6321-5BB71-2AA1**		151,980	96.7	5592
800	1800	5013	460	**1LE6321-5BB81-2AA1**		158,340	96.7	5863

SD200 | Eff: NEMA Premium | 4 Pole | 460V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	1800	444TS	460	**1LE6321-4FB11-2AA1**	+	29,320	95.4	1499
150	1800	445TS	460	**1LE6321-4FB21-2AA1**	+	34,100	96.2	1576
200	1800	447TS	460	**1LE6321-4GB11-2AA1**	+	41,460	96.2	1797
250	1800	449TS	460	**1LE6321-4GB21-2AA1**	+	52,020	96.2	2083
300	1800	449TS	460	**1LE6321-4GB31-2AA1**	+	60,680	96.2	2183
350	1800	L449TS	460	**1LE6321-4HB11-2AA1**	+	78,780	96.2	2574
400	1800	L449TS	460	**1LE6321-4HB21-2AA1**		98,280	96.2	2685
400	1800	509S	460	**1LE6321-5EB11-2AA1**		108,760	96.5	4105
450	1800	5010S	460	**1LE6321-5EB21-2AA1**		112,240	96.5	4302
500	1800	5011S	460	**1LE6321-5EB81-2AA1**		113,920	96.7	4509
600	1800	5011S	460	**1LE6321-5EB01-2AA1**		128,840	96.7	4993
700	1800	5013S	460	**1LE6321-5FB71-2AA1**		151,980	96.7	5592
800	1800	5013S	460	**1LE6321-5FB81-2AA1**		158,340	96.7	5863

SD200 | Eff: NEMA Premium | 4 Pole | 460V | Roller Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	1800	R444T	460	**1LE6321-4SB11-2AA1**	+	30,560	95.4	1521
150	1800	R445T	460	**1LE6321-4SB21-2AA1**	+	35,320	96.2	1588
200	1800	R447T	460	**1LE6321-4TB11-2AA1**	+	42,700	96.2	1841
250	1800	R449T	460	**1LE6321-4TB21-2AA1**	+	53,260	96.2	2150
300	1800	R449T	460	**1LE6321-4TB31-2AA1**	+	61,900	96.2	2216
350	1800	RL449T	460	**1LE6321-4UB11-2AA1**	+	80,020	96.2	2632
400	1800	RL449T	460	**1LE6321-4UB21-2AA1**		99,500	96.2	2734
400	1800	R509	460	**1LE6321-5RB11-2AA1**		111,260	96.5	4105
450	1800	R5010	460	**1LE6321-5RB21-2AA1**	MOD	114,740	96.5	4302
500	1800	R5011	460	**1LE6321-5RB81-2AA1**	MOD	116,420	96.7	4509
600	1800	R5011	460	**1LE6321-5RB01-2AA1**		131,360	96.7	4993
700	1800	R5013	460	**1LE6321-5SB71-2AA1**		154,480	96.7	5592
800	1800	R5013	460	**1LE6321-5SB81-2AA1**		160,840	96.7	5863

SD200 | Eff: NEMA Premium | 6 Pole | 460V | Ball Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
100	1200	444T	460	**1LE6321-4BC11-2AA1**	+	30,040	95.0	1465
125	1200	445T	460	**1LE6321-4BC21-2AA1**	+	36,880	95.0	1543
150	1200	447T	460	**1LE6321-4CC11-2AA1**	+	41,260	95.8	1795
200	1200	449T	460	**1LE6321-4CC21-2AA1**	+	50,520	95.8	2125
250	1200	449T	460	**1LE6321-4CC31-2AA1**	+	54,960	95.8	2283
300	1200	L449T	460	**1LE6321-4DC11-2AA1**		68,800	95.8	2830
350	1200	5010	460	**1LE6321-5AC21-2AA1**		113,380	96.2	4387
400	1200	5011	460	**1LE6321-5AC81-2AA1**		119,840	96.2	4529

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
450	1200	L5011	460	**1LE6321-5BC31-2AA1**		136,980	96.2	5083
500	1200	5012	460	**1LE6321-5BC51-2AA1**		145,200	96.2	5289
600	1200	5013	460	**1LE6321-5BC71-2AA1**		158,340	96.2	5391

SD200 | Eff: NEMA Premium | 6 Pole | 460V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
100	1200	444TS	460	**1LE6321-4FC11-2AA1**		30,040	95.0	1407
125	1200	445TS	460	**1LE6321-4FC21-2AA1**		36,880	95.0	1495
150	1200	447TS	460	**1LE6321-4GC11-2AA1**		41,260	95.8	1747
200	1200	449TS	460	**1LE6321-4GC21-2AA1**		50,520	95.8	2075
250	1200	449TS	460	**1LE6321-4GC31-2AA1**		54,960	95.8	2234
300	1200	L449TS	460	**1LE6321-4HC11-2AA1**		68,800	95.8	2798
350	1200	5010S	460	**1LE6321-5EC21-2AA1**		109,520	96.2	4387
400	1200	5011S	460	**1LE6321-5EC81-2AA1**		119,840	96.2	4529
450	1200	L5011S	460	**1LE6321-5FC31-2AA1**		127,340	96.2	5083
500	1200	5012S	460	**1LE6321-5FC51-2AA1**		141,340	96.2	5289
600	1200	5013S	460	**1LE6321-5FC71-2AA1**		158,340	96.2	5391

SD200 | Eff: NEMA Premium | 6 Pole | 460V | Roller Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
100	1200	R444T	460	**1LE6321-4SC11-2AA1**	+	31,280	95.0	1468
125	1200	R445T	460	**1LE6321-4SC21-2AA1**	+	38,120	95.0	1555
150	1200	R447T	460	**1LE6321-4TC11-2AA1**	+	42,500	95.8	1807
200	1200	R449T	460	**1LE6321-4TC21-2AA1**	+	51,760	95.8	2138
250	1200	R449T	460	**1LE6321-4TC31-2AA1**	+	56,200	95.8	2295
300	1200	RL449T	460	**1LE6321-4UC11-2AA1**	+	70,020	95.8	2845
350	1200	R5010	460	**1LE6321-5RC21-2AA1**		115,880	96.2	4387
400	1200	R5011	460	**1LE6321-5RC81-2AA1**		122,340	96.2	4529
450	1200	RL5011	460	**1LE6321-5SC31-2AA1**		139,480	96.2	5083
500	1200	R5012	460	**1LE6321-5SC51-2AA1**		147,700	96.2	5289
600	1200	R5013	460	**1LE6321-5SC71-2AA1**		160,840	96.2	5390

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SD200 | Eff: NEMA Premium | 8 Pole | 460V | Ball Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
75	900	444T	460	**1LE6321-4BD11-2AA1**		34,060	93.6	1414
100	900	445T	460	**1LE6321-4BD21-2AA1**		42,100	93.6	1495
125	900	447T	460	**1LE6321-4CD11-2AA1**		44,660	94.1	1720
150	900	449T	460	**1LE6321-4CD21-2AA1**		57,040	94.1	1967
200	900	L449T	460	**1LE6321-4DD11-2AA1**		69,820	94.5	2579
250	900	L449T	460	**1LE6321-4DD21-2AA1**		82,500	95.0	2853

SD200 | Eff: NEMA Premium | 8 Pole | 460V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
75	900	444TS	460	**1LE6321-4FD11-2AA1**		34,060	93.6	1402
100	900	445TS	460	**1LE6321-4FD21-2AA1**		42,100	93.6	1482
125	900	447TS	460	**1LE6321-4GD11-2AA1**		44,660	94.1	1282
150	900	449TS	460	**1LE6321-4GD21-2AA1**		57,040	94.1	1958
200	900	L449TS	460	**1LE6321-4HD11-2AA1**		69,820	94.5	2506
250	900	L449TS	460	**1LE6321-4HD21-2AA1**		82,500	95.0	2853

SD200 | Eff: NEMA Premium | 8 Pole | 460V | Roller Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
75	900	R444T	460	**1LE6321-4SD11-2AA1**	+	35,300	93.6	1425
100	900	R445T	460	**1LE6321-4SD21-2AA1**	+	43,340	93.6	1507
125	900	R447T	460	**1LE6321-4TD11-2AA1**	+	45,920	94.1	1733
150	900	R449T	460	**1LE6321-4TD21-2AA1**	+	58,280	94.1	1969
200	900	RL449T	460	**1LE6321-4UD11-2AA1**	+	71,060	94.5	2577
250	900	RL449T	460	**1LE6321-4UD21-2AA1**		83,740	95.0	2855

SD200 | Eff: NEMA Premium | 2 Pole | 575 V | Ball Bearing | Short Shaft
Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	3600	444TS	575	**1LE6321-4FA11-3AA1**		31,460	95.4	1462
150	3600	445TS	575	**1LE6321-4FA21-3AA1**		37,800	95.8	1557
200	3600	447TS	575	**1LE6321-4GA11-3AA1**		47,800	96.2	1819
250	3600	449TS	575	**1LE6321-4GA21-3AA1**		60,300	96.2	2061
300	3600	449TS	575	**1LE6321-4GA31-3AA1**		82,540	96.2	2183
350	3600	L449TS	575	**1LE6321-4HA11-3AA1**		84,820	96.2	2680
400	3600	L449TS	575	**1LE6321-4HA21-3AA1**		105,780	96.2	2797
400	3600	509S	575	**1LE6321-5EA11-3AA1**		117,860	96.5	4219
450	3600	5010S	575	**1LE6321-5EA21-3AA1**		120,120	96.5	4357
500	3600	5011S	575	**1LE6321-5EA81-3AA1**		121,620	96.5	4504
600	3600	5011S	575	**1LE6321-5EA01-3AA1**		134,960	96.7	4936
700	3600	5013S	575	**1LE6321-5FA71-3AA1**		154,320	95.8	5538
800	3600	5013S	575	**1LE6321-5FA81-3AA1**		161,720	96.2	5798

SD200 | Eff: NEMA Premium | 4 Pole | 575V | Ball Bearing | Long Shaft
Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	1800	444T	575	**1LE6321-4BB11-3AA1**		29,320	95.4	1543
150	1800	445T	575	**1LE6321-4BB21-3AA1**	+	34,100	96.2	1575
200	1800	447T	575	**1LE6321-4CB11-3AA1**		41,460	96.2	1830
250	1800	449T	575	**1LE6321-4CB21-3AA1**		52,020	96.2	2138
300	1800	449T	575	**1LE6321-4CB31-3AA1**		60,680	96.2	2250
350	1800	L449T	575	**1LE6321-4DB11-3AA1**		78,780	96.2	2598
400	1800	L449T	575	**1LE6321-4DB21-3AA1**		98,280	96.2	2670
400	1800	509	575	**1LE6321-5AB11-3AA1**		115,320	96.5	4105
450	1800	509	575	**1LE6321-5AB21-3AA1**		118,800	96.5	4302
500	1800	5011	575	**1LE6321-5AB81-3AA1**		120,480	96.7	4509
600	1800	5011	575	**1LE6321-5AB01-3AA1**		135,400	96.7	4993
700	1800	5013	575	**1LE6321-5BB71-3AA1**		158,540	96.7	5592

SD200 | Eff: NEMA Premium | 4 Pole | 575V | Ball Bearing | Short Shaft
Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	1800	444TS	575	**1LE6321-4FB11-3AA1**		29,320	95.4	1499
150	1800	445TS	575	**1LE6321-4FB21-3AA1**		34,100	96.2	1576
200	1800	447TS	575	**1LE6321-4GB11-3AA1**		41,460	96.2	1797
250	1800	449TS	575	**1LE6321-4GB21-3AA1**		52,020	96.2	2083
300	1800	449TS	575	**1LE6321-4GB31-3AA1**		60,680	96.2	2183
350	1800	L449TS	575	**1LE6321-4HB11-3AA1**		78,780	96.2	2574
400	1800	L449TS	575	**1LE6321-4HB21-3AA1**		98,280	96.2	2685
400	1800	509S	575	**1LE6321-5EB11-3AA1**		115,320	96.5	4105
450	1800	509S	575	**1LE6321-5EB21-3AA1**		118,800	96.5	4302

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
500	1800	5011S	575	**1LE6321-5EB81-3AA1**		120,480	96.7	4509
600	1800	5011S	575	**1LE6321-5EB01-3AA1**		135,400	96.7	4993
700	1800	5013S	575	**1LE6321-5FB71-3AA1**		158,540	96.7	5592

SD200 | Eff: NEMA Premium | 4 Pole | 575V | Roller Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	1800	R444T	575	**1LE6321-4SB11-3AA1**		30,560	95.0	1521
150	1800	R445T	575	**1LE6321-4SB21-3AA1**		35,320	95.0	1588
200	1800	R447T	575	**1LE6321-4TB11-3AA1**		42,700	95.8	1841
250	1800	R449T	575	**1LE6321-4TB21-3AA1**		53,260	95.8	2150
300	1800	R449T	575	**1LE6321-4TB31-3AA1**		61,900	95.8	2216
350	1800	RL449T	575	**1LE6321-4UB11-3AA1**		80,020	95.8	2632
400	1800	RL449T	575	**1LE6321-4UB21-3AA1**		99,500	96.2	2734
400	1800	R509	575	**1LE6321-5RB11-3AA1**		117,820	96.2	4105
450	1800	R509	575	**1LE6321-5RB21-3AA1**		121,300	96.2	4302
500	1800	R5011	575	**1LE6321-5RB81-3AA1**		122,980	96.2	4509
600	1800	R5011	575	**1LE6321-5RB01-3AA1**		137,920	96.2	4993
700	1800	R5013	575	**1LE6321-5SB71-3AA1**		161,040	95.0	5592

SD200 | Eff: NEMA Premium | 6 Pole | 575V | Ball Bearing | Long Shaft Without Winding Protection

Power HP	Speed RP<	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
100	1200	444T	575	**1LE6321-4BC11-3AA1**		30,040	95.0	1465
125	1200	445T	575	**1LE6321-4BC21-3AA1**		36,880	95.0	1543
150	1200	447T	575	**1LE6321-4CC11-3AA1**		41,260	95.8	1795
200	1200	449T	575	**1LE6321-4CC21-3AA1**		50,520	95.8	2125
250	1200	449T	575	**1LE6321-4CC31-3AA1**		54,960	95.8	2283
300	1200	L449T	575	**1LE6321-4DC11-3AA1**		68,800	95.8	2830
350	1200	5010	575	**1LE6321-5AC21-3AA1**		119,940	96.2	4387
400	1200	5011	575	**1LE6321-5AC81-3AA1**		126,400	96.2	4529
450	1200	L5011	575	**1LE6321-5BC31-3AA1**		143,540	96.2	5083
500	1200	5012	575	**1LE6321-5BC51-3AA1**		151,760	96.2	5289
600	1200	5013	575	**1LE6321-5BC71-3AA1**		164,900	96.2	5391

SD200 | Eff: NEMA Premium | 6 Pole | 575V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
100	1200	444TS	575	**1LE6321-4FC11-3AA1**		30,040	95.0	1407
125	1200	445TS	575	**1LE6321-4FC21-3AA1**		36,880	95.0	1495
150	1200	447TS	575	**1LE6321-4GC11-3AA1**		41,260	95.8	1747
200	1200	449TS	575	**1LE6321-4GC21-3AA1**		50,520	95.8	2075
250	1200	449TS	575	**1LE6321-4GC31-3AA1**		54,960	95.8	2234
300	1200	L449TS	575	**1LE6321-4HC11-3AA1**		68,800	95.8	2798
350	1200	5010S	575	**1LE6321-5EC21-3AA1**		116,080	96.2	4387
400	1200	5011S	575	**1LE6321-5EC81-3AA1**		126,400	96.2	4529
450	1200	L5011S	575	**1LE6321-5FC31-3AA1**		133,900	96.2	5083
500	1200	5012S	575	**1LE6321-5FC51-3AA1**		147,900	96.2	5289
600	1200	5013S	575	**1LE6321-5FC71-3AA1**		164,900	96.2	5391

SD200 | Eff: NEMA Premium | 6 Pole | 575V | Roller Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
100	1200	R444T	575	**1LE6321-4SC11-3AA1**		31,280	95.0	1468
125	1200	R445T	575	**1LE6321-4SC21-3AA1**		38,120	95.0	1555
150	1200	R447T	575	**1LE6321-4TC11-3AA1**		42,500	95.8	1807
200	1200	R449T	575	**1LE6321-4TC21-3AA1**		51,760	95.8	2138
250	1200	R449T	575	**1LE6321-4TC31-3AA1**		56,200	95.8	2295
300	1200	RL449T	575	**1LE6321-4UC11-3AA1**		70,020	95.8	2845
350	1200	R5010	575	**1LE6321-5RC21-3AA1**		122,440	96.2	4387
400	1200	R5011	575	**1LE6321-5RC81-3AA1**		128,900	96.2	4529
450	1200	RL5011	575	**1LE6321-5SC31-3AA1**		146,040	96.2	5083
500	1200	R5012	575	**1LE6321-5SC51-3AA1**		154,260	96.2	5289
600	1200	R5013	575	**1LE6321-5SC71-3AA1**		167,400	96.2	5390

SD200 | Eff: NEMA Premium | 8 Pole | 575V | Ball Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
75	900	444T	575	**1LE6321-4BD11-3AA1**		34,060	93.6	1414
100	900	445T	575	**1LE6321-4BD21-3AA1**		42,100	93.6	1495
125	900	447T	575	**1LE6321-4CD11-3AA1**		44,660	94.1	1720
150	900	449T	575	**1LE6321-4CD21-3AA1**		57,040	94.1	1967
200	900	L449T	575	**1LE6321-4DD11-3AA1**		69,820	94.5	2579
250	900	L449T	575	**1LE6321-4DD21-3AA1**		82,500	95.0	2853

SD200 | Eff: NEMA Premium | 8 Pole | 575V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
75	900	444TS	575	**1LE6321-4FD11-3AA1**		34,060	93.6	1402
100	900	445TS	575	**1LE6321-4FD21-3AA1**		42,100	93.6	1482
125	900	447TS	575	**1LE6321-4GD11-3AA1**		44,660	94.1	1282
150	900	449TS	575	**1LE6321-4GD21-3AA1**		57,040	94.1	1958
200	900	L449TS	575	**1LE6321-4HD11-3AA1**		69,820	94.5	2506
250	900	L449TS	575	**1LE6321-4HD21-3AA1**		82,500	95.0	2853

SD200 | Eff: NEMA Premium | 8 Pole | 575V | Roller Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
75	900	R444T	575	**1LE6321-4SD11-3AA1**	+	35,300	93.6	1425
100	900	R445T	575	**1LE6321-4SD21-3AA1**	+	43,340	93.6	1507
125	900	R447T	575	**1LE6321-4TD11-3AA1**	+	45,920	94.1	1733
150	900	R449T	575	**1LE6321-4TD21-3AA1**	+	58,280	94.1	1969
200	900	RL449T	575	**1LE6321-4UD11-3AA1**	+	71,060	94.5	2577
250	900	RL449T	575	**1LE6321-4UD21-3AA1**		83,740	95.0	2855

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2.2.1.2. SD200 841

SD200 841 | Eff: NEMA Premium | 2 Pole | 460V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	3600	444TS	460	**1LE6322-4FA11-2AA1**	+	36,700	95.4	1460
150	3600	445TS	460	**1LE6322-4FA21-2AA1**	+	42,920	95.8	1555
200	3600	447TS	460	**1LE6322-4GA11-2AA1**	+	53,820	96.2	1842
250	3600	449TS	460	**1LE6322-4GA21-2AA1**	+	68,500	96.2	2048
300	3600	449TS	460	**1LE6322-4GA31-2AA1**	+	86,980	96.2	2155
350	3600	L449TS	460	**1LE6322-4HA11-2AA1**		104,060	96.2	2688
400	3600	L449TS	460	**1LE6322-4HA21-2AA1**	+	116700	95.4	2863

SD200 841 | Eff: NEMA Premium | 4 Pole | 460V | Ball Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	1800	444T	460	**1LE6322-4BB11-2AA1**	+	33,800	95.4	1480
150	1800	445T	460	**1LE6322-4BB21-2AA1**	+	38,240	96.2	1568
200	1800	447T	460	**1LE6322-4CB11-2AA1**	+	46,500	96.2	1830
250	1800	449T	460	**1LE6322-4CB21-2AA1**	+	58,940	96.2	2150
300	1800	449T	460	**1LE6322-4CB31-2AA1**		79,920	96.2	2119
350	1800	L449T	460	**1LE6322-4DB11-2AA1**		96,360	96.2	2598
400	1800	L449T	460	**1LE6322-4DB21-2AA1**		108,100	96.2	2670

SD200 841 | Eff: NEMA Premium | 4 Pole | 460V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	1800	444TS	460	**1LE6322-4FB11-2AA1**	+	33,800	95.4	1520
150	1800	445TS	460	**1LE6322-4FB21-2AA1**	+	38,240	96.2	1600
200	1800	447TS	460	**1LE6322-4GB11-2AA1**	+	46,500	96.2	1820
250	1800	449TS	460	**1LE6322-4GB21-2AA1**	+	58,940	96.2	2095
300	1800	449TS	460	**1LE6322-4GB31-2AA1**		79,920	96.2	2170
350	1800	L449TS	460	**1LE6322-4HB11-2AA1**		96,360	96.2	2598
400	1800	L449TS	460	**1LE6322-4HB21-2AA1**		108,100	96.2	2685

SD200 841 | Eff: NEMA Premium | 4 Pole | 460V | Roller Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	1800	R444T	460	**1LE6322-4SB11-2AA1**	+	35,040	95.4	1492
150	1800	R445T	460	**1LE6322-4SB21-2AA1**	+	39,480	96.2	1581
200	1800	R447T	460	**1LE6322-4TB11-2AA1**	+	47,740	96.2	1865
250	1800	R449T	460	**1LE6322-4TB21-2AA1**	+	60,180	96.2	2150
300	1800	R449T	460	**1LE6322-4TB31-2AA1**		81,160	96.2	2097
350	1800	RL449T	460	**1LE6322-4UB11-2AA1**		97,680	96.2	2642
400	1800	RL449T	460	**1LE6322-4UB21-2AA1**		109,340	96.2	2670

SD200 841 | Eff: NEMA Premium | 6 Pole | 460V | Ball Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
100	1200	444T	460	**1LE6322-4BC11-2AA1**	+	34,800	95.0	1452
125	1200	445T	460	**1LE6322-4BC21-2AA1**	+	41,980	95.0	1540
150	1200	447T	460	**1LE6322-4CC11-2AA1**	+	46,100	95.8	1792
200	1200	449T	460	**1LE6322-4CC21-2AA1**	+	55,920	95.8	2123
250	1200	449T	460	**1LE6322-4CC31-2AA1**	+	61,460	95.8	2280
300	1200	L449T	460	**1LE6322-4DC11-2AA1**	+	82,520	95.8	2830

SD200 841 | Eff: NEMA Premium | 6 Pole | 460V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
100	1200	444TS	460	**1LE6322-4FC11-2AA1**		34,800	95.0	1454
125	1200	445TS	460	**1LE6322-4FC21-2AA1**		41,980	95.0	1494
150	1200	447TS	460	**1LE6322-4GC11-2AA1**		46,100	95.8	1746
200	1200	449TS	460	**1LE6322-4GC21-2AA1**		55,920	95.8	2075
250	1200	449TS	460	**1LE6322-4GC31-2AA1**		61,460	95.8	2235
300	1200	L449TS	460	**1LE6322-4HC11-2AA1**		82,520	95.8	2797

SD200 841 | Eff: NEMA Premium | 6 Pole | 460V Roller Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
100	1200	R444T	460	**1LE6322-4SC11-2AA1**	+	36,040	95.0	1465
125	1200	R445T	460	**1LE6322-4SC21-2AA1**	+	43,220	95.0	1552
150	1200	R447T	460	**1LE6322-4TC11-2AA1**	+	47,340	95.8	1804
200	1200	R449T	460	**1LE6322-4TC21-2AA1**	+	57,160	95.8	2135
250	1200	R449T	460	**1LE6322-4TC31-2AA1**	+	62,700	95.8	2292
300	1200	RL449T	460	**1LE6322-4UC11-2AA1**	+	83,740	95.8	2855

SD200 841 | Eff: NEMA Premium | 8 Pole | 460V | Ball Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
75	900	444T	460	**1LE6322-4BD11-2AA1**		40,480	93.6	1411
100	900	445T	460	**1LE6322-4BD21-2AA1**		49,620	93.6	1494
125	900	447T	460	**1LE6322-4CD11-2AA1**		50,960	94.1	1718
150	900	449T	460	**1LE6322-4CD21-2AA1**		65,160	94.1	1967
200	900	L449T	460	**1LE6322-4DD11-2AA1**		94,120	94.5	2579
250	900	L449T	460	**1LE6322-4DD21-2AA1**		103,000	95.0	2853

SD200 841 | Eff: NEMA Premium | 8 Pole | 460V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
75	900	444TS	460	**1LE6322-4FD11-2AA1**		40,480	93.6	1402
100	900	445TS	460	**1LE6322-4FD21-2AA1**		49,620	93.6	1482
125	900	447TS	460	**1LE6322-4GD11-2AA1**		50,960	94.1	1280
150	900	449TS	460	**1LE6322-4GD21-2AA1**		65,160	94.1	1958
200	900	L449TS	460	**1LE6322-4HD11-2AA1**		94,120	94.5	2506
250	900	L449TS	460	**1LE6322-4HD21-2AA1**		103,000	95.0	2853

SD200 841 | Eff: NEMA Premium | 8 Pole | 460V | Roller Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
75	900	R444T	460	**1LE6322-4SD11-2AA1**		41,740	93.6	1423
100	900	R445T	460	**1LE6322-4SD21-2AA1**		50,860	93.6	1505
125	900	R447T	460	**1LE6322-4TD11-2AA1**		52,200	94.1	1730
150	900	R449T	460	**1LE6322-4TD21-2AA1**		66,400	94.1	1966
200	900	RL449T	460	**1LE6322-4UD11-2AA1**		94,120	94.5	2579
250	900	RL449T	460	**1LE6322-4UD21-2AA1**		103,000	95.0	2583

SD200 841 | Eff: NEMA Premium | 2 Pole | 575V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	3600	444TS	575	**1LE6322-4FA11-3AA1**		36,700	95.4	1460
150	3600	445TS	575	**1LE6322-4FA21-3AA1**		42,920	95.8	1555
200	3600	447TS	575	**1LE6322-4GA11-3AA1**		53,820	96.2	1842
250	3600	449TS	575	**1LE6322-4GA21-3AA1**		68,500	96.2	2048
300	3600	449TS	575	**1LE6322-4GA31-3AA1**		86,980	96.2	2155
350	3600	L449TS	575	**1LE6322-4HA11-3AA1**		104,060	96.2	2688
400	3600	L449TS	575	**1LE6322-4HA21-3AA1**		116,700	96.2	2863

SD200 841 | Eff: NEMA Premium | 4 Pole | 575V | Ball Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	1800	444T	575	**1LE6322-4BB11-3AA1**	+	33,800	95.4	1480
150	1800	445T	575	**1LE6322-4BB21-3AA1**	+	38,240	96.2	1568
200	1800	447T	575	**1LE6322-4CB11-3AA1**	+	46,500	96.2	1830
250	1800	449T	575	**1LE6322-4CB21-3AA1**	+	58,940	96.2	2150
300	1800	449T	575	**1LE6322-4CB31-3AA1**		79,920	96.2	2119
350	1800	L449T	575	**1LE6322-4DB11-3AA1**		96,360	96.2	2598
400	1800	L449T	575	**1LE6322-4DB21-3AA1**		108,100	96.2	2670

SD200 841 | Eff: NEMA Premium | 4 Pole | 575V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	1800	444TS	575	**1LE6322-4FB11-3AA1**		33,800	95.4	1520
150	1800	445TS	575	**1LE6322-4FB21-3AA1**		38,240	96.2	1600
200	1800	447TS	575	**1LE6322-4GB11-3AA1**		46,500	96.2	1820
250	1800	449TS	575	**1LE6322-4GB21-3AA1**		58,940	96.2	2095
300	1800	449TS	575	**1LE6322-4GB31-3AA1**		79,920	96.2	2170
350	1800	L449TS	575	**1LE6322-4HB11-3AA1**		96,360	96.2	2598
400	1800	L449TS	575	**1LE6322-4HB21-3AA1**		108,100	96.2	2685

SD200 841 | Eff: NEMA Premium | 4 Pole | 575V | Roller Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
125	1800	R444T	575	**1LE6322-4SB11-3AA1**		35,040	95.4	1492
150	1800	R445T	575	**1LE6322-4SB21-3AA1**	+	39,480	96.2	1581
200	1800	R447T	575	**1LE6322-4TB11-3AA1**		47,740	96.2	1865
250	1800	R449T	575	**1LE6322-4TB21-3AA1**		60,180	96.2	2150
300	1800	R449T	575	**1LE6322-4TB31-3AA1**		81,160	96.2	2097
350	1800	RL449T	575	**1LE6322-4UB11-3AA1**		97,680	96.2	2642
400	1800	RL449T	575	**1LE6322-4UB21-3AA1**		109,340	96.2	2670

SD200 841 | Eff: NEMA Premium | 6 Pole | 575V | Ball Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
100	1200	444T	575	**1LE6322-4BC11-3AA1**		34,800	95.0	1452
125	1200	445T	575	**1LE6322-4BC21-3AA1**		41,980	95.0	1540
150	1200	447T	575	**1LE6322-4CC11-3AA1**		46,100	95.8	1792
200	1200	449T	575	**1LE6322-4CC21-3AA1**		55,920	95.8	2123
250	1200	449T	575	**1LE6322-4CC31-3AA1**		61,460	95.8	2280
300	1200	L449T	575	**1LE6322-4DC11-3AA1**		82,520	95.8	2830

SD200 841 | Eff: NEMA Premium | 6 Pole | 575V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
100	1200	444TS	575	**1LE6322-4FC11-3AA1**		34,800	95.0	1454
125	1200	445TS	575	**1LE6322-4FC21-3AA1**		41,980	95.0	1494
150	1200	447TS	575	**1LE6322-4GC11-3AA1**		46,100	95.8	1746
200	1200	449TS	575	**1LE6322-4GC21-3AA1**		55,920	95.8	2075
250	1200	449TS	575	**1LE6322-4GC31-3AA1**		61,460	95.8	2235
300	1200	L449TS	575	**1LE6322-4HC11-3AA1**		82,520	95.8	2797

SD200 841 | Eff: NEMA Premium | 6 Pole | 575V | Roller Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
100	1200	R444T	575	**1LE6322-4SC11-3AA1**		36,040	95.0	1465
125	1200	R445T	575	**1LE6322-4SC21-3AA1**		43,220	95.0	1552
150	1200	R447T	575	**1LE6322-4TC11-3AA1**		47,340	95.8	1804
200	1200	R449T	575	**1LE6322-4TC21-3AA1**		57,160	95.8	2135
250	1200	R449T	575	**1LE6322-4TC31-3AA1**		62,700	95.8	2292
300	1200	RL449T	575	**1LE6322-4UC11-3AA1**		83,740	95.8	2855

SD200 841 | Eff: NEMA Premium | 8 Pole | 575V | Ball Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
75	900	444T	575	**1LE6322-4BD11-3AA1**		40,480	93.6	1411
100	900	445T	575	**1LE6322-4BD21-3AA1**		49,620	93.6	1494
125	900	447T	575	**1LE6322-4CD11-3AA1**		50,960	94.1	1718
150	900	449T	575	**1LE6322-4CD21-3AA1**		65,160	94.1	1967
200	900	L449T	575	**1LE6322-4DD11-3AA1**		94,120	94.5	2579
250	900	L449T	575	**1LE6322-4DD21-3AA1**		103,000	95.0	2853

SD200 841 | Eff: NEMA Premium | 8 Pole | 575V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
75	900	444TS	575	**1LE6322-4FD11-3AA1**		40,480	93.6	1402
100	900	445TS	575	**1LE6322-4FD21-3AA1**		49,620	93.6	1482
125	900	447TS	575	**1LE6322-4GD11-3AA1**		50,960	94.1	1280
150	900	449TS	575	**1LE6322-4GD21-3AA1**		65,160	94.1	1958
200	900	L449TS	575	**1LE6322-4HD11-3AA1**		94,120	94.5	2506
250	900	L449TS	575	**1LE6322-4HD21-3AA1**		103,000	95.0	2853

SD200 841 | Eff: NEMA Premium | 8 Pole | 575V | Roller Bearing | Long Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
75	900	R444T	575	**1LE6322-4SD11-3AA1**		41,740	93.6	1423
100	900	R445T	575	**1LE6322-4SD21-3AA1**		50,860	93.6	1505
125	900	R447T	575	**1LE6322-4TD11-3AA1**		52,200	94.1	1730
150	900	R449T	575	**1LE6322-4TD21-3AA1**		66,400	94.1	1966
200	900	RL449T	575	**1LE6322-4UD11-3AA1**		94,120	94.5	2579
250	900	RL449T	575	**1LE6322-4UD21-3AA1**		103,000	95.0	2583

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2.2.2. Definite Purpose Low Voltage NEMA Motors

Introduction

ABB Definite Purpose low voltage NEMA motors are designed and built to operate under harsh environments in the industry, including but not limited to petrochemical, pulp and paper mills and waste-water treatment. DP200 HPS motors have all the quality features of the SD200 with additional key features that are key in the Horizontal Pump Systems motors. A wide selection of options, among them bearing isolator and ceramic bearings on drive end, make these motors suitable almost any requirement. The construction of these motors is backed by its three-year warranty and 5 years when ordered with IEEE841 features.

Performance Specification

		DP200 HPS
HP Range	3600 RPM	450-800 HP
Frame Size		FS 509-5013S
Standard Voltage	460V, 575V	FS 509-5013S
Efficiency	NEMA Premium® (MG1-Table 12-12)	FS 509-5013S
Service Factor	1.15 @ 40°C	FS 509-5013S
Insulation	Non-Hygroscopic	Class H
Temperature Rise	Class B	@ 1.0SF
	Class F	@ 1.15SF
Conduit Box (Oversized)	Oversized	Cast Iron
Fan Cover		Metallic
Cooling Fan	Bi-Directional	Polypropylene
Rotor	Die Cast Aluminum	FS 509-5013S
Ingress Protection	NEMA	IP55
Hazardous Location	Gas	CL 1, Div 2 Gr. A, B, C or D Temp Code T3
Inverter Duty	Variable Torque VT 20:1	FS 509-5013S
	Constant Torque CT 3:1	400-600 HP
	Constant Torque CT 35-60HZ	700-800 HP

Key Features

Bearings	Provisions for Bearing RTDs (RTDs added with option A50)
	Insulated NDE bearing
Vibration detectors	Provisions for vibration detectors on each bearing housing
Space Heaters	Standard 120V Space Heaters with Aux Box

Frame and end shields

Definite purpose motors feature cast iron frame, end shields and an easy to access, diagonally split, oversize terminal box; the terminal box is provided with a neoprene gasket and includes a heavy-duty ground lug and non-wicking clearly and permanently marked leads. These characteristics, its zinc-plated hardware, epoxy paint and stainless-steel nameplate provide exceptional structural integrity and resistant to rust and corrosion and make them suitable for severe duty applications in harsh environments.

Rotor and stator windings

A unique offset rotor bar design provides improved efficiency, while larger bars and end rings reduce resistance for lower rotor losses. Each die cast aluminum rotor assembly is dynamically balanced with half key for extended bearing life and includes a high-strength steel (C4140) shaft for maximum rotor performance.

The stator is manufactured with premium electrical C5 grade steel lamination and copper electrical magnet wire that reduce losses.

Insulation

The proprietary Class H non-hygroscopic insulation system, NEMA Class B temperature rise, provides an extra margin of thermal life. The varnish system application ensures maximum wire penetration to provide protection from moisture, corrosion and electrical shock. This insulation system meets or exceeds NEMA MG1 2014 Part 31 making the motors suitable for variable speed drives in constant torque (3:1, 2:1) and variable torque (20:1). All windings are tested for CIV.

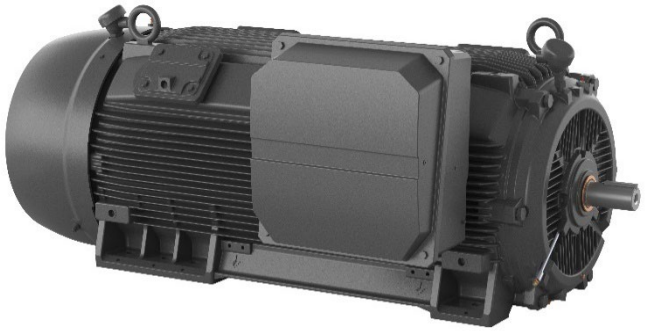
Cooling system

A non-sparking, bi-directional fan is locked and keyed to the shaft. Its low-inertia design reduces windage losses, improves airflow, reduces noise and provides dependable cooling. Metal sheet fan covers are provided for all frames sizes.

Bearings

DP200 HPS motors have 63 series bearings on both ends with Insulated shaft on NDE as standard to help minimize bearing failure due to shaft currents. (INSOCOAT bearing on NDE prior to January 2021).

2.2.2.1. DP200 HPS



DP200 HPS | Eff: NEMA Premium | 2 Pole | 460V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
400	3600	509S	460	**1PC6521-5EA11-2AA1**		114,920	96.5	4219
450	3600	5010S	460	**1PC6521-5EA21-2AA1**		117,180	96.5	4357
500	3600	5011S	460	**1PC6521-5EA81-2AA1**	+	117,700	96.5	4504
600	3600	5011S	460	**1PC6521-5EA01-2AA1**	+	130,280	96.7	4936
700	3600	5013S	460	**1PC6521-5FA71-2AA1**		151,380	95.8	5538
800	3600	5013S	460	**1PC6521-5FA81-2AA1**	+	158,760	96.2	5798

DP200 HPS | Eff: NEMA Premium | 2 Pole | 460V | Ball Bearing | Short Shaft With Stator RTDs

Power HP	Speed Rpm	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff	Weight (lbs)
400	3600	509S	460	**1PC6521-5EA11-2AK1**		128,040	96.5	4219
450	3600	5010S	460	**1PC6521-5EA21-2AK1**		130,300	96.5	4357
500	3600	5011S	460	**1PC6521-5EA81-2AK1**	+	130,820	96.5	4504
600	3600	5011S	460	**1PC6521-5EA01-2AK1**	+	143,400	96.7	4936
700	3600	5013S	460	**1PC6521-5FA71-2AK1**		164,500	95.8	5538
800	3600	5013S	460	**1PC6521-5FA81-2AK1**	+	171,880	96.2	5798

*Stator RTD's 100 ohm platinum w aux box-terminal strip 2/phase
NEMA Premium is a certification mark of the National Electrical Manufacturer's Association

DP200 HPS | Eff: NEMA Premium | 2 Pole | 575V | Ball Bearing | Short Shaft Without Winding Protection

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
400	3600	509S	575	**1PC6521-5EA11-3AA1**		121,480	96.5	4219
450	3600	5010S	575	**1PC6521-5EA21-3AA1**		123,740	96.5	4357
500	3600	5011S	575	**1PC6521-5EA81-3AA1**		124,260	96.5	4504
600	3600	5011S	575	**1PC6521-5EA01-3AA1**		136,840	96.7	4936
700	3600	5013S	575	**1PC6521-5FA71-3AA1**		157,940	95.8	5538
800	3600	5013S	575	**1PC6521-5FA81-3AA1**		165,320	96.2	5798

DP200 HPS | Eff: NEMA Premium | 2 Pole | 575V | Ball Bearing | Short Shaft With Stator RTDs

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
400	3600	509S	575	**1PC6521-5EA11-3AK1**		134,600	96.5	4219
450	3600	5010S	575	**1PC6521-5EA21-3AK1**		136,860	96.5	4357
500	3600	5011S	575	**1PC6521-5EA81-3AK1**		137,380	96.5	4504
600	3600	5011S	575	**1PC6521-5EA01-3AK1**		149,960	96.7	4936
700	3600	5013S	575	**1PC6521-5FA71-3AK1**		171,060	95.8	5538
800	3600	5013S	575	**1PC6521-5FA81-3AK1**		178,440	96.2	5798

*Stator RTD's 100 ohm platinum w aux box-terminal strip 2/phase
NEMA Premium is a certification mark of the National Electrical Manufacturer's Association

2.3. Option selection and pricing – Introduction

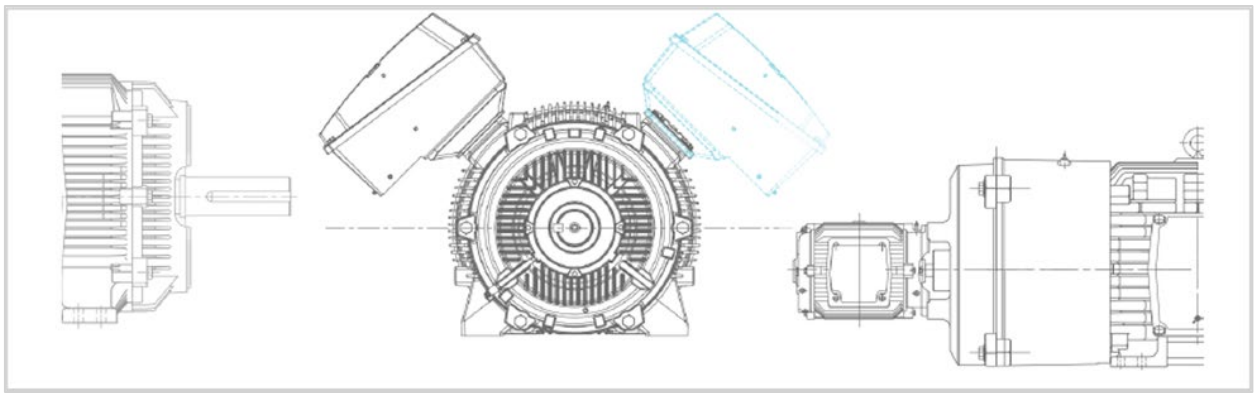


ABB offers a wide selection of options to increase the suitability of our motors to the specific customer needs.

Modified stock options:

Modified – 3-7 days

Special testing – 15-25 days

Note: **Modification times are dependent on availability of materials.**

Custom build options:

Case A-1: Base custom delivery

Case A-2: One additional week

Case B: Three additional weeks

Note: See Weekly Stock List for updated lead times on delivery cases.

Definitions:

MLFB Digit – Modifications or custom features that are built into the motor part number (MLFB).

Short Codes – Modifications or custom features that are added after the part number.

Ordering instructions:

1. Select a stock motor from the **Motor Selection and Pricing Section** (Note Part Number)
2. **Verify applicability of desired Option(s) at the end of the section** (Per motor type and frame)
3. Select applicable Option(s)

4. **Construct new Part Number and List Price** (See example below)

   a) If the MLFB Position is 12, 13, 14, 15 or 16, replace the number(s) or letter(s) at the same position(s) in the stock motor **Part Number** with the **MLFB Code**.

   b) If the option is a **Short Code**, then add a **'-Z'** to the end of the motor **Part Number and add the short code**. Then add a '+' sign followed by the **additional short Code(s)**.

Custom options combined with modification options - Motor Pricing Example:

Example: 150HP, 1800RPM, 460V, 445T, SD200, C-face with feet, PTC thermistors with Aux box on DE in F2 position.

Base List Price	$18,900	Part Number 1LE63214BB212AA1
List Price Adders		
C-Face with Feet	$1,300	Order Code **N**, Order Code Position **14**
PTC Thermistors	$640	Order Code **B**, Order Code Position **15**
Aux Box in F2	$400	Order Code **R01**, Order Code Position **Z**
Total List Price	**$21,240**	**New Part Number** – 1LE63214BB212**NB**1-**Z R01**
Delivery		Case A-1

2.3.1. Custom Option Selection and Pricing

	Codes	Description	Case	440	L449	500	SD200	DP200 HPS	Notes
		Voltage and Connection							
MLFB DIGIT 12-13	12	460V	STD	-	-	-	•	•	
	13	575	STD	-	-	6,560	+	+	
	22	460V PWS 60HZ	A-1	1,500	1,500	3,040	+	+	
	23	575V PWS 60HZ	A-1	1,600	1,600	3,040	+	+	
	32	WyeStrt-DeltaRun460, 60Hz	A-1	1,500	1,500	3,040	+	+	
	33	WyeStrt-DeltaRun575, 60Hz	A-1	1,600	1,600	3,040	+	+	
	90	(M6Y) Special Winding 200-600V	A-1	2,400	2,400	5,860	+	+	
		Mounting							
MLFB DIGIT 14	A	Foot Mounted Horizontal (IMB3)	STD	-	-	-	•	•	
	C	Foot Mounted Vertical Shaft-Down w/o Canopy (IMV5)	A-1	4,200	4,200	14,880	+	+	
	D	Foot Mounted Vertical Shaft-Up (IMV6)	A-1	4,200	4,200	14,880	+	+	
	F	Footless D-flange Horizontal (IMB5)	A-1	4,280	4,280	–	+	–	
	G	Footless D-flange Vertical Shaft-down w/o canopy (IMV1)	A-1	7,800	7,800	–	+	–	
	H	Footless D-flange Vertical Shaft-up (IMV3)	A-1	7,800	7,800	–	+	–	
	J	Foot Mounted D-Flange Horizontal (IMB35)	A-1	4,280	4,280	4,280	+	+	
	K	Footless C-Face Horizontal (IMB14)	A-1	2,600	2,600	–	+	–	
	L	Footless C-Face Vertical Shaft-down w/o canopy (IMV19)	A-1	6,400	6,400	–	+	–	
	M	Footless C-Face Vertical Shaft-up (IMV18)	A-1	6,400	6,400	–	+	–	
	N	Foot Mounted C-face Horizontal (IMB34 – F1 / F2 / F3)	A-1	2,600	2,600	–	+	–	
	P	Foot Mounted C-Face Vertical Shaft-down w/o Canopy – W6 / W7 / W12]	A-1	6,400	6,400	–	+	–	
	Q	Foot Mounted C-Face Vertical Shaft-up – W5 / W8 / W11	A-1	6,400	6,400	–	+	–	
	R	Foot Mounted D-Flange Vertical Shaft-Down w/o Canopy [W6/W7/W12]	A-1	7,800	7,800	18,520	+	+	
	S	Foot Mounted D-Flange Vertical Shaft-Up [W5/W8/W11]	A-1	7,800	7,800	18,520	+	+	
	T	Foot Wall Mount Horizontal (MB6, – W2 / W4)	A-1	4,200	4,200	29,740	+	–	
	U	Foot Wall Mounted Horizontal (IMB7 – W1 / W3)	A-1	4,200	4,200	29,740	+	+	
	V	Foot Ceiling Mount Horizontal (IMB8 – C1/ C2 / C3)	A-1	4,200	4,200	29,740	+	+	

+ Available • Standard – Not Available

1. Modification possible only when stocked with 12 leads

Delivery Cases/Modified

	Codes	Description	Case	440	L449	500	SD200	DP200 HPS	Notes
		Winding Protection							
MLFB DIGIT 15	A	Without Winding Protection	A-1	-	-	-	+	+	
	B	PTC 3 Embedded (Trip), 1 Per Phase	A-1	1,280	1,280	1,280	+	+	
	C	PTC 6 Embedded (Alarm & Trip), 1 Per Phase	A-1	2,560	2,560	2,560	+	+	
	G	Thermostats normally closed, Temp code T3C, 1 per phase	A-1	1,100	1,100	1,340	+	+	
	J	Thermocouples Coil Head (Type J)	A-1	3,600	3,600	7,420	+	+	
	K	Stator RTD's, 2 Per Phase, with aux box	A-1	10,000	10,000	13,120	+	+	
	L	Winding Protection - G + K	A-1	11,000	11,000	14,460	+	+	
	P	PT1000 Resistance Thermometers, 2 Embedded	A-1	2,240	2,240	2,240	+	+	
Short Codes	A46	Space Heaters 115V single phase, max temp 160°C	A-1	1,220	1,220	1,220	+	+	
	A47	Space Heaters 230V single phase, max temp 160°C	A-1	1,220	1,220	1,220	+	+	
	A48	Space Heaters 115V/230V Single Phase, Max Temp 160°C	A-1	1,220	1,220	1,220	+	+	
	A90	Control Module for PTC Thermistors	B	1,450	1,450	1,450	+	+	
	C01	Insulation Vacuum Pressure Impregnation (VPI)	A-2	18,000	18,000	54,000	+	+	
	C03	Spike resistant wire	A-2	1,000	1,000	6,960	+	+	
	C04	Insulation moisture/ Powerhouse (extra dip & bake)	A-2	1,600	1,600	2,720	+	+	
	C07	Insulation Fungus Protection - No UL	A-1	560	560	600	+	+	
	C08	Insulation tropicalization (extra dip & bake + fungus spray)	A-2	1,960	1,960	3,120	+	+	

+ Available • Standard – Not Available

2. Modification possible only when stocked with stator RTDs

Delivery Cases/Modified

	Codes	Description	Case	440	L449	500	SD200	DP200 HPS	Notes
		Terminal Boxes and Leads							
MLFB DIGIT 16	0	Top Mounted Terminal Box from RHS -Drive End Side	A-1	600	600	600	+	+	
	1	LHS Mount - View from DE - Drive End Side (F1)	A-1	-	-	-	•	•	
	2	RHS Mount - View from DE -Drive End Side (F2)	A-1	600	600	600	+	+	
	3	Top Mounted Terminal Box from LHS -Drive End Side	A-1	600	600	600	+	+	
	4	LHS Mount - View from DE –Non-Drive End Side (F1)	A-1	–	600	600	+	+	
	5	RHS Mount - View from DE -Non-Drive End Side (F2)	A-1	–	600	600	+	+	
	6	Top Mounted Terminal Box from LHS -Non-Drive End Side	A-1	–	600	600	+	+	
	7	Top Mounted Terminal Box from RHS -Non-Drive End Side	A-1	–	600	600	+	+	
Short Codes	J84	Conduit Box Orientation 90° (entry from DE)	A-1	200	200	540	+	+	
	J85	Conduit Box Orientation 180°	A-1	200	200	540	+	+	
	J86	Conduit Box Orientation 270° (entry from ODE)	A-1	200	200	540	+	+	
	K80	BURNDY HYDENT YA type terminals	A-2	300	300	300	+	+	
	K81	Special cable leads, 60” long	A-1	1,000	1,000	6,080	+	+	
	K82	Special cable leads, 120” long	A-1	1,800	1,800	13,240	+	+	
	K83	Terminal Block in Main Box	A-1	5,600	5,600	5,600	+	+	
	K85	3 Terminal Connection	A-1	-	-	-	+	+	
	K89	Sealed Leads	A-1	1,480	1,480	3,040	+	+	
	T00	Main Terminal Box - at a 45° angle	A-1	300	300	300	+	+	
	T03	Main Terminal Box – Oversized Steel (Centered Cable Entry)	A-1	2,800	2,800	–	+	–	
	T04	Steel terminal box oversized 20X20X16(in) with blank entry	A-1	5,760	5,760	5,760	+	+	
	T05	Steel terminal box oversized 28.5X24.4X20(in) with blank entry	A-1	–	–	10,400	+	+	
	T06	Steel terminal box oversized 18.5X22X7.5(in) with blank entry	A-1	2,400	2,400	–	+	–	
	T10	Centered Terminal Box	A-1	800	–	–	+	–	
	T11	Centered Retrofit Terminal Box	A-1	1,400	–	–	+	–	
	T50	Dual Entry Hole Terminal Box	A-1	700	700	700	+	+	
	Y96	Non-Standard NPT entry	A-1	800	800	800	+	+	

+ Available • Standard – Not Available ** Coming soon

1. Select FS500 motors will be stocked with Stator RTDs
2. Stock Mod only possible when stocked with stator RTDs

Delivery Cases/Modified

	Codes	Description	Case	440	L449	500	SD200	DP200 HPS	Notes
		Terminal Boxes and Leads – Aux Boxes							
Short Options	R00	Cast Iron Aux Box for thermal protection - Position 1 (F1 DE)	A-1	800	800	1,200	+	+	Note 1
	R01	Cast Iron Aux Box for thermal protection - Position 2 (F2 DE)	A-1	800	800	1,200	+	+	Note 1
	R02	Cast Iron Aux Box for thermal protection - Position 4 (F1 NDE)	A-1	800	800	1,200	+	+	Note 1
	R03	Cast Iron Aux Box for thermal protection - Position 5 (F2 NDE)	A-1	800	800	1,200	+	+	Note 1
	R04	Condulet Box for thermal protection - Position 1 (F1 DE)	A-1	500	500	800	+	+	
	R05	Condulet Box for thermal protection - Position 2 (F2 DE)	A-1	500	500	800	+	+	
	R06	Condulet Box for thermal protection - Position 4 (F1 NDE)	A-1	500	500	800	+	+	
	R07	Condulet Box for thermal protection - Position 5 (F2 NDE)	A-1	500	500	800	+	+	
	R10	Cast Iron Aux Box for space heaters - Position 1 (F1 DE)	A-1	800	800	1,200	+	+	
	R11	Cast Iron Aux Box for space heaters - Position 2 (F2 DE)	A-1	800	800	1,200	+	+	
	R12	Cast Iron Aux Box for space heaters - Position 4 (F1 NDE)	A-1	800	800	1,200	+	+	
	R13	Cast Iron Aux Box for space heaters - Position 5 (F2 NDE)	A-1	800	800	1,200	+	+	
	R14	Condulet Box for space heaters - Position 1 (F1 DE)	A-1	500	500	800	+	+	
	R15	Condulet Box for space heaters - Position 2 (F2 DE)	A-1	500	500	800	+	+	
	R16	Condulet Box for space heaters - Position 4 (F1 NDE)	A-1	500	500	800	+	+	
	R17	Condulet Box for space heaters - Position 5 (F2 NDE)	A-1	500	500	800	+	+	
	R20	Cast Iron Aux Box for all accessories - Position 1 (F1 DE)	A-1	800	800	1,200	+	+	Note 1
	R21	Cast Iron Aux Box for all accessories - Position 2 (F2 DE)	A-1	800	800	1,200	+	+	Note 1
	R22	Cast Iron Aux Box for all accessories - Position 4 (F1 NDE)	A-1	800	800	1,200	+	+	Note 1
	R23	Cast Iron Aux Box for all accessories - Position 5 (F2 NDE)	A-1	800	800	1,200	+	+	Note 1
	R24	Condulet Box for all accessories - Position 1 (F1 DE)	A-1	500	500	800	+	+	
	R25	Condulet Box for all accessories - Position 2 (F2 DE)	A-1	500	500	800	+	+	
	R26	Condulet Box for all accessories - Position 4 (F1 NDE)	A-1	500	500	800	+	+	
	R27	Condulet Box for all accessories - Position 5 (F2 NDE)	A-1	500	500	800	+	+	

+ Available • Standard – Not Available

Note 1 – No cost when used with stator RTDs

Delivery Cases/Modified

	Codes	Description	Case	440	L449	500	SD200	DP200 HPS	Notes
		Bearings and Lubrication							
Short Options	A50	Install Bearing RTD's-100 Ohm Platinum -Both Ends & Terminal Heads/Block	A-1	–	–	6,140	–	+	
	A51	Bearing RTD's-100 Ohm Platinum - Both Ends & Terminal Heads/Block	A-2	6,700	6,700	6,780	+	–	
	L49	Automatic Grease Relief Fitting	A-1	300	300	**	+	+	
	L50	Bearing Insulation for DE	A-1	1,500	1,500	**	+	+	
	L51	Bearing Insulation for NDE	A-1	1,500	1,500	**	+	•	
	L54	Provisions for oil mist (within 6 months)	A-2	8,400	8,400	–	+	–	
	L55	Oil Mist Ready (must use oil mist)	A-2	8,400	8,400	–	+	–	
	L57	MOBIL 28- High or Low - Special Grease	A-2	3,000	3,000	3,300	+	+	
	L58	MOBILITH SHC 100 -Special Grease	A-2	1,300	1,300	1,700	+	+	
	L61	Insulated Bearing -INSOCOAT (Both Ends)	A-1	6,000	16,000	16,000	+	+	Not for Roller Bearing
	L62	Insulated Bearing -INSOCOAT (DE Only)	A-1	8,000	8,000	–	+	–	Not for Roller Bearing
	L64	Insulated Bearing -INSOCOAT (NDE Only)	A-1	8,400	8,400	8,400	+	+	
	L68	Sealed Ball Bearings (Both Ends)	A-1	2,000	2,000	–	+	–	No 2 pole, Not for Roller Bearing
	L69	Hybrid (Ceramic Ball) Bearings - Both Ends	B	24,000	24,000	39,460	+	+	Not for Roller Bearing
	L70	Hybrid (Ceramic Ball) Bearings – NDE	B	12,000	12,000	19,740	+	+	
	L71	Hybrid (Ceramic Ball) Bearings – DE	B	4,000	14,000	19,740	+	+	Not for Roller Bearing
		Shafts and Seals							
Short Options	K41	Keyless shaft	A-1	200	200	840	+	+	
	K42	Retrofit S449 Shaft Extension	A-1	–-	1,260	–	+	–	
	L29	Shaft Grounding Brush	A-2	7,600	7,600	7,600	+	+	Removes Division 2
	L76	Shaft Slinger & O Ring	A-1	400	400	–	+	–	
	L79	INPRO/SEAL DE	A-1	2,000	2,000	2,300	+	+	
	L80	INPRO/SEAL ODE	A-2	2,000	2,000	2,300	+	+	
	L81	INPRO/SEAL - Both Ends	A-2	4,000	4,000	4,600	+	+	
	L89	INPRO/SEAL MGS shaft grounding – DE	A-1	4,980	4,980	6,640	+	+	
	M52	NEMA std long shaft - ODE	A-2	1,100	1,100	–	+	–	
	M53	NEMS std short shaft - ODE	A-2	1,100	1,100	–	+	–	
	M57	(C4140) Carbon steel shaft	A-2	3,600	3,600	4,460	+	+	
	Y50	Special shaft on Drive End	B	1,600	1,600	CF	+	+	
	Y51	Special shaft on Non-Drive End	B	1,600	1,600	CF	+	+	

+ Available • Standard – Not Available CF Consult Factory

Delivery Cases/Modified

	Codes	Description	Case	440	L449	500	SD200	DP200 HPS	Notes
		Frame							
Short Options	K33	Drip Cover	A-1	800	800	5,940	+	+	
	K38	Provisions for Dowel Holes	A-1	1,800	1,800	•	+	+	
	K70	Rotation Arrow Bi-directional	A-1	300	300	300	+	+	
	K71	Rotation Arrow Clockwise (From NDE)	A-1	300	300	300	+	+	
	K72	Rotation Arrow Counterclockwise (From NDE)	A-1	300	300	300	+	+	
	L22	Stainless Steel Hardware (Includes T Drain SS)	A-1	1,200	1,200	1,300	+	+	
	L27	Ground Bolts - Qty 2	A-1	300	300	300	+	+	
	L45	SS T - Slot Breather Drain	A-1	600	600	600	+	+	
	L46	CROUSE HINDS UL Approved Breather Drain	A-1	700	700	760	+	+	
	L91	IP56 Ingress Protection	A-1	1,000	1,000	–	+	–	
	M10	Bronze Fan	A-1	7,000	7,000	–	+	–	
	M39	Vertical Jacking Provisions	A-1	1,100	1,100	2,400	+	+	
		Rating Plates and Tagging							
Short Options	C40	Rerate 50HZ Voltage to 380V	A-1	340	–	–	+	–	
	C41	Rerate 50HZ Voltage to 415V	A-1	340	–	–	+	–	
	M21	Additional nameplate (without logos)	A-1	400	400	400	+	+	
	M25	Class II, Division 2	A-1	STD	STD	2,700	+	+	
	Y80	Derate-Alt-Amb (Nameplate Change)	A-1	340	340	340	+	+	
	Y82	Auxiliary n/p Max. 40 Characters (Aux Tag)	A-1	200	200	200	+	+	
		Ambient Temperature							
Short Options	B27	+40°C to-40°C Ambient temp	A-2	2,900	2,900	8,400	+	+	
	B29	+40°C to-50°C Ambient temp	B	4,400	4,400	9,000	+	+	
		Mechanical Design and Accessories							
Short Options	A67	Provision only for vibration sensors	A-1	1,000	1,000	1,000	+	-	
	A68	Metrix Sensors Installed on DE and NDE, top of the end shield	B	28,000	28,000	28,000	+	+	
	G05	Dynapar Encoder HS35R 1024 PPR	B	3,800	3,800	5,000	+	+	
	G06	C-Face Mounted Slim Tach Encoder	B	9,500	9,500	9,500	+	+	
	K10	IEEE 841 Features	B	–	–	1,920	–	+	
	M08	Separately Driven Fan for 1000:1 CT - VFD Only Operation	A-1	6,800	6,800	6,800	+	+	
	M69	Precision Balance	A-1	680	680	–	+	–	Standard for 841
	M70	Extra Precision Balance	A-1	1,240	1,240	–	+	–	

+ Available • Standard – Not Available

** Coming soon

Delivery Cases/Modified

	Codes	Description	Case	440	L449	500	SD200	DP200 HPS	Notes
		Paint and Packaging							
Short Options	B07	Special Stackable Packing	A-1	1,600	–	–	+	–	
	B09	Export Packaging Sea Freight – ABB Standard	A-1	2,020	2,020	4,860	+	+	
	B11	Export Packaging Sea freight – ABB Standard + sensors	A-1	2,100	2,100	–	+	+	
	N01	2 Part Epoxy (Industrial-Coastal low salt)	B	2,800	2,800	6,420	+	+	
	N02	3 Part Epoxy (Industrial-Coastal moderate salt)	B	7,900	7,900	6,900	+	+	
	N03	Primer only	A-1	1,100	1,100	1,100	+	+	
	N05	3 Part Epoxy (Coastal-offshore high salt)	B	9,200	9,200	14,240	+	+	
	N06	2 Part Epoxy C4 (Industrial-Coastal moderate salt)	A-2	3,040	3,300	6,210	+	+	
	N07	2 Part Epoxy C5I/C5M (Coastal-offshore high salt)	A-2	4,100	4,510	9,970	+	+	
	Y60	Special color for standard paint system (Provide RAL#)	A-1	400	400	400	+	+	
	Y61	Special color for special paint system (Provide RAL#)	A-1	200	200	200	+	+	Must include N01, N02, N05, N06, or N07
		Tests							
Short Options	F10	Routine Test Report	A-1	500	500	500	+	+	
	F12	Routine Test Report (Witnessed)	A-2	5,500	5,500	6,940	+	+	
	F15	Complete Test	A-1	24,100	24,100	**	+	+	
	F17	Complete Test (Witnessed)	A-2	36,100	36,100	**	+	+	
	F20	Routine Test + Vibration	A-1	1,200	1,200	1,200	+	+	
	F22	Routine Test + Vibration (Witnessed)	A-2	6,500	6,500	7,560	+	+	
	F27	Performance Load Test (Curve Report)	A-1	14,420	14,420	14,420	+	+	
	F30	Noise test	A-1	7,740	7,740	7,740	+	+	
	F32	Noise test (Witnessed)	A-2	15,730	15,730	15,730	+	+	
	F36	Routine Test Report of Electrical Duplicate Design	A-1	500	500	500	+	+	
	F37	Type Test Report of Electrical Duplicate Design	A-1	910	910	910	+	+	

	Codes	Description	Case	440	L449	500	SD200	DP200 HPS	Notes
		Documentation							
Short Options	D05	Documentation in Spanish	A-1	-	-	-	+	+	
	F00	Certificate of Compliance	A-1	600	600	600	+	+	
	F01	Certificate of Origin - Stamped by Chamber of Commerce	A-1	1,800	1,800	1,800	+	+	
	F03	Standard Performance Curves	A-1	900	900	900	+	+	
	F04	Acceleration Time Calculation	A-1	380	380	380	+	+	
	F05	Polarization Index	A-1	300	300	300	+	+	
	F07	Curve Package at 100% and 80% voltage (S-T, PERF)	A-1	1,500	1,500	1,500	+	+	
	F08	Shaft Torsional Analysis (includes shaft drawing)	A-1	1,000	1,000	1,000	+	+	
	F09	Bearing L10 Calculation	A-1	1,100	1,100	1,100	+	+	
	F40	Stall Time Curve (Thermal Limit Curve)	A-1	620	620	620	+	+	
	F42	Standard Dimensional Sheet	A-1	300	300	300	+	+	
	F43	Non-Standard Dimension Sheet	A-2	1,100	1,100	1,100	+	+	
	F44	Conduit Box Dimension Sheet	A-1	620	620	620	+	+	
	F45	Wiring Diagram	A-1	300	300	300	+	+	
	F46	Instruction & Operation Manual in English	A-1	300	300	300	+	+	
	F47	Renewal Parts	A-1	300	300	300	+	+	
	F48	CAD Drawing (Dwg Format) Customer/Application Specific	A-1	1,220	1,220	1,220	+	+	
	F49	Performance Data Sheets	A-1	520	520	520	+	+	
	F50	Customer Specific Data Sheets	A-2	1,100	1,100	1,100	+	+	
	F51	Shaft Profile Detail (included materials data)	A-1	400	400	400	+	+	
	F60	Visual Inspection Proof (Max 8X Photos)	A-1	680	680	680	+	+	
	F70	Inspection Test Plan	A-1	1,000	1,000	1,000	+	+	
	F71	Paint Report (thickness and adherence)	A-1	300	300	300	+	+	
	F81	Advanced Document Package	A-1	3,300	3,300	3,300	+	+	
	F82	Project Document Package	A-2	6,000	6,000	6,000	+	+	

+ Available • Standard – Not Available

Delivery Cases/Modified

2.3.2. MOD Option Selection and Pricing

	Codes	Description	440	L449	500	SD200	DP200 HPS	Notes
		Voltage and Connection						
MLFB DIGIT 12-13	12	460V	-	-	-	•	•	
	13	575	-	-	7,544	+	+	
	22	460V PWS 60HZ	1,725	1,725	3,496	+	+	
	32	WyeStrt-DeltaRun460, 60Hz	1,725	1,725	3,496	+	+	
		Mounting						
MLFB DIGIT 14	A	Foot Mounted Horizontal (IMB3)	-	-	-	•	•	
	C	Foot Mounted Vertical Shaft-Down w/o Canopy (IMV5)	4,830	4,830	17,112	+	+	
	D	Foot Mounted Vertical Shaft-Up (IMV6)	4,830	4,830	17,112	+	+	
	N	Foot Mounted C-face Horizontal (IMB34 – F1 / F2 / F3)	2,990	2,990	–	+	–	
	P	Foot Mounted C-Face Vertical Shaft-down w/o Canopy – W6 / W7 / W12]	7,360	7,360	–	+	–	
	Q	Foot Mounted C-Face Vertical Shaft-up – W5 / W8 / W11	7,360	7,360	–	+	–	
	T	Foot Wall Mount Horizontal (MB6, – W2 / W4)	4,830	4,830	34,201	+	–	
	U	Foot Wall Mounted Horizontal (IMB7 – W1 / W3)	4,830	4,830	34,201	+	+	
	V	Foot Ceiling Mount Horizontal (IMB8 – C1/ C2 / C3)	4,830	4,830	34,201	+	+	
		Winding Protection						
MLFB DIGIT 15	A	Without Winding Protection	-	-	-	+	+	
	G	Thermostats normally closed, Temp code T3C, 1 per phase	1,265	1,265	1,541	+	+	
	L	Winding Protection - G + K	12,650	12,650	16,629	+	+	
Short Codes	A46	Space Heaters 115V single phase, max temp 160°C	1,403	1,403	1,403	+	+	
	A47	Space Heaters 230V single phase, max temp 160°C	1,403	1,403	1,403	+	+	
	A48	Space Heaters 115V/230V Single Phase, Max Temp 160°C	1,403	1,403	1,403	+	+	
	C07	Insulation Fungus Protection - No UL	644	644	690	+	+	

+ Available • Standard – Not Available

2. Modification possible only when stocked with stator RTDs

Delivery Cases/Modified

	Codes	Description	440	L449	500	SD200	DP200 HPS	Notes
		Terminal Boxes and Leads						
MLFB DIGIT 16	0	Top Mounted Terminal Box from RHS -Drive End Side	690	690	690	+	+	
	1	LHS Mount - View from DE -Drive End Side (F1)	-	-	-	•	•	
	2	RHS Mount - View from DE -Drive End Side (F2)	690	690	690	+	+	
Short Codes	J84	Conduit Box Orientation 90° (entry from DE)	690	690	690	+	+	
	J85	Conduit Box Orientation 180°	230	230	621	+	+	
	J86	Conduit Box Orientation 270° (entry from ODE)	230	230	621	+	+	
	K80	BURNDY HYDENT YA type terminals	230	230	621	+	+	
	K83	Terminal Block in Main Box	345	345	345	+	+	
	K89	Sealed Leads	6,440	6,440	6,440	+	+	
	T00	Main Terminal Box - at a 45° angle	345	345	345	+	+	
	T03	Main Terminal Box – Oversized Steel (Centered Cable Entry)	3,220	3,220	–	+	–	
	T04	Steel terminal box oversized 20X20X16(in) with blank entry	6,624	6,624	6,624	+	+	
	T10	Centered Terminal Box	920	–	–	+	–	
	T11	Centered Retrofit Terminal Box	1,610	–	–	+	–	
	T50	Dual Entry Hole Terminal Box	805	805	805	+	+	

+ Available • Standard – Not Available ** Coming soon

1. Select FS500 motors will be stocked with Stator RTDs
2. Stock Mod only possible when stocked with stator RTDs

Delivery Cases/Modified

	Codes	Description	440	L449	500	SD200	DP200 HPS	Notes
		Terminal Boxes and Leads – Aux Boxes						
Short Options	R00	Cast Iron Aux Box for thermal protection - Position 1 (F1 DE)	920	920	1,380	+	+	Note 1
	R01	Cast Iron Aux Box for thermal protection - Position 2 (F2 DE)	920	920	1,380	+	+	Note 1
	R02	Cast Iron Aux Box for thermal protection - Position 4 (F1 NDE)	920	920	1,380	+	+	Note 1
	R03	Cast Iron Aux Box for thermal protection - Position 5 (F2 NDE)	920	920	1,380	+	+	Note 1
	R04	Condulet Box for thermal protection - Position 1 (F1 DE)	575	575	920	+	+	
	R05	Condulet Box for thermal protection - Position 2 (F2 DE)	575	575	920	+	+	
	R06	Condulet Box for thermal protection - Position 4 (F1 NDE)	575	575	920	+	+	
	R07	Condulet Box for thermal protection - Position 5 (F2 NDE)	575	575	920	+	+	
	R10	Cast Iron Aux Box for space heaters - Position 1 (F1 DE)	920	920	1,380	+	+	
	R11	Cast Iron Aux Box for space heaters - Position 2 (F2 DE)	920	920	1,380	+	+	
	R12	Cast Iron Aux Box for space heaters - Position 4 (F1 NDE)	920	920	1,380	+	+	
	R13	Cast Iron Aux Box for space heaters - Position 5 (F2 NDE)	920	920	1,380	+	+	
	R14	Condulet Box for space heaters - Position 1 (F1 DE)	575	575	920	+	+	
	R15	Condulet Box for space heaters - Position 2 (F2 DE)	575	575	920	+	+	
	R16	Condulet Box for space heaters - Position 4 (F1 NDE)	575	575	920	+	+	
	R17	Condulet Box for space heaters - Position 5 (F2 NDE)	575	575	920	+	+	
	R20	Cast Iron Aux Box for all accessories - Position 1 (F1 DE)	920	920	1,380	+	+	Note 1
	R21	Cast Iron Aux Box for all accessories - Position 2 (F2 DE)	920	920	1,380	+	+	Note 1
	R22	Cast Iron Aux Box for all accessories - Position 4 (F1 NDE)	920	920	1,380	+	+	Note 1
	R23	Cast Iron Aux Box for all accessories - Position 5 (F2 NDE)	920	920	1,380	+	+	Note 1
	R24	Condulet Box for all accessories - Position 1 (F1 DE)	575	575	920	+	+	
	R25	Condulet Box for all accessories - Position 2 (F2 DE)	575	575	920	+	+	
	R26	Condulet Box for all accessories - Position 4 (F1 NDE)	575	575	920	+	+	
	R27	Condulet Box for all accessories - Position 5 (F2 NDE)	575	575	920	+	+	

+ Available • Standard – Not Available

Note 1 – No cost when used with stator RTDs

Delivery Cases/Modified

	Codes	Description	440	L449	500	SD200	DP200 HPS	Notes
		Bearings and Lubrication						
Short Options	A50	Install Bearing RTD's-100 Ohm Platinum -Both Ends & Terminal Heads/Block	–	–	7,061	–	+	
	L49	Automatic Grease Relief Fitting	345	345	**	+	+	
	L57	MOBIL 28- High or Low - Special Grease	3,450	3,450	3,795	+	+	
	L58	MOBILITH SHC 100 -Special Grease	1,495	1,495	1,955	+	+	
	L61	Insulated Bearing -INSOCOAT (Both Ends)	18,400	18,400	18,400	+	+	Not for Roller Bearing
	L62	Insulated Bearing -INSOCOAT (DE Only)	9,200	9,200	–	+	–	Not for Roller Bearing
	L64	Insulated Bearing -INSOCOAT (NDE Only)	9,660	9,660	9,660	+	+	
	L68	Sealed Ball Bearings (Both Ends)	2,300	2,300	–	+	–	No 2 pole, Not for Roller Bearing
	L69	Hybrid (Ceramic Ball) Bearings - Both Ends	27,600	27,600	45,379	+	+	Not for Roller Bearing
	L70	Hybrid (Ceramic Ball) Bearings – NDE	13,800	13,800	22,701	+	+	
	L71	Hybrid (Ceramic Ball) Bearings – DE	16,100	16,100	22,701	+	+	Not for Roller Bearing
		Shafts and Seals						
	L29	Shaft Grounding Brush	8,740	8,740	8,740	+	+	Removes Division 2
	L76	Shaft Slinger & O Ring	460	460	–	+	–	
	L79	INPRO/SEAL DE	2,300	2,300	2,645	+	+	
	L80	INPRO/SEAL ODE	2,300	2,300	2,645	+	+	
	L81	INPRO/SEAL - Both Ends	4,600	4,600	5,290	+	+	
	L89	INPRO/SEAL MGS shaft grounding – DE	5,727	5,727	7,636	+	+	
		Frame						
Short Options	K33	Drip Cover	920	920	6,831	+	+	
	K38	Provisions for Dowel Holes	2,070	2,070	•	+	+	
	K70	Rotation Arrow Bi-directional	345	345	345	+	+	
	K71	Rotation Arrow Clockwise (From NDE)	345	345	345	+	+	
	K72	Rotation Arrow Counterclockwise (From NDE)	345	345	345	+	+	
	L22	Stainless Steel Hardware (Includes T Drain SS)	1,380	1,380	1,495	+	+	
	L27	Ground Bolts - Qty 2	345	345	345	+	+	
	L45	SS T - Slot Breather Drain	690	690	690	+	+	
	L46	CROUSE HINDS UL Approved Breather Drain	805	805	874	+	+	
	M39	Vertical Jacking Provisions	1,265	1,265	2,760	+	+	

+ Available • Standard – Not Available

Delivery Cases/Modified

	Codes	Description	440	L449	500	SD200	DP200 HPS	Notes
		Rating Plates and Tagging						
Short Options	C40	Rerate 50HZ Voltage to 380V	391	–	–	+	–	
	C41	Rerate 50HZ Voltage to 415V	391	–	–	+	–	
	M25	Class II, Division 2	STD	STD	3,105	+	+	
	Y80	Derate-Alt-Amb (Nameplate Change)	391	391	391	+	+	
	Y82	Auxiliary n/p Max. 40 Characters (Aux Tag)	230	230	230	+	+	
		Ambient Temperature						
	B27	+40°C to-40°C Ambient temp	2,900	2,900	8,400	+	+	
		Mechanical Design and Accessories						
	M08	Separately Driven Fan for 1000:1 CT - VFD Only Operation	7,820	7,820	7,820	+	+	
		Paint and Packaging						
	B09	Export Packaging Sea Freight – ABB Standard	2,323	2,323	5,589	+	+	
		Tests						
Short Options	F10	Routine Test Report	575	575	575	+	+	
	F12	Routine Test Report (Witnessed)	6,325	6,325	7,981	+	+	
	F15	Complete Test	27,715	27,715	**	+	+	
	F17	Complete Test (Witnessed)	41,515	41,515	**	+	+	
	F20	Routine Test + Vibration	1,380	1,380	1,380	+	+	
	F22	Routine Test + Vibration (Witnessed)	7,475	7,475	8,694	+	+	
	F27	Performance Load Test (Curve Report)	16,583	16,583	16,583	+	+	
	F36	Routine Test Report of Electrical Duplicate Design	575	575	575	+	+	
	F37	Type Test Report of Electrical Duplicate Design	1,047	1,047	1,047	+	+	

+ Available • Standard – Not Available

** Coming soon

Delivery Cases/Modified

Codes	Description	440	L449	500	SD200	DP200 HPS	Notes
	Documentation						
F00	Certificate of Compliance	690	690	690	+	+	
F01	Certificate of Origin - Stamped by Chamber of Commerce	2,070	2,070	2,070	+	+	
F03	Standard Performance Curves	1,035	1,035	1,035	+	+	
F04	Acceleration Time Calculation	437	437	437	+	+	
F05	Polarization Index	1,725	1,725	1,725	+	+	
F07	Curve Package at 100% and 80% voltage (S-T, PERF)	1,150	1,150	1,150	+	+	
F08	Shaft Torsional Analysis (includes shaft drawing)	1,265	1,265	1,265	+	+	
F09	Bearing L10 Calculation	713	713	713	+	+	
F40	Stall Time Curve (Thermal Limit Curve)	345	345	345	+	+	
F42	Standard Dimensional Sheet	1,265	1,265	1,265	+	+	
F43	Non-Standard Dimension Sheet	713	713	713	+	+	
F44	Conduit Box Dimension Sheet	345	345	345	+	+	
F45	Wiring Diagram	345	345	345	+	+	
F46	Instruction & Operation Manual in English	345	345	345	+	+	
F47	Renewal Parts	1,403	1,403	1,403	+	+	
F48	CAD Drawing (Dwg Format) Customer/Application Specific	598	598	598	+	+	
F49	Performance Data Sheets	1,265	1,265	1,265	+	+	
F50	Customer Specific Data Sheets	460	460	460	+	+	
F51	Shaft Profile Detail (included materials data)	782	782	782	+	+	
F60	Visual Inspection Proof (Max 8X Photos)	690	690	690	+	+	

+ Available • Standard – Not Available

Delivery Cases/Modified

3. Low Voltage NEMA Motors

Technical details, options, motor selection, and pricing

GP100A, GP100, SD100, SD100 IEEE841, SD661, LP100, HP100, XP100, XP100 ID1

Technical details

3.1.1. MLFB Structure

MLFB Structure	1	2	3	4	5	6	7	–	8	9	10	11	12	–	13	14	15	16	-Z
Motor Series	**1**	**2**	**3**					–						–					
Standard GP, SD Motors	1	L	E					–						–					
Division 1 Explosion Proof Motors	1	M	B					–						–					
Definite Purpose Motors	1	P	C																
Main Series				**4**				–						–					
NEMA Motors				2				–						–					
Motor Type/Enclosure/ Efficiency					**5**	**6**	**7**	–						–					
GP100A NP	1	L	E	2	1	2	1	–						–					
GP100 NP	1	L	E	2	2	2	1	–						–					
SD100 NP	1	L	E	2	3	2	1	–						–					
SD100 NP (Low Maintenance)	1	L	E	2	3	2	3	–						–					
SD100 IEEE841 NP	1	L	E	2	4	2	1	–						–					
SD661	1	L	E	2	4	2	2	–						–					
SD10 MS	1	L	E	2	3	0	1	–						–					
XP100	1	M	B	2	1	2	1	–						–					
XP100 ID1	1	M	B	2	2	2	1	–						–					
HP100	1	P	C	2	8	2	2	–						–					
LP100	1	P	C	2	8	3	2	–						–					
Motor HP and Frame								–	**8**	**9**		**11**		–					
Number of Poles (Speed)								–			**10**			**–**					
2 Pole (3000/3600 RPM)								–			A			**–**					
4 Pole (1500/1800 RPM)								–			B			**–**					
6 Pole (1000/1200 RPM)								–			C			**–**					
8 Pole (750/900 RPM)								–			D			**–**					
8/4 Pole (Two Speed)								–			M			**–**					
Winding Design/Voltage/Frequency								–					**12**	–	**13**				
Mounting								**–**							–	**14**			
Winding Protection								**–**							**–**		**15**		
Terminal Box Position								**–**							**–**			**16**	
With Additional Options								**–**							**–**				**-Z**

3.1.2. Technical Information

3.1.2.1. Voltage and Connection

			140-250 Frames	280-400 Frames	440-S449 Frames
MLFB DIGITS 12 & 13	11	230V	3 Lead Wye Fig. 2.1	3 Lead Delta Fig. 2.2	N/A
	12	460V	3 Lead Wye Fig. 2.1	3 Lead Delta Fig. 2.2	3 Lead Delta Fig. 2.2 or Fig. 2.3
	13	575V	3 Lead Wye Fig. 2.1	3 Lead Delta Fig. 2.2	3 Lead Delta Fig. 2.2 or Fig. 2.3
	14	230/460 (Suitable for 208V)	9 Lead Wye Fig. 2.4	N/A	N/A
	16	230/460	9 Lead Wye Fig. 2.4	9 Lead Delta Fig. 2.5	N/A
	22	PWS 460V 60Hz	–	Part Winding Start Fig. 2.6	
	23	PWS 575V 60HZ	–	Part Winding Start Fig. 2.6	
	32	Y/D 460V 60Hz	–	6 Lead Wye-Start Delta-Run Fig. 2.7	
	33	Y/D 575V 60HZ	–	6 Lead Wye-Start Delta-Run Fig. 2.7	
	40	460V Y, YY, 60HZ, 1 Winding Variable Torque	2 Speed - 1 Winding VT Fig. 2.8		
	44	575V Y, YY, 60HZ, 1 Winding Variable Torque	2 Speed - 1 Winding VT Fig. 2.8		
	90	M2Y (200-600V)	As Specified		

Pricing

Voltage

Low voltage NEMA motors can operate from 200-600V according to the winding selection. Windings up to 230V can only be applied to motors with 75HP or less.

Part-Winding-Start and Wye-Start/ Delta-Run are special windings that help to limit the amount of inrush current at startup. Both options require a special motor starter to operate correctly.

Special voltage, **M2Y**, can be used for any voltage within the voltage range listed for each.

When used for 50HZ operation the service factor will be 1.0 with the standard HP output. Electrical Data must be calculated and provided by the factory when **M2Y** is selected. For 50HZ operation at 1.15 S.F. de-rate to the next smaller HP can be requested with option **Y80** (see Rating Plates and Tagging section).

Low voltage NEMA motors are designed with the following tolerances in accordance with NEMA MG-1:

- Voltage tolerance: +/-10% of rated voltage
- Frequency tolerance: +/- 5% of rated frequency
- Voltage & Frequency combined tolerance: +/-10% (sum of absolute values)

Winding connection:

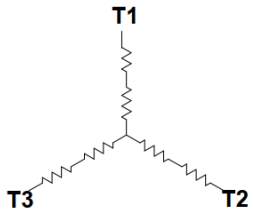
140-250 frame: Y for single voltage and YY/Y for dual voltage

280 frame and up:Δ for single voltage and Δ Δ / Δ for dual voltage

440T frames with 3 lead connection may have paired leads for flexibility in connection. Figure 2.3

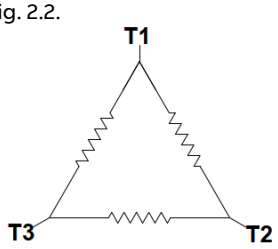
See Terminal Box and Leads section for additional information on motor leads.

Fig. 2.1.



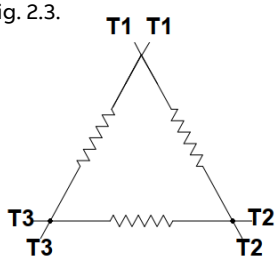
3 LEAD WYE			
LINES			CONN.
L1	L2	L3	
T1	T2	T3	Y

Fig. 2.2.



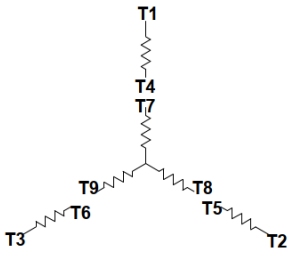
3 LEAD DELTA			
LINES			CONN.
L1	L2	L3	
T1	T2	T3	Δ

Fig. 2.3.



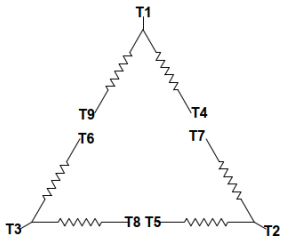
6 LEAD DELTA			
LINES			CONN.
L1	L2	L3	
T1	T2	T3	Δ

Fig. 2.4



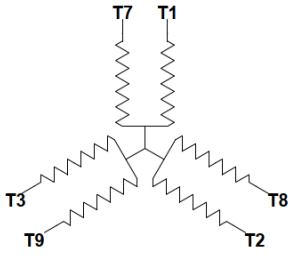
9 LEAD WYE					
Volts	LINES			CONNECTED TOGETHER	CONN.
	L1	L2	L3		
LOW	T1 T7	T2 T6	T3 T9	T4 T5 T6	YY
HIGH	T1	T2	T3	T4 T7-T5 T8-T6 T9	Y

Fig. 2.5



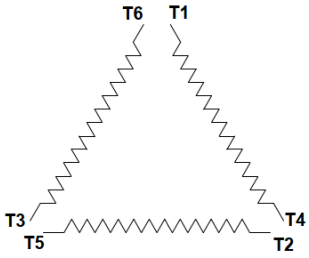
9 LEAD DELTA					
Volts	LINES			CONNECTED TOGETHER	CONN.
	L1	L2	L3		
LOW	T1 T7 T6	T2 T8 T4	T3 T9 T5		ΔΔ
HIGH	T1	T2	T3	T4 T7-T5 T8-T6 T9	Δ

Fig. 2.6



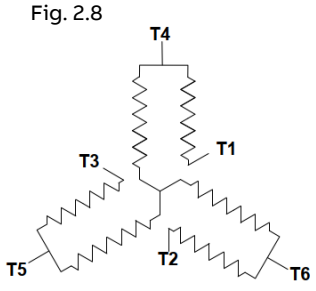
PART WINDING START				
LINES	L1	L2	L3	
START	T1	T2	T3	T7 T8 T9 OPEN
RUN	T1 T7	T2 T8	T3 T9	

Fig. 2.7



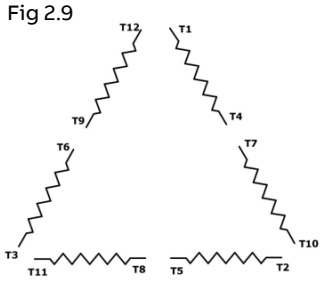
WYE-START DELTA-RUN					
LINES	L1	L2	L3	CONNECTED TOGETHER	CONN.
START	T1	T2	T3	T4 T5 T6	Y
RUN	T1 T6	T2 T4	T3 T5		Δ

Fig. 2.8



2 SPEED - 1 WINDING VT					
SPEEDS	LINES			CONNECTED TOGETHER	CONN.
	L1	L2	L3		
LOW	T1	T2	T3	T4 T5 T6 OPEN	Y
HIGH	T4	T5	T6	T1 T2 T3 TOGETHER	YY

Fig 2.9

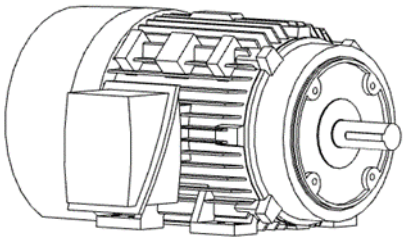


12 LEAD DELTA		
LINES	CONNECT TOGETHER	CONN.
L1	T12 -T7 - T6 - T1	ΔΔ
L2	T10 - T8 - T4 - T2	
L3	T11 - T9 - T5 - T3	

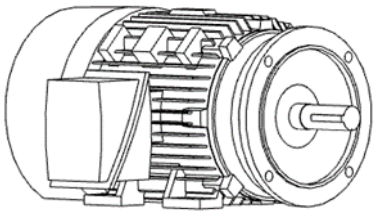
3.1.2.2. Mounting

	Codes	Description	1LE2	1MB2	1PC2
MLFB DIGIT 14	A	Foot Mount	+	+	–
	E	C - Face with Feet	+	+	–
	F	D - Flange with Feet	+	+	–
	G	C - Face without Feet	+	+	–
	H	D - Flange without Feet	+	+	–
	L	C - Face without Feet with Drip Cover and Lifting Hooks	+	+	–
	M	D - Flange without Feet with Drip Cover and Lifting Hooks	+	+	–
	N	C - Face with Feet with Drip Cover	+	+	–
	P	D - Flange with Feet with Drip Cover	+	+	–
	T	P-Base without Feet with Drip Cover and Lifting Hooks	–	–	+
	V	CH - Flange w Feet with Drip Cover	–	+	–
	W	CH - Flange with Feet	–	+	–
	X	CH - Flange without Feet	–	+	–
	Y	CH - Flange without Feet with Drip Cover and Lifting Hooks	–	+	–

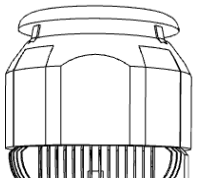
+ Available • Standard – Not Available Pricing



C-Face Foot Mount



D-Flange Foot Mount



Vertical with Drip Cover

Flange mounting

The drive end bearing housing can be replaced with flange mounting for direct coupling to the driven equipment. Flanges can be supplied with or without feet and as vertical or horizontal as required by the application. S449 frame must use the motor feet as support with flange mounting in either vertical or horizontal mounting positions.

C-Face

The NEMA C-face has threaded holes in the flange and the mounting hardware will be introduced from the driven equipment side. The C-face can be added to a stock motor as a modification where applicable.

CH flange is a standard C-face design in the next smaller size. The CH flange is only available for XP motors in frame size 180.

D-Flange

The NEMA D-flange will have through holes that are unthreaded. The D-flange can be added to stock motors 140-250 frame as a modification where applicable and can be built as custom on all frames. **Note: D-flange is not available on XP motors in frames 140-250.**

Notes:

- D-flange modification on frames 280-449 will result in non-standard usable shaft length when modified from stock
- D-flange is not available on XP motors in frames 140-250
- Round frame motors are only stocked in frames 140-250 and can be custom built up to 449 frames.

3.1.2.3. Winding Protection

	Codes	Description	1LE2	1MB2	1PC2
MLFB DIGIT 15	A	No Protection	+	+	+
	B	PTC 3 Embedded, 1 Per Phase	+	+	+
	C	PTC 6 Embedded, 2 Per Phase	+	+	+
	G	Thermostats Normally Closed, Temp Code T3C, 1 Per Phase	+	+	+
	J	Thermocouples Coil Head	+	+	+
	K	Stator RTD's 100-Ohm Platinum w Aux Box-Terminal Strip 2/Phase	+	+	+
	L	Winding Protection - G + K	+	+	+
	P	PT1000, 2 Embedded Temperature Sensors	+	+	+
	T	Thermostats Normally Closed, Temp Code T3, 1 Per Phase (55C Ambient, 1.15SF)	–	+	–
Short Options	A46	Space Heaters 115V Single Phase, Max Temp 160°C	+	+	+
	A47	Space Heaters 230V Single Phase, Max Temp 160°C	+	+	+
	A48	Space Heaters 115/230V Single Phase, Max Temp 160°C	+	+	+
	A90	Control Module	+	+	+
	C00	Insulation Class H	+	+	+
	C01	Insulation Vacuum Pressure Impregnation (VPI)	+	+	+
	C03	Spike Resistant Wire	+	+	+
	C04	Insulation Moisture/Powerhouse (Extra Dip & Bake)	+	+	+
	C07	Insulation Fungus Protection - No UL	+	–	+
	C08	Insulation Tropicalization (Extra Dip & Bake + Fungus Spray) – No UL	+	–	+

+ Available • Standard – Not Available Pricing

Winding insulation

Low voltage NEMA motor stators are random wound and insulated with Class F insulation system which is compliant with NEMA MG-1 part 31 and is rated for 155°C. Spike resistant wire, **C03**, can be used to meet those more stringent specifications that require part 31 to be exceeded. The stator is protected from moisture with acrylic impregnation though a dip and bake process. The stator is designed to have a temp rise no greater than class B at nameplate horsepower.

Class H insulation, **C00**, is rated for 180°C and may be used to better protect the stator when the temp rise may be higher due to ambient conditions or harsher VFD applications. With Class H insulation the lead material will remain Class F.

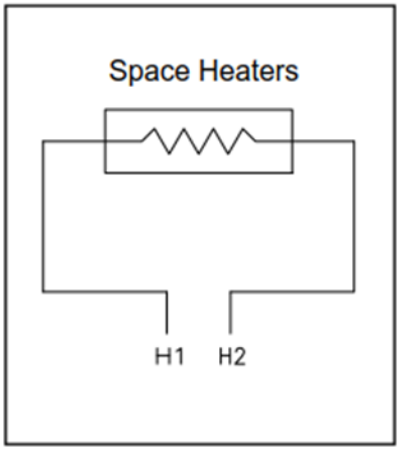
Moisture Powerhouse (extra dip and bake), **C04**, adds and extra layer of varnish to the winding for added protection against moisture. Vacuum Pressure Impregnation (VPI), **C01**, is an alternative to the standard dip and bake process. VPI uses a vacuum system to pull the varnish into the winding to reduce air bubbles in the varnish. Fungus Protection, **C07, C08**, is an anti-fungal spray that is applied to the windings after the dip and bake process to help reduce fungus from growing on the windings during storage prior to operation.

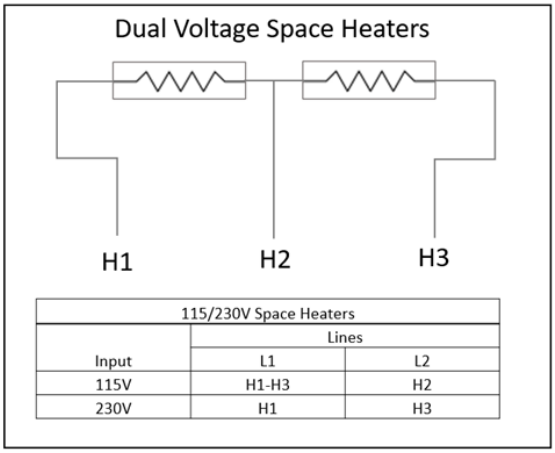
Space heaters

Space heaters help to reduce the humidity inside the motor during idle times of operation and storage. ABB uses flexible silicone rubber space heaters that have been proven to provide long life which either meets or exceeds the overall life of ABB NEMA motors. Space heaters will have wattage corresponding to the voltage and motor size as seen in Table 4.2 and will have leads to the main box as standard or an aux box as an option with leads marked per Figure 4.1.

ABB offers low temp space heaters rated for a max surface temperature of 160°C for use in safe area, Division 2, or Division 1 certified motors. The heaters can be configured for operation on 115V supply, **A46**, 230V supply, **A47**, or dual rated for 115/230V supply, **A48** (280 frame and up only).

Space heater information plate will be included when space heaters are added to the motor.





115/230V Space Heaters		
	Lines	
Input	L1	L2
115V	H1-H3	H2
230V	H1	H3

Figure 4.1.

MOTOR EQUIPPED
WITH SPACE HEATERS
V: HZ: W:
LEADS MARKED H1 - H2

MAXIMUM WINDING STATOR SURFACE TEMPERATURE 120°C
MAXIMUM SPACE HEATER SURFACE TEMPERATURE °C
SPACE HEATERS MAY BE ENERGIZED

Order Code	Frame	Voltage	Qty	Size	Watts
A46	140-180	115	1	1 x 15	30
A47	140-180	230	1	1 x 15	30
A46	210	115	1	1 x 20	40
A47	210	230	1	1 x 20	40
A46	250	115	1	1 x 25	50
A47	250	230	1	1 x 25	50
A46	280-360	115	1	2 x 24	48
A47	280-360	230	2	2 x 12	48
A48	280-360	115/230	2	2 x 12	48
A46	400-S449	115	2	2.5 x 20	100
A47	400-S449	230	2	2.5 x 20	100
A48	400-S449	115/230	2	2.5 x 20	100

Winding temperature protection

Thermostats, **MLFB Position 15 “G” or “T”,** are supplied as normally closed. When the temperature of the motor reaches the rated temperature of the device, the switch will open and cause a trip condition. Thermostats will have leads to the main box as standard or an aux box as an option with leads marked per Figure 4.2.

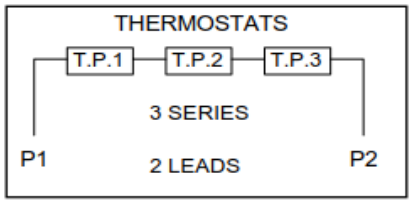


Fig. 4.2

PTC (positive temperature coefficient) thermistors, **MLFB Position 15 "B or C"**, are resistive devices that increase in resistance as the temperature increases. They are set to jump to a very high resistance at a rated temperature. Options are available to have one per phase for trip only, "B", or two per phase for alarm and trip, "C". PTC thermistors will have leads to the main box as standard or an aux box as an option with leads marked per Figure 4.3 and Figure 4.4.

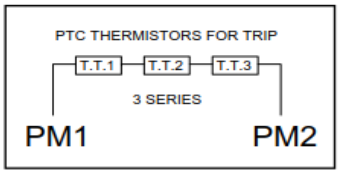


Fig. 4.3

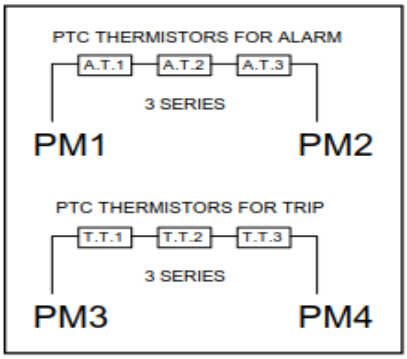


Fig. 4.4

Stator RTDs, **MLFB Position 15 "K"**, are PT100 resistive thermal devices that can be used to monitor the temperature of the motor based on the measured resistance of the device. The resistance range will be 100 ohms at 0 degrees C and increase at a rate of .385 ohms per degree C. RTDs are supplied with two sets per phase (one set active and one set as spares) embedded in the DE end turn of the winding. This option also includes an aux box with a terminal strip with terminals marked per Figure 4.5.

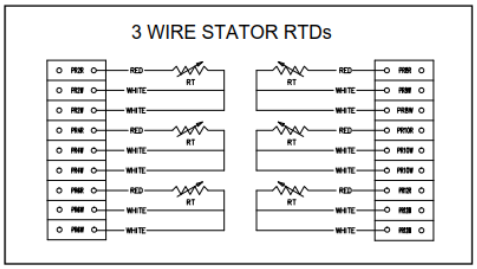


Fig. 4.5

PT1000 sensors, **MLFB Position 15 "P"**, function like the PT100 stator RTDs. The resistance range for the PT1000 sensors is 1000 ohms at 0 degrees C and increases at a rate of 3.85 ohms per degree C. This option comes with two independent sensors (one active and one spare) embedded in the DE end turn of the winding. PT1000 sensors will have leads to the main box as standard or an aux box as an option with leads marked per Figure 4.6.

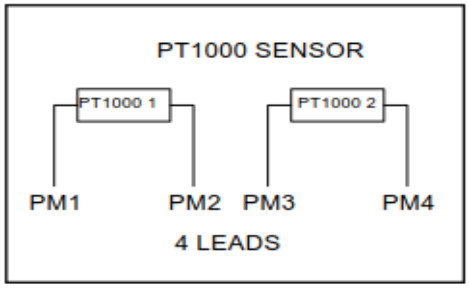


Fig. 4.6

3.1.2.4. Terminal Boxes and Leads

	Codes	Description	1LE2	1MB2	1PC2
MLFB DIGIT 16	0	F-3 Top Mounted Box (GP100A only)	+	–	–
	1	C-2 Ceiling	+	+	–
	2	F-2	+	+	–
	3	F-1	+	+	+
	4	W-6 Shaft Down	+	+	–
	5	W-7 (F-2) Shaft Down	+	+	–
	6	W-5 (F-2) Shaft Up	+	+	–
	7	W-8 Shaft Up	+	+	–
	8	C-1 (F-2) Ceiling	+	+	–
	9-R1A	W-1 (F-2) Wall	+	+	–
	9-R2A	W-2 Wall	+	+	–
	9-R3A	W-3 Wall	+	+	–
	9-R4A	W-4 (F-2) Wall	+	+	–
Short Codes	Jx0	Separate Condulet on Main Box Side	+	–	+
	Jx2	Condulet to Main Box	+	–	+
	Jx3	Aux Box to Main Box	+	–	+
	Jx4	Condulet Opposite to Main box Side	+	–	+
	Jx5	Aux Box Opposite to Main box Side	+	–	+
	Jx6	Explosion Proof Condulet Opposite to Main box Side	–	+	–
	Jx7	Explosion Proof Condulet to NDE side of Main Box	–	+	–
	J84	Conduit Box Orientation 90° CCW (Entry from DE)	+	+	+
	J85	Conduit Box Orientation 180° CCW (Entry from Top)	+	+	+
	J86	Conduit Box Orientation 270° CCW (Entry from NDE)	+	+	+
	K80	BURNDY HYDENT YA Type Terminals	+	+	+
	K83	Terminal Block - 3 Lead Only	+	–	+
	K89	Sealed Leads	+	•	+
	L01	Cast Iron in Lieu of Aluminum	+	•	•
	T04	Steel terminal box - oversized 20X20X16(in) with blank entry	+	–	–
	Y85	Special Cable Length (up to 120”)	+	–	+

+ Available • Standard – Not Available Pricing

Main terminal boxes

The main conduit box is diagonally split with a single entrance hole (see drawing section for standard entry hole size) with internal grounding lug provided as standard. The standard terminal box will have a volume that is greater than required by NEMA/NEC.

Terminal Box Material

Motor Type	Frame	Material
GP, GPA	140-250	Aluminum
GP	280-400	Stamped Steel
GP	440	Cast Iron
SD, XP, Definite purpose	All	Cast Iron

Table 5.1

Cast iron terminal box is available as an option, **L01**, on general purpose motors that are supplied with stamped steel box as standard. Explosion proof motors have special round style, cast iron explosion proof terminal box with a rabbet fit cover. Severe Duty motors will be supplied with a gasket between conduit box and frame and between cover and base. Oversized steel box, **T04**, is available with the blank entry.
See Drawings and Dimensions section for additional details.

The main terminal box position is defined by the 16th position of the MLFB. Foot mounted Cast iron frame motor in 1LE2, 1MB2, 1PC2 can have the terminal box located on the left or right of the frame only (Reference Figure 5.1). GP100A motors have the option for top mounted terminal box. The connection entry will be facing the motor feet as standard and can be rotated in 90-degree increments in the field or by ordering with options **J84, J85, J86**. Round Frame motors (without feet) will have the terminal box positioned in relation to the motor condensation drains (drains will be in the lowest position). Auxiliary boxes will be rotated in the same direction as the main box.

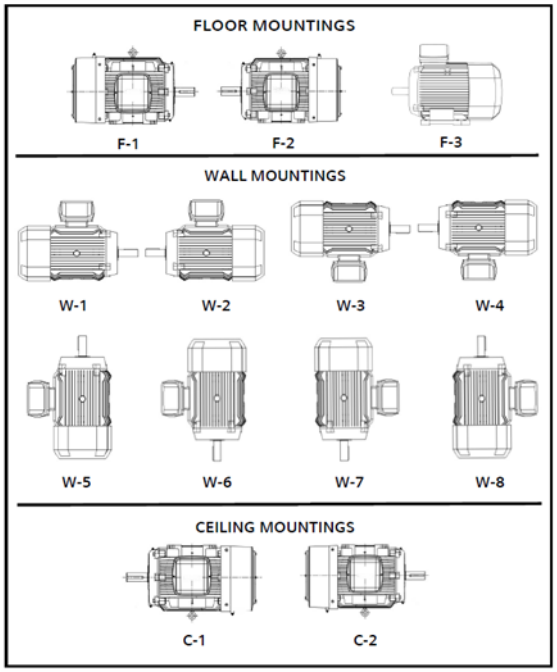


Fig. 5.1

Auxiliary terminal boxes

Auxiliary terminal boxes are available for accessories included in the motor selection. The auxiliary box can be attached to the motor frame or to the side of the main terminal box. Aux box, **Jx3, Jx5**, will be a cast iron auxiliary box. Condulet, **Jx0, Jx2, Jx4** is an aluminum electrical condulet with a steel cover. The explosion proof condulet, **Jx6, Jx7** is a UL approved explosion proof box that has a fully threaded cover.

Jx0 will be on opposing end to main box for frame size S449. The auxiliary box option should be selected according to the accessory that it will be paired with. Stator RTDs will come with an aux box with a terminal strip included as standard. The aux box will be on the opposite to main for the 1LE2, 1MB2, and 1PC2 motors. Bearing RTDs, **A51**, does not require an auxiliary terminal box, as it comes standard with terminal heads on each bearing housing (S449 will have a single auxiliary box).

	PTC Thermistors	Thermostats	PT1000 Sensors	Space Heaters
Condulet on Frame (Same Side as Main)	J00	J10	J20	J50
Condulet on Main Boxes (NDE Side)	J02	J12	J22	J52
Auxiliary Box on Main Box (NDE Side)	J03	J13	J23	J53
Condulet on Frame (Opposite to Main)	J04	J14	J24	J54
Auxiliary Box on Frame (Opposite to Main)	J05	J15	J25	J55
Explosion Proof Condulet on Frame (Opposite to Main)	J06	J16	J26	J56
Explosion Proof Condulet on Main Box	J07	J17	J27	J57

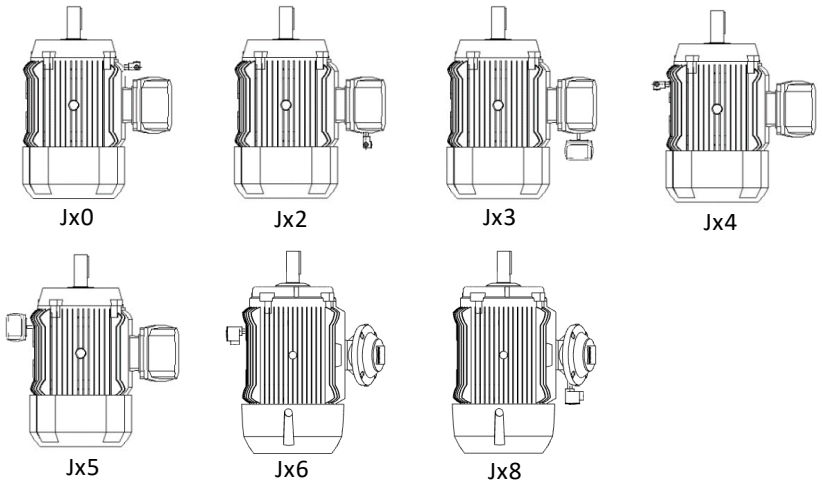


Fig. 5.3

Terminal leads

All NEMA motors come standard with flying leads (no terminal block) terminated using ring terminals. The leads are Class F insulated and identified with permanent marking. Terminal block, **K83**, is available on motors up to 360 frame and only with 3 leads. As standard terminal leads will be of sufficient length to execute the termination to the power leads inside the terminal box. Special cable length, **Y85**, is available on 1LE2 and 1PC2 severe duty motors and may be used to extend the leads up to 120” outside of the motor frame.

3.1.2.5. Bearings and Lubrication

	Codes	Description	1LE2	1MB2	1PC2
Short Codes	A51	BRG RTD's-100 Ohm Platinum - Both Ends & Terminal Heads/Block	+	–	+
	K21	Extra High Thrust	–	–	+
	L54	Provisions for Oil Mist	+	–	–
	L55	Oil Mist Ready	+	–	–
	L57	MOBIL 28-High or Low Ambient - Special Grease	+	+	+
	L58	MOBILITH SHC 100 -Special Grease	+	+	+
	L60	ALEMITE and Grease Relief Fitting	+	–	+
	L61	INSOCOAT Bearing Both Ends	+	+	+
	L64	INSOCOAT Bearing NDE	+	+	+
	L65	Roller Instead of Ball	+	+	–
	L66	Insulated Bearings on Both Ends	+	–	–
	L67	Insulated NDE Only	+	–	–
	L68	Sealed Ball Bearings (Both Ends)	+	+	+
	L69	Hybrid (Ceramic Ball) Bearings – Both Ends	+	+	–
	L70	Hybrid (Ceramic Ball) Bearings – NDE	+	+	+
	L71	Hybrid (Ceramic Ball) Bearings – DE	+	+	+

+ Available • Standard – Not Available Pricing

Lubrication

Standard lubrication for low voltage NEMA motors is EXXONMOBIL POLYREX EM (Polyurea-based grease).

MOBIL 28 Grease, **L57**, has a wide temperature range with a clay base thickener ideal for low ambient conditions down to -50C. This option is supplied as standard for low ambient option codes **B27, B28**, and **B29**.

MOBILITH SCH 100, **L58**, is a Lithium base alternative to our standard POLYREX EM.

Grease inlet (Alemite fitting) is standard on GP100 in frame 280 and larger, and all SD, XP, and DP NEMA products. Grease fittings are not possible on the GP100A product line. SD100 IEEE motors include Alemite and automatic grease relief fittings as standard, **L60** option is available for other severe duty motors.

Oil mist ready, **L55**, and Provisions for oil mist, **L54**, are possible on Severe Duty motors (SD100/ SD100IEEE) 280 to 440 Frames and SD10MS 280 to 440 Frames Horizontal Foot Mount only. Bearings must be single shield ball bearings with shields to inboard side. Motor leads are sealed to prevent mist from entering conduit box and lead material used is resistant to oil mist. Oil mist ready will only have enough grease in the bearings to complete the routine test. Provisions for oil mist will be supplied with grease in the bearing housing which must be expelled prior to switching to oil mist lubrication. Motors with oil mist options will not have grease fittings or grease relief.

Sealed bearings, **L68**, are greased for life bearings and will not require re-lubrication. Sealed bearings with IEEE 841 will result in the motor labeled as “IEEE Std 841-2021 Features”.

Bearings

Low voltage NEMA motor standard re-greaseable bearings have an L10 bearing life of 100,000 hours for direct coupled applications and 50,000 hours for belted applications when properly sized for the application and with proper maintenance. See Technical Tables section for standard bearings sizes and with option **L65**.

Vertical solid shaft motors, HP100 and LP100, thrust values are published with a bearing life of one year. Extra high thrust, **K21**, changes the NDE thrust bearings to tandem configuration on the LP100 to allow for more down thrust to be considered (see Technical Tables). API 610, **K20**, does not allow for bearings in tandem and cannot be used with **K21**. With API610 the thrust bearing must be located on the NDE and have a minimum bearing life of 3 years. See thrust values for 3 year bearing life in Technical Tables.

Bearing temperature protection

Bearing RTDs, **A51**, included temperature monitoring on both the drive end and non-drive end bearing. The bearing housing is drilled and tapped for the temperature probe to rest on the outer race of the bearing with the leads in a terminal head on each end (Fig. 6.1). This allows for independent temperature monitoring for each bearing.

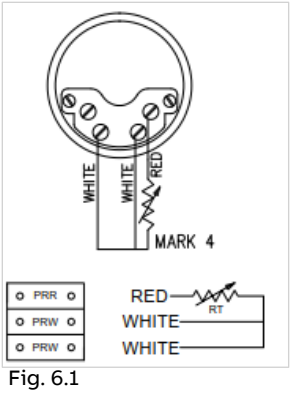


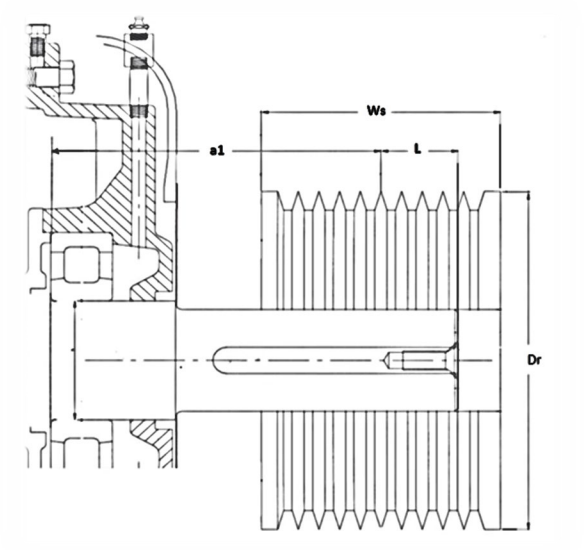
Fig. 6.1

Overhung load/belted considerations

ABB recommends a roller bearing, **L65**, on the DE for overhung load applications. Roller bearing on DE is standard on SD661 product line and on select 440 frame and up as noted in Table 6.1.

Belting details can be evaluated, **F09**, by ABB Engineering on request. The belting form can be requested through the Low Voltage NEMA motor Quotation Team. Minimum criteria for belting evaluation are listed below and cannot be properly evaluated without this data.

- Operating application horsepower (Can be less than the rated motor HP)
- Operating RPM
- Frame size of selected motor
- Dr = Motor sheave diameter (Must be within Table 6.3)
- Dn = Driven sheave diameter
- Number of belts
- Type of belts (e.g., 3V, 5V, 8V, A, B, C, etc.)
- C = Distance between sheaves (center to center)
- L = Distance from center of motor sheave to end of shaft
- Orientation of motor (Horizontal/Vertical shaft up/Vertical shaft down)
- Ws = Face width of motor sheave



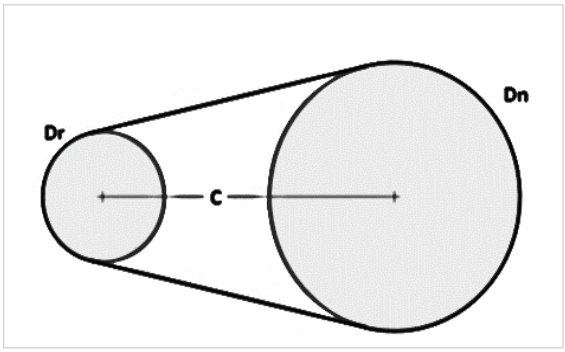


Fig. 6.2

Recommended Sheave Diameters for V-belts

Frame	HP Synchronous RPM			Standard V Minimum Diameter (in.)	Narrow V Minimum Diameter (in.)
	1800	1200	900		
364T	60	–	--	7.4	7.4
365T	75	–	--	9.0	8.6
404T	–	60	--	9.0	8.0
404T	–	–	50	9.0	8.4
405T	100	–	--	10.0	8.6
405T	–	75	60	10.0	10.0
444T	–	100	--	11.8	10.0
444T	–	–	75	13.0	9.5
444T	125	–	--	12.0	10.5
445T	–	–	100	15.0	12.0
445T	–	125	--	15.2	12.4
445T	150	–	--	13.2	10.5
447T	–	150	--	16.1	11.6
447T	–	–	150	24.7	14.6
447T	200	–	--	15.8	13.2
449T	–	200	--	25.0	14.6
449T	–	–	200	--	18.0
449T	250	–	--	18.4	13.0
449T	–	250	--	--	18.2
S449LS	–	–	250	--	19.8
449T	300	–	--	24.8	15.4
S449LS	–	300	--	--	18.4
S449LS	350	–	--	--	15.8
S449LS	–	350	--	--	21.0
S449LS	400	–	--	--	18.0

Table 6.3

Narrow V Example: 3V, 5V, 8V
Standard V Example: A, B, C, D section
Do not exceed belt service factor of 1.6
Maximum speed reduction of 5:1
Shaft center distance approximately equal to diameter of largest sheave
The motor sheave should be located as close as possible to the bearing (1/2" from shaft shoulder)
The center of the belt system should never extend beyond the end of the motor shaft

VFD application considerations for bearings

Shaft currents caused by VFD supply can cause damage to bearings that can result in bearing failure. The shaft currents tend to increase as the frame size increases. ABB recommends the use of an insulated bearing on the NDE of frames 400 and larger to reduce the risk of the shaft current passing through the bearing.

Insulated bearings, **L66** and **L67**, use a non-conductive insulating sleeve inserted into the bearing housing. This option is effective in reducing the shaft currents and uses sealed bearings making the bearings non-regreasable. **Note: Not available for roller bearing on DE or load bearing on NDE (LP100). Not to be used with bearing RTDs,** A51**.**

Hybrid ceramic bearings, **L69, L70** and **L71**, are a direct replacement for the standard bearing size and are fully regreasable. They utilize ceramic balls to eliminate the currents from passing through the bearings. **Note**: **Not available for roller bearing on DE or load bearing on NDE (LP100).**

INSOCOAT Bearings, **L61, L64**, are a direct replacement for the standard bearing size and are fully regreasable. An insulated coating on the outer race of the bearing is used to reduce the risk of the currents passing through the bearing. **Note: Not available for load bearing on NDE (LP100).**

See Shafts and Seals for additional options to reduce bearing damage due to shaft currents.

3.1.2.6. Shafts and Seals

	Codes	Description	1LE2	1MB2	1PC2
Short Codes	K41	Keyless Shaft	+	+	+
	L29	Shaft Grounding Brush	+	–	–
	L76	Shaft Slinger & O Ring	+	+	+
	L79	INPRO/SEAL DE	+	+	+
	L80	INPRO/SEAL NDE	+	+	+
	L81	INPRO/SEAL Both Ends	+	+	+
	L84	Brass Seal	+	+	+
	L86	INPRO/SEAL MGS Shaft Grounding - DE	+	–	+
	M42	Shaft Ring Brush (Steel) - NDE (AEGIS)	+	–	–
	M52	NEMA Std Long Shaft - NDE	+	+	–
	M53	NEMA Std Short Shaft - NDE	+	+	–
	M57	(C4140) Carbon Steel Shaft	+	+	+
	Y50	Special Shaft on Drive End	+	+	+
	Y51	Special Shaft on Non-Drive End	+	+	–

+ Available • Standard – Not Available Pricing

Shafts

The standard shaft material will be C1045 or C4140 as noted in Table 7.1. C4140 shaft material is available as a custom option, **M57**, on frames with C-1045 as standard. ABB NEMA motors are designed with the shaft dimensions and tolerances to meet the standards of NEMA MG-1 single shaft extension. Any exceptions will be noted on the motor drawings.

Frame	Standard Shaft Material
140-449	C-1045
S449	C-4140

Table 7.1

Motors can be custom built with a double shaft extension with NDE shaft according to NEMA MG-1. This can be offered as either long shaft, **M52**, or short shaft, **M53**. See drawings and dimensions for reference.

Motors can be custom built with a special shaft extension on DE, **Y50**, or NDE, **Y51**. These options can be used for special dimensions or special shaft features (ex: drill and tap, threaded shaft, special keyway, etc.) and must be quoted by the ABB NEMA Motor Quotation Team.

Keyless DE shaft extension, **K41**, is available as a custom feature. All other shaft dimensions will remain in accordance with NEMA MG-1 (unless otherwise noted in drawing).

Seals

Shaft seals are used to protect the bearings from liquid and dust contaminates that lead to premature bearing failure. NEMA motor are equipped with v-ring shaft seals as standard on all General Purpose motors and severe duty motors unless otherwise noted. The v-ring shaft seal provides protection to meet IP55.

Labyrinth seals (Inpro Seals, **L79, L80**, and **L81**), are shaft rotating seals that provide extra ingress protection from water and dust while the motor is in operation. Motors that are noted to meet IEEE 841 or when IEEE 841 features, **K10**, will include labyrinth seals on both ends.

Shaft slinger and O-ring, **L76**, is used in shaft up applications to help reduce liquid from running down the shaft and settling in the seal area.

VFD application considerations for shaft grounding

Shaft grounding can reduce the risk of shaft currents from passing through the bearings.

This allows the current generated in the shaft to flow harmlessly to the frame and ultimately to ground bypassing the bearings in the process. Shaft grounding options are considered sparking devices and cannot be used in hazardous areas. When selected for SD products, the Division 2 information will be removed from the nameplate.

SGS™ MOTOR GROUNDING BRUSH & RING SYSTEMS, **L29**, mounts on the fan housing with a carbon brush that contacts the motor shaft. The carbon brush is rated at 100,000 hours before being changed. **Note: Not possible in combination with** G05, G06, H04, M08**, or** Y51**.**

Bearing Isolator + grounding brush, (MGS INPRO Seal, **L86**), uses the labyrinth sealing protection of an Inpro Seal combined with shaft grounding brushes that rest on the shaft behind the sealing mechanism. The brushes reduce the shaft currents from passing through the bearings while the seal reduces contamination build up on the grounding brushes and in the bearing. **Note: This option may reduce the usable shaft length.**

AEGIS grounding brush, **M42**, can be added to the NDE on GP100 motors.

3.1.2.7. Frame

	Codes	Description	1LE2	1MB2	1PC2
Short Codes	K33	Drip Cover	+	+	•
	K34	Vertical Lifting Devices (No Drip Cover)	+	+	•
	K38	Provisions for Dowel Holes	+	+	–
	K70	Rotation Arrow Bidirectional	+	+	+
	K71	Rotation Arrow Clockwise (from NDE)	+	+	+
	K72	Rotation Arrow Counterclockwise (from NDE)	+	+	+
	L20	Lifting Eyebolt	+	•	•
	L22	Stainless Steel Hardware (Includes T Drain SS)	+	–	+
	L27	Ground Bolt	+	+	+
	L45	SS T-Slot Breather Drain	+	–	+
	L46	CROUSE HINDS UL Approved Breather Drain	+	+	+
	L90	IP66 Ingress Protection	+	+	–
	L91	IP56 Ingress Protection	+	–	–
	L92	IP65 Ingress Protection	+	–	–
	M09	Aluminum Fan	+	–	–
	M10	Bronze Fan (S440 - Std)	+	–	+
	M28	Stainless Steel Eyebolt	+	+	–
	M39	Vertical Jacking Provisions	+	+	–

+ Available • Standard – Not Available Pricing

Feet

Motors with cast iron frame will have cast in feet as standard.

Provisions for dowel holes, **K38**, provides a hole drilled at an angle in each of the motor feet. The holes will be used as a guide for drilling the mounting plate for the addition of the dowel once the motor is aligned to the driven equipment. Dowels can be used to pinpoint the alignment of the motor to the driven equipment when the motor is taken out for service.

Motors will be delivered as standard with dual/tri drilled mounting holes in the feet for increased flexibility in mounting.

Provisions for vertical jacking, **M39**, provides threads in the non-mounting holes on the feet in order that a bolt may be added for leveling of the motor during installation. Jacking provisions are required on motors that exceed 500 lbs to meet API610 requirements for horizontal pump applications.

The GP100A aluminum frame includes bolt on feet, 140-250 frames, for flexibility within the field changes.

Lifting

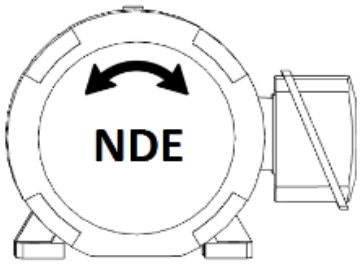
Horizontal cast iron motors up to S449 will be supplied with an eye bolt located in the center line of the center of gravity on the motor frame. GP100 140 frame must include, option **L20**, for eyebolt to be included.

Vertical lifting devices, **K34**, are closed hooks used for vertical lifting and will be supplied with one on each side of the motor. Vertical lifting devices are standard when mentioned in the mounting description for Position 14 of the MLFB and on the LP/HP motors. Vertical lifting devices are only available on round frame motors.

Fan and fan cover

The standard bidirectional cooling fan is non-sparking polypropylene design, unless otherwise noted. Directional fans will have polypropylene blades with metallic mounting. Bronze fans, **M10**, are non-sparking and may be used on bi-directional motors. Aluminum fans, **M09**, may only be used on safe area motors and do not comply with IEEE 841 standards.

NEMA motors are supplied as either bi-directional or clockwise as standard (directional motors will be noted in motor selection section) as viewed from Non-Drive End (NDE).



Rotation arrows, **K70, K71, K72**, can be added to the fan housing for clarity. Motors supplied as unidirectional will have a rotational arrow as standard. Option **K72** can be used to achieve counterclockwise rotation on a motor that has clockwise as standard (this will make the motor MOD or Custom). Options K71 and K72 do not change the motor fan when applied to a bidirectional motor.

Cast iron fan cover will be included as standard on all SD motors. General Purpose motors will include fan cover in material mentioned in Table 8.2.

General Purpose Fan Cover Material

Motor Type	Frame	Material
GP, GPA	140-250	Polyamide
GP	280-320	Plate Steel
GP	360-440	Cast Iron

Table 8.2

Drip cover, **K33**, can be added to the fan cover of motors used in vertical shaft down applications in order to protect the motor from water or liquids from falling directly into the fan housing.

Drip cover is standard when mentioned in the mounting description for Position 14 of the MLFB and on the LP/HP motors. See Table drawing and dimensions for drip cover dimensions.

Hardware

Standard hardware is grade 5 zinc plated corrosion resistant hardware. Stainless steel hardware, **L22**, includes all external nuts and bolts as well as the T-Drain. Stainless steel eyebolt, **M28**, is not included with **L22**. Stainless steel hardware is included with option, **B29**, for low ambient temperature and is not available on XP motors. Stainless steel T-drain, **L45**, will include only the drain as stainless steel.

All NEMA motors will include tapped holes on each side of the frame near the feet for frame grounding. Bronze ground bolt, **L27**, can be added for additional provisions.

Various types of drains are used based on the motor types (see motor type introduction for clarity). Drain plugs require the user to unscrew the plug to allow the moisture to escape during times of idle use. T-slot drains allow for moisture to drain from the motor freely without user intervention. Crouse Hinds drains, **L46**, are UL approved drains that can be added on frames 280 and larger. The Crouse Hinds drain is standard on XP motors in frame 280 and larger.

Ingress protection

The ingress protection (IP) rating is the protection grade against water and dust. The IP rating on the nameplate applies to completed motor, including shaft seals, bearing housing fits, and terminal box. The first number designation in the IP rating, IP_*, relates to the protection against water. The second number designation in the IP rating, IP*_, relates to the protection against dust. GP100 motors will have a standard IP54 rating. Severe Duty and Definite purpose motors will have a standard IP55 rating that can be increased up to IP66 with options **L90, L91, L92**. Explosion proof motors have a standard IP65 rating that can be increased to IP66 with option, **L90**.

3.1.2.8. Rating Plates and Tagging

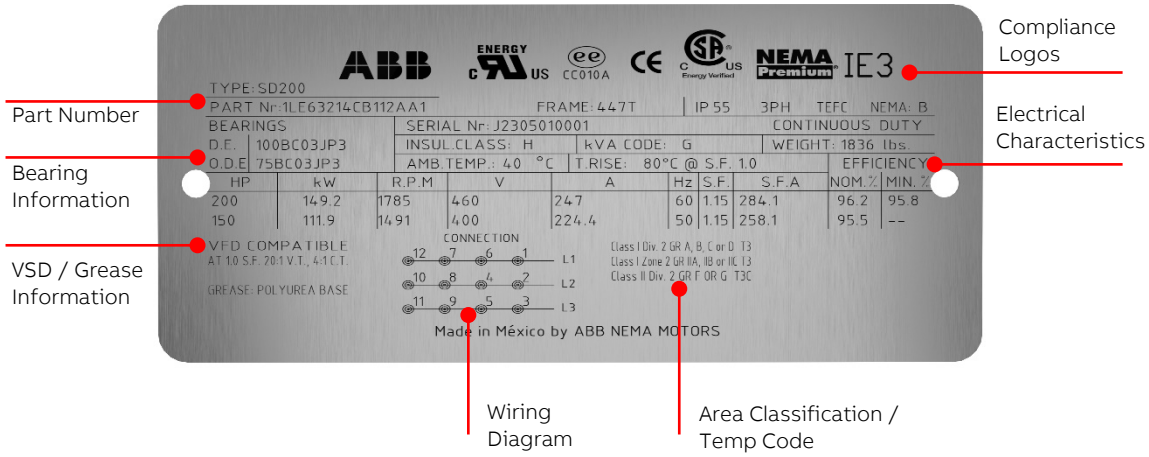
	Codes	Description	1LE2	1MB2	1PC2
Short Codes	C40	Re-rate 400V to 380V, 50HZ	+	+	+
	C41	Re-rate 400V to 415V, 50HZ	+	+	+
	M21	Additional Nameplate (Without Logos)	+	+	–
	M25	Class II, Division 2, Groups F & G, T3C Temp Code	+	–	+
	M32	Class II, Group E Hazardous Area	–	+	–
	Y80	Derate-Altitude-Ambient (Nameplate Change)	+	+	+
	Y82	Auxiliary n/p Max. 40 Characters (Aux Tag)	+	+	+

+ Available • Standard – Not Available Pricing

Main nameplate

Duplicate rating plate

A rating plate similar to the original nameplate, **M21**, can be supplied with the motor attached to the eyebolt during shipment. The **M21** plate can only be supplied without the logos on the plate.



Compliance logos

Compliance logos and certifications will change based on the motor line and/or nameplate language.

Electrical characteristics

Beginning in 2022 nameplates for 2, 4, and 6 pole motors will include 50Hz information at 400V, 50Hz with decreased output. This data can be replaced with 380V, option **C40**, or 415V, option **C41**. **Note**: **SD100 IEEE841 and SD661 will not have 50Hz as standard.**

Motor main nameplate may be modified, **Y80**, for de-rate, re-rate, deviated altitude, deviated ambient, or information added to the main nameplate. Information must be consistent with guidelines listed in catalog for de-rate or re-rate and within the limitations set in the ambient and altitude section (unless custom quotation is referenced).

Note: ABB reserves the right to reject/ hold an order based on inconsistent information or the lack of information provided for option Y80. When additional information is requested on the nameplate, it may result in standard information being displaced or removed due to space restrictions.

Hazardous area classification

All ABB Severe Duty low voltage NEMA motors and Definite Purpose low voltage NEMA motors will be tagged as Class I, Division 2 as standard.

SD100 motors in frames 280 to 400 and all SD100 IEEE841 will be supplied with Class II, Division 2 standard on the main nameplate see figure 9.1.

Separate Division 2, Class II, **M25**, can be supplied when required. The motors will be equipped with additional features and tagging figure 9.3.

Division 2 information will not be included when one of the following options are selected: **L29, L86** or any other feature that may be deemed as a sparking device.

Explosion proof motors will have a separate UL tag with the area classification defined as per Figure 9.4. Class II, Division 1, Group E hazardous area, **M32**, can be added on the XP100 motor line as a custom build.

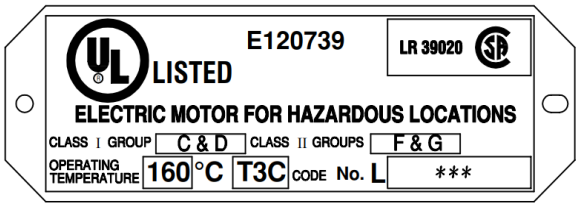


Fig. 9.4

Auxiliary plates

An auxiliary tag, **Y82**, may be provided separate from motor nameplate. This tag can be used for free text provided by customer in PO. This is often used for customer tagging or customer instructions. The tag has a character limit of 40 which includes spaces and special characters. **Note**: **ABB will not be held accountable for free text provided by customer that is provided in the PO that proves to be inconsistent with the motor design (unless specified in an ABB custom quotation, Figure 9.5).**

A separate lubrication plate, **M24**, may be added for additional details on motor lubrication (see example Figure 9.6).

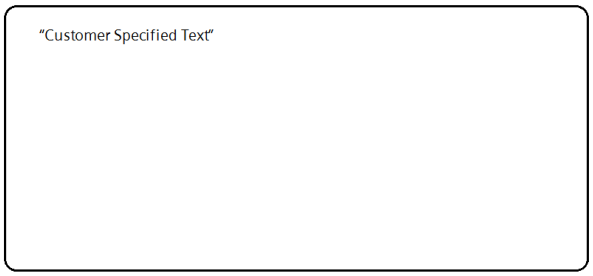


Fig. 9.5

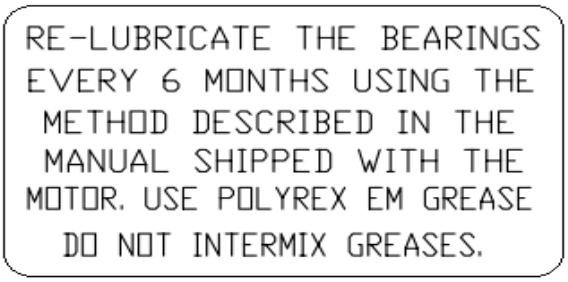


Fig. 9.6

3.1.2.9. Ambient and Altitude

	Codes	Description	1LE2	1MB2	1PC2
Short Code	B27	+40°C to - 30°C Ambient Temp	+	–	+
	B29	+40°C to - 50°C Ambient Temp	+	–	+

+ Available • Standard – Not Available Pricing

Standard ambient and altitude

ABB General Purpose and Severe Duty NEMA motors are suitable for operation at an altitude up to 3300 feet (1000 meters) above sea level with an ambient temperature range of -25°C to 40°C with 1.15 service factor as standard.

ABB Explosion proof motors up to 320 frame will have a standard maximum ambient temperature of 55°C with 1.15SF, 360 frame and up can be offered with 55°C with **MLFB position 15 "T"** see Winding Protection and will have a T3 temp code (449T will have a 1.0SF at 55°C). Explosion proof Division 1 motors cannot be offered at an ambient below -25°C.

Increased ambient or altitude

Altitude can be adjusted up to 9900 feet or Ambient can be adjusted up to 55°C with a reduction in service factor to 1.0 using **Y80** option code.

Altitude may also be increased with reduction in ambient per Figure 10.1.

For altitude above 9900 feet or ambient above 55°C please contact the ABB NEMA Motor Quotation Team.

Maximum Altitude	Maximum Ambient
3300 ft (1000m)	40°C (104°F)
6600 ft (2000m)	30°C (56°F)
9900 ft (3000m)	20°C (68°F)

Table 10.1

Low ambient conditions

Ambient temperatures below -25°C can cause standard grease to become ineffective and some standard metals to become brittle leading to motor failure or damage. Features for low ambient conditions can be added a custom build, **B27** for down to -30°C, **B28** for down to -40°C, **B29** for down to -50°C, include special grease, external hardware, shaft material, lead material, and seals for suitability for the low temperatures.

3.1.2.10. Mechanical Design & Accessories

	Codes	Description	1LE2	1MB2	1PC2
Short Codes	A66	ROBERT SHAW Vibrator Detector Model 366 - D8 120VAC	+	–	–
	A67	Provision for Vibration Sensors	+	–	–
	G05	DYNAPAR Encoder HS35R 1024 PPR	+	–	+
	G06	C-Face Mounted SLIM Tach Encoder	+	–	–
	H04	C-Face Mounted Brake	+	–	–
	K10	IEEE 841 Features	+	–	+
	K20	API 610	–	–	+
	M05	Larger Fan	+	+	–
	M08	Separately Driven Fan	+	–	–
	M18	Non-Reverse Ratchet	–	–	+
	M69	Precision	+	+	+
	M70	Extra Precision Balance	+	+	+

+ Available • Standard – Not Available Pricing

Standards

IEEE 841 Features, **K10**, adds the applicable features of IEEE 841 to the motor. The motors will be nameplated according to IEEE Std 841-2021.

API610, **K20**, provides the stringent guideline of API610 pumps to the LP100 motor line with high thrust. API610 is not available with extra high thrust, **K21**. See Bearings and Lubrication section for additional information.

Balance

All low voltage NEMA motors are dynamically balanced to commercial limits measure in accordance with NEMA MG1-12.06. Precision and Extra Precision balance, **M69, M70**, provides more stringent balancing guidelines (see Technical Tables for values).

ACCESSORIES

Vibration monitoring

ROBERT SHAW Malfunction vibration detectors, **A66**, are a single point vibration monitoring switch. This is designed to trip and shut down the motor in the event of excessive vibration.

Provisions for vibration sensors, **A67**, will provide 1/4“–28 UNF drilled and tapped holes on each bearing housing when selected with no additional instruction. This option can also be adapted to the required drill and tap required for a customer specified vibration sensor with quote from LOW VOLTAGE MOTOR quotation team.

Encoders

DYNAPAR HS35R, **G05**, is a hollow shaft rotary pulse 1024 PPR encoder with single output. It is mounted on an NDE shaft extension that extends beyond the fan housing. It is held in place with an arm that is attached to the fan housing.

SLIM Tach ST56 for 140-250 frames or ST85 for 280-S449, **G06**, is a c-face mounted 1024 PPR encoder with single output. See Drawings and Dimensions for Encoder dimensions.

Brake

C-Face Mounted Brake, **H04**, will be a Stearns brake, rated IP55, rigidly mounted to the NDE of the motor with a special designed bearings housing with C-face for mounting the brake.

Brakes will be supplied with rated supply voltage equivalent to the motor voltage. See Drawings and Dimensions for basic brake data.

Additional cooling for VFD applications

Larger Fan, **M05**, can be added on select 2, 4, and 6 pole motors in frames 360-444 to provide additional cooling and extended speed range for constant torque. See Technical Tables for new range. The motor will be labeled as VFD only and the NEMA Premium logos will be removed from the nameplate.

External Force cooling, **M08**, can be added to severe duty motors for increased turndown on VFD applications, see Drawings and Dimensions section. The blower motor voltage will follow the voltage of the drive motor. The addition of the blower will increase the constant torque turndown to 1000:1. Class H insulation, **C00**, and Spike Resistant Wire, **C03**, and bearing insulation for frame 360 and above is also recommended for 1000:1 CT applications.

Others

Non-Reverse Ratchet (NRR), **M18**, prevents the opposite rotation of the shaft on the LP100 motor line. NRR is only available for standard clockwise rotation. This device is not suitable for hazardous locations and the standard Division 2 information will be removed from the nameplate.

3.1.2.11. Paint and Packaging

	Codes	Description	1LE2	1MB2	1PC2
Short Codes	B07	Stackable Crate Packing	+	+	–
	B09	Export Packaging Sea freight – ABB Standard	+	+	+
	B11	Export Packaging Sea freight – ABB Standard + sensors	+	+	+
	N01	2 Part Epoxy (Industrial-Coastal Low Salt)	+	+	+
	N02	3 Part Epoxy (Industrial-Coastal Moderate Salt)	+	+	+
	N03	Primer Only	+	+	+
	N05	3 Part Epoxy (Coastal-Offshore High Salt)	+	+	+
	N06	2 Part Epoxy C4 (Industrial-Coastal Moderate Salt)	+	+	+
	N07	2 Part Epoxy C5I/C5M (Coastal-Offshore High Salt)	+	+	+
	Y60	Special color (Provide RAL#)	+	+	+
	Y61	Special color with Special Paint system (Provide RAL#)	+	+	+

+ Available • Standard – Not Available Pricing

Packaging

Frames 280 and larger will be bolted to an open wood pallet and wrapped in plastic to protect the finish. See standard packaging weights in dims in Drawing section.

Stackable crate packing, **B07**, will have supported wooden slates on all sides surrounding the motor. This packing is available for frames 280 – 400 and provides additional protection during transport and allows for the motors to be stacked on the floor in a warehouse.

Export packing, **B09**, the motor will be secured into a fully enclosed wood crate. See Export box weights and dimensions in Drawing section. Special packing, **B11**, will include B09+shock and tilt sensors.

Shipping weights and dimensions can be calculated using the standard packing weights and dimensions table combined with the motor information. The weights and dimensions listed in the tables do not include the weight and dimensions of the motor unless otherwise noted.

Paint

NEMA motors as standard are protected against corrosion (C2 category) and external influences with high-quality coatings based on (Alkyd Modified + Epoxy). If a higher corrosive class is required, a special paint system must be included.

Motors can be provided with primer only, **N03**, to allow the customer to apply their own final paint in the field.

The 2 Parts Epoxy paint system, **N01**, offers excellent resistance to the corrosive action of chemical agents, prolonged weathering and to the action of direct sunlight.

The 3 Parts Epoxy paint system, **N02**, is an organic base of Epoxy Zinc, provides a high resistance to humid environments (saline or no-saline) but not for offshore ocean climate, excellent inhibitory capacity to corrosion, excellent resistance to abrasion, high temperatures (ambient temperatures > 59°C) and to the

most of industrial solvents (splashes). This Paint System is recommended to apply in high relative humidity environments (>60%).

2 Parts Epoxy paint system, **N06**, offers the same level of protection as **N02** at a reduced price and shorter process time.

The 3 parts epoxy (Coastal-Offshore High Salt) paint system, **N05**, is recommended for offshore installation, provides good chemical resistance to splash/spillage, fumes and immersion in neutral, fresh and salt water. Effectively protects the motor from corrosion resulting from industrial and marine exposures as it is safeguarding the environment.

2 Parts Epoxy paint system, **N07**, offers the same level of protection as **N05** at a reduced price and shorter process time.

See Technical Tables for additional details.

3.1.2.12. Documentation

	Codes	Description	1LE2	1MB2	1PC2
Short Codes	D05	Documentation in Spanish	+	+	+
	F00	Certificate of Compliance	+	+	+
	F01	Certificate of Origin - Stamped by Chamber of Commerce	+	+	+
	F03	Standard Performance Curve	+	+	+
	F04	Acceleration Time Calculation	+	+	+
	F05	Polarization Index	+	+	+
	F07	Curve Package at 100% and 80% voltage (S-T, PERF)	+	+	+
	F08	Shaft Torsional Analysis (includes shaft sketch)	+	+	+
	F09	Bearing L10 Calculation	+	+	+
	F40	Stall Time (Thermal Limit Curve)	+	+	+
	F42	Standard Dimension Sheet	+	+	+
	F43	Nonstandard Dimension Sheet	+	+	+
	F44	Conduit Box Dimension Sheet	+	+	+
	F45	Wiring Diagram	+	+	+
	F46	Instruction and Operation Manual	+	+	+
	F47	Renewal Parts	+	+	+
	F48	CAD Drawing (Dwg Format) Customer/Application Specific	+	+	+
	F49	Performance Data Sheets	+	+	+
	F50	Customer Specific Data Sheets	+	+	+
	F51	Shaft Profile Detail (included materials data)	+	+	+
	F60	Visual Inspection Proof (Max 8X Photos)	+	+	+
	F70	Inspection Test Plan	+	+	+
	F71	Paint Report (thickness and adherence)	+	+	+
	F81	Advanced Document Package	+	+	+
	F82	Project Document Package	+	+	+

+ Available • Standard – Not Available Pricing

ABB offers much of our documentation and certificates for download through ABB's Motor Builder at https://motorbuilder.abb.com. This allows the data to be tailored to the motor configuration.

In addition to our online documentation, we also offer a wide variety of order specific documentation through order codes as individual documents or as documentation packages. Ordered documents be provided in ABB standard electronic format unless otherwise noted. Information that is proprietary to ABB will not be included in documentation supplied.

Drawings

Motor drawings can be provided in either pdf or dxf format as specified in the purchase order. The standard drawing, **F42**, can be used for a standard F1 configuration with no special options. This drawing is also available for download through ABB's Motor Builder at https://motorbuilder.abb.com.

The non-standard drawing in pdf format, **F43**, or in CAD (.dxf) format, **F48**, can be used for motors with mechanical modifications that would add on accessories or change the standard dimensions of the motor.

Conduit box drawing, **F44**, can be used for a standard conduit box drawing and auxiliary boxes.

Shaft Profile Detail, **F51**, provides a shaft profile drawing with limited dimensions and shaft material data.

Curves

Standard performance curves, **F03**, will include the motor calculated speed torque curve and calculated performance curve (Efficiency, Power Factor, and Amps Over percent of rated horsepower) at rated voltage. This curve is also available for download through ABB's Motor Builder at https://motorbuilder.abb.com.

Stall Time Curve, **F40**, is a logarithmic curve of current (in present of full load) over time. The curve will be shown for both hot and cold conditions and graphically illustrates the safe stall time.

Curves at 100% and 80% voltage, **F07**, will include speed torque curve and performance curves.

Data sheets

Typical Data sheet, **F49**, will provide an electrical data sheet for the motor ordered in ABB standard format.

Customer specific data sheet, **F50**, provides the customer with the project data sheet filled out by ABB Engineering. The customer data sheet must be supplied in excel format at the time the purchase order is placed.

Special calculations and reports

Acceleration time calculation, **F04**, will be calculated based on the load inertia value provided by the customer. The inertia value must be provided with the PO.

Polarization Index, **F05**, provides a reference winding impendence to gauge deterioration of the winding insulation.

Shaft Torsional Analysis, **F08**, provides motor shaft torsional data for each step on the shaft with the shaft drawing.

Bearing L10 calculation, **F09**, calculates the estimated life of the bearings based on customer supplied application details. See Bearings section for minimum application details required.

Other Documentation

Documentation and nameplates can be provided in Spanish, **D05**. This option will also include NOM on the nameplate.

Certificate of compliance, **F00**, can be issued to certify compliance with ISO standards.

Certificate of origin stamped by the Chamber of Commerce, **F01**, can be required when motors are exported for select countries.

Inspection Test Plan, **F70**, provides formal documentation of the factory standard tests and inspections.

Wiring diagram, **F45**, will provide a pdf copy of the motor wiring diagram for the motor ordered. This document is also available for download through ABB's Motor Builder at https://motorbuilder.abb.com.

Instruction and Operation Manual, **F46**, is general instructions for installation, operation and maintenance for NEMA motors. This document is also available for download through ABB's Motor Builder at https://motorbuilder.abb.com.

Replacement parts list, **F47**, will provide part numbers and general descriptions for the following spare parts:

– Bearings, Fan, Fan housing, Conduit Box, Bearing housings (flange if applicable), and seals.

Visual inspection Proof, **F60**, provides up to 8 photos of the motor prior to shipment. Photos will include nameplate and tagging, at least 3 views of overall motors, and detail special features.

Paint Report, **F71**, provides a measure of paint thickness and overall paint adherence.

Additional specialized documentation and calculations may be offered by the factory through the ABB NEMA Motor Quotation Team.

Documentation packages

Order specific documentation packages provide many of the common documents required for special projects and OEMs packaged into a zip file. Additional documentation options may be added with order codes as required by the project.

Advanced Document Package, **F81**, will include:

– (F46) Instruction Operation Manual
– (F00) Certificate of Compliance
– (F49) Data Sheet
– Nameplate Drawing
– (F45) Connection Diagram
– (F07) Curves (at 80% and 100% Voltage)
– (F47) Spare Parts List
– (F43) Outline Drawing (pdf)

Project Documentation Package, **F82**, will include:

– (F46) Instruction Operation Manual
– (F00) Certificate of Compliance
– (F49) Data Sheet
– Nameplate Drawing
– (F45) Connection Diagram
– (F07) Curves (at 80% and 100% Voltage)
– (F47) Spare Parts List
– (F43) Outline Drawing (pdf)
– (F48) CAD Dimension drawing
– Thermal Limit Curve
– (F44) Terminal box drawing
– (F50) Customer specific data sheets
– (F70) ITP
– Hazardous Area Certs (UL or CSA)
– Details of Paint System

3.1.2.13. Tests

	Codes	Description	1LE2	1MB2	1PC2
Short Codes	F10	Routine Test Report	+	+	+
	F12	Routine Test Report (Witnessed)	+	+	+
	F15	Complete Test	+	+	+
	F17	Complete Test (Witnessed)	+	+	+
	F20	Routine Test + Vibration	+	+	+
	F22	Routine Test + Vibration (Witnessed)	+	+	+
	F27	Performance Load Test (Curve Report)	+	+	+
	F30	Noise Test	+	+	+
	F32	Noise Test (Witnessed)	+	+	+
	F36	Routine Test Report of Electrical Duplicate Design	+	+	+
	F37	Type Test Report of Electrical Duplicate Design	+	+	+

+ Available • Standard – Not Available Pricing

Routine Test, F10, F12

Routine test consists of the following items tested in accordance with IEEE standard 112.

- No Load Current
- No Load Speed
- Nominal Current at Locked Rotor
- Winding Resistance
- High Potential
- Bearings/Vibration Check

Routine Test with vibration, F20, F22

Includes all tests from standard routine test with additional records of vibration testing. A hard copy of the Routine Test with vibration is included on all IEEE 841 compliant motors, adding **F20** will get you the test report in electronic format.

Test report of routine test is based on IEEE Std. 112 Form A-1 and includes complete nameplate information.

Electrical Duplicate Routine Test, **F36**, is an electronic copy of a test report of the same electrical design as the motor on order.

Performance Load Test, F27

Performance Load Tests the motors at select points from 0-125% of the rated load recording speed, torque, current, power factor and efficiency, at rated voltage. Data is curve plotted, on ABB standard format. Foot mounted motors only.

Complete Test, F15, F17

Complete test consists of the following items tested in accordance with NEMA and IEEE-112 test standards.

- Full Load Heat Run
- Temperature Rise at F.L.
- Winding Resistance
- Rated F.L. Slip
- No Load Current
- Breakdown Torque
- Locked Rotor Torque-Amps
- High Potential Tests
- Efficiencies @ 100, 75, 50 Percent Load
- Power Factor @ 100, 75, 50 Percent Load

Test report of complete test is based on IEEE Std. Form A-2 and includes complete nameplate information.

Electrical Duplicate Complete Test, **F37**, is an electronic copy of a test report of the same electrical design as the motor on order.

Noise Test, F30, F32

Motors are tested according to IEEE 85 standard in unloaded condition only. Test report will be provided with Sound Pressure (L_p) and sound power (L_w) in octave bands of 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, and 8kHz.

3.2. Motor selection and pricing

3.2.1. General Purpose Low Voltage NEMA Motors

Introduction

ABB General Purpose low voltage NEMA motors are designed and built to operate in a variety of commercial and industrial environments. These motors are design to meet or exceed the NEMA Premium® efficiency (MG1 Table 12.12). A wide selection of options makes them suitable for a variety of applications. The construction of these motors is backed up by its 18-month warranty.

Performance Specification

		GP100A	GP100
HP Range	3600 RPM	1-20 HP	1-200 HP
	1800 RPM	1-20 HP	1-200 HP
	1200 RPM	1-20 HP	1-200 HP
	900 RPM	–	1-125 HP
Frame Size	140T - 440T	140T-250T	140T-449T
Standard Voltage (3 phase)	230V/460V (Suitable for 208V)	FS 140-250	FS 140-250
	230V/460V	1-20 HP	Up to 75 HP
	460V	1-20 HP	1-200 HP
	575V	1-20 HP	1-200 HP
Efficiency	NEMA Premium® (MG1-Table 12-12)	1-20 HP	1-200 HP
	NEMA Premium® Plus (>MG1-Table 12-12)	1-20 HP	
Service Factor	1.15 @ 40°C	FS 140-250	FS 140-440
Insulation	Non-Hygroscopic	Class F	
Temperature Rise	Class B	@ 1.0SF	
	Class F	@ 1.15SF	
Conduit Box (Oversized)	Oversized	Aluminum FS 140-250	Steel FS140-400
			Cast Iron - FS400
Fan Cover		Plastic	Plastic/Steel/Cast Iron
Cooling Fan	Bi-Directional	Polypropylene	
Rotor	Die Cast Aluminum	FS 140-250	FS 140-449
Ingress Protection	NEMA MG1	IP55	
Hazardous Location	Safe Area	FS 140-250	FS 140-440
Inverter Duty[5]	Variable Torque VT 20:1	FS 140-250	FS 140-440
	Constant Torque CT 4:1	FS 140-250	FS 140-440

Frame and end shields

The General Purpose low voltage NEMA Motors are available in two different lines, GP100 which features a cast iron frame and end shields and GP100A with aluminum frame and end shields. Both offer an aluminum, easy-to-access, diagonally -split, oversize terminal box; the terminal box includes a heavy-duty ground lug and non-wicking clearly and permanently marked leads. These characteristics, its zinc-plated hardware, epoxy paint, and stainless-steel nameplate provide exceptional structural integrity and resistance to rust and corrosion, and make them ideal for use in material handling, pump, fan compressor, and other industrial and commercial applications.

Rotor and stator windings

A unique offset rotor bar design provides improved efficiency, while larger bars and end rings reduce resistance for lower rotor losses. Each die cast aluminum rotor assembly is dynamically balanced for extended bearing life and includes a high-strength carbon steel (C1045) shaft for maximum rotor performance. The stator is manufactured with premium electrical C5 grade steel lamination and copper electrical magnet wire that furthers the reduction in losses.

Insulation

The proprietary Class F non-hygroscopic insulation system, NEMA Class B temperature rise, provides an extra margin of thermal life. The varnish system application ensures maximum wire penetration to provide protection from moisture, corrosion, and electrical shock. This insulation system meets or exceeds NEMA MG1 2014 Part 31 making the motors suitable for variable speed drives in constant torque (up to 4:1) and variable torque (20:1). All windings are tested for CIV.

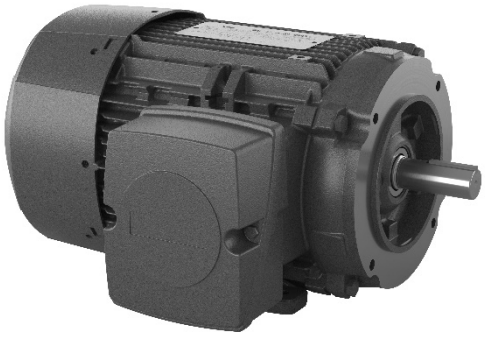
Cooling system

A non-sparking, bi-directional fan is locked and keyed to the shaft. Its low-inertia design reduces windage losses, improves airflow, reduces noise, and provides dependable cooling. A durable and rigid plastic fan cover is offered on every frame size.

Bearings

The motors are equipped with antifriction ball bearings, double shielded up to frame size 250 for the drive end and frame size 280 and above on the non-drive end; Frames 280 and above are provided with single shielded bearings on the drive end and they are also available with roller bearings, when roller bearings are used, the non-drive end will be equipped with single shielded bearings.

3.2.1.1. GP100A



GP100A | Eff: NEMA Premium | 230/460V | Ball Bearing | Long Shaft | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
				2 Pole				
1	3600	143T	230/460	**1LE21211AA114AA3**	+	858	82.5	29
1 ½	3600	143T	230/460	**1LE21211AA214AA3**	+	880	84.0	35
2	3600	145T	230/460	**1LE21211AA314AA3**	+	1,022	85.5	38
3	3600	182T	230/460	**1LE21211CA114AA3**	+	1,140	86.5	57
5	3600	184T	230/460	**1LE21211CA314AA3**	+	1,482	88.5	67
7 ½	3600	213T	230/460	**1LE21212AA114AA3**	+	1,938	89.5	100
10	3600	215T	230/460	**1LE21212AA214AA3**	+	2,284	90.2	113
15	3600	254T	230/460	**1LE21212BA114AA3**	+	2,986	91.0	196
20	3600	256T	230/460	**1LE21212BA214AA3**	+	3,696	91.0	231
				4 Pole				
1	1800	143T	230/460	**1LE21211AB214AA3**	+	858	85.5	41
1 ½	1800	145T	230/460	**1LE21211AB314AA3**	+	942	86.5	47
2	1800	145T	230/460	**1LE21211AB414AA3**	+	1,026	86.5	46
3	1800	182T	230/460	**1LE21211CB114AA3**	+	1,180	89.5	68
5	1800	184T	230/460	**1LE21211CB314AA3**	+	1,342	89.5	74
7 ½	1800	213T	230/460	**1LE21212AB114AA3**	+	1,878	91.7	130
10	1800	215T	230/460	**1LE21212AB214AA3**	+	2,284	91.7	136
15	1800	254T	230/460	**1LE21212BB114AA3**	+	2,914	92.4	198
20	1800	256T	230/460	**1LE21212BB214AA3**	+	3,510	93.0	229
				6 Pole				
1	1200	145T	230/460	**1LE21211AC314AA3**		1,066	82.5	45
1 ½	1200	182T	230/460	**1LE21211CC114AA3**	+	1,140	87.5	63
2	1200	184T	230/460	**1LE21211CC314AA3**	+	1,258	88.5	72
3	1200	213T	230/460	**1LE21212AC114AA3**	+	1,618	89.5	104
5	1200	215T	230/460	**1LE21212AC214AA3**	+	2,414	89.5	116
7 ½	1200	254T	230/460	**1LE21212BC114AA3**	+	3,080	91.0	200
10	1200	256T	230/460	**1LE21212BC214AA3**	+	3,628	91.0	196

Voltage code “1-4” - Suitable for 208V

NEMA Premium is a certification mark of the National Electrical Manufacturer's Association

GP100A | Eff: NEMA Premium | 230/460V | Ball Bearing | Long Shaft | C-Face Round Body

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
				4 Pole				
1	1800	143TC	230/460	**1LE21211AB214GA3**	+	1,038	85.5	41
1 ½	1800	145TC	230/460	**1LE21211AB314GA3**	+	1,122	86.5	47
2	1800	145TC	230/460	**1LE21211AB414GA3**	+	1,206	86.5	46
3	1800	182TC	230/460	**1LE21211CB114GA3**	+	1,444	89.5	68
5	1800	184TC	230/460	**1LE21211CB314GA3**	+	1,606	89.5	74
7 ½	1800	213TC	230/460	**1LE21212AB114GA3**		2,142	91.7	130
10	1800	215TC	230/460	**1LE21212AB214GA3**		2,548	91.7	136
15	1800	254TC	230/460	**1LE21212BB114GA3**		3,274	92.4	198
20	1800	256TC	230/460	**1LE21212BB214GA3**		3,870	93.0	229

GP100A | Eff: NEMA Premium | 575V | Ball Bearing | Long Shaft | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
1	3600	143T	575	**1LE21211AA113AA3**		858	82.5	29
1 ½	3600	143T	575	**1LE21211AA213AA3**		880	84.0	35
2	3600	145T	575	**1LE21211AA313AA3**		1,022	85.5	38
3	3600	182T	575	**1LE21211CA113AA3**		1,140	86.5	57
5	3600	184T	575	**1LE21211CA313AA3**		1,482	88.5	67
7 ½	3600	213T	575	**1LE21212AA113AA3**		1,938	89.5	100
10	3600	215T	575	**1LE21212AA213AA3**		2,284	90.2	113
15	3600	254T	575	**1LE21212BA113AA3**		2,986	91.0	196
20	3600	256T	575	**1LE21212BA213AA3**		3,696	91.0	231
				4 Pole				
1	1800	143T	575	**1LE21211AB213AA3**		858	85.5	41
1 ½	1800	145T	575	**1LE21211AB313AA3**		942	86.5	47
2	1800	145T	575	**1LE21211AB413AA3**		1,026	86.5	46
3	1800	182T	575	**1LE21211CB113AA3**	+	1,180	89.5	68
5	1800	184T	575	**1LE21211CB313AA3**	+	1,342	89.5	74
7 ½	1800	213T	575	**1LE21212AB113AA3**	+	1,878	91.7	130
10	1800	215T	575	**1LE21212AB213AA3**		2,284	91.7	136
15	1800	254T	575	**1LE21212BB113AA3**	+	2,914	92.4	198
20	1800	256T	575	**1LE21212BB213AA3**	+	3,510	93.0	229
				6 Pole				
1	1200	145T	575	**1LE21211AC313AA3**		1,066	82.5	45
1 ½	1200	182T	575	**1LE21211CC113AA3**		1,140	87.5	63
2	1200	184T	575	**1LE21211CC313AA3**		1,258	88.5	72
3	1200	213T	575	**1LE21212AC113AA3**		1,618	89.5	104
5	1200	215T	575	**1LE21212AC213AA3**		2,414	89.5	116
7 ½	1200	254T	575	**1LE21212BC113AA3**		3,080	91.0	200
10	1200	256T	575	**1LE21212BC213AA3**		3,628	91.0	196

Voltage code “1-4” - Suitable for 208V

NEMA Premium is a certification mark of the National Electrical Manufacturer's Association

3.2.1.2. GP100

GP100 | Eff: NEMA Premium | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 230/460V | Ball Bearing | Long Shaft								
1	3600	143T	230/460	**1LE22211AA114AA3**	+	908	82.5	60
1 ½	3600	143T	230/460	**1LE22211AA214AA3**	+	932	84.0	56
2	3600	145T	230/460	**1LE22211AA314AA3**	+	1,080	85.5	59
3	3600	182T	230/460	**1LE22211CA114AA3**	+	1,204	86.5	87
5	3600	184T	230/460	**1LE22211CA314AA3**	+	1,568	88.5	98
7 ½	3600	213T	230/460	**1LE22212AA114AA3**	+	2,050	89.5	148
10	3600	215T	230/460	**1LE22212AA214AA3**	+	2,418	90.2	163
15	3600	254T	230/460	**1LE22212BA114AA3**	+	3,162	91.0	258
20	3600	256T	230/460	**1LE22212BA214AA3**	+	3,910	91.0	293
2 Pole | 230/460V | Ball Bearing | Short Shaft								
25	3600	284TS	230/460	**1LE22212DA116AA3**	+	4,536	91.7	454
30	3600	286TS	230/460	**1LE22212DA216AA3**	+	5,502	91.7	424
40	3600	324TS	230/460	**1LE22213BA116AA3**	+	7,358	93.6	608
50	3600	326TS	230/460	**1LE22213BA216AA3**	+	9,742	93.6	593
60	3600	364TS	230/460	**1LE22213DA116AA3**	+	11,350	93.6	780
75	3600	365TS	230/460	**1LE22213DA216AA3**	+	14,182	94.1	888
2 Pole | 460V | Ball Bearing | Short Shaft								
100	3600	405TS	460	**1LE22214BA212AA3**	+	20,694	94.1	1012
125	3600	444TS	460	**1LE22214DA112AA3**	+	25,662	95	1381
150	3600	445TS	460	**1LE22214DA212AA3**	+	31,934	95.0	1542
200	3600	447TS	460	**1LE22214DA312AA3**	+	44,478	95.4	2182
4 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1800	143T	230/460	**1LE22211AB214AA3**	+	908	85.5	62
1 ½	1800	145T	230/460	**1LE22211AB314AA3**	+	1,000	86.5	66
2	1800	145T	230/460	**1LE22211AB414AA3**	+	1,084	86.5	66
3	1800	182T	230/460	**1LE22211CB114AA3**	+	1,246	89.5	98
5	1800	184T	230/460	**1LE22211CB314AA3**	+	1,418	89.5	104
7 ½	1800	213T	230/460	**1LE22212AB114AA3**	+	1,988	91.7	171
10	1800	215T	230/460	**1LE22212AB214AA3**	+	2,418	91.7	177
15	1800	254T	230/460	**1LE22212BB114AA3**	+	3,084	92.4	259
20	1800	256T	230/460	**1LE22212BB214AA3**	+	3,714	93.0	292
25	1800	284T	230/460	**1LE22212CB116AA3**	+	4,328	93.6	429
30	1800	286T	230/460	**1LE22212CB216AA3**	+	5,232	93.6	449
40	1800	324T	230/460	**1LE22213AB116AA3**	+	7,044	94.1	633
50	1800	326T	230/460	**1LE22213AB216AA3**	+	8,856	94.5	668
60	1800	364T	230/460	**1LE22213CB116AA3**	+	11,250	95.0	880
75	1800	365T	230/460	**1LE22213CB216AA3**	+	14,192	95.4	950

Voltage code “1-4” - Suitable for 208V

NEMA Premium is a certification mark of the National Electrical Manufacturer's Association

GP100 | Eff: NEMA Premium | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
4 Pole | 460V | Ball Bearing | Long Shaft								
100	1800	405T	460	**1LE22214AB212AA3**	+	19,094	95.4	1107
125	1800	B444T	460	**1LE22214EB112AA3**	+	23,848	95.4	1552
150	1800	B445T	460	**1LE22214EB212AA3**	+	28,718	95.8	1827
200	1800	B447T	460	**1LE22214EB312AA3**		38,460	96.2	2207
4 Pole | 460V | Ball Bearing | Short Shaft								
100	1800	405TS	460	**1LE22214BB212AA3**	+	19,094	95.4	1107
125	1800	444TS	460	**1LE22214DB112AA3**	+	23,848	95.4	1552
150	1800	445TS	460	**1LE22214DB212AA3**	+	28,718	95.8	1637
200	1800	447TS	460	**1LE22214DB312AA3**	+	38,460	96.2	2182
4 Pole | 460V | Roller Bearing | Long Shaft								
125	1800	444T	460	**1LE22214CB112AA3**	+	25,064	95.4	1590
150	1800	445T	460	**1LE22214CB212AA3**	+	29,934	95.8	1865
200	1800	447T	460	**1LE22214CB312AA3**	+	39,676	96.2	2245
6 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1200	145T	230/460	**1LE22211AC314AA3**	+	1,126	82.5	64
1 ½	1200	182T	230/460	**1LE22211CC114AA3**	+	1,204	87.5	93
2	1200	184T	230/460	**1LE22211CC314AA3**	+	1,332	88.5	102
3	1200	213T	230/460	**1LE22212AC114AA3**	+	1,714	89.5	144
5	1200	215T	230/460	**1LE22212AC214AA3**	+	2,554	89.5	156
7 ½	1200	254T	230/460	**1LE22212BC114AA3**	+	3,260	91.0	262
10	1200	256T	230/460	**1LE22212BC214AA3**	+	3,836	91.0	259
15	1200	284T	230/460	**1LE22212CC116AA3**	+	5,020	91.7	409
20	1200	286T	230/460	**1LE22212CC216AA3**	+	5,912	91.7	434
25	1200	324T	230/460	**1LE22213AC116AA3**	+	7,130	93.0	633
30	1200	326T	230/460	**1LE22213AC216AA3**	+	8,774	93.0	658
40	1200	364T	230/460	**1LE22213CC116AA3**	+	12,064	94.1	828
50	1200	365T	230/460	**1LE22213CC216AA3**	+	14,176	94.1	863
60	1200	404T	230/460	**1LE22214AC116AA3**	+	14,708	94.5	1047
75	1200	405T	230/460	**1LE22214AC216AA3**		17,230	94.5	1117
6 Pole | 460V | Ball Bearing | Long Shaft								
100	1200	B444T	460	**1LE22214EC112AA3**		25,642	95.0	1664
125	1200	B445T	460	**1LE22214EC212AA3**		29,884	95.0	1664
150	1200	B447T	460	**1LE22214EC312AA3**		34,634	95.8	1922
200	1200	B449T	460	**1LE22214EC512AA3**		46,680	95.8	2263
6 Pole | 460V | Ball Bearing | Short Shaft								
100	1200	444TS	460	**1LE22214DC112AA3**		25,642	95.0	1467
125	1200	445TS	460	**1LE22214DC212AA3**		29,884	95.0	1647
150	1200	447TS	460	**1LE22214DC312AA3**		34,634	95.8	1897
200	1200	449TS	460	**1LE22214DC512AA3**		46,680	95.8	2240

GP100 | Eff: NEMA Premium | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
6 Pole | 460V | Roller Bearing | Long Shaft								
100	1200	444T	460	**1LE22214CC112AA3**		25,064	95.4	1531
125	1200	445T	460	**1LE22214CC212AA3**	+	29,934	95.8	1702
150	1200	447T	460	**1LE22214CC312AA3**		39,676	96.2	1960
200	1200	449T	460	**1LE22214CC512AA3**		25,064	95.4	2301
8 Pole | 230/460V | Ball Bearing | Long Shaft								
1	900	182T	230/460	**1LE22211CD114AA3**	+	1,364	81.5	86
1 ½	900	184T	230/460	**1LE22211CD314AA3**		1,482	82.5	99
2	900	213T	230/460	**1LE22212AD114AA3**	+	1,704	84.0	123
3	900	215T	230/460	**1LE22212AD214AA3**	+	2,444	85.5	138
5	900	254T	230/460	**1LE22212BD114AA3**	+	3,548	86.5	218
7 ½	900	256T	230/460	**1LE22212BD214AA3**	+	3,574	87.5	250
10	900	284T	230/460	**1LE22212CD116AA3**		5,138	90.2	414
15	900	286T	230/460	**1LE22212CD216AA3**		6,102	91.0	459
20	900	324T	230/460	**1LE22213AD116AA3**		7,328	91.0	616
25	900	326T	230/460	**1LE22213AD216AA3**		8,484	91.0	663
30	900	364T	230/460	**1LE22213CD116AA3**		10,898	91.7	854
40	900	365T	230/460	**1LE22213CD216AA3**		12,872	91.7	950

Voltage code “1-4” - Suitable for 208V

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GP100 | Eff: NEMA Premium | C-Face Round Body

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 230/460V | Ball Bearing | Long Shaft								
1	3600	143TC	230/460	**1LE22211AA114GA3**		1,088	82.5	60
1 ½	3600	143TC	230/460	**1LE22211AA214GA3**	+	1,112	84.0	56
2	3600	145TC	230/460	**1LE22211AA314GA3**	+	1,260	85.5	59
3	3600	182TC	230/460	**1LE22211CA114GA3**	+	1,468	86.5	87
5	3600	184TC	230/460	**1LE22211CA314GA3**	+	1,832	88.5	98
7 ½	3600	213TC	230/460	**1LE22212AA114GA3**	+	2,314	89.5	148
10	3600	215TC	230/460	**1LE22212AA214GA3**	+	2,682	90.2	163
15	3600	254TC	230/460	**1LE22212BA114GA3**	+	3,522	91.0	258
20	3600	256TC	230/460	**1LE22212BA214GA3**		4,270	91.0	293
4 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1800	143TC	230/460	**1LE22211AB214GA3**	+	1,088	85.5	62
1 ½	1800	145TC	230/460	**1LE22211AB314GA3**	+	1,180	86.5	66
2	1800	145TC	230/460	**1LE22211AB414GA3**	+	1,264	86.5	66
3	1800	182TC	230/460	**1LE22211CB114GA3**	+	1,510	89.5	98
5	1800	184TC	230/460	**1LE22211CB314GA3**	+	1,682	89.5	104
7 ½	1800	213TC	230/460	**1LE22212AB114GA3**	+	2,252	91.7	171
10	1800	215TC	230/460	**1LE22212AB214GA3**	+	2,682	91.7	177
15	1800	254TC	230/460	**1LE22212BB114GA3**	+	3,444	92.4	259
20	1800	256TC	230/460	**1LE22212BB214GA3**		4,074	93.0	292
6 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1200	145TC	230/460	**1LE22211AC314GA3**		1,306	82.5	64
1 ½	1200	182TC	230/460	**1LE22211CC114GA3**		1,468	87.5	93
2	1200	184TC	230/460	**1LE22211CC314GA3**		1,596	88.5	102
3	1200	213TC	230/460	**1LE22212AC114GA3**		1,978	89.5	144
5	1200	215TC	230/460	**1LE22212AC214GA3**		2,818	89.5	156
7 ½	1200	254TC	230/460	**1LE22212BC114GA3**		3,620	91.0	262
10	1200	256TC	230/460	**1LE22212BC214GA3**		4,196	91.0	259
8 Pole | 230/460V | Ball Bearing | Long Shaft								
1	900	182TC	230/460	**1LE22211CD114GA3**	+	1,628	81.5	86
1 ½	900	184TC	230/460	**1LE22211CD314GA3**		1,746	82.5	99
2	900	213TC	230/460	**1LE22212AD114GA3**		1,968	84.0	123
3	900	215TC	230/460	**1LE22212AD214GA3**		2,708	85.5	138
5	900	254TC	230/460	**1LE22212BD114GA3**		3,908	86.5	218
7 ½	900	256TC	230/460	**1LE22212BD214GA3**		3,934	87.5	250

Voltage code “1-4” - Suitable for 208V

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GP100 | Eff: NEMA Premium | C-Face with Feet

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 230/460V | Ball Bearing | Long Shaft								
1	3600	143TC	230/460	1LE22211AA114EA3	Mod	1,120	82.5	60
1 ½	3600	145TC	230/460	1LE22211AA214EA3	Mod	1,144	84.0	56
2	3600	145TC	230/460	1LE22211AA314EA3	+	1,292	85.5	59
3	3600	182TC	230/460	1LE22211CA114EA3	Mod	1,512	86.5	87
5	3600	184TC	230/460	1LE22211CA314EA3	+	1,876	88.5	98
7 ½	3600	213TC	230/460	1LE22212AA114EA3	Mod	2,378	89.5	148
10	3600	215TC	230/460	1LE22212AA214EA3	+	2,746	90.2	163
15	3600	254TC	230/460	1LE22212BA114EA3	+	3,620	91.0	258
20	3600	256TC	230/460	1LE22212BA214EA3	+	4,368	91.0	293
4 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1800	143TC	230/460	1LE22211AB214EA3	+	1,120	85.5	62
1 ½	1800	145TC	230/460	1LE22211AB314EA3	+	1,212	86.5	66
2	1800	145TC	230/460	1LE22211AB414EA3	+	1,296	86.5	66
3	1800	182TC	230/460	1LE22211CB114EA3	+	1,554	89.5	98
5	1800	184TC	230/460	1LE22211CB314EA3	+	1,726	89.5	104
7 ½	1800	213TC	230/460	1LE22212AB114EA3	+	2,316	91.7	171
10	1800	215TC	230/460	1LE22212AB214EA3	+	2,746	91.7	177
15	1800	254TC	230/460	1LE22212BB114EA3	+	3,542	92.4	259
20	1800	256TC	230/460	1LE22212BB214EA3	+	4,172	93.0	292

Voltage code “1-4” - Suitable for 208V

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GP100 | Eff: NEMA Premium | Foot Mounted | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 575V | Ball Bearing | Long Shaft								
1	3600	143T	575	**1LE22211AA113AA3**		908	82.5	60
1 ½	3600	143T	575	**1LE22211AA213AA3**		932	84.0	56
2	3600	145T	575	**1LE22211AA313AA3**		1,080	85.5	59
3	3600	182T	575	**1LE22211CA113AA3**	+	1,204	86.5	87
5	3600	184T	575	**1LE22211CA313AA3**	+	1,568	88.5	98
7 ½	3600	213T	575	**1LE22212AA113AA3**	+	2,050	89.5	148
10	3600	215T	575	**1LE22212AA213AA3**	+	2,418	90.2	163
15	3600	254T	575	**1LE22212BA113AA3**	+	3,162	91.0	258
20	3600	256T	575	**1LE22212BA213AA3**		3,910	91.0	293
2 Pole | 575V | Ball Bearing | Short Shaft								
25	3600	284TS	575	**1LE22212DA113AA3**		4,536	91.7	454
30	3600	286TS	575	**1LE22212DA213AA3**		5,502	91.7	424
40	3600	324TS	575	**1LE22213BA113AA3**		7,358	93.6	608
50	3600	326TS	575	**1LE22213BA213AA3**		9,742	93.6	593
60	3600	364TS	575	**1LE22213DA113AA3**		11,350	93.6	780
75	3600	365TS	575	**1LE22213DA213AA3**		14,182	94.1	888
100	3600	405TS	575	**1LE22214BA213AA3**		20,694	94.1	1012
125	3600	444TS	575	**1LE22214DA113AA3**		25,662	95.0	1381
150	3600	445TS	575	**1LE22214DA213AA3**		31,934	95.0	1542
200	3600	447TS	575	**1LE22214DA313AA3**		44,478	95.4	2182
4 Pole | 575V | Ball Bearing | Long Shaft								
1	1800	143T	575	**1LE22211AB213AA3**	+	908	85.5	62
1 ½	1800	145T	575	**1LE22211AB313AA3**	+	1,000	86.5	66
2	1800	145T	575	**1LE22211AB413AA3**		1,084	86.5	66
3	1800	182T	575	**1LE22211CB113AA3**	+	1,246	89.5	98
5	1800	184T	575	**1LE22211CB313AA3**		1,418	89.5	104
7 ½	1800	213T	575	**1LE22212AB113AA3**	+	1,988	91.7	171
10	1800	215T	575	**1LE22212AB213AA3**	+	2,418	91.7	177
15	1800	254T	575	**1LE22212BB113AA3**	+	3,084	92.4	259
20	1800	256T	575	**1LE22212BB213AA3**	+	3,714	93.0	292
25	1800	284T	575	**1LE22212CB113AA3**	+	4,328	93.6	429
30	1800	286T	575	**1LE22212CB213AA3**	+	5,232	93.6	449
40	1800	324T	575	**1LE22213AB113AA3**	+	7,044	94.1	633
50	1800	326T	575	**1LE22213AB213AA3**		8,856	94.5	668
60	1800	364T	575	**1LE22213CB113AA3**	+	11,250	95.0	880
75	1800	365T	575	**1LE22213CB213AA3**	+	14,192	95.4	950
100	1800	405T	575	**1LE22214AB213AA3**	+	19,094	95.4	1107
125	1800	B444T	575	**1LE22214EB113AA3**		23,848	95.4	1552
150	1800	B445T	575	**1LE22214EB213AA3**		28,718	95.8	1827
200	1800	B447T	575	**1LE22214EB313AA3**		38,460	96.2	2207
4 Pole | 575V | Ball Bearing | Short Shaft								
100	1800	405TS	575	**1LE22214BB213AA3**		19,094	95.4	1107
125	1800	444TS	575	**1LE22214DB113AA3**		23,848	95.4	1552
150	1800	445TS	575	**1LE22214DB213AA3**		28,718	95.8	1637
200	1800	447TS	575	**1LE22214DB313AA3**		38,460	96.2	2182

GP100 | Eff: NEMA Premium | Foot Mounted | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
4 Pole | 575V | Roller Bearing | Long Shaft								
125	1800	444T	575	**1LE22214CB113AA3**		25,064	95.4	1590
150	1800	445T	575	**1LE22214CB213AA3**		29,934	95.8	1865
200	1800	447T	575	**1LE22214CB313AA3**		39,676	96.2	2245
6 Pole | 575V | Ball Bearing | Long Shaft								
1	1200	145T	575	**1LE22211AC313AA3**		1,126	82.5	64
1 ½	1200	182T	575	**1LE22211CC113AA3**		1,204	87.5	93
2	1200	184T	575	**1LE22211CC313AA3**		1,332	88.5	102
3	1200	213T	575	**1LE22212AC113AA3**		1,714	89.5	144
5	1200	215T	575	**1LE22212AC213AA3**		2,554	89.5	156
7 ½	1200	254T	575	**1LE22212BC113AA3**		3,260	91.0	262
10	1200	256T	575	**1LE22212BC213AA3**		3,836	91.0	259
15	1200	284T	575	**1LE22212CC113AA3**		5,020	91.7	409
20	1200	286T	575	**1LE22212CC213AA3**		5,912	91.7	434
25	1200	324T	575	**1LE22213AC113AA3**		7,130	93.0	633
30	1200	326T	575	**1LE22213AC213AA3**		8,774	93.0	658
40	1200	364T	575	**1LE22213CC113AA3**		12,064	94.1	828
50	1200	365T	575	**1LE22213CC213AA3**		14,176	94.1	863
60	1200	404T	575	**1LE22214AC113AA3**		14,708	94.5	1047
75	1200	405T	575	**1LE22214AC213AA3**		17,230	94.5	1117
100	1200	B444T	575	**1LE22214EC113AA3**		25,642	95.0	1664
125	1200	B445T	575	**1LE22214EC213AA3**		29,884	95.0	1664
150	1200	B447T	575	**1LE22214EC313AA3**		34,634	95.8	1922
200	1200	B449T	575	**1LE22214EC513AA3**		46,680	95.8	2263
6 Pole | 575V | Ball Bearing | Short Shaft								
100	1200	444TS	575	**1LE22214DC113AA3**		25,642	95.0	1467
125	1200	445TS	575	**1LE22214DC213AA3**		29,884	95.0	1647
150	1200	447TS	575	**1LE22214DC313AA3**		34,634	95.8	1897
200	1200	449TS	575	**1LE22214DC513AA3**		46,680	95.8	2240
6 Pole | 575V | Roller Bearing | Long Shaft								
100	1200	444T	575	**1LE22214CC113AA3**		26,858	95.0	1531
125	1200	445T	575	**1LE22214CC213AA3**		31,100	95.0	1702
150	1200	447T	575	**1LE22214CC313AA3**		35,850	95.8	1960
200	1200	449T	575	**1LE22214CC513AA3**		47,896	95.8	2301

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GP100 | Eff: NEMA Premium | Foot Mounted | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
			8 Pole | 575V | Ball Bearing | Long Shaft					
1	900	182T	575	**1LE22211CD113AA3**		1,364	81.5	86
1 ½	900	184T	575	**1LE22211CD313AA3**		1,482	82.5	99
2	900	213T	575	**1LE22212AD113AA3**		1,704	84.0	123
3	900	215T	575	**1LE22212AD213AA3**		2,444	85.5	138
5	900	254T	575	**1LE22212BD113AA3**		3,548	86.5	218
7 ½	900	256T	575	**1LE22212BD213AA3**		3,574	87.5	250
10	900	284T	575	**1LE22212CD113AA3**		5,138	90.2	414
15	900	286T	575	**1LE22212CD213AA3**		6,102	91.0	459
20	900	324T	575	**1LE22213AD113AA3**		7,328	91.0	616
25	900	326T	575	**1LE22213AD213AA3**		8,484	91.0	663
30	900	364T	575	**1LE22213CD113AA3**		10,898	91.7	854
40	900	365T	575	**1LE22213CD213AA3**		12,872	91.7	950

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3.2.2. Severe Duty Low Voltage NEMA Motors

Introduction

ABB Severe Duty low voltage NEMA motors are designed and built to operate under harsh environments in the industry, including but not limited to petrochemical, pulp and paper mills and waste-water treatment. Fans, compressors, pumps, and conveyors are some of the many applications. These motors are design to meet or exceed the NEMA Premium® efficiency (MG1 Table 12.12) as well as the most stringent industry standards IEEE Std 841 2021. A wide selection of options, among them IP56 ingress protection, encoders, brakes, and blower, provide higher flexibility and reliability to a diversity of operating conditions. The construction of these motors is backed by its 3-to-5-year warranty for SD100 and 5-year warranty for SD100 IEEE841 and SD661.

Performance Specification

		SD100	SD100 IEEE841	SD661
HP Range	3600 RPM	1-100 HP		–
	1800 RPM	1-100 HP		5-75 HP
	1200 RPM	1-100 HP		7 ½-50 HP
	900 RPM	1-100 HP		–
Frame Size	140T - 500	140T-400		180T-360T
Standard Voltage (3~ 60 Hz)	230V/460V (Suitable for 208V)	FS 140-250	–	–
	230V/460V	Up to 75 HP	–	–
	460V	1-100 HP	1-100 HP	5-75 HP
	575V	1-100 HP	1-100 HP	5-75 HP
Efficiency	NEMA Premium® (MG1-Table 12.12)	1-100 HP		5-75 HP
Service Factor	1.15 @ 40°C	FS 140T-400		FS 180-360
Insulation	Non-Hygroscopic	Class F		
Temperature Rise	Class B	@ 1.0SF		
	Class F	@ 1.15SF		
Conduit Box (Oversized)	Oversized	Cast Iron		
Fan Cover		Cast Iron		
Cooling Fan	Bi-Directional	Polypropylene		
Rotor	Die Cast Aluminum	FS 140T-400		FS 180-360
Ingress Protection	NEMA	IP55	IP55	IP56
Hazardous Location	Gas	CL 1, Div 2 Gr. A, B, C or D Temp Code T3[2]		
	Dust[3]	CL 2, Div 2 Gr. F & G Temp Code T3C		
Inverter Duty	Variable Torque 20:1	FS 140T-400		FS 180-360
	Constant Torque CT 4:1	FS 140T-400		FS 180-360
	Constant Torque CT 20:1	4 Pole FS140-360		4 pole FS 180-360
	Constant Torque CT 10:1[4]	4 Pole FS400		–

2. FS S449: Temperature Code T2D
3. Standard on frames 280-400. As option (M25) for other frames
4. As option (M05 - VFD Fan)

Frame and end shields

The Severe Duty SD100, SD100IEEE841 and SD661, feature cast iron frame, end shields, and an easy-to-access, diagonally-split, oversize terminal box; the terminal box is provided with a neoprene gasket and includes a heavy-duty ground lug and non-wicking clearly and permanently marked leads.
These characteristics, its high strength zinc-plated hardware, epoxy paint and stainless-steel nameplate provide exceptional structural integrity and resistance to rust and corrosion, making them suitable for severe duty applications in harsh environments.

Rotor and stator windings

A unique offset rotor bar design provides improved efficiency, while larger bars and end rings reduce resistance for lower rotor losses. Each die cast aluminum rotor assembly is dynamically balanced for extended bearing life and includes a high-strength carbon steel (C1045) shaft for maximum rotor performance.

The stator is manufactured with premium electrical C5 grade steel lamination and copper electrical magnet wire that furthers the reduction in losses.

Insulation

The proprietary Class F non-hygroscopic insulation system, NEMA Class B temperature rise, provides an extra margin of thermal life. The varnish system application ensures maximum wire penetration to provide protection from moisture, corrosion, and electrical shock. This insulation system meets or exceeds NEMA MG1 2014 Part 31 making the motors suitable for variable speed drives in constant torque (4:1) and variable torque (20:1). All windings are tested for CIV.

Cooling system

A non-sparking, bi-directional fan is locked and keyed to the shaft. Its low-inertia design reduces windage losses, improves airflow, reduces noise, and provides dependable cooling. Cast Iron fan covers are provided for all frames sizes.

Bearings

Single shielded bearings are used for better bearing protection against contaminants.

3.2.2.1. SD100

SD100 | Eff: NEMA Premium | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 230/460V | Ball Bearing | Long Shaft								
1	3600	143T	230/460	**1LE23211AA114AA3**	+	1,148	85.5	62
1 ½	3600	143T	230/460	**1LE23211AA214AA3**	+	1,148	86.5	66
2	3600	145T	230/460	**1LE23211AA314AA3**	+	1,372	86.5	66
3	3600	182T	230/460	**1LE23211CA114AA3**	+	1,542	89.5	98
5	3600	184T	230/460	**1LE23211CA314AA3**	+	1,910	89.5	104
7 ½	3600	213T	230/460	**1LE23212AA114AA3**	+	2,242	91.7	171
10	3600	215T	230/460	**1LE23212AA214AA3**	+	2,698	91.7	177
15	3600	254T	230/460	**1LE23212BA114AA3**	+	3,706	92.4	259
20	3600	256T	230/460	**1LE23212BA214AA3**	+	4,588	93.0	292
2 Pole | 460V | Ball Bearing | Short Shaft								
25	3600	284TS	460	**1LE23212DA112AA3**	+	5,404	91.7	415
30	3600	286TS	460	**1LE23212DA212AA3**	+	6,310	91.7	430
40	3600	324TS	460	**1LE23213BA112AA3**	+	8,326	93.6	575
50	3600	326TS	460	**1LE23213BA212AA3**	+	10,768	93.6	610
60	3600	364TS	460	**1LE23213DA112AA3**	+	14,166	93.6	717
75	3600	365TS	460	**1LE23213DA212AA3**	+	17,788	94.1	815
100	3600	405TS	460	**1LE23214BA212AA3**	+	23,838	94.1	1100

Voltage code “1-4” - Suitable for 208V
2 Pole S449SS CW rotation facing NDE as standard

SD100 | Eff: NEMA Premium | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
4 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1800	143T	230/460	**1LE23211AB214AA3**	+	1,074	85.5	76
1 ½	1800	145T	230/460	**1LE23211AB314AA3**	+	1,190	86.5	80
2	1800	145T	230/460	**1LE23211AB414AA3**	+	1,310	86.5	80
3	1800	182T	230/460	**1LE23211CB114AA3**	+	1,452	89.5	118
5	1800	184T	230/460	**1LE23211CB314AA3**	+	1,696	89.5	124
7 ½	1800	213T	230/460	**1LE23212AB114AA3**	+	2,234	91.7	191
10	1800	215T	230/460	**1LE23212AB214AA3**	+	2,774	91.7	197
15	1800	254T	230/460	**1LE23212BB114AA3**	+	3,652	92.4	289
20	1800	256T	230/460	**1LE23212BB214AA3**	+	4,548	93.0	322
25	1800	284T	230/460	**1LE23212CB116AA3**	+	5,174	93.6	445
30	1800	286T	230/460	**1LE23212CB216AA3**	+	6,020	93.6	465
40	1800	324T	230/460	**1LE23213AB116AA3**	+	7,996	94.1	666
50	1800	326T	230/460	**1LE23213AB216AA3**	+	9,820	94.5	700
60	1800	364T	230/460	**1LE23213CB116AA3**	+	14,086	95.0	930
75	1800	365T	230/460	**1LE23213CB216AA3**	+	17,856	95.4	1000
4 Pole | 460V | Ball Bearing | Long Shaft								
25	1800	284T	460	**1LE23212CB112AA3**	+	5,174	93.6	445
30	1800	286T	460	**1LE23212CB212AA3**	+	6,020	93.6	465
40	1800	324T	460	**1LE23213AB112AA3**	+	7,996	94.1	666
50	1800	326T	460	**1LE23213AB212AA3**	+	9,820	94.5	700
60	1800	364T	460	**1LE23213CB112AA3**	+	14,086	95.0	930
75	1800	365T	460	**1LE23213CB212AA3**	+	17,856	95.4	1000
100	1800	405T	460	**1LE23214AB212AA3**	+	22,064	95.4	1160
4 Pole | 460V | Ball Bearing | Short Shaft								
25	1800	284TS	460	**1LE23212DB112AA3**	+	5,174	93.6	445
30	1800	286TS	460	**1LE23212DB212AA3**	+	6,020	93.6	465
40	1800	324TS	460	**1LE23213BB112AA3**	+	7,996	94.1	666
50	1800	326TS	460	**1LE23213BB212AA3**	+	9,820	94.5	700
60	1800	364TS	460	**1LE23213DB112AA3**	+	14,086	95.0	930
75	1800	365TS	460	**1LE23213DB212AA3**	+	17,856	95.4	1000
100	1800	405TS	460	**1LE23214BB212AA3**	+	22,064	95.4	1160

Voltage code “1-4” - Suitable for 208V

250HP and 300HP 4 pole and 6 pole - NEMA Design A

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SD100 | Eff: NEMA Premium | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
6 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1200	145T	230/460	**1LE23211AC314AA3**	+	1,326	82.5	77
1.5	1200	182T	230/460	**1LE23211CC114AA3**	+	1,494	87.5	113
2	1200	184T	230/460	**1LE23211CC314AA3**	+	1,670	88.5	122
3	1200	213T	230/460	**1LE23212AC114AA3**	+	2,034	89.5	164
5	1200	215T	230/460	**1LE23212AC214AA3**	+	2,866	89.5	176
7.5	1200	254T	230/460	**1LE23212BC114AA3**	+	3,704	91.0	292
10	1200	256T	230/460	**1LE23212BC214AA3**	+	4,656	91.0	288
15	1200	284T	230/460	**1LE23212CC116AA3**	+	5,908	91.7	400
20	1200	286T	230/460	**1LE23212CC216AA3**	+	7,196	91.7	465
6 Pole | 460V | Ball Bearing | Long Shaft								
25	1200	324T	460	**1LE23213AC112AA3**	+	8,470	93.0	640
30	1200	326T	460	**1LE23213AC212AA3**	+	10,034	93.0	675
40	1200	364T	460	**1LE23213CC112AA3**	+	13,606	94.1	863
50	1200	365T	460	**1LE23213CC212AA3**	+	15,620	94.1	900
60	1200	404T	460	**1LE23214AC112AA3**	+	18,300	94.5	1100
75	1200	405T	460	**1LE23214AC212AA3**	+	21,544	94.5	1150
8 Pole | 230/460V | Ball Bearing | Long Shaft								
1	900	182T	230/460	**1LE23211CD114AA3**	+	1,800	81.5	106
1 ½	900	184T	230/460	**1LE23211CD314AA3**	+	2,028	82.5	119
2	900	213T	230/460	**1LE23212AD114AA3**	+	2,350	84.0	143
3	900	215T	230/460	**1LE23212AD214AA3**	+	3,242	85.5	158
5	900	254T	230/460	**1LE23212BD114AA3**	+	4,558	86.5	247
7 ½	900	256T	230/460	**1LE23212BD214AA3**	+	5,260	87.5	279
10	900	284T	230/460	**1LE23212CD116AA3**	+	7,022	91.0	375
15	900	286T	230/460	**1LE23212CD216AA3**	+	9,138	91.0	430
20	900	324T	230/460	**1LE23213AD116AA3**	+	11,170	91.0	567
8 Pole | 460V | Ball Bearing | Long Shaft								
25	900	326T	460	**1LE23213AD212AA3**	+	12,974	90.2	600
30	900	364T	460	**1LE23213CD112AA3**	+	15,352	91.0	800
40	900	365T	460	**1LE23213CD212AA3**	+	18,566	91.7	875
50	900	404T	460	**1LE23214AD112AA3**	+	22,182	92.4	1135
60	900	405T	460	**1LE23214AD212AA3**	+	25,336	92.4	1300

Voltage code “1-4” - Suitable for 208V

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SD100 | Eff: NEMA Premium | C-Face Round Body

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 230/460V | Ball Bearing | Long Shaft								
1	3600	143TC	230/460	**1LE23211AA114GA3**	+	1,328	82.5	75
1.5	3600	143TC	230/460	**1LE23211AA214GA3**	+	1,328	84.0	70
2	3600	145TC	230/460	**1LE23211AA314GA3**	+	1,552	85.5	72
3	3600	182TC	230/460	**1LE23211CA114GA3**	+	1,806	86.5	107
5	3600	184TC	230/460	**1LE23211CA314GA3**	+	2,174	88.5	118
7.5	3600	213TC	230/460	**1LE23212AA114GA3**	+	2,506	89.5	160
10	3600	215TC	230/460	**1LE23212AA214GA3**	+	2,962	90.2	174
15	3600	254TC	230/460	**1LE23212BA114GA3**	+	4,066	91.0	287
20	3600	256TC	230/460	**1LE23212BA214GA3**	+	4,948	91.0	323
4 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1800	143TC	230/460	**1LE23211AB214GA3**	+	1,254	85.5	76
1.5	1800	145TC	230/460	**1LE23211AB314GA3**	+	1,370	86.5	80
2	1800	145TC	230/460	**1LE23211AB414GA3**	+	1,490	86.5	80
3	1800	182TC	230/460	**1LE23211CB114GA3**	+	1,716	89.5	118
5	1800	184TC	230/460	**1LE23211CB314GA3**	+	1,960	89.5	124
7.5	1800	213TC	230/460	**1LE23212AB114GA3**	+	2,498	91.7	191
10	1800	215TC	230/460	**1LE23212AB214GA3**	+	3,038	91.7	197
15	1800	254TC	230/460	**1LE23212BB114GA3**	+	4,012	92.4	289
20	1800	256TC	230/460	**1LE23212BB214GA3**	+	4,908	93.0	322
6 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1200	145TC	230/460	**1LE23211AC314GA3**	+	1,506	82.5	77
1.5	1200	182TC	230/460	**1LE23211CC114GA3**	+	1,758	87.5	113
2	1200	184TC	230/460	**1LE23211CC314GA3**	+	1,934	88.5	122
3	1200	213TC	230/460	**1LE23212AC114GA3**	+	2,298	89.5	164
5	1200	215TC	230/460	**1LE23212AC214GA3**	+	3,130	89.5	176
7.5	1200	254TC	230/460	**1LE23212BC114GA3**	+	4,064	91.0	292
10	1200	256TC	230/460	**1LE23212BC214GA3**	+	5,016	91.0	288
8 Pole | 230/460V | Ball Bearing | Long Shaft								
1	900	182TC	230/460	**1LE23211CD114GA3**	+	2,064	81.5	106
1.5	900	184TC	230/460	**1LE23211CD314GA3**	+	2,292	82.5	119
2	900	213TC	230/460	**1LE23212AD114GA3**	+	2,614	84.0	143
3	900	215TC	230/460	**1LE23212AD214GA3**	+	3,506	85.5	158
5	900	254TC	230/460	**1LE23212BD114GA3**	+	4,918	86.5	247
7.5	900	256TC	230/460	**1LE23212BD214GA3**	+	5,620	87.5	279

Voltage code “1-4” - Suitable for 208V

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SD100 | Eff: NEMA Premium | Foot Mounted | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 575V | Ball Bearing | Long Shaft								
1	3600	143T	575	**1LE23211AA113AA3**		1,148	85.5	62
1 ½	3600	143T	575	**1LE23211AA213AA3**		1,148	86.5	66
2	3600	145T	575	**1LE23211AA313AA3**		1,372	86.5	66
3	3600	182T	575	**1LE23211CA113AA3**		1,542	89.5	98
5	3600	184T	575	**1LE23211CA313AA3**		1,910	89.5	104
7 ½	3600	213T	575	**1LE23212AA113AA3**		2,242	91.7	171
10	3600	215T	575	**1LE23212AA213AA3**		2,698	91.7	177
15	3600	254T	575	**1LE23212BA113AA3**		3,706	92.4	259
20	3600	256T	575	**1LE23212BA213AA3**		4,588	93.0	292
2 Pole | 575V | Ball Bearing | Short Shaft								
25	3600	284TS	575	**1LE23212DA113AA3**		5,404	91.7	415
30	3600	286TS	575	**1LE23212DA213AA3**		6,310	91.7	430
40	3600	324TS	575	**1LE23213BA113AA3**		8,326	93.6	575
50	3600	326TS	575	**1LE23213BA213AA3**		10,768	93.6	610
60	3600	364TS	575	**1LE23213DA113AA3**		14,166	93.6	717
75	3600	365TS	575	**1LE23213DA213AA3**		17,788	94.1	815
100	3600	405TS	575	**1LE23214BA213AA3**		23,838	94.1	1100
4 Pole | 575V | Ball Bearing | Long Shaft								
1	1800	143T	575	**1LE23211AB213AA3**	+	1,074	85.5	76
1 1/2	1800	145T	575	**1LE23211AB313AA3**	+	1,190	86.5	80
2	1800	145T	575	**1LE23211AB413AA3**		1,310	86.5	80
3	1800	182T	575	**1LE23211CB113AA3**		1,452	89.5	118
5	1800	184T	575	**1LE23211CB313AA3**		1,696	89.5	124
7 1/2	1800	213T	575	**1LE23212AB113AA3**		2,234	91.7	191
10	1800	215T	575	**1LE23212AB213AA3**		2,774	91.7	197
15	1800	254T	575	**1LE23212BB113AA3**		3,652	92.4	289
20	1800	256T	575	**1LE23212BB213AA3**	+	4,548	93.0	322
25	1800	284T	575	**1LE23212CB113AA3**		5,174	93.6	445
30	1800	286T	575	**1LE23212CB213AA3**		6,020	93.6	465
40	1800	324T	575	**1LE23213AB113AA3**		7,996	94.1	666
50	1800	326T	575	**1LE23213AB213AA3**		9,820	94.5	700
60	1800	364T	575	**1LE23213CB113AA3**		14,086	95.0	930
75	1800	365T	575	**1LE23213CB213AA3**	+	17,856	95.4	1000
100	1800	405T	575	**1LE23214AB213AA3**	+	22,064	95.4	1160

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SD100 | Eff: NEMA Premium | Foot Mounted | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
4 Pole | 575V | Ball Bearing | Short Shaft								
25	1800	284TS	575	**1LE23212DB113AA3**		5,174	93.6	445
30	1800	286TS	575	**1LE23212DB213AA3**		6,020	93.6	465
40	1800	324TS	575	**1LE23213BB113AA3**		7,996	94.1	666
50	1800	326TS	575	**1LE23213BB213AA3**		9,820	94.5	700
60	1800	364TS	575	**1LE23213DB113AA3**		14,086	95.0	930
75	1800	365TS	575	**1LE23213DB213AA3**		17,856	95.4	1000
100	1800	405TS	575	**1LE23214BB213AA3**		22,064	95.4	1160
6 Pole | 575V | Ball Bearing | Long Shaft								
1	1200	145T	575	**1LE23211AC313AA3**		1,326	82.5	77
1 ½	1200	182T	575	**1LE23211CC113AA3**		1,494	87.5	113
2	1200	184T	575	**1LE23211CC313AA3**		1,670	88.5	122
3	1200	213T	575	**1LE23212AC113AA3**		2,034	89.5	164
5	1200	215T	575	**1LE23212AC213AA3**		2,866	89.5	176
7 ½	1200	254T	575	**1LE23212BC113AA3**		3,704	91.0	292
10	1200	256T	575	**1LE23212BC213AA3**		4,656	91.0	288
15	1200	284T	575	**1LE23212CC113AA3**		5,908	91.7	400
20	1200	286T	575	**1LE23212CC213AA3**		7,196	91.7	465
25	1200	324T	575	**1LE23213AC113AA3**		8,470	93.0	640
30	1200	326T	575	**1LE23213AC213AA3**		10,034	93.0	675
40	1200	364T	575	**1LE23213CC113AA3**		13,606	94.1	863
50	1200	365T	575	**1LE23213CC213AA3**		15,620	94.1	900
60	1200	404T	575	**1LE23214AC113AA3**		18,300	94.5	1100
75	1200	405T	575	**1LE23214AC213AA3**		21,544	94.5	1150
8 Pole | 575V | Ball Bearing | Long Shaft								
1	900	182T	575	**1LE23211CD113AA3**		1,800	81.5	106
1 ½	900	184T	575	**1LE23211CD313AA3**		2,028	82.5	119
2	900	213T	575	**1LE23212AD113AA3**		2,350	84.0	143
3	900	215T	575	**1LE23212AD213AA3**		3,242	85.5	158
5	900	254T	575	**1LE23212BD113AA3**		4,558	86.5	247
7 ½	900	256T	575	**1LE23212BD213AA3**		5,260	87.5	279
10	900	284T	575	**1LE23212CD113AA3**		7,022	91.0	375
15	900	286T	575	**1LE23212CD213AA3**		9,138	91.0	430
20	900	324T	575	**1LE23213AD113AA3**		11,170	91.0	567
25	900	326T	575	**1LE23213AD213AA3**		12,974	90.2	600
30	900	364T	575	**1LE23213CD113AA3**		15,352	91.0	800
40	900	365T	575	**1LE23213CD213AA3**		18,566	91.7	875
50	900	404T	575	**1LE23214AD113AA3**		22,182	92.4	1135
60	900	405T	575	**1LE23214AD213AA3**		25,336	92.4	1300

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3.2.2.2. SD100 Low Maintenance

SD100 – Low Maintenance | No Regreasing | Eff: NEMA Premium | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
4 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1800	143T	230/460	**1LE23231AB216AA3**	+	1,110	85.5	76
1 ½	1800	145T	230/460	**1LE23231AB316AA3**	+	1,230	86.5	80
2	1800	145T	230/460	**1LE23231AB416AA3**	+	1,350	86.5	80
3	1800	182T	230/460	**1LE23231CB116AA3**	+	1,500	89.5	118
5	1800	184T	230/460	**1LE23231CB316AA3**	+	1,750	89.5	124
7 ½	1800	213T	230/460	**1LE23232AB116AA3**	+	2,300	91.7	191
10	1800	215T	230/460	**1LE23232AB216AA3**	+	2,860	91.7	197
15	1800	254T	230/460	**1LE23232BB116AA3**	+	3,760	92.4	289
20	1800	256T	230/460	**1LE23232BB216AA3**	+	4,680	93.0	322
25	1800	284T	230/460	**1LE23232CB116AA3**		5,330	93.6	445
30	1800	286T	230/460	**1LE23232CB216AA3**		6,200	93.6	465
40	1800	324T	230/460	**1LE23233AB116AA3**		8,240	94.1	666
50	1800	326T	230/460	**1LE23233AB216AA3**		10,110	94.5	700
60	1800	364T	230/460	**1LE23233CB116AA3**		14,510	95.0	930
75	1800	365T	230/460	**1LE23233CB216AA3**		18,390	95.4	1000
4 Pole | 230/460V | Ball Bearing | Short Shaft								
25	1800	284TS	230/460	**1LE23232DB116AA3**		5,330	93.6	445
30	1800	286TS	230/460	**1LE23232DB216AA3**		6,200	93.6	465
40	1800	324TS	230/460	**1LE23233BB116AA3**		8,240	94.1	666
50	1800	326TS	230/460	**1LE23233BB216AA3**		10,110	94.5	700
60	1800	364TS	230/460	**1LE23233DB116AA3**		14,510	95.0	930
75	1800	365TS	230/460	**1LE23233DB216AA3**		18,390	95.4	1000

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SD100 – Low Maintenance | No Regreasing | Eff: NEMA Premium | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
6 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1200	145T	230/460	**1LE23231AC316AA3**	+	1,370	82.5	77
1 ½	1200	182T	230/460	**1LE23231CC116AA3**	+	1,540	87.5	113
2	1200	184T	230/460	**1LE23231CC316AA3**	+	1,720	88.5	122
3	1200	213T	230/460	**1LE23232AC116AA3**	+	2,100	89.5	164
5	1200	215T	230/460	**1LE23232AC216AA3**	+	2,950	89.5	176
7 ½	1200	254T	230/460	**1LE23232BC116AA3**	+	3,820	91.0	292
10	1200	256T	230/460	**1LE23232BC216AA3**	+	4,800	91.0	288
15	1200	284T	230/460	**1LE23232CC116AA3**	+	6,090	91.7	400
20	1200	286T	230/460	**1LE23232CC216AA3**	+	7,410	91.7	465
25	1200	324T	230/460	**1LE23233AC116AA3**		8,720	93.0	640
30	1200	326T	230/460	**1LE23233AC216AA3**		10,340	93.0	675
40	1200	364T	230/460	**1LE23233CC116AA3**		14,010	94.1	863
50	1200	365T	230/460	**1LE23233CC216AA3**		16,090	94.1	900

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3.2.2.3. SD100 IEEE841

SD100 IEEE841 | Eff: NEMA Premium | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 460V | Ball Bearing | Long Shaft								
1	3600	143T	460	**1LE24211AA112AA3**	+	1,574	82.5	75
1 ½	3600	143T	460	**1LE24211AA212AA3**	+	1,576	84.0	70
2	3600	145T	460	**1LE24211AA312AA3**	+	1,808	85.5	72
3	3600	182T	460	**1LE24211CA112AA3**	+	1,894	86.5	107
5	3600	184T	460	**1LE24211CA312AA3**	+	2,318	88.5	118
7 ½	3600	213T	460	**1LE24212AA112AA3**	+	2,842	89.5	160
10	3600	215T	460	**1LE24212AA212AA3**	+	3,268	90.2	174
15	3600	254T	460	**1LE24212BA112AA3**	+	4,432	91.0	287
20	3600	256T	460	**1LE24212BA212AA3**	+	5,440	91.0	323
2 Pole | 460V | Ball Bearing | Short Shaft								
25	3600	284TS	460	**1LE24212DA112AA3**	+	6,462	91.7	415
30	3600	286TS	460	**1LE24212DA212AA3**	+	7,550	91.7	430
40	3600	324TS	460	**1LE24213BA112AA3**	+	9,956	93.6	575
50	3600	326TS	460	**1LE24213BA212AA3**	+	12,656	93.6	610
60	3600	364TS	460	**1LE24213DA112AA3**	+	16,796	93.6	717
75	3600	365TS	460	**1LE24213DA212AA3**	+	21,090	94.1	815
100	3600	405TS	460	**1LE24214BA212AA3**	+	28,014	94.1	1100

2 Pole S449SS CW rotation facing NDE as standard
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SD100 IEEE841 | Eff: NEMA Premium | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
4 Pole | 460V | Ball Bearing | Long Shaft								
1	1800	143T	460	**1LE24211AB212AA3**	+	1,524	85.5	76
1 ½	1800	145T	460	**1LE24211AB312AA3**	+	1,644	86.5	80
2	1800	145T	460	**1LE24211AB412AA3**	+	1,756	86.5	80
3	1800	182T	460	**1LE24211CB112AA3**	+	1,814	89.5	118
5	1800	184T	460	**1LE24211CB312AA3**	+	2,078	89.5	124
7 ½	1800	213T	460	**1LE24212AB112AA3**	+	2,760	91.7	191
10	1800	215T	460	**1LE24212AB212AA3**	+	3,304	91.7	197
15	1800	254T	460	**1LE24212BB112AA3**	+	4,354	92.4	289
20	1800	256T	460	**1LE24212BB212AA3**	+	5,612	93.0	322
25	1800	284T	460	**1LE24212CB112AA3**	+	6,172	93.6	445
30	1800	286T	460	**1LE24212CB212AA3**	+	7,176	93.6	465
40	1800	324T	460	**1LE24213AB112AA3**	+	9,534	94.1	666
50	1800	326T	460	**1LE24213AB212AA3**	+	11,606	94.5	700
60	1800	364T	460	**1LE24213CB112AA3**	+	16,506	95.0	930
75	1800	365T	460	**1LE24213CB212AA3**	+	20,558	95.4	1000
100	1800	405T	460	**1LE24214AB212AA3**	+	25,398	95.4	1160
4 Pole | 460V | Ball Bearing | Short Shaft								
25	1800	284TS	460	**1LE24212DB112AA3**	+	6,172	93.6	445
30	1800	286TS	460	**1LE24212DB212AA3**	+	7,176	93.6	465
40	1800	324TS	460	**1LE24213BB112AA3**	+	9,534	94.1	666
50	1800	326TS	460	**1LE24213BB212AA3**	+	11,606	94.5	700
60	1800	364TS	460	**1LE24213DB112AA3**	+	16,506	95.0	930
75	1800	365TS	460	**1LE24213DB212AA3**	+	20,558	95.4	1000
100	1800	405TS	460	**1LE24214BB212AA3**	+	25,398	95.4	1160

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SD100 IEEE841 | Eff: NEMA Premium | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
			6 Pole | 460V | Ball Bearing | Long Shaft					
1	1200	145T	460	**1LE24211AC312AA3**	+	1,796	82.5	77
1 ½	1200	182T	460	**1LE24211CC112AA3**	+	2,012	87.5	113
2	1200	184T	460	**1LE24211CC312AA3**	+	2,142	88.5	122
3	1200	213T	460	**1LE24212AC112AA3**	+	2,700	89.5	164
5	1200	215T	460	**1LE24212AC212AA3**	+	3,574	89.5	176
7 ½	1200	254T	460	**1LE24212BC112AA3**	+	4,568	91.0	292
10	1200	256T	460	**1LE24212BC212AA3**	+	5,680	91.0	288
15	1200	284T	460	**1LE24212CC112AA3**	+	7,082	91.7	400
20	1200	286T	460	**1LE24212CC212AA3**	+	8,632	91.7	465
25	1200	324T	460	**1LE24213AC112AA3**	+	10,454	93.0	640
30	1200	326T	460	**1LE24213AC212AA3**	+	12,044	93.0	675
40	1200	364T	460	**1LE24213CC112AA3**	+	16,320	94.1	863
50	1200	365T	460	**1LE24213CC212AA3**	+	18,574	94.1	900
60	1200	404T	460	**1LE24214AC112AA3**	+	21,198	94.5	1100
75	1200	405T	460	**1LE24214AC212AA3**	+	24,736	94.5	1150
			8 Pole | 460V | Ball Bearing | Long Shaft					
1	900	182T	460	**1LE24211CD112AA3**		2,914	81.5	106
1 ½	900	184T	460	**1LE24211CD312AA3**	+	3,438	82.5	119
2	900	213T	460	**1LE24212AD112AA3**	+	4,046	84.0	145
3	900	215T	460	**1LE24212AD212AA3**	+	5,130	85.5	160
5	900	254T	460	**1LE24212BD112AA3**	+	6,856	86.5	247
7 ½	900	256T	460	**1LE24212BD212AA3**	+	8,594	87.5	279
10	900	284T	460	**1LE24212CD112AA3**	+	8,796	90.2	362
15	900	286T	460	**1LE24212CD212AA3**	+	11,246	90.2	420
20	900	324T	460	**1LE24213AD112AA3**	+	13,750	91.0	570
25	900	326T	460	**1LE24213AD212AA3**	+	15,972	90.2	582
30	900	364T	460	**1LE24213CD112AA3**	+	18,906	91.7	740
40	900	365T	460	**1LE24213CD212AA3**	+	22,856	91.7	840
50	900	404T	460	**1LE24214AD112AA3**	+	26,604	92.4	1116
60	900	405T	460	**1LE24214AD212AA3**	+	29,854	92.4	1182

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SD100 IEEE841 | Eff: NEMA Premium | C-Face Round Body

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
			2 Pole | 460V | Ball Bearing | Long Shaft					
1	3600	143TC	460	**1LE24211AA112GA3**	+	1,754	82.5	75
1 ½	3600	143TC	460	**1LE24211AA212GA3**	+	1,756	84.0	70
2	3600	145TC	460	**1LE24211AA312GA3**	+	1,988	85.5	72
3	3600	182TC	460	**1LE24211CA112GA3**	+	2,158	86.5	107
5	3600	184TC	460	**1LE24211CA312GA3**	+	2,582	88.5	118
7 ½	3600	213TC	460	**1LE24212AA112GA3**	+	3,106	89.5	160
10	3600	215TC	460	**1LE24212AA212GA3**	+	3,532	90.2	174
15	3600	254TC	460	**1LE24212BA112GA3**	+	4,792	91.0	287
20	3600	256TC	460	**1LE24212BA212GA3**	+	5,800	91.0	323
			4 Pole | 460V | Ball Bearing | Long Shaft					
1	1800	143TC	460	**1LE24211AB212GA3**	+	1,704	85.5	76
1 ½	1800	145TC	460	**1LE24211AB312GA3**	+	1,824	86.5	80
2	1800	145TC	460	**1LE24211AB412GA3**	+	1,936	86.5	80
3	1800	182TC	460	**1LE24211CB112GA3**	+	2,078	89.5	118
5	1800	184TC	460	**1LE24211CB312GA3**	+	2,342	89.5	124
7 ½	1800	213TC	460	**1LE24212AB112GA3**	+	3,024	91.7	191
10	1800	215TC	460	**1LE24212AB212GA3**	+	3,568	91.7	197
15	1800	254TC	460	**1LE24212BB112GA3**	+	4,714	92.4	289
20	1800	256TC	460	**1LE24212BB212GA3**	+	5,972	93.0	322

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SD100 IEEE841 | Eff: NEMA Premium | Foot Mounted | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 575V | Ball Bearing | Long Shaft								
1	3600	143T	575	**1LE24211AA113AA3**		1,574	82.5	75
1 ½	3600	143T	575	**1LE24211AA213AA3**		1,576	84.0	70
2	3600	145T	575	**1LE24211AA313AA3**		1,808	85.5	72
3	3600	182T	575	**1LE24211CA113AA3**		1,894	86.5	107
5	3600	184T	575	**1LE24211CA313AA3**		2,318	88.5	118
7 ½	3600	213T	575	**1LE24212AA113AA3**		2,842	89.5	160
10	3600	215T	575	**1LE24212AA213AA3**		3,268	90.2	174
15	3600	254T	575	**1LE24212BA113AA3**		4,432	91.0	287
20	3600	256T	575	**1LE24212BA213AA3**		5,440	91.0	323
2 Pole | 575V | Ball Bearing | Short Shaft								
25	3600	284TS	575	**1LE24212DA113AA3**		6,462	91.7	415
30	3600	286TS	575	**1LE24212DA213AA3**		7,550	91.7	430
40	3600	324TS	575	**1LE24213BA113AA3**		9,956	93.6	575
50	3600	326TS	575	**1LE24213BA213AA3**		12,656	93.6	610
60	3600	364TS	575	**1LE24213DA113AA3**		16,796	93.6	717
75	3600	365TS	575	**1LE24213DA213AA3**		21,090	94.1	815
100	3600	405TS	575	**1LE24214BA213AA3**		28,014	94.1	1100
4 Pole | 575V | Ball Bearing | Long Shaft								
1	1800	143T	575	**1LE24211AB213AA3**		1,524	85.5	76
1 ½	1800	145T	575	**1LE24211AB313AA3**	+	1,644	86.5	80
2	1800	145T	575	**1LE24211AB413AA3**		1,756	86.5	80
3	1800	182T	575	**1LE24211CB113AA3**		1,814	89.5	118
5	1800	184T	575	**1LE24211CB313AA3**		2,078	89.5	124
7 ½	1800	213T	575	**1LE24212AB113AA3**		2,760	91.7	191
10	1800	215T	575	**1LE24212AB213AA3**		3,304	91.7	197
15	1800	254T	575	**1LE24212BB113AA3**		4,354	92.4	289
20	1800	256T	575	**1LE24212BB213AA3**		5,612	93.0	322
25	1800	284T	575	**1LE24212CB113AA3**		6,172	93.6	445
30	1800	286T	575	**1LE24212CB213AA3**		7,176	93.6	465
40	1800	324T	575	**1LE24213AB113AA3**		9,534	94.1	666
50	1800	326T	575	**1LE24213AB213AA3**	+	11,606	94.5	700
60	1800	364T	575	**1LE24213CB113AA3**	+	16,506	95.0	930
75	1800	365T	575	**1LE24213CB213AA3**		20,558	95.4	1000
100	1800	405T	575	**1LE24214AB213AA3**		25,398	95.4	1160

SD100 IEEE841 | Eff: NEMA Premium | Foot Mounted | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
4 Pole | 575V | Ball Bearing | Short Shaft								
25	1800	284TS	575	**1LE24212DB113AA3**		6,172	93.6	445
30	1800	286TS	575	**1LE24212DB213AA3**		7,176	93.6	465
40	1800	324TS	575	**1LE24213BB113AA3**		9,534	94.1	666
50	1800	326TS	575	**1LE24213BB213AA3**		11,606	94.5	700
60	1800	364TS	575	**1LE24213DB113AA3**		16,506	95.0	930
75	1800	365TS	575	**1LE24213DB213AA3**		20,558	95.4	1000
100	1800	405TS	575	**1LE24214BB213AA3**		25,398	95.4	1160
6 Pole | 575V | Ball Bearing | Long Shaft								
1	1200	145T	575	**1LE24211AC313AA3**		1,796	82.5	77
1 ½	1200	182T	575	**1LE24211CC113AA3**		2,012	87.5	113
2	1200	184T	575	**1LE24211CC313AA3**		2,142	88.5	122
3	1200	213T	575	**1LE24212AC113AA3**		2,700	89.5	164
5	1200	215T	575	**1LE24212AC213AA3**		3,574	89.5	176
7 ½	1200	254T	575	**1LE24212BC113AA3**		4,568	91.0	292
10	1200	256T	575	**1LE24212BC213AA3**		5,680	91.0	288
15	1200	284T	575	**1LE24212CC113AA3**		7,082	91.7	400
20	1200	286T	575	**1LE24212CC213AA3**		8,632	91.7	465
25	1200	324T	575	**1LE24213AC113AA3**		10,454	93.0	640
30	1200	326T	575	**1LE24213AC213AA3**		12,044	93.0	675
40	1200	364T	575	**1LE24213CC113AA3**	+	16,320	94.1	863
50	1200	365T	575	**1LE24213CC213AA3**	+	18,574	94.1	900
60	1200	404T	575	**1LE24214AC113AA3**	+	21,198	94.5	1100
75	1200	405T	575	**1LE24214AC213AA3**	+	24,736	94.5	1150
8 Pole | 575V | Ball Bearing | Long Shaft								
1	900	182T	575	**1LE24211CD113AA3**		2,914	81.5	106
1 ½	900	184T	575	**1LE24211CD313AA3**		3,438	82.5	119
2	900	213T	575	**1LE24212AD113AA3**		4,046	84.0	145
3	900	215T	575	**1LE24212AD213AA3**		5,130	85.5	160
5	900	254T	575	**1LE24212BD113AA3**		6,856	86.5	247
7 ½	900	256T	575	**1LE24212BD213AA3**		8,594	87.5	279
10	900	284T	575	**1LE24212CD113AA3**		8,796	90.2	362
15	900	286T	575	**1LE24212CD213AA3**		11,246	90.2	420
20	900	324T	575	**1LE24213AD113AA3**		13,750	91.0	570
25	900	326T	575	**1LE24213AD213AA3**		15,972	90.2	582
30	900	364T	575	**1LE24213CD113AA3**		18,906	91.7	740
40	900	365T	575	**1LE24213CD213AA3**		22,856	91.7	840
50	900	404T	575	**1LE24214AD113AA3**		26,604	92.4	1116
60	900	405T	575	**1LE24214AD213AA3**		29,854	92.4	1182

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SD100 IEEE841 | Eff: NEMA Premium | C-Face Round Body | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 575V | Ball Bearing | Long Shaft								
1	3600	143TC	575	**1LE24211AA113GA3**		1,754	82.5	75
1 ½	3600	143TC	575	**1LE24211AA213GA3**		1,756	84.0	70
2	3600	145TC	575	**1LE24211AA313GA3**		1,988	85.5	72
3	3600	182TC	575	**1LE24211CA113GA3**		2,158	86.5	107
5	3600	184TC	575	**1LE24211CA313GA3**		2,582	88.5	118
7 ½	3600	213TC	575	**1LE24212AA113GA3**		3,106	89.5	160
10	3600	215TC	575	**1LE24212AA213GA3**		3,532	90.2	174
15	3600	254TC	575	**1LE24212BA113GA3**		4,792	91.0	287
20	3600	256TC	575	**1LE24212BA213GA3**		5,800	91.0	323
4 Pole | 575V | Ball Bearing | Long Shaft								
1	1800	143TC	575	**1LE24211AB213GA3**		1,704	85.5	76
1 ½	1800	145TC	575	**1LE24211AB313GA3**		1,824	86.5	80
2	1800	145TC	575	**1LE24211AB413GA3**		1,936	86.5	80
3	1800	182TC	575	**1LE24211CB113GA3**		2,078	89.5	118
5	1800	184TC	575	**1LE24211CB313GA3**		2,342	89.5	124
7 ½	1800	213TC	575	**1LE24212AB113GA3**		3,024	91.7	191
10	1800	215TC	575	**1LE24212AB213GA3**		3,568	91.7	197
15	1800	254TC	575	**1LE24212BB113GA3**		4,714	92.4	289
20	1800	256TC	575	**1LE24212BB213GA3**		5,972	93.0	322

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3.2.2.4. SD661

SD661 | Eff: NEMA Premium | Foot Mounted

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
			4 Pole | 460 | Roller Bearing | Long Shaft					
5	1800	184T	460	1LE24221CB312AA3	+	2,078	89.5	124
7 ½	1800	213T	460	1LE24222AB112AA3	+	3,136	91.7	191
10	1800	215T	460	1LE24222AB212AA3	+	3,684	91.7	197
15	1800	254T	460	**1LE24222BB112AA3**	+	4,870	92.4	289
20	1800	256T	460	**1LE24222BB212AA3**	+	6,226	93.0	322
25	1800	284T	460	**1LE24222CB112AA3**	+	6,826	93.6	445
30	1800	286T	460	**1LE24222CB212AA3**	+	7,820	93.6	465
40	1800	324T	460	**1LE24223AB112AA3**	+	10,352	94.1	666
40	1800	364T	460	**1LE24223CC112AA3**	+	17,318	94.1	863
50	1800	326T	460	**1LE24223AB212AA3**	+	12,458	94.5	700
60	1800	364T	460	**1LE24223CB112AA3**	+	17,504	95.0	930
75	1800	365T	460	**1LE24223CB212AA3**	+	21,628	95.4	1000
			6 Pole | 460 | Roller Bearing | Long Shaft					
7 ½	1200	254T	460	**1LE24222BC112AA3**		5,084	91.0	272
10	1200	256T	460	**1LE24222BC212AA3**		6,294	91.0	288
15	1200	284T	460	**1LE24222CC112AA3**	+	7,736	91.7	400
20	1200	286T	460	**1LE24222CC212AA3**	+	9,276	91.7	465
25	1200	324T	460	**1LE24223AC112AA3**	+	11,272	93.0	640
30	1200	326T	460	**1LE24223AC212AA3**	+	12,896	93.0	675
40	1200	364T	460	**1LE24223CC112AA3**	+	17,318	94.1	839
50	1200	365T	460	**1LE24223CC212AA3**	+	19,644	94.1	900

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3.2.3. Explosion Proof Low Voltage NEMA Motors

Introduction

Explosion Proof low voltage NEMA motors are **not only** designed and built to operate under harsh environments in the industry, including but not limited to petrochemical and the **food industry**. Fans, compressors, pumps, and conveyors are some of the many applications. These motors are design to meet or exceed the NEMA Premium® efficiency (MG1 Table 12.12) as well as the high requirements for safety and protection stablished by the NFPA 70 code NEC®. These motors are prepared for different hazardous atmospheres for gas and dust protection, its IP65 ingress protection provides reliability and safety assurance in all cases. The construction of these motors is backed by its 3-to-5-year warranty.

Performance Specification

		XP100	XP100 ID1
HP Range	3600 RPM	1-300 HP	
	1800 RPM		
	1200 RPM	1-250 HP	1-200 HP
	900 RPM	1-200 HP	–
Frame Size	140T – 440T	140T-449T, 180JP-210JP	
Standard Voltage (3~ 60 Hz)	230V/460V (Suitable for 208V)	FS 140-250	
	230V/460V	1-100 HP	
	460V	1-300 HP	
	575V		
Efficiency	NEMA Premium® (MG1-Table 12-12)	1-300 HP	
Service Factor	1.15 @ 55°C (Temp Code T3C)	FS 140-360	FS 140-440
	1.15 @ 55°C (Temp Code T2A)	–	FS 140-440
	1.15 @ 55°C (Temp Code T3)	FS 360-447	–
	1.15 @ 40°C (Temp Code T3C)	FS 360-447	–
	1.0 @ 40°C (Temp Code T3C)	FS 449	–
Insulation	Non-Hygroscopic	Class F	
Temperature Rise	Class B	@ 1.0SF	
	Class F	@ 1.15SF	
Conduit Box (Oversized)	Oversized	Cast Iron	
Fan Cover		Cast Iron	
Cooling Fan	Bi-Directional	Polypropylene	
Rotor	Die Cast Aluminum	FS 140-449	
Ingress Protection	NEMA	IP65	
Hazardous Location	Gas	CL I, Div 1 Gr. C&D	CL I, Div 1 Gr. D
	Dust	CL II, Div 1, Gr F&G[1]	–
Inverter Duty[5]	Variable Torque 20:1	FS 140-440	FS 140-440
	Constant Torque 4:1	FS 140-447	FS 140-447

1. Group E as option (M32)

Frame and End Shields

The Explosion Proof XP100 and XP100 ID1 feature cast iron frame, end shields and an easy-to-access diagonally split, oversize terminal box; the terminal box is provided with a neoprene gasket and includes a heavy-duty ground lug and non-wicking clearly and permanently marked leads. These characteristics, its high strength, zinc-plated hardware, epoxy paint, and stainless-steel nameplate provide exceptional structural integrity and resistance to rust and corrosion, making them suitable for severe duty applications in harsh environments.

Rotor and Stator Windings

A unique offset rotor bar design provides improved efficiency, while larger bars and end rings reduce resistance for lower rotor losses. Each die cast aluminum rotor assembly is dynamically balanced for extended bearing life and includes a high-strength carbon steel (C1045) shaft for maximum rotor performance.

The stator is manufactured with premium electrical C5 grade steel lamination and copper electrical magnet wire that furthers the reduction in losses.

Insulation

The proprietary Class F non-hygroscopic insulation system, NEMA Class B temperature rise, provides an extra margin of thermal life. The varnish system application ensures maximum wire penetration to provide protection from moisture, corrosion, and electrical shock. This insulation system meets or exceeds NEMA MG1 2014 Part 31, making the motors suitable for variable speed drives in constant torque (4:1) and variable torque (20:1). All windings are tested for CIV.

Cooling System

A non-sparking, bi-directional fan is locked and keyed to the shaft. Its low-inertia design reduces windage losses, improves airflow, reduces noise, and provides dependable cooling. Cast Iron fan covers are provided for all frames sizes.

Bearings

Single shielded bearings are used for better bearing protection against contaminants.

3.2.3.1. XP100

XP100 | Eff: NEMA Premium | Foot Mounted | Division 1, Class I, Groups C & D, Class II, Groups F & G

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 230/460V | Ball Bearing | Long Shaft								
1 ½	3600	143T	230/460	**1MB21211AA214AG3**	+	1,810	84.0	55
2	3600	145T	230/460	**1MB21211AA314AG3**	+	2,056	85.5	65
3	3600	182T	230/460	**1MB21211CA114AG3**	+	2,246	86.5	88
5	3600	184T	230/460	**1MB21211CA314AG3**	+	3,004	88.5	105
7 ½	3600	213T	230/460	**1MB21212AA114AG3**	+	3,390	89.5	165
10	3600	215T	230/460	**1MB21212AA214AG3**	+	3,930	90.2	173
15	3600	254T	230/460	**1MB21212BA114AG3**	+	5,342	91.0	283
20	3600	256T	230/460	**1MB21212BA214AG3**	+	6,592	91.0	308
2 Pole | 230/460V | Ball Bearing | Short Shaft								
25	3600	284TS	230/460	**1MB21212DA116AG3**	+	8,150	91.7	526
30	3600	286TS	230/460	**1MB21212DA216AG3**	+	9,514	91.7	521
40	3600	324TS	230/460	**1MB21213BA116AG3**	+	12,088	93.6	606
50	3600	326TS	230/460	**1MB21213BA216AG3**	+	15,416	93.6	615
60	3600	364TS	230/460	**1MB21213DA116AG3**	+	18,698	93.6	790
75	3600	365TS	230/460	**1MB21213DA216AG3**	+	22,800	94.1	900
100	3600	405TS	230/460	**1MB21214BA216AG3**	+	32,106	94.1	1020
2 Pole | 460V | Ball Bearing | Short Shaft								
125	3600	444TS	460	**1MB21214DA112AG3**		39,146	95.0	1450
150	3600	445TS	460	**1MB21214DA212AG3**	+	48,096	95.0	1611
200	3600	447TS	460	**1MB21214DA312AG3**	+	61,426	95.4	2250
250	3600	449TS	460	**1MB21214DA512AG3**		75,146	95.8	2300
300	3600	449TS	460	**1MB21214DA612AG3**		110,452	95.8	2300

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XP100 | Eff: NEMA Premium | Foot Mounted | Division 1, Class I, Groups C & D, Class II, Groups F & G

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
4 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1800	143T	230/460	**1MB21211AB214AG3**	+	1,724	85.5	77
1 ½	1800	145T	230/460	**1MB21211AB314AG3**	+	1,854	86.5	88
2	1800	145T	230/460	**1MB21211AB414AG3**	+	1,980	86.5	88
3	1800	182T	230/460	**1MB21211CB114AG3**	+	2,230	89.5	110
5	1800	184T	230/460	**1MB21211CB314AG3**	+	2,732	89.5	125
7 ½	1800	213T	230/460	**1MB21212AB114AG3**	+	3,360	91.7	185
10	1800	215T	230/460	**1MB21212AB214AG3**	+	3,990	91.7	187
15	1800	254T	230/460	**1MB21212BB114AG3**	+	5,246	92.4	303
20	1800	256T	230/460	**1MB21212BB214AG3**	+	6,504	93.0	340
25	1800	284T	230/460	**1MB21212CB116AG3**	+	7,824	93.6	501
30	1800	286T	230/460	**1MB21212CB216AG3**	+	9,092	93.6	521
40	1800	324T	230/460	**1MB21213AB116AG3**	+	11,626	94.1	653
50	1800	326T	230/460	**1MB21213AB216AG3**	+	14,162	94.5	695
60	1800	364T	230/460	**1MB21213CB116AG3**	+	18,496	95.0	890
75	1800	365T	230/460	**1MB21213CB216AG3**	+	22,738	95.4	960
100	1800	405T	230/460	**1MB21214AB216AG3**	+	29,804	95.4	1115
4 Pole | 460V | Ball Bearing | Long Shaft								
125	1800	B444T	460	**1MB21214EB112AG3**	+	36,562	95.4	1621
150	1800	B445T	460	**1MB21214EB212AG3**	+	43,566	95.8	1896
200	1800	B447T	460	**1MB21214EB312AG3**	+	53,680	96.2	2276
250	1800	B449T	460	**1MB21214EB512AG3**	+	64,546	96.2	2453
300	1800	B449T	460	**1MB21214EB612AG3**	+	82,950	96.2	2315
4 Pole | 460V | Ball Bearing | Short Shaft								
125	1800	444TS	460	**1MB21214DB112AG3**	+	36,562	95.4	1596
150	1800	445TS	460	**1MB21214DB212AG3**	+	43,566	95.8	1706
200	1800	447TS	460	**1MB21214DB312AG3**	+	53,680	96.2	2250
250	1800	449TS	460	**1MB21214DB512AG3**	+	64,546	96.2	2453
300	1800	449TS	460	**1MB21214DB612AG3**	+	82,950	96.2	2315
4 Pole | 460V | Roller Bearing | Long Shaft								
125	1800	444T	460	**1MB21214CB112AG3**	+	37,778	95.4	1659
150	1800	445T	460	**1MB21214CB212AG3**	+	44,782	95.8	1934
200	1800	447T	460	**1MB21214CB312AG3**	+	54,896	96.2	2314
250	1800	449T	460	**1MB21214CB512AG3**	+	65,762	96.2	2453
300	1800	449T	460	**1MB21214CB612AG3**	+	84,166	96.2	2350

Voltage code “1-4” - Suitable for 208V

NEMA Premium is a certification mark of the National Electrical Manufacturer's Association

XP100 | Eff: NEMA Premium | Foot Mounted | Division 1, Class I, Groups C & D, Class II, Groups F & G

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
6 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1200	145T	230/460	**1MB21211AC314AG3**	+	2,028	82.5	88
1.5	1200	182T	230/460	**1MB21211CC114AG3**	+	2,212	87.5	105
2	1200	184T	230/460	**1MB21211CC314AG3**	+	2,498	88.5	125
3	1200	213T	230/460	**1MB21212AC114AG3**	+	3,044	89.5	173
5	1200	215T	230/460	**1MB21212AC214AG3**	+	4,342	89.5	180
7.5	1200	254T	230/460	**1MB21212BC114AG3**	+	5,254	91.0	285
10	1200	256T	230/460	**1MB21212BC214AG3**	+	6,376	91.0	308
15	1200	284T	230/460	**1MB21212CC116AG3**	+	8,830	91.7	481
20	1200	286T	230/460	**1MB21212CC216AG3**	+	10,774	91.7	506
25	1200	324T	230/460	**1MB21213AC116AG3**	+	13,000	93.0	713
30	1200	326T	230/460	**1MB21213AC216AG3**	+	15,036	93.0	678
40	1200	364T	230/460	**1MB21213CC116AG3**	+	19,384	94.1	835
50	1200	365T	230/460	**1MB21213CC216AG3**	+	22,382	94.1	870
60	1200	404T	230/460	**1MB21214AC116AG3**	+	24,840	94.5	1055
75	1200	405T	230/460	**1MB21214AC216AG3**	+	28,526	94.5	1025
6 Pole | 460V | Roller Bearing | Long Shaft								
100	1200	444T	230/460	**1MB21214CC116AG3**	+	41,360	95.0	1551
125	1200	445T	460	**1MB21214CC212AG3**	+	46,504	95.0	1771
150	1200	447T	460	**1MB21214CC312AG3**	+	53,450	95.8	2029
200	1200	449T	460	**1MB21214CC512AG3**	+	63,518	95.8	2450
8 Pole | 230/460V | Ball Bearing | Long Shaft								
1	900	182T	230/460	**1MB21211CD114AG3**	+	3,748	81.5	100
1.5	900	184T	230/460	**1MB21211CD314AG3**	+	4,412	82.5	125
2	900	213T	230/460	**1MB21212AD114AG3**	+	5,278	84.0	161
3	900	215T	230/460	**1MB21212AD214AG3**	+	6,340	85.5	173
5	900	254T	230/460	**1MB21212BD114AG3**	+	7,232	86.5	270
7.5	900	256T	230/460	**1MB21212BD214AG3**		8,262	87.5	300
10	900	284T	230/460	**1MB21212CD116AG3**		10,248	90.2	486
15	900	286T	230/460	**1MB21212CD216AG3**		13,148	91.0	531
20	900	324T	230/460	**1MB21213AD116AG3**		16,964	91.0	636
25	900	326T	230/460	**1MB21213AD216AG3**		19,770	91.0	683
30	900	364T	230/460	**1MB21213CD116AG3**		20,840	91.7	860
40	900	365T	230/460	**1MB21213CD216AG3**		20,638	91.7	940
50	900	404T	230/460	**1MB21214AD116AG3**		31,956	92.4	1050
60	900	405T	230/460	**1MB21214AD216AG3**		36,332	92.4	1050
8 Pole | 460V | Roller Bearing | Long Shaft								
75	900	444T	230/460	**1MB21214CD116AG3**		45,054	93.6	1551
100	900	445T	230/460	**1MB21214CD216AG3**		47,432	94.1	1770
125	900	447T	460	**1MB21214CD312AG3**		64,808	94.1	2029
150	900	449T	460	**1MB21214CD512AG3**		73,908	94.1	2508
200	900	449T	460	**1MB21214CD612AG3**		79,330	94.5	2450

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XP100 | Eff: NEMA Premium | Division 1, Class I, Groups C & D, Class II, Groups F & G

C-Face Vertical Mount with Drip Cover

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 230/460V | Ball Bearing | Long Shaft								
1 ½	3600	143TC	230/460	**1MB21211AA216LG3**	+	2,238	84.0	55
2	3600	145TC	230/460	**1MB21211AA316LG3**	+	2,484	85.5	65
3	3600	182TC	230/460	**1MB21211CA116LG3**	+	2,720	86.5	88
5	3600	184TC	230/460	**1MB21211CA316LG3**	+	3,478	88.5	105
7 ½	3600	213TC	230/460	**1MB21212AA116LG3**	+	3,868	89.5	165
10	3600	215TC	230/460	**1MB21212AA216LG3**	+	4,408	90.2	173
15	3600	254TC	230/460	**1MB21212BA116LG3**	+	5,978	91.0	283
20	3600	256TC	230/460	**1MB21212BA216LG3**	+	7,228	91.0	308
4 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1800	143TC	230/460	**1MB21211AB216LG3**	+	2,152	85.5	77
1 ½	1800	145TC	230/460	**1MB21211AB316LG3**	+	2,282	86.5	88
2	1800	145TC	230/460	**1MB21211AB416LG3**	+	2,408	86.5	88
3	1800	182TC	230/460	**1MB21211CB116LG3**	+	2,704	89.5	110
5	1800	184TC	230/460	**1MB21211CB316LG3**	+	3,206	89.5	125
7 ½	1800	213TC	230/460	**1MB21212AB116LG3**	+	3,838	91.7	185
10	1800	215TC	230/460	**1MB21212AB216LG3**	+	4,468	91.7	187
15	1800	254TC	230/460	**1MB21212BB116LG3**	+	5,882	92.4	303
20	1800	256TC	230/460	**1MB21212BB216LG3**	+	7,140	93.0	340
6 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1200	145TC	230/460	**1MB21211AC316LG3**	+	2,456	82.5	88
1 ½	1200	182TC	230/460	**1MB21211CC116LG3**	+	2,686	87.5	105
2	1200	184TC	230/460	**1MB21211CC316LG3**	+	2,972	88.5	125
3	1200	213TC	230/460	**1MB21212AC116LG3**	+	3,522	89.5	173
5	1200	215TC	230/460	**1MB21212AC216LG3**	+	4,820	89.5	180
7 ½	1200	254TC	230/460	**1MB21212BC116LG3**	+	5,890	91.0	285
10	1200	256TC	230/460	**1MB21212BC216LG3**	+	7,012	91.0	308
15	1200	284TC	230/460	**1MB21212CC116LG3**		11,042	91.7	481
20	1200	286TC	230/460	**1MB21212CC216LG3**		12,986	91.7	506
8 Pole | 230/460V | Ball Bearing | Long Shaft								
1	900	182TC	230/460	**1MB21211CD116LG3**		4,222	81.5	100
1 ½	900	184TC	230/460	**1MB21211CD316LG3**		4,886	82.5	125
2	900	213TC	230/460	**1MB21212AD116LG3**		5,756	84.0	161
3	900	215TC	230/460	**1MB21212AD216LG3**		6,818	85.5	173
5	900	254TC	230/460	**1MB21212BD116LG3**		7,868	86.5	270
7 ½	900	256TC	230/460	**1MB21212BD216LG3**		8,898	87.5	300

Voltage code “1-4” - Suitable for 208V

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XP100 | Eff: NEMA Premium | Foot Mounted | 575V

Division 1, Class I, Groups C & D, Class II, Groups F & G

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 575V | Ball Bearing | Long Shaft								
1 ½	3600	143T	575	**1MB21211AA213AG3**		1,810	84.0	55
2	3600	145T	575	**1MB21211AA313AG3**		2,056	85.5	65
3	3600	182T	575	**1MB21211CA113AG3**		2,246	86.5	88
5	3600	184T	575	**1MB21211CA313AG3**		3,004	88.5	105
7 ½	3600	213T	575	**1MB21212AA113AG3**		3,390	89.5	165
10	3600	215T	575	**1MB21212AA213AG3**		3,930	90.2	173
15	3600	254T	575	**1MB21212BA113AG3**		5,342	91.0	283
20	3600	256T	575	**1MB21212BA213AG3**		6,592	91.0	308
2 Pole | 575V | Ball Bearing | Short Shaft								
25	3600	284TS	575	**1MB21212DA113AG3**		8,150	91.7	526
30	3600	286TS	575	**1MB21212DA213AG3**		9,514	91.7	521
40	3600	324TS	575	**1MB21213BA113AG3**		12,088	93.6	606
50	3600	326TS	575	**1MB21213BA213AG3**		15,416	93.6	615
60	3600	364TS	575	**1MB21213DA113AG3**		18,698	93.6	790
75	3600	365TS	575	**1MB21213DA213AG3**		22,800	94.1	900
100	3600	405TS	575	**1MB21214BA213AG3**		32,106	94.1	1020
125	3600	444TS	575	**1MB21214DA113AG3**		39,146	95.0	1450
150	3600	445TS	575	**1MB21214DA213AG3**		48,096	95.0	1611
200	3600	447TS	575	**1MB21214DA313AG3**		61,426	95.4	2250
250	3600	449TS	575	**1MB21214DA513AG3**		75,146	95.8	2300
300	3600	449TS	575	**1MB21214DA613AG3**		110,452	95.8	2300
4 Pole | 575V | Ball Bearing | Long Shaft								
1	1800	143T	575	**1MB21211AB213AG3**	+	1,724	85.5	77
1 ½	1800	145T	575	**1MB21211AB313AG3**	+	1,854	86.5	88
2	1800	145T	575	**1MB21211AB413AG3**	+	1,980	86.5	88
3	1800	182T	575	**1MB21211CB113AG3**		2,230	89.5	110
5	1800	184T	575	**1MB21211CB313AG3**	+	2,732	89.5	125
7 ½	1800	213T	575	**1MB21212AB113AG3**		3,360	91.7	185
10	1800	215T	575	**1MB21212AB213AG3**	+	3,990	91.7	187
15	1800	254T	575	**1MB21212BB113AG3**		5,246	92.4	303
20	1800	256T	575	**1MB21212BB213AG3**	+	6,504	93.0	340
25	1800	284T	575	**1MB21212CB113AG3**		7,824	93.6	501
30	1800	286T	575	**1MB21212CB213AG3**	+	9,092	93.6	521
40	1800	324T	575	**1MB21213AB113AG3**		11,626	94.1	653
50	1800	326T	575	**1MB21213AB213AG3**	+	14,162	94.5	695
60	1800	364T	575	**1MB21213CB113AG3**		18,496	95.0	890
75	1800	365T	575	**1MB21213CB213AG3**	+	22,738	95.4	960
100	1800	405T	575	**1MB21214AB213AG3**	+	29,804	95.4	1115

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XP100 | Eff: NEMA Premium | Foot Mounted | 575V

Division 1, Class I, Groups C & D, Class II, Groups F & G

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
4 Pole | 575V | Ball Bearing | Long Shaft								
125	1800	B444T	575	**1MB21214EB113AG3**	+	36,562	95.4	1621
150	1800	B445T	575	**1MB21214EB213AG3**	+	43,566	95.8	1896
200	1800	B447T	575	**1MB21214EB313AG3**	+	53,680	96.2	2276
250	1800	B449T	575	**1MB21214EB513AG3**	+	64,546	96.2	2453
300	1800	B449T	575	**1MB21214EB613AG3**	+	82,950	96.2	2315
4 Pole | 575V | Ball Bearing | Short Shaft								
125	1800	444TS	575	**1MB21214DB113AG3**		36,562	95.4	1596
150	1800	445TS	575	**1MB21214DB213AG3**		43,566	95.8	1706
200	1800	447TS	575	**1MB21214DB313AG3**		53,680	96.2	2250
250	1800	449TS	575	**1MB21214DB513AG3**		64,546	96.2	2453
300	1800	449TS	575	**1MB21214DB613AG3**		82,950	96.2	2315
4 Pole | 575V | Roller Bearing | Long Shaft								
125	1800	444T	575	**1MB21214CB113AG3**		37,778	95.4	1659
150	1800	445T	575	**1MB21214CB213AG3**	+	44,782	95.8	1934
200	1800	447T	575	**1MB21214CB313AG3**		54,896	96.2	2314
250	1800	449T	575	**1MB21214CB513AG3**		65,762	96.2	2453
300	1800	449T	575	**1MB21214CB613AG3**		84,166	96.2	2350
6 Pole | 575V | Ball Bearing | Long Shaft								
1	1200	145T	575	**1MB21211AC313AG3**		2,028	82.5	88
1 ½	1200	182T	575	**1MB21211CC113AG3**		2,212	87.5	105
2	1200	184T	575	**1MB21211CC313AG3**		2,498	88.5	125
3	1200	213T	575	**1MB21212AC113AG3**		3,044	89.5	173
5	1200	215T	575	**1MB21212AC213AG3**		4,342	89.5	180
7 ½	1200	254T	575	**1MB21212BC113AG3**		5,254	91.0	285
10	1200	256T	575	**1MB21212BC213AG3**		6,376	91.0	308
15	1200	284T	575	**1MB21212CC113AG3**		8,830	91.7	481
20	1200	286T	575	**1MB21212CC213AG3**		10,774	91.7	506
25	1200	324T	575	**1MB21213AC113AG3**		13,000	93.0	713
30	1200	326T	575	**1MB21213AC213AG3**		15,036	93.0	678
40	1200	364T	575	**1MB21213CC113AG3**		19,384	94.1	835
50	1200	365T	575	**1MB21213CC213AG3**		22,382	94.1	870
60	1200	404T	575	**1MB21214AC113AG3**		24,840	94.5	1055
75	1200	405T	575	**1MB21214AC213AG3**		28,526	94.5	1025
6 Pole | 575V | Roller Bearing | Long Shaft								
100	1200	444T	575	**1MB21214CC113AG3**		41,360	95.0	1551
125	1200	445T	575	**1MB21214CC213AG3**		46,504	95.0	1771
150	1200	447T	575	**1MB21214CC313AG3**		53,450	95.8	2029
200	1200	449T	575	**1MB21214CC513AG3**		63,518	95.8	2450

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XP100 | Eff: NEMA Premium | Foot Mounted | 575V

Division 1, Class I, Groups C & D, Class II, Groups F & G

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
8 Pole | 575V | Ball Bearing | Long Shaft								
1	900	182T	575	**1MB21211CD113AG3**		3,748	81.5	100
1 ½	900	184T	575	**1MB21211CD313AG3**		4,412	82.5	125
2	900	213T	575	**1MB21212AD113AG3**		5,278	84.0	161
3	900	215T	575	**1MB21212AD213AG3**		6,340	85.5	173
5	900	254T	575	**1MB21212BD113AG3**		7,232	86.5	270
7 ½	900	256T	575	**1MB21212BD213AG3**		8,262	87.5	300
10	900	284T	575	**1MB21212CD113AG3**		10,248	90.2	486
15	900	286T	575	**1MB21212CD213AG3**		13,148	91.0	531
20	900	324T	575	**1MB21213AD113AG3**		16,964	91.0	636
25	900	326T	575	**1MB21213AD213AG3**		19,770	91.0	683
30	900	364T	575	**1MB21213CD113AG3**		20,840	91.7	860
40	900	365T	575	**1MB21213CD213AG3**		20,638	91.7	940
50	900	404T	575	**1MB21214AD113AG3**		31,956	92.4	1050
60	900	405T	575	**1MB21214AD213AG3**		36,332	92.4	1050
8 Pole | 575V | Roller Bearing | Long Shaft								
75	900	444T	575	**1MB21214CD113AG3**		45,054	93.6	1551
100	900	445T	575	**1MB21214CD213AG3**		47,432	94.1	1770
125	900	447T	575	**1MB21214CD313AG3**		64,808	94.1	2029
150	900	449T	575	**1MB21214CD513AG3**		73,908	94.1	2508
200	900	449T	575	**1MB21214CD613AG3**		79,330	94.5	2450

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3.2.3.2. XP100 ID1

XP100 | Eff: NEMA Premium | Foot Mounted

Division 1, Class I, Group D

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
2 Pole | 230/460V | Ball Bearing | Long Shaft								
1 ½	3600	143T	230/460	**1MB22211AA214AA3**		1,738	84.0	55
2	3600	145T	230/460	**1MB22211AA314AA3**		1,974	85.5	65
3	3600	182T	230/460	**1MB22211CA114AA3**	+	2,156	86.5	88
5	3600	184T	230/460	**1MB22211CA314AA3**	+	2,884	88.5	105
7 ½	3600	213T	230/460	**1MB22212AA114AA3**	+	3,254	89.5	165
10	3600	215T	230/460	**1MB22212AA214AA3**	+	3,772	90.2	173
15	3600	254T	230/460	**1MB22212BA114AA3**		5,128	91.0	283
20	3600	256T	230/460	**1MB22212BA214AA3**	+	6,328	91.0	308
2 Pole | 230/460V | Ball Bearing | Short Shaft								
25	3600	284TS	230/460	**1MB22212DA116AA3**	+	7,052	91.7	530
30	3600	286TS	230/460	**1MB22212DA216AA3**	+	8,220	91.7	525
40	3600	324TS	230/460	**1MB22213BA116AA3**	+	10,422	93.6	615
50	3600	326TS	230/460	**1MB22213BA216AA3**	+	13,272	93.6	615
60	3600	364TS	230/460	**1MB22213DA116AA3**		17,350	93.6	790
75	3600	365TS	230/460	**1MB22213DA216AA3**		20,980	94.1	900
100	3600	405TS	230/460	**1MB22214BA216AA3**		29,288	94.1	1020
2 Pole | 460V | Ball Bearing | Short Shaft								
125	3600	444TS	460	**1MB22214DA112AA3**		35,520	95.0	1450
150	3600	445TS	460	**1MB22214DA212AA3**		43,486	95.0	1611
200	3600	447TS	460	**1MB22214DA312AA3**		54,722	95.4	2250
250	3600	449TS	460	**1MB22214DA512AA3**		64,868	95.8	2300
300	3600	449TS	460	**1MB22214DA612AA3**		83,006	95.8	2300

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XP100 | Eff: NEMA Premium | Foot Mounted

Division 1, Class I, Group D

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
4 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1800	143T	230/460	**1MB22211AB214AA3**		1,656	85.5	77
1 ½	1800	145T	230/460	**1MB22211AB314AA3**		1,780	86.5	88
2	1800	145T	230/460	**1MB22211AB414AA3**		1,900	86.5	88
3	1800	182T	230/460	**1MB22211CB114AA3**	+	2,140	89.5	110
5	1800	184T	230/460	**1MB22211CB314AA3**	+	2,622	89.5	125
7 ½	1800	213T	230/460	**1MB22212AB114AA3**	+	3,226	91.7	185
10	1800	215T	230/460	**1MB22212AB214AA3**	+	3,830	91.7	187
15	1800	254T	230/460	**1MB22212BB114AA3**	+	5,036	92.4	303
20	1800	256T	230/460	**1MB22212BB214AA3**	+	6,244	93.0	340
25	1800	284T	230/460	**1MB22212CB116AA3**	+	6,792	93.6	501
30	1800	286T	230/460	**1MB22212CB216AA3**	+	7,880	93.6	521
40	1800	324T	230/460	**1MB22213AB116AA3**	+	10,056	94.1	653
50	1800	326T	230/460	**1MB22213AB216AA3**	+	12,232	94.5	687
60	1800	364T	230/460	**1MB22213CB116AA3**	+	17,222	95.0	890
75	1800	365T	230/460	**1MB22213CB216AA3**	+	20,996	95.4	960
100	1800	405T	230/460	**1MB22214AB216AA3**	+	27,282	95.4	1115
4 Pole | 460V | Ball Bearing | Long Shaft								
125	1800	B444T	460	**1MB22214EB112AA3**	+	33,292	95.4	1621
150	1800	B445T	460	**1MB22214EB212AA3**	+	39,522	95.8	1896
200	1800	B447T	460	**1MB22214EB312AA3**		47,986	96.2	2276
250	1800	B449T	460	**1MB22214EB512AA3**		55,908	96.2	2453
300	1800	B449T	460	**1MB22214EB612AA3**		62,548	96.2	2340
4 Pole | 460V | Roller Bearing | Long Shaft								
125	1800	444T	460	**1MB22214CB112AA3**		34,508	95.4	1659
150	1800	445T	460	**1MB22214CB212AA3**		40,738	95.8	1934
200	1800	447T	460	**1MB22214CB312AA3**		49,202	96.2	2314
250	1800	449T	460	**1MB22214CB512AA3**		57,124	96.2	2453
300	1800	449T	460	**1MB22214CB612AA3**		63,764	96.2	2350

Voltage code “1-4” - Suitable for 208V

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XP100 | Eff: NEMA Premium | Foot Mounted

Division 1, Class I, Group D

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
6 Pole | 230/460V | Ball Bearing | Long Shaft								
1	1200	145T	230/460	**1MB22211AC314AA3**		1,946	82.5	88
1 ½	1200	182T	230/460	**1MB22211CC114AA3**		2,124	87.5	105
2	1200	184T	230/460	**1MB22211CC314AA3**		2,398	88.5	125
3	1200	213T	230/460	**1MB22212AC114AA3**		2,922	89.5	173
5	1200	215T	230/460	**1MB22212AC214AA3**		4,168	89.5	180
7 ½	1200	254T	230/460	**1MB22212BC114AA3**		5,044	91.0	285
10	1200	256T	230/460	**1MB22212BC214AA3**		6,120	91.0	308
15	1200	284T	230/460	**1MB22212CC116AA3**		7,628	91.7	481
20	1200	286T	230/460	**1MB22212CC216AA3**		9,276	91.7	506
25	1200	324T	230/460	**1MB22213AC116AA3**		11,168	93.0	713
30	1200	326T	230/460	**1MB22213AC216AA3**		12,898	93.0	678
40	1200	364T	230/460	**1MB22213CC116AA3**		16,592	94.1	835
50	1200	365T	230/460	**1MB22213CC216AA3**		19,134	94.1	870
60	1200	404T	230/460	**1MB22214AC116AA3**		22,890	94.5	1055
75	1200	405T	230/460	**1MB22214AC216AA3**		26,066	94.5	1025
100	1200	B444T	230/460	**1MB22214EC116AA3**		36,362	95.0	1513
6 Pole | 460V | Ball Bearing | Long Shaft								
125	1200	B445T	460	**1MB22214EC212AA3**		40,810	95.0	1733
150	1200	B447T	460	**1MB22214EC312AA3**		46,894	95.8	1991
200	1200	B449T	460	**1MB22214EC512AA3**		55,110	95.8	2440
6 Pole | 460V | Roller Bearing | Long Shaft								
100	1200	444T	230/460	**1MB22214CC116AA3**		37,578	95.0	1551
125	1200	445T	460	**1MB22214CC212AA3**		42,026	95.0	1771
150	1200	447T	460	**1MB22214CC312AA3**		48,110	95.8	2029
200	1200	449T	460	**1MB22214CC512AA3**		56,326	95.8	2450

Voltage code “1-4” - Suitable for 208V

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XP100 | Eff: NEMA Premium | Foot Mounted | 575V

Division 1, Class I, Group D

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
4 Pole | 575V | Ball Bearing | Long Shaft								
1	1800	143T	575	**1MB22211AB213AA3**		1,656	85.5	77
1 ½	1800	145T	575	**1MB22211AB313AA3**		1,780	86.5	88
2	1800	145T	575	**1MB22211AB413AA3**		1,900	86.5	88
3	1800	182T	575	**1MB22211CB113AA3**		2,140	89.5	110
5	1800	184T	575	**1MB22211CB313AA3**		2,622	89.5	125
7 ½	1800	213T	575	**1MB22212AB113AA3**		3,226	91.7	185
10	1800	215T	575	**1MB22212AB213AA3**		3,830	91.7	187
15	1800	254T	575	**1MB22212BB113AA3**		5,036	92.4	303
20	1800	256T	575	**1MB22212BB213AA3**		6,244	93.0	340
25	1800	284T	575	**1MB22212CB113AA3**		6,792	93.6	501
30	1800	286T	575	**1MB22212CB213AA3**		7,880	93.6	521
40	1800	324T	575	**1MB22213AB113AA3**		10,056	94.1	653
50	1800	326T	575	**1MB22213AB213AA3**		12,232	94.5	687
60	1800	364T	575	**1MB22213CB113AA3**		17,222	95.0	890
75	1800	365T	575	**1MB22213CB213AA3**		20,996	95.4	960
100	1800	405T	575	**1MB22214AB213AA3**		27,282	95.4	1115
125	1800	B444T	575	**1MB22214EB113AA3**		33,292	95.4	1621
150	1800	B445T	575	**1MB22214EB213AA3**		39,522	95.8	1896
200	1800	B447T	575	**1MB22214EB313AA3**		47,986	96.2	2276
250	1800	B449T	575	**1MB22214EB513AA3**		55,908	96.2	2453
300	1800	B449T	575	**1MB22214EB613AA3**		62,548	96.2	2340
4 Pole | 575V | Roller Bearing | Long Shaft								
125	1800	444T	575	**1MB22214CB113AA3**		34,508	95.4	1659
150	1800	445T	575	**1MB22214CB213AA3**		40,738	95.8	1934
200	1800	447T	575	**1MB22214CB313AA3**		51,502	96.2	2314
250	1800	449T	575	**1MB22214CB513AA3**		57,124	96.2	2453
300	1800	449T	575	**1MB22214CB613AA3**		63,764	96.2	2350

Voltage code “1-4” - Suitable for 208V
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3.2.3.3. XP100 JP Frame

XP100 | Eff: NEMA Premium | C-Face Foot Mount with JP Shaft

Division 1, Class I, Groups C & D, Class II, Groups F & G

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
3	1800	182JP	230/460	**1MB21211FB314WG3**	+	3,438	89.5	110
5	1800	184JP	230/460	**1MB21211FB414WG3**	+	3,940	89.5	125
7 ½	1800	213JP	230/460	**1MB21212FB314EG3**		6,202	91.7	185
10	1800	215JP	230/460	**1MB21212FB414EG3**		6,832	91.7	187

Voltage code “1-4” - Suitable for 208V
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XP100 ID1 | Eff: NEMA Premium | C-Face Foot Mount with JP Shaft

Division 1, Class I, Groups D

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
3	1800	182JP	230/460	**1MB22211FB314WA3**		2,754	89.5	110
5	1800	184JP	230/460	**1MB22211FB414WA3**		3,256	89.5	125
7.5	1800	213JP	230/460	**1MB22212FB314EA3**		5,804	91.7	185
10	1800	215JP	230/460	**1MB22212FB414EA3**		6,342	91.7	187

Voltage code “1-4” - Suitable for 208V
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3.2.4. Definite Purpose Low Voltage NEMA Motors

Introduction

ABB Definite Purpose low voltage NEMA motors are designed and built to operate under harsh environments in the industry, including but not limited to petrochemical, pulp and paper mills and waste-water treatment. in-line pumps, booster, centrifugal and non-clog pumps, vertical turbine, mix flow, and propeller pumps are some of the many applications. Pump motors are designed to meet or exceed the NEMA Premium® efficiency (MG1 Table 12-12) as well as the most stringent industry standards API610 (LP100) and IEEE 841 where applicable. DP200 HPS motors use the SD200 as a base with added features (Provisions for Bearing RTDs, Provisions for Vibration detectors, and Insulated NDE bearing) that are key in the Horizontal Pump Systems motors. SD10 MS motors are energy efficient motors built with the same characteristics of our Severe Duty line. A wide selection of options, among them bearing isolator and ceramic bearings on drive end, extra high thrust and Non-Reverse Ratchet for LP100 motors, make these motors suitable for almost any requirement. The construction of these motors is backed by its three-year warranty and 5 years when ordered with IEEE841 features.

Performance Specification

		Pump Motors		Multi-speed
		VSS Vertical Solid Shaft		One Winding Variable
		LP100	HP100	SD10 MS
HP Range	3600 RPM	3-100 HP		1-250HP 1800 / 900
	1800 RPM	3-250 HP		
	1200 RPM			
Frame Size	140T - 500	180LP-440LP	180H - 440HP	143T-449T
Standard Voltage (3~ 60 Hz)	230V/460V	FS 180-250		–
	460V	FS 280-440		FS 143-449
	575V	FS 180-440		FS 143-449
Efficiency	NEMA Premium® (MG1-Table 12-12)	3-300 HP		–
	Energy Efficient (MG 1-Table 12-11)	–		FS 143-449
Service Factor	1.15 @ 40°C	FS 180-440		–
	1.00 @ 40°C	–		FS 143-449
Insulation	Non-Hygroscopic	Class F		Class F
Temperature Rise	Class B	@ 1.0SF		@ 1.0SF
	Class F	@ 1.15SF		@ 1.15SF
Conduit Box (Oversized)	Oversized	Cast Iron		Cast Iron
Fan Cover		Cast Iron		Cast Iron
Cooling Fan	Bi-Directional	Polypropylene		Polypropylene
Rotor	Die Cast Aluminum	FS 180-440		FS 143-449
Ingress Protection	NEMA	IP55		IP54
Hazardous Location	Gas	CL 1, Div 2 Gr. A, B, C or D Temp Code T3		–
Inverter Duty[5]	Variable Torque VT 20:1	FS 180-440		–
	Constant Torque CT 4:1	FS 180-440		–
	Constant Torque CT 2:1	–		–

Frame and end shields

Definite purpose motors feature cast iron frame, end shields and an easy to access, diagonally split, oversize terminal box; the terminal box is provided with a neoprene gasket and includes a heavy-duty ground lug and non-wicking clearly and permanently marked leads. These characteristics, its zinc-plated hardware, epoxy paint and stainless-steel nameplate provide exceptional structural integrity and resistant to rust and corrosion and make them suitable for severe duty applications in harsh environments.

Rotor and stator windings

A unique offset rotor bar design provides improved efficiency, while larger bars and end rings reduce resistance for lower rotor losses. Each die cast aluminum rotor assembly is dynamically balanced with half key for extended bearing life and includes a high-strength carbon steel (C1045) shaft for maximum rotor performance.

The stator is manufactured with premium electrical C5 grade steel lamination and copper electrical magnet wire that reduce losses.

Insulation

The proprietary Class F non-hygroscopic insulation system, NEMA Class B temperature rise, provides an extra margin of thermal life. The varnish system application ensures maximum wire penetration to provide protection from moisture, corrosion and electrical shock. This insulation system meets or exceeds NEMA MG1 Part 31 making the motors suitable for variable speed drives in constant torque (4:1) and variable torque (20:1). All windings are tested for CIV.

Cooling system

A non-sparking, bi-directional fan is locked and keyed to the shaft. Its low-inertia design reduces windage losses, improves airflow, reduces noise and provides dependable cooling. Metal sheet fan covers are provided for all frames sizes.

Bearings

Definite purpose motors are provided with single shielded bearings, HP100 (DE and NDE) and LP100 (DE) include regreasable open ball bearings for up to 250HP and 250LP frames, The LP100 opposite drive end features a duplex angular contact thrust bearing, across all frame sizes, depending on the arrangement the motor can provide high thrust or up to 175% extra high thrust.

3.2.4.1. Vertical Solid Shaft – LP100

LP100 | Eff: NEMA Premium | Vertical P-Base | NDE Thrust Bearing(s)

							Rated Thrust (Lbs)				
Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Down Thrust	Up Thrust	Radial Thrust	Eff %	Weight (lbs)
2 Pole | 230/460V											
3	3600	182LP	230/460	**1PC28321DA416TA3**	+	3,934	1087	1095	24	86.5	118
5	3600	184LP	230/460	**1PC28321DA516TA3**	+	4,348	1075	1082	34	88.5	130
7 ½	3600	213LP	230/460	**1PC28322AA516TA3**	+	5,218	1860	1880	40	89.5	188
10	3600	215LP	230/460	**1PC28322AA616TA3**	+	5,844	1848	1868	50	90.2	202
15	3600	254LP	230/460	**1PC28322BA516TA3**	+	6,732	1811	1843	75	91.0	309
20	3600	256LP	230/460	**1PC28322BA616TA3**	+	7,556	1789	1824	92	91.0	337
2 Pole | 460V											
25	3600	284LPH	460	**1PC28322EA112TA3**	+	10,494	2541	2593	65	91.7	559
30	3600	286LPH	460	**1PC28322EA412TA3**	+	11,134	2523	2578	78	91.7	591
40	3600	324LP	460	**1PC28323AA512TA3**	+	14,846	2480	2551	98	93.6	784
50	3600	326LP	460	**1PC28323AA612TA3**	+	18,190	2466	2535	105	93.6	799
60	3600	364LP	460	**1PC28323CA512TA3**	+	22,640	2386	2495	152	93.6	836
75	3600	365LP	460	**1PC28323CA612TA3**	+	27,598	2352	2465	175	94.1	877
100	3600	405LP	460	**1PC28324AA612TA3**	+	31,648	2269	2406	230	94.1	1057
4 Pole | 230/460V											
3	1800	182LP	230/460	**1PC28321DB416TA3**	+	3,832	1361	1369	39	89.5	129
5	1800	184LP	230/460	**1PC28321DB516TA3**	+	4,108	1351	1357	45	89.5	135
7 ½	1800	213LP	230/460	**1PC28322AB516TA3**	+	5,198	2328	2351	66	91.7	212
10	1800	215LP	230/460	**1PC28322AB616TA3**	+	5,848	2317	2338	73	91.7	220
15	1800	254LP	230/460	**1PC28322BB516TA3**	+	6,990	2279	2309	95	92.4	315
20	1800	256LP	230/460	**1PC28322BB616TA3**	+	7,964	2247	2281	120	93.0	342

Extra high thrust is available with option K21, refer to Technical Notes Section Bearing and Lubrication Table 6.2 for thrust values
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LP100 | Eff: NEMA Premium | Vertical P-Base | NDE Thrust Bearing(s)

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Rated Thrust (Lbs) Down Thrust	Up Thrust	Radial Thrust	Eff %	Weight (lbs)
4 Pole | 460V											
25	1800	284LPH	460	**1PC28322EB112TA3**	+	10,326	3172	3233	108	93.6	640
30	1800	286LPH	460	**1PC28322EB412TA3**	+	11,616	3158	3217	116	93.6	649
40	1800	324LP	460	**1PC28323AB512TA3**	+	14,396	3093	3179	140	94.1	848
50	1800	326LP	460	**1PC28323AB612TA3**	+	16,892	3034	3135	180	94.5	957
60	1800	364LP	460	**1PC28323CB512TA3**	+	22,528	2965	3097	214	95.0	885
75	1800	365LP	460	**1PC28323CB612TA3**	+	27,686	2902	3046	255	95.4	948
100	1800	405LP	460	**1PC28324AB612TA3**	+	31,960	2814	2976	303	95.4	1059
125	1800	444LP	460	**1PC28324JB112TA3**	+	38,470	2670	2911	347	95.4	1429
150	1800	445LP	460	**1PC28324JB212TA3**		44,918	2558	2835	417	95.8	1565
200	1800	447LP	460	**1PC28324JB312TA3**		56,386	2361	2703	524	96.2	1843
250	1800	449LP	460	**1PC28324JB512TA3**		65,510	2149	2571	638	96.2	2203
6 Pole | 230/460V											
3	1200	213LP	230/460	**1PC28322AC516TA3**		4,580	2702	2725	51	89.5	192
5	1200	215LP	230/460	**1PC28322AC616TA3**		5,956	2685	2705	62	89.5	204
7 ½	1200	254LP	230/460	**1PC28322BC516TA3**		7,096	2648	2680	84	91.0	294
10	1200	256LP	230/460	**1PC28322BC616TA3**		8,012	2629	2659	98	91.0	310
15	1200	284LPH	230/460	**1PC28322EC116TA3**		11,222	3682	3738	95	91.7	601
20	1200	286LPH	230/460	**1PC28322EC416TA3**		13,630	3645	3705	120	91.7	656
6 Pole | 460V											
25	1200	324LP	460	**1PC28323AC512TA3**		15,452	3569	3665	155	93.0	884
30	1200	326LP	460	**1PC28323AC612TA3**		17,272	3541	3640	172	93.0	920
40	1200	364LP	460	**1PC28323CC512TA3**		22,182	3494	3605	186	94.1	822
50	1200	365LP	460	**1PC28323CC612TA3**		26,152	3455	3565	208	94.1	855
60	1200	404LP	460	**1PC28324AC512TA3**		28,330	3351	3500	274	94.5	1021
75	1200	405LP	460	**1PC28324AC612TA3**		33,218	3290	3444	310	94.5	1088
100	1200	444LP	460	**1PC28324JC112TA3**		39,734	3116	3364	353	95.0	1385
125	1200	445LP	460	**1PC28324JC212TA3**		50,502	2946	3254	455	95.0	1565
150	1200	447LP	460	**1PC28324JC312TA3**		59,688	2795	3161	529	95.8	1778
200	1200	449LP	460	**1PC28324JC512TA3**		65,710	2515	2985	673	95.8	2204
250	1200	449LP	460	**1PC28324JC612TA3**		74,790	2488	2904	679	95.8	2191

Add “-Z” at the end of the base part number, and short code “+K21”

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LP100 | Eff: NEMA Premium | Vertical P-Base | NDE Thrust Bearing(s) | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Rated Thrust (Lbs) Down Thrust	Up Thrust	Radial Thrust	Eff %	Weight (lbs)
2 Pole | 575V											
3	3600	182LP	575	**1PC28321DA413TA3**		3,934	1087	1095	24	86.5	118
5	3600	184LP	575	**1PC28321DA513TA3**		4,348	1075	1082	34	88.5	130
7 ½	3600	213LP	575	**1PC28322AA513TA3**		5,218	1860	1880	40	89.5	188
10	3600	215LP	575	**1PC28322AA613TA3**		5,844	1848	1868	50	90.2	202
15	3600	254LP	575	**1PC28322BA513TA3**		6,732	1811	1843	75	91.0	309
20	3600	256LP	575	**1PC28322BA613TA3**		7,556	1789	1824	92	91.0	337
25	3600	284LPH	575	**1PC28322EA113TA3**		10,494	2541	2593	65	91.7	559
30	3600	286LPH	575	**1PC28322EA413TA3**		11,134	2523	2578	78	91.7	591
40	3600	324LP	575	**1PC28323AA513TA3**		14,846	2480	2551	98	93.6	784
50	3600	326LP	575	**1PC28323AA613TA3**		18,190	2466	2535	105	93.6	799
60	3600	364LP	575	**1PC28323CA513TA3**		22,640	2386	2495	152	93.6	836
75	3600	365LP	575	**1PC28323CA613TA3**		27,598	2352	2465	175	94.1	877
100	3600	405LP	575	**1PC28324AA613TA3**		31,648	2269	2406	230	94.1	1057
4 Pole | 575V											
3	1800	182LP	575	**1PC28321DB413TA3**		3,832	1361	1369	39	89.5	129
5	1800	184LP	575	**1PC28321DB513TA3**		4,108	1351	1357	45	89.5	135
7 ½	1800	213LP	575	**1PC28322AB513TA3**		5,198	2328	2351	66	91.7	212
10	1800	215LP	575	**1PC28322AB613TA3**		5,848	2317	2338	73	91.7	220
15	1800	254LP	575	**1PC28322BB513TA3**		6,990	2279	2309	95	92.4	315
20	1800	256LP	575	**1PC28322BB613TA3**		7,964	2247	2281	120	93.0	342
25	1800	284LPH	575	**1PC28322EB113TA3**		10,326	3172	3233	108	93.6	640
30	1800	286LPH	575	**1PC28322EB413TA3**		11,616	3158	3217	116	93.6	649
40	1800	324LP	575	**1PC28323AB513TA3**		14,396	3093	3179	140	94.1	848
50	1800	326LP	575	**1PC28323AB613TA3**		16,892	3034	3135	180	94.5	957
60	1800	364LP	575	**1PC28323CB513TA3**		22,528	2965	3097	214	95.0	885
75	1800	365LP	575	**1PC28323CB613TA3**		27,686	2902	3046	255	95.4	948
100	1800	405LP	575	**1PC28324AB613TA3**		31,960	2814	2976	303	95.4	1059
125	1800	444LP	575	**1PC28324JB113TA3**		38,470	2670	2911	347	95.4	1429
150	1800	445LP	575	**1PC28324JB213TA3**		44,918	2558	2835	417	95.8	1565
200	1800	447LP	575	**1PC28324JB313TA3**		56,386	2361	2703	524	96.2	1843
250	1800	449LP	575	**1PC28324JB513TA3**		65,510	2149	2571	638	96.2	2203

Extra high thrust is available with option K21, refer to Technical Notes Section Bearing and Lubrication Table 6-2 for thrust values
NEMA Premium is a certification mark of the National Electrical Manufacturer's Association

LP100 | Eff: NEMA Premium | Vertical P-Base | NDE Thrust Bearing(s) | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Rated Thrust (Lbs) Down Thrust	Up Thrust	Radial Thrust	Eff %	Weight (lbs)
6 Pole | 575V											
3	1200	213LP	575	**1PC28322AC513TA3**		4,580	2702	2725	51	89.5	192
5	1200	215LP	575	**1PC28322AC613TA3**		5,956	2685	2705	62	89.5	204
7 ½	1200	254LP	575	**1PC28322BC513TA3**		7,096	2648	2680	84	91.0	294
10	1200	256LP	575	**1PC28322BC613TA3**		8,012	2629	2659	98	91.0	310
15	1200	284LPH	575	**1PC28322EC113TA3**		11,222	3682	3738	95	91.7	601
20	1200	286LPH	575	**1PC28322EC413TA3**		13,630	3645	3705	120	91.7	656
25	1200	324LP	575	**1PC28323AC513TA3**		15,452	3569	3665	155	93.0	884
30	1200	326LP	575	**1PC28323AC613TA3**		17,272	3541	3640	172	93.0	920
40	1200	364LP	575	**1PC28323CC513TA3**		22,182	3494	3605	186	94.1	822
50	1200	365LP	575	**1PC28323CC613TA3**		26,152	3455	3565	208	94.1	855
60	1200	404LP	575	**1PC28324AC513TA3**		28,330	3351	3500	274	94.5	1021
75	1200	405LP	575	**1PC28324AC613TA3**		33,218	3290	3444	310	94.5	1088
100	1200	444LP	575	**1PC28324JC113TA3**		39,734	3116	3364	353	95.0	1385
125	1200	445LP	575	**1PC28324JC213TA3**		50,502	2946	3254	455	95.0	1565
150	1200	447LP	575	**1PC28324JC313TA3**		59,688	2795	3161	529	95.8	1778
200	1200	449LP	575	**1PC28324JC513TA3**		65,710	2515	2985	673	95.8	2204
250	1200	449LP	575	**1PC28324JC613TA3**		74,790	2488	2904	679	95.8	2191

Add “-Z” at the end of the base part number, and short code “+K21”

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3.2.4.2. Vertical Solid Shaft – HP100

LP100 | Eff: NEMA Premium | Vertical P-Base | Ball Bearings

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Rated Thrust (Lbs) Down Thrust	Up Thrust	Radial Thrust	Eff %	Weight (lbs)
2 Pole | 230/460V											
3	3600	182HP	230/460	**1PC28221DA116TA3**	+	2,964	901	908	24	86.5	118
5	3600	184HP	230/460	**1PC28221DA216TA3**	+	4,154	889	896	34	88.5	130
7 ½	3600	213HP	230/460	**1PC28222AA316TA3**	+	5,008	1681	1699	40	89.5	188
10	3600	215HP	230/460	**1PC28222AA416TA3**	+	5,610	1668	1688	52	90.2	202
15	3600	254HP	230/460	**1PC28222BA316TA3**	+	6,468	1631	1664	76	91.0	309
20	3600	256HP	230/460	**1PC28222BA416TA3**	+	7,072	1609	1643	94	91.0	337
2 Pole | 460V											
25	3600	284HP	460	**1PC28222CA312TA3**	+	8,850	1525	1567	66	91.7	454
30	3600	286HP	460	**1PC28222CA412TA3**	+	9,580	1508	1552	78	91.7	486
40	3600	324HP	460	**1PC28223AA312TA3**	+	13,152	1952	2025	106	93.6	674
50	3600	326HP	460	**1PC28223AA412TA3**	+	16,498	1938	2007	114	93.6	689
60	3600	364HP	460	**1PC28223CA312TA3**	+	20,996	2226	2345	153	93.6	817
75	3600	365HP	460	**1PC28223CA412TA3**	+	25,954	2192	2314	175	94.1	857
100	3600	405HP	460	**1PC28224AA412TA3**	+	29,390	2110	2255	230	94.1	1023
4 Pole | 230/460V											
3	1800	182HP	230/460	**1PC28221DB116TA3**		2,616	1126	1134	39	89.5	129
5	1800	184HP	230/460	**1PC28221DB216TA3**	+	3,642	1116	1122	45	89.5	135
7 ½	1800	213HP	230/460	**1PC28222AB316TA3**	+	4,990	2102	2123	66	91.7	211
10	1800	215HP	230/460	**1PC28222AB416TA3**	+	5,614	2091	2111	75	91.7	220
15	1800	254HP	230/460	**1PC28222BB316TA3**	+	6,708	2052	2082	97	92.4	315
20	1800	256HP	230/460	**1PC28222BB416TA3**	+	7,646	2021	2052	122	93.0	342
4 Pole | 460V											
25	1800	284HP	460	**1PC28222CB312TA3**	+	9,914	1890	1940	109	93.6	535
30	1800	286HP	460	**1PC28222CB412TA3**	+	11,152	1876	1923	117	93.6	544
40	1800	324HP	460	**1PC28223AB312TA3**	+	13,284	2427	2514	153	94.1	737
50	1800	326HP	460	**1PC28223AB412TA3**		15,752	2366	2468	196	94.5	846
60	1800	364HP	460	**1PC28223CB312TA3**		20,884	2767	2908	215	95.0	865
75	1800	365HP	460	**1PC28223CB412TA3**	+	26,040	2703	2856	255	95.4	928
100	1800	405HP	460	**1PC28224AB412TA3**	+	30,530	2616	2786	304	95.4	1073
125	1800	444HP	460	**1PC28224HB112TA3**		37,864	2985	3243	342	95.4	1419
150	1800	445HP	460	**1PC28224HB212TA3**		43,678	2874	3166	411	95.8	1559
200	1800	447HP	460	**1PC28224HB312TA3**		55,492	2678	3035	516	96.2	1854
250	1800	449HP	460	**1PC28224HB512TA3**		60,794	2466	2903	631	96.2	2246

Extra high thrust is available with option K21, refer to Technical Notes Section Bearing and Lubrication Table 6-2 for thrust values
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LP100 | Eff: NEMA Premium | Vertical P-Base | Ball Bearings

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Rated Thrust (Lbs) Down Thrust	Up Thrust	Radial Thrust	Eff %	Weight (lbs)
6 Pole | 230/460V											
3	1200	213HP	230/460	**1PC28222AC316TA3**		4,058	2442	2413	51	89.5	192
5	1200	215HP	230/460	**1PC28222AC416TA3**		5,714	2426	2413	62	89.5	204
7 ½	1200	254HP	230/460	**1PC28222BC316TA3**		6,812	2389	2413	86	91.0	294
10	1200	256HP	230/460	**1PC28222BC416TA3**		7,696	2369	2399	100	91.0	310
15	1200	284HP	230/460	**1PC28222CC316TA3**		10,790	2212	2258	97	91.7	494
20	1200	286HP	230/460	**1PC28222CC416TA3**		13,214	2175	2226	120	91.7	551
6 Pole | 460V											
25	1200	324HP	460	**1PC28223AC312TA3**		14,840	2807	2906	169	93.0	773
30	1200	326HP	460	**1PC28223AC412TA3**		16,944	2779	2879	187	93.0	809
40	1200	364HP	460	**1PC28223CC312TA3**		21,980	3267	3388	187	94.1	802
50	1200	365HP	460	**1PC28223CC412TA3**		25,862	3229	3348	208	94.1	835
60	1200	404HP	460	**1PC28224AC312TA3**		28,010	3125	3283	274	94.5	1000
75	1200	405HP	460	**1PC28224AC412TA3**		32,946	3064	3227	310	94.5	1068
100	1200	444HP	460	**1PC28224HC112TA3**		39,112	3479	3743	347	95.0	1372
125	1200	445HP	460	**1PC28224HC212TA3**		48,032	3310	3633	448	95.0	1557
150	1200	447HP	460	**1PC28224HC312TA3**		57,392	3160	3539	522	95.8	1786
200	1200	449HP	460	**1PC28224HC512TA3**		63,182	2880	3365	665	95.8	2216
250	1200	449HP	460	**1PC28224HC612TA3**		72,262	2853	3284	671	95.8	2203

Add “-Z” at the end of the base part number, and short code “+K21”

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LP100 | Eff: NEMA Premium | Vertical P-Base | Ball Bearings | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Rated Thrust (Lbs) Down Thrust	Up Thrust	Radial Thrust	Eff %	Weight (lbs)
2 Pole | 575V											
3	3600	182HP	575	**1PC28221DA113TA3**		2,964	901	908	24	86.5	118
5	3600	184HP	575	**1PC28221DA213TA3**		4,154	889	896	34	88.5	130
7 ½	3600	213HP	575	**1PC28222AA313TA3**		5,008	1681	1699	40	89.5	188
10	3600	215HP	575	**1PC28222AA413TA3**		5,610	1668	1688	52	90.2	202
15	3600	254HP	575	**1PC28222BA313TA3**		6,468	1631	1664	76	91.0	309
20	3600	256HP	575	**1PC28222BA413TA3**		7,072	1609	1643	94	91.0	337
25	3600	284HP	575	**1PC28222CA313TA3**		8,850	1525	1567	66	91.7	454
30	3600	286HP	575	**1PC28222CA413TA3**		9,580	1508	1552	78	91.7	486
40	3600	324HP	575	**1PC28223AA313TA3**		13,152	1952	2025	106	93.6	674
50	3600	326HP	575	**1PC28223AA413TA3**		16,498	1938	2007	114	93.6	689
60	3600	364HP	575	**1PC28223CA313TA3**		20,996	2226	2345	153	93.6	817
75	3600	365HP	575	**1PC28223CA413TA3**		25,954	2192	2314	175	94.1	857
100	3600	405HP	575	**1PC28224AA413TA3**		29,390	2110	2255	230	94.1	1023
4 Pole | 575V											
3	1800	182HP	575	**1PC28221DB113TA3**		2,616	1126	1134	39	89.5	129
5	1800	184HP	575	**1PC28221DB213TA3**		3,642	1116	1122	45	89.5	135
7 ½	1800	213HP	575	**1PC28222AB313TA3**		4,990	2102	2123	66	91.7	211
10	1800	215HP	575	**1PC28222AB413TA3**		5,614	2091	2111	75	91.7	220
15	1800	254HP	575	**1PC28222BB313TA3**		6,708	2052	2082	97	92.4	315
20	1800	256HP	575	**1PC28222BB413TA3**		7,646	2021	2052	122	93.0	342
25	1800	284HP	575	**1PC28222CB313TA3**		9,914	1890	1940	109	93.6	535
30	1800	286HP	575	**1PC28222CB413TA3**		11,152	1876	1923	117	93.6	544
40	1800	324HP	575	**1PC28223AB313TA3**		13,284	2427	2514	153	94.1	737
50	1800	326HP	575	**1PC28223AB413TA3**		15,752	2366	2468	196	94.5	846
60	1800	364HP	575	**1PC28223CB313TA3**		20,884	2767	2908	215	95.0	865
75	1800	365HP	575	**1PC28223CB413TA3**		26,040	2703	2856	255	95.4	928
100	1800	405HP	575	**1PC28224AB413TA3**		30,530	2616	2786	304	95.4	1073
125	1800	444HP	575	**1PC28224HB113TA3**		37,864	2985	3243	342	95.4	1419
150	1800	445HP	575	**1PC28224HB213TA3**		43,678	2874	3166	411	95.8	1559
200	1800	447HP	575	**1PC28224HB313TA3**		55,492	2678	3035	516	96.2	1854
250	1800	449HP	575	**1PC28224HB513TA3**		60,794	2466	2903	631	96.2	2246

Extra high thrust is available with option K21, refer to Technical Notes Section Bearing and Lubrication Table 6-2 for thrust values
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LP100 | Eff: NEMA Premium | Vertical P-Base | Ball Bearings | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Rated Thrust (Lbs) Down Thrust	Up Thrust	Radial Thrust	Eff %	Weight (lbs)
6 Pole | 575V											
3	1200	213HP	575	**1PC28222AC313TA3**		4,058	2442	2413	51	89.5	192
5	1200	215HP	575	**1PC28222AC413TA3**		5,714	2426	2413	62	89.5	204
7 ½	1200	254HP	575	**1PC28222BC313TA3**		6,812	2389	2413	86	91.0	294
10	1200	256HP	575	**1PC28222BC413TA3**		7,696	2369	2399	100	91.0	310
15	1200	284HP	575	**1PC28222CC313TA3**		10,790	2212	2258	97	91.7	494
20	1200	286HP	575	**1PC28222CC413TA3**		13,214	2175	2226	120	91.7	551
25	1200	324HP	575	**1PC28223AC313TA3**		14,840	2807	2906	169	93.0	773
30	1200	326HP	575	**1PC28223AC413TA3**		16,944	2779	2879	187	93.0	809
40	1200	364HP	575	**1PC28223CC313TA3**		21,980	3267	3388	187	94.1	802
50	1200	365HP	575	**1PC28223CC413TA3**		25,862	3229	3348	208	94.1	835
60	1200	404HP	575	**1PC28224AC313TA3**		28,010	3125	3283	274	94.5	1000
75	1200	405HP	575	**1PC28224AC413TA3**		32,946	3064	3227	310	94.5	1068
100	1200	444HP	575	**1PC28224HC113TA3**		39,112	3479	3743	347	95.0	1372
125	1200	445HP	575	**1PC28224HC213TA3**		48,032	3310	3633	448	95.0	1557
150	1200	447HP	575	**1PC28224HC313TA3**		57,392	3160	3539	522	95.8	1786
200	1200	449HP	575	**1PC28224HC513TA3**		63,182	2880	3365	665	95.8	2216
250	1200	449HP	575	**1PC28224HC613TA3**		72,262	2853	3284	671	95.8	2203

Add “-Z” at the end of the base part number, and short code “+K21”

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3.2.4.3. Two Speed Motors – SD10MS

SD10 MS | Eff: NEMA Premium | 1 Winding Variable Torque | 4/8 Pole

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
460V | Ball Bearing | Long Shaft								
1/0.25	1800/900	143T	460	**1LE23011AM240AA3**		1,544	81.0/64.5	78
1.5/0.37	1800/900	145T	460	**1LE23011AM340AA3**		1,712	81.3/65.5	82
2/0.5	1800/900	182T	460	**1LE23011CM140AA3**		1,896	86.5/74.0	108
3/0.75	1800/900	184T	460	**1LE23011CM340AA3**		2,104	87.5/78.5	114
5/1.2	1800/900	213T	460	**1LE23012AM140AA3**		2,458	86.5/75.5	125
7.5 1.9	1800/900	215T	460	**1LE23012AM240AA3**	+	3,234	87.5/78.5	195
10/2.5	1800/900	254T	460	**1LE23012BM140AA3**	+	4,012	90.4/85.8	200
15/3.7	1800/900	256T	460	**1LE23012BM240AA3**	+	5,284	90.2/86.5	256
20/5	1800/900	284T	460	**1LE23012CM140AA3**	+	6,586	88.5/84.0	370
25/6.2	1800/900	286T	460	**1LE23012CM240AA3**	+	7,810	89.5/85.5	430
30/7.5	1800/900	324T	460	**1LE23013AM140AA3**	+	9,104	91.7/88.5	565
40/10	1800/900	326T	460	**1LE23013AM240AA3**	+	12,094	92.4/88.5	600
50/12	1800/900	364T	460	**1LE23013CM140AA3**		14,854	93.0/89.5	831
60/15	1800/900	365T	460	**1LE23013CM240AA3**		21,310	93.0/88.5	875
75/19	1800/900	405T	460	**1LE23014AM240AA3**		27,012	93.0/88.5	1050
100/25	1800/900	B444T	460	**1LE23014EM140AA3**		30,526	93.6/91.0	1625
125/31	1800/900	B445T	460	**1LE23014EM240AA3**		38,878	93.0/91.7	1900
150/37	1800/900	B447T	460	**1LE23014EM340AA3**		46,926	93.6/90.2	2280
200/50	1800/900	B449T	460	**1LE23014EM540AA3**		56,426	94.5/93.0	2600
250/62.5	1800/900	B449T	460	**1LE23014EM640AA3**		77,912	93.6/91.0	2600
460V | Ball Bearing | Short Shaft								
100/25	1800/900	444TS	460	**1LE23014DM140AA3**		30,526	93.6/91.0	1625
125/31	1800/900	445TS	460	**1LE23014DM240AA3**		38,878	93.0/91.7	1900
150/37	1800/900	447TS	460	**1LE23014DM340AA3**		46,926	93.6/90.2	2280
200/50	1800/900	449TS	460	**1LE23014DM540AA3**		56,426	94.5/93.0	2600
250/62.5	1800/900	449TS	460	**1LE23014DM640AA3**		77,912	93.6/91.0	2600

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SD10 MS | Eff: NEMA Premium | 1 Winding Variable Torque | 4/8 Pole

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
			460V | Roller Bearing | Long Shaft					
100/25	1800/900	444T	460	**1LE23014CM140AA3**		31,742	93.6/91.0	1625
125/31	1800/900	445T	460	**1LE23014CM240AA3**		40,094	93.0/91.7	1900
150/37	1800/900	447T	460	**1LE23014CM340AA3**		48,142	93.6/90.2	2280
200/50	1800/900	449T	460	**1LE23014CM540AA3**		57,642	94.5/93.0	2600
250/62.5	1800/900	449T	460	**1LE23014CM640AA3**		79,128	93.6/91.0	2600

SD10 MS | Eff: NEMA Premium | 1 Winding Variable Torque | 4/8 Pole | 575V

Power HP	Speed RPM	NEMA Frame	Voltage	Base Part Number	Stock	List Price	Eff %	Weight (lbs)
575V | Ball Bearing | Long Shaft								
1/0.25	1800/900	143T	575	**1LE23011AM244AA3**		1,544	81.0/64.5	78
1.5/0.37	1800/900	145T	575	**1LE23011AM344AA3**		1,712	81.3/65.5	82
2/0.5	1800/900	182T	575	**1LE23011CM144AA3**		1,896	86.5/74.0	108
3/0.75	1800/900	184T	575	**1LE23011CM344AA3**		2,104	87.5/78.5	114
5/1.2	1800/900	213T	575	**1LE23012AM144AA3**		2,458	86.5/75.5	125
7.5/1.9	1800/900	215T	575	**1LE23012AM244AA3**		3,234	87.5/78.5	195
10/2.5	1800/900	254T	575	**1LE23012BM144AA3**		4,012	90.4/85.8	200
15/3.7	1800/900	256T	575	**1LE23012BM244AA3**		5,284	90.2/86.5	256
20/5	1800/900	284T	575	**1LE23012CM144AA3**		6,586	88.5/84.0	370
20/5	1800/900	284T	575	**1LE23012CM144AA3**		6,586	88.5/84.0	370
25/6.2	1800/900	286T	575	**1LE23012CM244AA3**		7,810	89.5/85.5	430
30/7.5	1800/900	324T	575	**1LE23013AM144AA3**		9,104	91.7/88.5	565
40/10	1800/900	326T	575	**1LE23013AM244AA3**		12,094	92.4/88.5	600
50/12	1800/900	364T	575	**1LE23013CM144AA3**		14,854	93.0/89.5	831
60/15	1800/900	365T	575	**1LE23013CM244AA3**		21,310	93.0/88.5	875
75/19	1800/900	405T	575	**1LE23014AM244AA3**		27,012	93.0/88.5	1050
100/25	1800/900	B444T	575	**1LE23014EM144AA3**		30,526	93.6/91.0	1625
125/31	1800/900	B445T	575	**1LE23014EM244AA3**		38,878	93.0/91.7	1900
150/37	1800/900	B447T	575	**1LE23014EM344AA3**		46,926	93.6/90.2	2280
200/50	1800/900	B449T	575	**1LE23014EM544AA3**		56,426	94.5/93.0	2600
250/62.5	1800/900	B449T	575	**1LE23014EM644AA3**		77,912	93.6/91.0	2600
575V | Ball Bearing | Short Shaft								
100/25	1800/900	444TS	575	**1LE23014DM144AA3**		30,526	93.6/91.0	1625
125/31	1800/900	445TS	575	**1LE23014DM244AA3**		38,878	93.0/91.7	1900
150/37	1800/900	447TS	575	**1LE23014DM344AA3**		46,926	93.6/90.2	2280
200/50	1800/900	449TS	575	**1LE23014DM544AA3**		56,426	94.5/93.0	2600
250/62.5	1800/900	449TS	575	**1LE23014DM644AA3**		77,912	93.6/91.0	2600
575V | Roller Bearing | Long Shaft								
100/25	1800/900	444T	575	**1LE23014CM144AA3**		31,742	93.6/91.0	1625
125/31	1800/900	445T	575	**1LE23014CM244AA3**		40,094	93.0/91.7	1900
150/37	1800/900	447T	575	**1LE23014CM344AA3**		48,142	93.6/90.2	2280
200/50	1800/900	449T	575	**1LE23014CM544AA3**		57,642	94.5/93.0	2600
250/62.5	1800/900	449T	575	**1LE23014CM644AA3**		79,128	93.6/91.0	2600

NEMA Premium is a certification mark of the National Electrical Manufacturer's Association.
QuikMOD Delivery is for stocked motors only

3.3. Option Selection and Pricing – Introduction

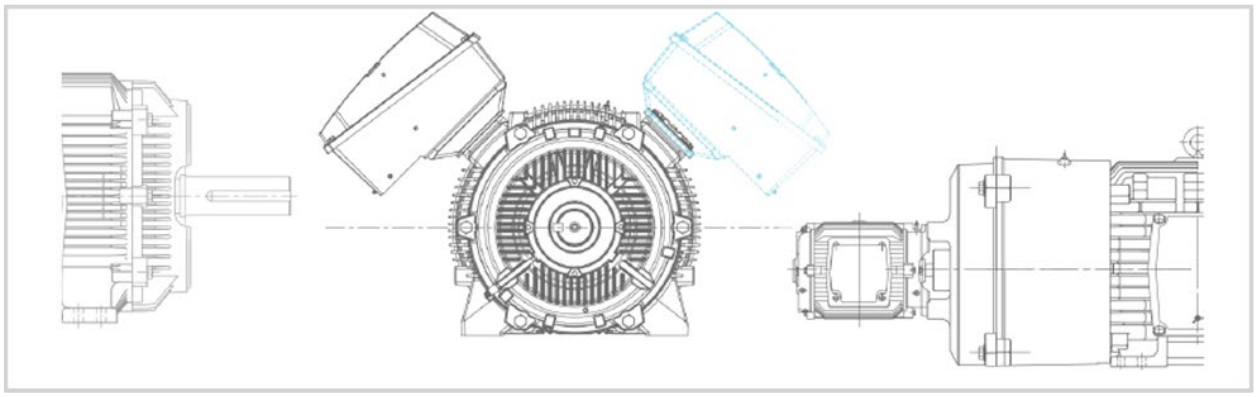

ABB offers a wide selection of options to increase the suitability of our motors to the specific customer needs.

Modified Stock Options:

Modified – 3-7 days

Special Testing – 15-25 days

Note: **Modification times are dependent on availability of materials.**

Custom Build Options:

Case A-1: Base Custom Delivery

Case A-2: One additional week

Case B: Three additional weeks

Definitions:

MLFB Digit – Modifications or Custom features that are built into the motor part number (MLFB).

Short Codes – Modifications or Custom features that are added after the part number.

Ordering Instructions:

1. Select a stock motor from the Motor **Selection and Pricing Section** (Note Part Number)
2. **Verify applicability of desired Option(s) at the end of the section** (Per motor type and frame)
3. Select applicable Option(s)
4. Construct new Part Number and List Price. (See example below)

a) If the MLFB Position is 12, 13, 14, 15 or 16, replace the number(s) or letter(s) at the same position(s) in the stock motor **Part Number** with the **MLFB Code**

b) If the option is a Short Code, then add a '-Z' to the end of the motor **Part Number and add the short code**. Then add a '+' sign followed by the **additional short Code(s).**

Custom Options combined with Modification options Motor Pricing Example:

Example: 15HP, 1800RPM, 208-230/460V, 254T, SD100, Copper Rotor, D-flange with feet, PTC thermistors(3 embedded temperature sensors for tripping) with condulet to main box and Class H insulation.

Base List Price	$2,131	Part Number 1LE23112BB114AA3
List Price Adders		
D-Flange with Feet	$774	Order Code **F**, Order Code Position **14**
PTC Thermistors	$634	Order Code **B**, Order Code Position **15**
Condulet to Main Box	$251	Order Code **J02**, Order Code Position **Z**
Class H Insulation	**$157**	Order Code **C00**, Order Code Position **Z**
Total List Price	**$3,947**	**New Part Number –** 1LE23112BB114**FB**3-**Z J02+C00**
Delivery		Please contact ABB for delivery

3.3.1. Option Selection and Pricing

	Codes	Description	Case	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
		Voltage and Connection														
MLFB DIGITS 12 & 13	11	230V	A-1	246	246	276	318	322	322	382	382	460	+	+	+	1
	12	460V	A-1	246	246	276	318	322	322	382	382	460	+	+	+	
	13	575V	A-1	•	•	•	•	•	•	•	•	•	+	+	+	
	14	230/460 (suitable for 208V)	A-1	•	•	•	•	–	–	–	–	–	+	+	+	1,2
	16	230/460	A-1	•	•	•	•	•	•	•	•	•	+	+	+	1,2
	22	PWS 460V 60Hz	A-1	–	–	–	–	330	400	588	922	1534	+	+	+	
	23	PWS 575V 60HZ	A-1	–	–	–	–	330	400	588	922	1534	+	+	+	
	32	Y/D 460V 60Hz	A-1	–	–	–	–	330	400	588	922	1534	+	+	+	
	33	Y/D 575V 60HZ	A-1	–	–	–	–	330	400	588	922	1534	+	+	+	
	90	200-600V (M1Y 200-460, M2Y 461-600)	A-1	240	240	240	332	400	964	1092	1428	2374	+	+	+	
		Mounting														
MLFB DIGITS 14	A	Foot Mount	A-1	•	•	•	•	•	•	•	•	•	+	+	–	
	E	C - Face with Feet	A-1	212	308	328	458	1740	1882	2032	2522	2986	+	+	–	
	F	D - Flange with Feet	A-1	568	722	792	1548	2172	2538	2962	3952	4774	+	+	–	
	G	C - Face without Feet	A-1	180	264	264	360	1878	2058	2616	3368	4606	+	+	–	
	H	D - Flange without feet	A-1	604	792	856	1618	2448	2904	4010	5558	7792	+	+	–	
	L	C - Face without Feet with Drip Cover and Lifting Hooks	A-1	428	474	478	636	2212	2648	3814	5044	7706	+	+	–	
	M	D - Flange without Feet with Drip Cover and Lifting Hooks	A-1	910	1098	1162	1952	2782	3494	5208	7234	10892	+	+	–	
Short Codes	N	C - Face w Feet with Drip Cover	A-1	718	804	872	1584	2074	2472	3230	4198	6086	+	+	–	
	P	D - Flange w Feet with Drip Cover	A-1	874	1028	1098	1882	2506	3128	4160	5628	7874	+	+	–	
	T	P-Base without Feet with Drip Cover and Lifting Hooks	A-1	•	•	•	•	•	•	•	•	•	–	–	+	
	V	CH - Flange w Feet with Drip Cover	A-1	–	684	–	–	–	–	–	–	–	–	+	–	
	W	CH - Flange with Feet	A-1	–	262	–	–	–	–	–	–	–	–	+	–	
	X	CH - Flange wothout feet	A-1	–	224	–	–	–	–	–	–	–	–	+	–	
	Y	CH - Flange without Feet with Drip Cover and Lifting Hooks	A-1	–	404	–	–	–	–	–	–	–	–	+	–	

+ Available • Standard – Not Available

1. 1-75HP Only 2. NO SD100 IEEE841 3. No 2 POLE 440 frame SD100 IEEE841, 4. NO Roller Bearing, 5, NO XP 140-250

	Codes	Description	Case	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
		Winding Protection														
MLFB DIGITS 15	A	No Protection	A-1	•	•	•	•	•	•	•	•	•	+	+	+	
	B	PTC 3 Embedded, 1 per Phase	A-1	1268	1268	1268	1268	1268	1268	1268	1268	1268	+	+	+	2
	C	PTC 6 Embedded, 2 per Phase	A-1	2536	2536	2536	2536	2536	2536	2536	2536	2536	+	+	+	2
	G	Thermostats Normally Closed, Temp Code T3C, 1 Per Phase	A-1	458	458	458	458	458	612	612	918	1132	+	+	+	2, 3
	J	Thermocouples Coil head	A-1	–	–	–	–	–	–	3628	3628	3628	+	+	+	2
	K	Stator RTD's 2xPhase 100-Ohm Platinum	A-1	–	–	–	–	–	–	6106	6106	6106	+	+	+	1, 2, 3
	L	Winding Protection - G + K	A-1	–	–	–	–	–	–	5590	5590	5590	+	+	+	2,3
	P	PT1000, 2 Embedded Temperature Sensors	A-1	2536	2536	2536	2536	2536	2536	2536	2536	2536	+	+	+	2
Short Codes	A46	Space Heaters 115V Single Phase, Max Temp 160°C	A-1	600	600	600	600	1000	1000	1000	1220	1220	+	+	+	
	A47	Space Heaters 230V Single Phase, Max Temp 160°C	A-1	600	600	600	600	1000	1000	1000	1220	1220	+	+	+	
	A48	Space Heaters 115/230V Single Phase, Max Temp 160°C	A-1	–	–	600	600	1100	1100	1100	1220	1220	+	+	+	
	A90	Control Module	B	1450	1450	1450	1450	1450	1450	1450	1450	1450	+	+	+	2
	C00	Insulation Class H	A-1	244	244	244	314	522	686	876	1268	1808	+	+	+	2
	C01	Insulation Vacuum Pressure Impregnation (VPI)	A-2	5200	5200	5200	5200	6800	6800	6800	8500	7456	+	+	+	2
	C03	Spike Resistant Wire	A-2	300	300	300	300	300	300	440	520	820	+	+	+	
	C04	Insulation Moisture/Powerhouse (Extra Dip & Bake)	A-2	320	320	320	416	600	760	810	1300	1600	+	+	+	2
	C07	Insulation Fungus Protection - No UL	A-1	400	400	400	400	400	400	450	500	560	+	–	+	2
	C08	Insulation Tropical-ization (Extra Dip & Bake + Fungus Spray)	A-2	428	428	428	554	800	960	1060	1600	1960	+	–	+	2

+ Available • Standard – Not Available2

1. Includes Aux Box-terminal and Strip 2. NO GP100A 3. NO XP100 ID1

	Codes	Description	Case	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
		Winding Protection														
MLFB DIGITS 16	0	F-3 Top Mounted Box	A-1	250	250	250	250	–	–	–	–	–	+	–	–	
	1	C-2 Ceiling	A-1	268	268	268	268	268	268	268	268	268	+	+	–	
	2	F-2	A-1	568	568	568	568	568	568	568	568	568	+	+	–	
	3	F-1	A-1	•	•	•	•	•	•	•	•	•	+	+	+	
	4	W-6 Shaft Down	A-1	404	404	404	404	404	404	404	404	404	+	+	–	
	5	W-7 (F-2) Shaft Down	A-1	576	576	576	576	576	576	576	576	576	+	+	–	
	6	W-5 (F-2) Shaft Up	A-1	568	568	568	568	568	568	568	568	568	+	+	–	
	7	W-8 Shaft Up	A-1	262	262	262	262	262	262	262	262	262	+	+	–	
	8	C-1 (F-2) Ceiling	A-1	568	568	568	568	568	568	568	568	568	+	+	–	
	9-R1A	W-1 (F-2) Wall	A-1	568	568	568	568	568	568	568	568	568	+	+	–	
	9-R2A	W-2 Wall	A-1	260	260	260	260	260	260	260	260	260	+	+	–	
	9-R3A	W-3 Wall	A-1	260	260	260	260	260	260	260	260	260	+	+	–	
Short Codes	J00	PTC's Separate Condule on Main Box Side	A-1	–	–	–	–	470	470	470	470	470	+	–	+	2
	J02	PTC's Condulet to Main Box	A-1	502	502	502	502	502	502	502	502	502	+	–	+	1
	J03	PTC's - Aux Box to Main Box	A-1	–	–	–	–	830	830	830	830	830	+	–	+	1
	J04	PTC's – Condulet Opp Side to Main	A-1	–	–	–	–	470	470	470	470	470	+	–	+	2
	J05	PTC - Aux Box Opp Side to Main	A-1	–	–	–	–	886	886	886	886	886	+	–	+	2
	J06	PTC's (XP) - Condulet Opp to Main	A-1	1120	1120	1120	1120	1120	1120	1120	1120	1120	–	+	–	
	J07	PTC's (XP) Condulet to Main Box	A-1	1120	1120	1120	1120	1120	1120	1120	1120	1120	–	+	–	
	J10	Thermostat's Separate Condulet on Main Box Side	A-1	–	–	–	–	470	470	470	470	470	+	–	+	2
	J12	Thermostat's Condulet to Main Box	A-1	502	502	502	502	502	502	502	502	502	+	–	+	1
	J13	Thermostat's Aux Box to Main Box	A-1	–	–	–	–	830	830	830	830	830	+	–	+	1
	J14	Thermostat's Condulet Opp Side to Main	A-1	–	–	–	–	470	470	470	470	470	+	–	+	2
	J15	Thermostat's Auxiliary Box Opp Side to Main	A-1	–	–	–	–	886	886	886	886	886	+	–	+	2
	J16	Thermostat's (XP) Condulet Opp to Main for	A-1	1120	1120	1120	1120	1120	1120	1120	1120	1120	–	+	–	
	J17	Thermostat's (XP) Condulet to Main Box	A-1	1120	1120	1120	1120	1120	1120	1120	1120	1120	–	+	–	

+ Available • Standard – Not Available

1. NO GP 2. NO GP100A 3. ONLY GP100A

	Codes	Description	Case	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
		Winding Protection (Cont...)														
Short Codes	J20	PT1000's Separate Condulet on Main Box Side	A-1	–	–	–	–	470	470	470	470	470	+	–	+	2
	J22	PT1000's Condulet to Main Box	A-1	502	502	502	502	502	502	502	502	502	+	–	+	1
	J23	PT1000's Aux Box to Main Box	A-1	–	–	–	–	830	830	830	830	830	+	–	+	1
	J24	PT1000's Condulet Opp Side to Main	A-1	–	–	–	–	470	470	470	470	470	+	–	+	2
	J25	PT1000's Aux box Opp Side to Main	A-1	–	–	–	–	886	886	886	886	886	+	–	+	2
	J26	PT1000's (XP) Condulet Opp to Main	A-1	1120	1120	1120	1120	1120	1120	1120	1120	1120	–	+	–	
	J27	PT1000's (XP) Condulet to Main Box	A-1	1120	1120	1120	1120	1120	1120	1120	1120	1120	–	+	–	
	J50	Space Heater's Separate Condulet on Main Box Side	A-1	470	470	470	470	470	470	470	470	470	+	–	+	2
	J52	Space Heater's Condulet to Main Box	A-1	502	502	502	502	502	502	502	502	502	+	–	+	1
	J53	Space Heater's Aux Box to Main Box	A-1	–	–	–	–	830	830	830	830	830	+	–	+	1
	J54	Space Heater's Condulet Opp Side to Main Box	A-1	–	–	–	–	470	470	470	470	470	+	–	+	2
	J55	Space Heater's Aux Box Opp Side to Main Box	A-1	–	–	–	–	886	886	886	886	886	+	–	+	2
	J56	Space Heater's (XP) Condulet Opp of Main	A-1	1120	1120	1120	1120	1120	1120	1120	1120	1120	–	+	–	
	J57	Space Heater's (XP) Condulet to Main Box	A-1	1120	1120	1120	1120	1120	1120	1120	1120	1120	–	+	–	
	J84	Conduit Box Orientation 90° CCW (Entry from DE)	A-1	268	268	268	268	268	268	268	268	268	+	+	+	2
	J85	Conduit Box Orientation 180° CCW (Entry from Top)	A-1	268	268	268	268	268	268	268	268	268	+	+	+	2
	J86	Conduit Box Orientation 270° CCW (Entry from ODE)	A-1	268	268	268	268	268	268	268	268	268	+	+	+	2

+ Available • Standard – Not Available2

1. NO GP 2. NO GP100A

	Codes	Description	Case	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
		Winding Protection (Cont...)														
	K80	BURNDY HYDENT YA Type Terminals	A-2	342	342	342	342	342	342	342	342	342	+	+	+	
	K83	Terminal Block – 3 Lead Only	A-1	456	456	456	684	684	1036	1036	–	–	+	–	+	2
	K89	Sealed Leads	A-1	300	300	300	300	300	300	300	400	400	+	•	+	2
	L01	Cast Iron Main Terminal Box in Lieu of Aluminum	A-2	296	308	322	334	360	398	436	502	–	+	•	•	3
	T04	Steel terminal box - oversized - blank entry	A-2	–	–	–	–	–	–	–	–	5760	+	•	•	
		Bearings and Lubrication														
Short Codes	A51	Bearing RTD's-100 Ohm Platinum - Both Ends & Terminal Heads/Block	A-2	–	–	–	–	–	–	–	6694	6694	+	–	+	1
	K21	Extra High Thrust	B	------	1400	1400	1400	1400	1940	2460	2820	3520		–	+	
	L54	Provisions for Oil Mist	A-1	700	700	720	720	760	760	1300	2200	2700	+	–	–	1
	L55	Oil Mist Ready	A-1	700	700	720	720	760	760	1300	2200	2700	+	–	–	1
	L57	MOBIL 28 - High or Low - Special Grease	A-2	970	1790	1790	1790	1790	2460	2460	3280	3280	+	+	+	2
	L58	MOBILITH SHC 100 - Special Grease	A-2	672	672	672	672	672	1268	1268	1268	1268	+	+	+	2
	L60	ALEMITE and Grease Relief Fitting	A-1	372	372	372	372	372	372	372	372	372	+	–	+	4, 5
	L61	Insulated Bearing - INSOCOAT (Both Ends)	A-1	–	–	–	–	–	–	7400	8000	8000	+	+	+	
	L64	Insulated Bearing - INSOCOAT (NDE Only)	A-1	–	–	–	–	–	–	3700	4000	4000	+	+	+	
	L65	Roller Instead of ball bearings	A-2	–	–	–	–	2430	2430	2430	2430	–	+	+	–	1
	L66	Insulated Bearings on Both Ends	B	1530	1530	2100	2630	4992	5922	7046	15290	23534	+	–	–	6, 7
	L67	Insulated NDE Only	B	760	770	1050	1320	2504	2968	3522	7646	11768	+	–	–	6
	L68	Sealed Ball Bearings (Both Ends)	A-1	458	458	458	916	916	916	1144	1832	1832	+	+	+	8, 9
	L69	Hybrid (Ceramic Ball) Bearings - both Ends	B	2656	2656	4192	4664	6632	9636	12472	21700	23212	+	+	–	1, 7, 10
	L70	Hybrid (Ceramic Ball) Bearings – NDE	B	1328	1328	2096	2332	3316	4818	6236	10850	11606	+	+	+	1, 10
	L71	Hybrid (Ceramic Ball) Bearings – DE	B	–	1328	2096	2332	3316	4818	6236	10850	11606	+	+	+	1, 7, 10

+ Available • Standard – Not Available

1. NO GP 2. NO GP100A 3. GP100 ONLY 4. GP100 280-440 ONLY 5. STD on SD100, SD100 IEE841, SD661
6. SD ONLY 7. NO Roller Bearing 8. NO SD100IEEE841, SD661 9. NO 2 Pole 360-440 10. NO SD10 MS, LP100

Codes	Description	Case	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
							Shafts and Seals								
K41	Keyless Shaft	A-1	500	500	500	500	500	500	500	500	500	+	+	+	1
L29	Shaft Grounding Brush	A-2	–	–	–	–	7600	7600	7600	7600	7600	+	–	–	1, 7, 10
L76	Shaft Slinger & O Ring	A-1	176	176	176	242	242	328	328	426	426	+	+	+	
L79	INPRO/SEAL DE	A-1	1022	1022	1066	1244	1288	1356	1556	1910	2088	+	+	+	2, 5
L80	INPRO/SEAL ODE	A-2	1022	1022	1066	1244	1288	1356	1556	1910	2088	+	+	+	2, 5
L81	INPRO/SEAL Both Ends	A-2	2042	2042	2132	2488	2578	2712	3112	3822	4176	+	+	+	2, 5
L84	Brass Seal	A-1	266	266	266	266	266	266	266	266	266	+	+	+	1, 8, 9
L89	INPRO/SEAL MGS shaft grounding - DE	A-1	1520	1660	1980	2240	2480	2780	3020	3540	4980	+	–	+	1, 7, 10
M42	Shaft Ring Brush (Steel) – NDE (AEGIS)	A-2	642	684	750	912	978	1102	1486	1860	4540	+	–	–	3
M52	NEMA Std Long Shaft - NDE	A-2	264	264	264	352	544	784	886	980	1116	+	+	–	1
M53	NEMA Std Short Shaft (NDE)	A-2	–	–	–	–	544	784	886	980	1116	+	+	–	1
M57	(C4140) Carbon Steel Shaft	A-2	–	–	–	–	–	–	–	2450	3600	+	-	+	
Y50	Special Shaft on Drive End	B	CF	CF	CF	CF	CF	CF	CF	CF	CF	+	+	+	
Y51	Special Shaft on Non-Drive End	B	CF	CF	CF	CF	CF	CF	CF	CF	CF	+	+	+	1
							Frame								
K33	Drip Cover	A-1	306	306	306	334	334	590	1198	1676	3100	+	+	•	
K34	Vertical Lifting Devices (No Drip cover)	A-1	470	572	572	776	832	1440	1440	1816	2002	+	+	•	2, 9
K38	Provisions for Dowel Holes	A-1	–	–	–	–	870	966	1060	1228	1830	+	+	–	2
K70	Rotation Arrow Bidirectional (Not for Uni-Directional)	A-1	284	284	284	284	284	284	284	284	284	+	+	+	
K71	Rotation Arrow Clockwise (From NDE)	A-1	284	284	284	284	284	284	284	284	284	+	+	+	
K72	Rotation Arrow Counterclockwise (From NDE)	A-1	284	284	284	284	284	284	284	284	284	+	+	+	

+ Available • Standard – Not Available

1. NO GP 2. NO GP100A 3. GP100 ONLY 4. XP ONLY 5. STD on SD100, SD100 IEE841, SD661

6. SD ONLY 7. Removes Div. 2 8. NO SD100IEEE841 9. NO SD661 10. NO SD10 MS

Codes	Description	Case	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
							Frame (Cont...)								
L20	Lifting Eyebolt	A-1	86	•	•	•	•	•	•	•	•	+	•	•	3
L22	Stainless Steel Hardware (Includes SS T Drain)	A-1	406	406	406	406	406	502	616	760	936	+	–	+	2
L27	Ground Bolts - Qty 2	A-1	284	284	284	328	328	372	372	372	532	+	+	+	2
L45	SS T - Slot Breather Drain	A-1	322	322	322	468	468	468	614	614	614	+	–	+	2
L46	CROUSE HINDS UL Approved Breather Drain	A-1	–	–	–	–	706	706	706	706	706	+	+	+	1
L90	IP66 Ingress Protection	A-1	2042	2042	2132	2488	2578	2712	3112	3822	4176	–	+	–	4
L90	IP66 Ingress Protection	A-1	1720	1720	1720	1720	2930	3580	4010	4320	5600	+	–	–	5
L91	IP56 Ingress Protection	A-1	1090	1090	1090	1090	2530	2890	3280	3490	4860	+	–	–	1
L92	IP65 Ingress Protection	A-1	1720	1720	1720	1720	2930	3580	4010	4320	5600	+	•	–	1
M09	Aluminum Fan	A-2	290	326	332	394	418	456	476	546	630	+	–	–	
M10	Bronze Fan	A-1	1092	1092	1412	1504	1882	2274	2380	2650	3660	+	–	+	2
M28	Stainless Steel Eyebolt	A-1	322	322	322	322	322	322	322	322	322	+	+	–	2
M39	Vertical Jacking Provisions	A-1	–	–	–	–	1100	1100	1100	1100	1100	+	–	+	6
							Rating Plates & Tagging								
C40	Re-rate 400V to 380V, 50HZ	A-1	328	328	328	328	328	328	328	328	328	+	+	+	
C41	Re-rate 400V to 415V, 50HZ	A-1	328	328	328	328	328	328	328	328	328	+	+	+	
M21	Additional Nameplate (without Logos)	A-1	328	328	328	328	328	328	328	328	328	+	+	+	
M24	Lubrication Plate	A-1	208	208	208	208	208	208	208	208	208	+	+	+	
M25	Class II, Division 2, Groups F & G, T3C Temp Code	A-2	1200	1200	1200	1200	•	•	•	•	–	+	+	+	1
M32	Class II, Group E Hazardous Area	A-2	1024	1024	1454	1486	1656	1990	2328	2664	3474	–	+	–	
Y80	Derate-Alt-Amb (Nameplate Change)	A-1	328	328	328	328	328	328	328	328	328	+	+	+	
Y82	Auxiliary n/p Max. 40 Charact. (Aux Tag)	A-1	328	328	328	328	328	328	328	328	328	+	+	+	

+ Available • Standard – Not Available

1. NO GP 2. NO GP100A 3. GP100 ONLY 4. XP ONLY 5. SD ONLY 6. SD100 ONLY

Codes	Description	Case	140	180	210	250	280	320	360	400	440	1LE2	1MB2 1PC2		Notes
							Abient								
B27	+40°C to -40°C Ambient Temp	A-2	380	400	530	620	770	880	1020	1380	1790	+	–	+	1
B29	+40°C to -50°C Ambient Temp.	B	680	930	1050	1140	1310	1440	1730	2150	2560	+	–	+	1
							Mechanical Design and Accessories								
A66	Vibration Detectors, Model 366-D8 120VAC	A-2	–	–	–	–	8432	8432	8432	10340	10340	+	–	–	
A67	Provision Only for Vibration Sensors	A-2	–	–	–	–	1000	1000	1000	1000	1000	+	–	+	
G05	DYNAPAR Encoder HS35 1024 PPR	B	3800	3800	3800	3800	3800	3800	3800	3800	3800	+	–	+	1, 2,5
G06	C-Face Mounted SLIM Tach Encoder	B	6700	7440	8270	9190	12110	12140	12160	12460	12760	+	–	+	1, 2
H04	C-Face Mounted brake	B	6960	7740	8600	9550	13830	27800	38340	58490	64990	+	–	–	1, 2
K10	IEEE 841 Features	B	1250	1250	1250	1400	1400	1500	1600	1800	1920	+	–	+	1, 2, 3, 4
K20	API 610	B	–	500	500	920	920	920	1160	1840	1840	–	–	+	
M05	Larger Fan	A-2	–	–	–	–	–	–	640	640	720	+	+	–	1, 4, 6
M08	Separately Driven Fan	A-2	–	–	–	2240	2130	2320	2580	2650	2940	+	–	–	
M18	Non-Reverse Ratchet	B	–	–	700	800	1000	1400	2150	3440	4520	–	–	+	1, 2
M69	Precision Balance	A-1	380	380	380	436	436	496	496	626	626	+	+	+	
M70	Extra Precision Balance	A-1	624	624	660	660	752	752	1012	1012	1302	+	+	+	
A66	Vibration Detectors, Model 366-D8 120VAC	A-2	–	–	–	–	8432	8432	8432	10340	10340	+	–	–	
							Paint and Packaging								
B07	Special Stackable Crate Packing	A-1	–	–	–	–	210	220	240	410	–	+	+	–	
B09	Export Packaging Sea Freight - ABB Standard	A-1	300	460	740	740	740	1000	1200	1800	2020	+	+	+	
B10	Export Packaging Special Export Box	A-2	CF	CF	CF	CF	CF	CF	CF	CF	CF	+	+	+	

+ Available • Standard – Not Available

1. NO GP 2. NO SD10 MS 3. NO SD100 IEEE841 4. NO SD661 5. Removes Div. 2 6. 4 Pole ONLY

Codes	Description	Case	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
							Paint and Packaging (Cont...)								
N01	2 Part Epoxy (Industrial-Coastal Low Salt)	B	860	1100	1170	1350	1660	1850	1890	2210	2640	+	+	+	
N02	3 Part Epoxy (Industrial-Coastal Moderate Salt)	B	1040	1310	1420	1640	2010	2240	2290	2680	3200	+	+	+	
N03	Primer Only	A-1	1120	1120	1120	1120	1120	1120	1120	1120	1120	+	+	+	
N05	3 Part Epoxy (Coastal-Offshore High Salt)	B	1250	1660	1760	2096	2510	2930	3350	3830	4320	+	+	+	
N06	2 Part Epoxy C4 (Industrial-Coastal moderate salt)	B	1050	1240	1350	1560	1910	2130	2180	2550	3040	+	+	+	
N07	2 Part Epoxy C5I/C5M (Coastal-offshore high salt	B	1190	1580	1670	1990	2380	2780	3180	3640	4100	+	+	+	
Y60	Special color (Provide RAL#)	A-2	400	400	400	400	400	400	400	400	400	+	–	+	
Y61	Special system and color (Provide RAL#)	A-2	200	200	200	200	200	200	200	200	200	+	+	+	
N01	2 Part Epoxy (Industrial-Coastal Low Salt)	B	860	1100	1170	1350	1660	1850	1890	2210	2640	+	+	+	
							Documentation								
D05	Documentation in Spanish	A-1	0	0	0	0	0	0	0	0	0	+	+	+	
F00	Certificate of Compliance	A-1	600	600	600	600	600	600	600	600	600	+	+	+	
F01	Certificate of Origin - Stamped by Chamber of Commerce	A-1	1800	1800	1800	1800	1800	1800	1800	1800	1800	+	+	+	
F03	Standard Performance Curves	A-1	1494	1494	1494	1494	1494	1494	1494	1494	1494	+	+	+	
F04	Acceleration Time Calculation	A-1	380	380	380	380	380	380	380	380	380	+	+	+	
F05	Polarization Index	A-1	300	300	300	300	300	300	300	300	300	+	+	+	

+ Available • Standard – Not Available

1. Must include N01, N02, N05, N06, or N07

Codes	Description	Case	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
							Documentation (Cont...)								
F07	Curve Package at 100% and 80% voltage (S-T, PERF)	A-1	2390	2390	2390	2390	2390	2390	2390	2390	2390	+	+	+	
F08	Shaft Torsional Analysis (includes shaft drawing)	A-1	1000	1000	1000	1000	1000	1000	1000	1000	1000	+	+	+	
F09	Bearing L10 Calculation	A-1	1100	1100	1100	1100	1100	1100	1100	1100	1100	+	+	+	
F40	Stall Time Curve (Thermal Limit Curve)	A-1	90	90	90	90	90	90	90	90	90	+	+	+	
F42	Standard Dimensional Sheet	A-1	90	90	90	90	90	90	90	90	90	+	+	+	
F43	Non-Standard Dimension Sheet	A-2	1046	1046	1046	1046	1046	1046	1046	1046	1046	+	+	+	
F44	Conduit Box Dimension Sheet	A-1	90	90	90	90	90	90	90	90	90	+	+	+	
F45	Wiring Diagram	A-1	90	90	90	90	90	90	90	90	90	+	+	+	
F46	Instruction and Operation Manual in English	A-1	90	90	90	90	90	90	90	90	90	+	+	+	
F47	Renewal Parts	A-1	90	90	90	90	90	90	90	90	90	+	+	+	
F48	CAD Drawing (Dwg Format) Customer/ Application Specific	A-1	1220	1220	1220	1220	1220	1220	1220	1220	1220	+	+	+	
F49	Performance Data Sheets	A-1	522	522	522	522	522	522	522	522	522	+	+	+	
F50	Customer Specific Data Sheets	A-2	1046	1046	1046	1046	1046	1046	1046	1046	1046	+	+	+	
F60	Visual Inspection Proof (Max 8X Photos)	A-1	680	680	680	680	680	680	680	680	680	+	+	+	
F70	Inspection Test Plan	A-1	1000	1000	1000	1000	1000	1000	1000	1000	1000	+	+	+	
F71	Paint Report (thickness and adherence)	A-1	300	300	300	300	300	300	300	300	300	+	+	+	
F81	Advanced Document Package	A-1	3000	3000	3000	3000	3000	3000	3000	3000	3000	+	+	+	
F82	Project Document Package	A-2	6000	6000	6000	6000	6000	6000	6000	6000	6000	+	+	+	

+ Available • Standard – Not Available

Codes	Description	Case	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
							Test								
F10	Routine Test Report	A-1	600	600	600	600	600	600	600	600	600	+	+	+	
F12	Routine Test Report (Witnessed)	A-2	3256	3256	3256	3256	3286	3944	4720	5138	5556	+	+	+	
F15	Complete Test	A-1	13498	13498	13498	13498	13624	15834	19360	22108	24020	+	+	+	
F17	Complete Test (Witnessed)	A-1	20246	20246	20246	20246	20434	23780	29038	33162	36030	+	+	+	
F20	Routine Test + Vibration	A-1	1200	1200	1200	1200	1200	1200	1200	1200	1200	+	+	+	
F22	Routine Test + Vibration (Witnessed)	A-1	6512	6512	6512	6512	6572	6572	6572	6572	6572	+	+	+	
F27	Performance Load Test (Curve Report)	A-1	10124	10124	10124	10124	10218	11876	14520	16580	18014	+	+	+	
F30	Noise Test	A-1	8288	8288	8288	8288	8366	8366	10756	10756	10756	+	+	+	
F32	Noise Test (Witnessed)	A-1	13024	13024	13024	13024	13146	15536	15536	15536	15536	+	+	+	
F36	Routine Test Report of Electrical Duplicate Design	A-1	600	600	600	600	600	600	600	600	600	+	+	+	
F37	Type Test Report of Electrical Duplicate Design	A-1	910	910	910	910	910	910	910	910	910	+	+	+	

+ Available • Standard – Not Available

3.3.2. MOD Option - Selection and Pricing

	Codes	Description	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
Voltage and Connection															
MLFB 12 & 13	11	230V	283	283	317	366	370	370	439	439	529	+	+	+	1-75HP ONLY
	12	460V	283	283	317	366	370	370	439	439	529	+	+	+	
Mounting															
MLFB DIGIT 14	A	Foot Mount	•	•	•	•	•	•	•	•	•	+	+	–	
	E	C - Face with Feet	244	354	377	527	2001	2164	2337	2900	3434	+	+	–	1
	F	D - Flange with Feet	653	830	911	1780	2498	2919	3406	4545	5490	+	+	–	1,2
	G	C - Face without Feet	207	304	304	414	2160	2367	3008	3873	5297	+	+	–	1
	H	D - Flange without Feet	695	911	984	1861	2815	3340	4612	6392	8961	+	+	–	1,2
	L	C - Face without Feet with Drip Cover and Lifting Hooks	492	545	550	731	2544	3045	4386	5801	8862	+	+	–	1
	M	D - Flange without Feet with Drip Cover and Lifting Hooks	1047	1263	1336	2245	3199	4018	5989	8319	12526	+	+	–	1,2
	N	C - Face w Feet with Drip Cover	826	925	1003	1822	2385	2843	3715	4828	6999	+	+	–	1
	P	D - Flange w Feet with Drip Cover	1005	1182	1263	2164	2882	3597	4784	6472	9055	+	+	–	1,2
	T	P-Base without Feet with Drip Cover and Lifting Hooks	•	•	•	•	•	•	•	•	•	–	–	+	
Winding Protection															
MLFB DIGIT 14	A	No Protection	•	•	•	•	•	•	•	•	•	+	+	+	
	G	Thermostats Normally Closed, Temp Code T3C, 1 Per Phase	527	527	527	527	527	704	704	1056	1302	+	+	+	NO GP100A, XP100 1D1
Short Codes	A46	Space Heaters 115V Single Phase, Max Temp 160°C	690	690	690	690	1150	1150	1150	1403	1403	+	+	+	
	A47	Space Heaters 230V Single Phase, Max Temp 160°C	690	690	690	690	1150	1150	1150	1403	1403	+	+	+	
	A48	Space Heaters 115/230V Single Phase, Max Temp 160°C	–	–	690	690	1265	1265	1265	1403	1403	+	+	+	
	C07	Insulation Fungus Protection - No UL	460	460	460	460	460	460	518	575	644	+	–	+	NO GP100A

+ Available • Standard – Not Available

1. NO 2 POLE 440 Frame IEEE, Roller Bearing 2. NO XP 140-250, 3. No GAP100A, 4. No XP100 Id1
Modified only when stocked with “14” or “16”, 2. Modified only when stocked as round body

	Codes	Description	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
		Terminal Boxes and Leads													
MLFB DIGIT 14	0	F-3 Top Mounted Box	288	288	288	288	–	–	–	–	–	+	–	–	ONLY GP100A
	1	C-2 Ceiling	308	308	308	308	308	308	308	308	308	+	+	–	
	2	F-2	653	653	653	653	653	653	653	653	653	+	+	–	
	3	F-1	•	•	•	•	•	•	•	•	•	+	+	+	
	4	W-6 Shaft Down	465	465	465	465	465	465	465	465	465	+	+	–	
	5	W-7 (F-2) Shaft Down	662	662	662	662	662	662	662	662	662	+	+	–	
	6	W-5 (F-2) Shaft Up	653	653	653	653	653	653	653	653	653	+	+	–	
	7	W-8 Shaft Up	301	301	301	301	301	301	301	301	301	+	+	–	
	8	C-1 (F-2) Ceiling	653	653	653	653	653	653	653	653	653	+	+	–	
	9-R1A	W-1 (F-2) Wall	653	653	653	653	653	653	653	653	653	+	+	–	
	9-R2A	W-2 Wall	299	299	299	299	299	299	299	299	299	+	+	–	
	9-R3A	W-3 Wall	299	299	299	299	299	299	299	299	299	+	+	–	
	9-R4A	W-4 (F-2) Wall	653	653	653	653	653	653	653	653	653	+	+	–	
Short Codes	J12	Condulet to Main Box for Thermostats	577	577	577	577	577	577	577	577	577	+	–	+	NO GP
	J13	Aux Box to Main Box for Thermostats	–	–	–	–	955	955	955	955	955	+	–	+	NO GP
	J52	Condulet to Main Box for Space Heaters	577	577	577	577	577	577	577	577	577	+	–	+	NO GP
	J53	Aux Box to Main Box for Space Heaters	–	–	–	–	955	955	955	955	955	+	–	+	NO GP
	J84	Conduit Box Orientation 90° CCW (Entry from DE)	308	308	308	308	308	308	308	308	308	+	+	+	NO GP100A
	J85	Conduit Box Orientation 180° CCW (Entry from Top)	308	308	308	308	308	308	308	308	308	+	+	+	NO GP100A
	J86	Conduit Box Orientation 270° CCW (Entry from ODE)	308	308	308	308	308	308	308	308	308	+	+	+	NO GP100A
	K80	BURNDY HYDENT YA Type Terminals	393	393	393	393	393	393	393	393	393	+	+	+	
	K83	Terminal Block – 3 Lead Only	524	524	524	787	787	1191	1191	–	–	+	–	+	NO GP100A
	K89	Sealed Leads	345	345	345	345	345	345	345	460	460	+	•	+	NO GP100A
	L01	Cast Iron Main Terminal Box in Lieu of Aluminum	340	354	370	384	414	458	501	577	–	+	•	•	ONLY GP100

+ Available • Standard – Not Available

Codes	Description	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
	Bearings and Lubrications													
L57	MOBIL 28 - High or Low - Special Grease	1116	2059	2059	2059	2059	2829	2829	3772	3772	+	+	+	1
L58	MOBILITH SHC 100 - Special Grease	773	773	773	773	773	1458	1458	1458	1458	+	+	+	1
L60	ALEMITE and Grease Relief Fitting	428	428	428	428	428	428	428	428	428	+	–	+	2, 10
L61	Insulated Bearing - INSOCOAT (Both Ends)	–	–	–	–	–	–	8510	9200	9200	+	+	+	
L64	Insulated Bearing - INSOCOAT (NDE Only)	–	–	–	–	–	–	4255	4600	4600	+	+	+	
L65	Roller Instead of ball bearings	–	–	–	–	2795	2795	2795	2795	–	+	+	–	3
L68	Sealed Ball Bearings (Both Ends)	527	527	527	1053	1053	1053	1316	2107	2107	+	+	+	4
L69	Hybrid (Ceramic Ball) Bearings - both Ends	3054	3054	4821	5364	7627	11081	14343	24955	26694	+	+	–	3, 5, 6, 7
L70	Hybrid (Ceramic Ball) Bearings – NDE	1527	1527	2410	2682	3813	5541	7171	12478	13347	+	+	+	3, 5, 6
L71	Hybrid (Ceramic Ball) Bearings – DE	–	1527	2410	2682	3813	5541	7171	12478	13347	+	+	+	3, 5, 7
	Shafts and Seals													
L29	Shaft Grounding Brush	–	–	–	–	8740	8740	8740	8740	8740	+	–	–	3, 5, 8
L76	Shaft Slinger & O Ring	202	202	202	278	278	377	377	490	490	+	+	+	1, 9
L79	INPRO/SEAL DE	1175	1175	1226	1431	1481	1559	1789	2197	2401	+	+	+	1, 10
L80	INPRO/SEAL ODE	1175	1175	1226	1431	1481	1559	1789	2197	2401	+	+	+	1, 10
L81	INPRO/SEAL Both Ends	2348	2348	2452	2861	2965	3119	3579	4395	4802	+	+	+	1, 10
L89	INPRO/SEAL MGS shaft grounding - DE	1748	1909	2277	2576	2852	3197	3473	4071	5727	+	–	+	3, 5, 8

+ Available • Standard – Not Available

1. NO GP100A 2. GP100 280-440 Only 3. NO GP 4. NO SD100 IEEE, SD661, 2 pole 360-440
5. NO SD10 MS, 6. NO LP100 7. NO Roller Bearing DE 8. Removes Div 2 9. NO 2 Pole 10. Std. SD100 IEEE, SD661

Codes	Description	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
						Frame								
K33	Drip Cover	352	352	352	384	384	679	1378	1927	3565	+	+	•	
K34	Vertical Lifting Devices (No Drip cover)	541	658	658	892	957	1656	1656	2088	2302	+	+	•	1, 5
K38	Provisions for Dowel Holes	–	–	–	–	1001	1111	1219	1412	2105	+	+	–	1
K70	Rotation Arrow Bidirectional (Not for Uni-Directional)	327	327	327	327	327	327	327	327	327	+	+	+	
K71	Rotation Arrow Clockwise (From NDE)	327	327	327	327	327	327	327	327	327	+	+	+	
K72	Rotation Arrow Counterclockwise (From NDE)	327	327	327	327	327	327	327	327	327	+	+	+	
L20	Lifting Eyebolt	99	•	•	•	•	•	•	•	•	+	•	•	2
L22	Stainless Steel Hardware (Includes SS T Drain)	467	467	467	467	467	577	708	874	1076	+	–	+	1
L27	Ground Bolts - Qty 2	327	327	327	377	377	428	428	428	612	+	+	+	1
L45	SS T - Slot Breather Drain	370	370	370	538	538	538	706	706	706	+	–	+	1
L46	CROUSE HINDS UL Approved Breather Drain	–	–	–	–	812	812	812	812	812	+	+	+	3
L90	IP66 Ingress Protection	2348	2348	2452	2861	2965	3119	3579	4395	4802	–	+	–	4
M28	Stainless Steel Eyebolt	370	370	370	370	370	370	370	370	370	+	+	–	1
						Rating Plates and Tagging								
C40	Re-rate 400V to 380V, 50HZ	377	377	377	377	377	377	377	377	377	+	+	+	
C41	Re-rate 400V to 415V, 50HZ	377	377	377	377	377	377	377	377	377	+	+	+	
M24	Lubrication Plate	239	239	239	239	239	239	239	239	239	+	+	+	
M25	Class II, Division 2, Groups F & G, T3C Temp Code	1380	1380	1380	1380	•	•	•	•	–	+	+	+	3
Y80	Derate-Alt-Amb (Nameplate Change)	377	377	377	377	377	377	377	377	377	+	+	+	
Y82	Auxiliary n/p Max. 40 Characters (Aux Tag)	377	377	377	377	377	377	377	377	377	+	+	+	

+ Available • Standard – Not Available

1. NO GP100A 2. GP100 ONLY 3. NO GP 4. XP ONLY 5. NO SD661

Codes	Description	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
						Ambient								
B27	+40°C to -40°C Ambient Temp	A-2	380	400	530	620	770	880	1020	1380	+	–	+	NO GP
						Paint And Packaging								
B09	Export Packaging Sea Freight - ABB Standard	300	460	740	740	740	1000	1200	1800	2020	+	+	+	
						Documentation								
F00	Certificate of Compliance	690	690	690	690	690	690	690	690	690	+	+	+	
F01	Certificate of Origin - Stamped by Chamber of Commerce	2070	2070	2070	2070	2070	2070	2070	2070	2070	+	+	+	
F03	Standard Performance Curves	1718	1718	1718	1718	1718	1718	1718	1718	1718	+	+	+	
F04	Acceleration Time Calculation	437	437	437	437	437	437	437	437	437	+	+	+	
F07	Curve Package at 100% and 80% voltage (S-T, PERF)	2749	2749	2749	2749	2749	2749	2749	2749	2749	+	+	+	
F08	Shaft Torsional Analysis (includes shaft drawing)	1150	1150	1150	1150	1150	1150	1150	1150	1150	+	+	+	
F09	Bearing L10 Calculation	1265	1265	1265	1265	1265	1265	1265	1265	1265	+	+	+	
F40	Stall Time Curve (Thermal Limit Curve)	104	104	104	104	104	104	104	104	104	+	+	+	
F42	Standard Dimensional Sheet	104	104	104	104	104	104	104	104	104	+	+	+	
F43	Non-Standard Dimension Sheet	1203	1203	1203	1203	1203	1203	1203	1203	1203	+	+	+	
F44	Conduit Box Dimension Sheet	104	104	104	104	104	104	104	104	104	+	+	+	
F45	Wiring Diagram	104	104	104	104	104	104	104	104	104	+	+	+	
F46	Instruction and Operation Manual in English	104	104	104	104	104	104	104	104	104	+	+	+	
F47	Renewal Parts	104	104	104	104	104	104	104	104	104	+	+	+	
F48	CAD Drawing (Dwg Format) Customer/ Application Specific	1403	1403	1403	1403	1403	1403	1403	1403	1403	+	+	+	
F49	Performance Data Sheets	600	600	600	600	600	600	600	600	600	+	+	+	
F50	Customer Specific Data Sheets	1203	1203	1203	1203	1203	1203	1203	1203	1203	+	+	+	
F60	Visual Inspection Proof (Max 8X Photos)	782	782	782	782	782	782	782	782	782	+	+	+	

+ Available • Standard – Not Available

Codes	Description	140	180	210	250	280	320	360	400	440	1LE2	1MB2	1PC2	Notes
						Test								
F10	Routine Test Report	690	690	690	690	690	690	690	690	690	+	+	+	
F12	Routine Test Report (Witnessed)	3744	3744	3744	3744	3779	4536	5428	5909	6389	+	+	+	
F15	Complete Test	15523	15523	15523	15523	15668	18209	22264	25424	27623	+	+	+	
F17	Complete Test (Witnessed)	23283	23283	23283	23283	23499	27347	33394	38136	41435	+	+	+	
F20	Routine Test + Vibration	1380	1380	1380	1380	1380	1380	1380	1380	1380	+	+	+	
F22	Routine Test + Vibration (Witnessed)	7489	7489	7489	7489	7558	7558	7558	7558	7558	+	+	+	
F27	Performance Load Test (Curve Report)	11643	11643	11643	11643	11751	13657	16698	19067	20716	+	+	+	
F36	Routine Test Report of Electrical Duplicate Design	690	690	690	690	690	690	690	690	690	+	+	+	
F37	Type Test Report of Electrical Duplicate Design	1047	1047	1047	1047	1047	1047	1047	1047	1047	+	+	+	

+ Available • Standard – Not Available

4. Technical Tables

VFD capabilities, bearing details, typical performance data

4.1. VFD Capabilities

4.1.1. Next Generation Low Voltage NEMA Motors

4.1.1.1. SD200, SD200 841, DP200 HPS

Severe Duty Low Voltage NEMA Motors (SD200, SD200 841, DP200)

		Standard		M05 Option	M08	Temp Codes	
						Standard Class I, Division 2	Standard Class II, Division 2
Frame	Poles	Constant Torque	Variable Torque	Constant Torque	Constant Torque	Temp Code	Temp Code
444T - 445T	4	4:1	20:1	6:1	1000:1	T3 (200°C)	T3C (160°C)
	2, 6, 8	4:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)
447T	4	4:1	20:1	6:1	1000:1	T3 (200°C)	T3C (160°C)
	2, 6, 8	4:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)
449T	2, 4, 6, 8	4:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)
L449	2, 4, 6, 8	2:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)
Frame Size 500							
400 - 600 HP	2	3:1	20:1	NA	NA	T3 (200°C)	T3C (160°C)[1]
	4	4:1	20:1	NA	NA	T3 (200°C)	T3C (160°C)[1]
350 - 400 HP	6	2:1	20:1	NA	NA	T3 (200°C)	T3C (160°C)[1]
700 - 800 HP	2	35-60HZ	20:1	NA	NA	T2D (215°C)	T3C (160°C)[1]
	4	2:1	20:1	NA	NA	T2D (215°C)	T3C (160°C)[1]
500 - 600 HP	6	2:1	20:1	NA	NA	T2D (215°C)	T3C (160°C)[1]

1) With option M25

4.1.2. Low Voltage NEMA Motors

4.1.2.1. GP100A, GP100

General Purpose Low Voltage NEMA Motors (GP100, GP100A)

		Standard	
Frame	**Poles**	**Constant Torque**	**Variable Torque**
143T - 145T	2, 4, 6	4:1	20:1
	8	4:1	20:1
182T - 184T	2, 4, 6	4:1	20:1
	8	4:1	20:1
213T - 215T	2, 4, 6	4:1	20:1
	8	4:1	20:1
254T - 256T	2, 4, 6	4:1	20:1
	8	4:1	20:1
284T - 286T	2, 4, 6	4:1	20:1
	8	4:1	20:1
324T - 326T	2, 4, 6	4:1	20:1
	8	4:1	20:1
364T - 365T	2, 4, 6	4:1	20:1
	8	4:1	20:1
404T - 405T	2, 4, 6	4:1	20:1
	8	4:1	20:1
444T - 445T	2, 4, 6	4:1	20:1
	8	4:1	20:1
447T	2, 4, 6	4:1	20:1
	8	4:1	20:1
449T	2, 4, 6	4:1	20:1
	8	4:1	20:1

4.1.2.2. SD100, SD100 IEEE, SD661

Severe Duty Low Voltage NEMA Motors (SD100, SD100IEEE, SD661)

		Standard		M05 Option	C00+C03+ M08 Options	Temp Codes	
						Class I, Division 2	Class II, Division 2
Frame	Poles	Constant Torque	Variable Torque	Constant Torque	Constant Torque	Temp Code	Temp Code
143T - 145T	2, 4, 6	20:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)[1]
	8	4:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)[1]
182T - 184T	2, 4, 6	20:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)[1]
	8	4:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)[1]
213T - 215T	2, 4, 6	20:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)[1]
	8	4:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)[1]
254T - 256T	2, 4, 6	20:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)[1]
	8	4:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)[1]
284T - 286T	2, 4, 6	20:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)
	8	4:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)
324T - 326T	2, 4, 6	20:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)
	8	4:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)
364T - 365T	2, 4, 6	20:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)
	8	4:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)
404T - 405T	2, 4, 6	4:1	20:1	10:1	1000:1	T3 (200°C)	T3C (160°C)
	8	4:1	20:1	NA	1000:1	T3 (200°C)	T3C (160°C)

1) With option M25

4.1.2.3. XP100, XP100 ID1

Explosion Proof Low Voltage NEMA Motors (XP100, XP100 ID1)

		XP100				XP100 ID1		
		Standard		M05 Option		Standard		
Frame	Poles	Constant Torque	Variable Torque	Constant Torque	Temp Code	Constant Torque	Variable Torque	Temp Code
143T - 145T	2, 4, 6	4:1	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
	8	4:1	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
182T - 184T	2, 4, 6	4:1	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
	8	4:1	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
213T - 215T	2, 4, 6	4:1	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
	8	4:1	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
254T - 256T	2, 4, 6	4:1	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
	8	4:1	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
284T - 286T	2, 4, 6	4:1	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
	8	4:1	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
324T - 326T	2, 4, 6	4:1	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
	8	4:1	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
364T - 365T	2, 4, 6	4:1[1]	20:1	6:1	T3C (160°C)	4:1	100:1	T2A (280°C)
	8	4:1[1]	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
404T - 405T	2, 4, 6	4:1[1]	20:1	6:1	T3C (160°C)	4:1	100:1	T2A (280°C)
	8	4:1[1]	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
444T - 445T	2, 4, 6	4:1[1]	20:1	6:1	T3C (160°C)	4:1	100:1	T2A (280°C)
	8	4:1[1]	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
447T	2, 4, 6	4:1[1]	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
	8	4:1[1]	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
449T	2, 4, 6	4:1[1]	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)
	8	4:1[1]	20:1	NA	T3C (160°C)	4:1	100:1	T2A (280°C)

1. Only with De-rated output

4.2. Bearing tables

4.2.1. Next Generation – Bearing Sizes

4.2.1.1. SD200, SD200 841, DP200 HPS

Next Generation - Standard Bearing Information

Motor Type	Frame	Standard Bearing Size DE	Standard Bearing Size NDE
SD200, SD200 841 (2 pole)	444TS-L449TS	6315 Z C3 S0	6315 Z C3 S0
SD200, SD200 841 (2 pole)	444T-L449T	6320 Z C3 S0	6315 Z C3 S0
SD200, SD200 841 (4 pole)	444TS-L449TS	6320 Z C3 S0	6315 Z C3 S0
SD200, SD200 841 (4 pole)	444T-L449T	6320 Z C3 S0	6315 Z C3 S0
SD200, SD200 841 (4 pole)	R444T-RL449T	NU 320	6315 Z C3 S0
SD200 (2 Pole)	509-5013S	6316 Z C3 S0	6316 Z C3 S0
DP200 (2 Pole)	509-5013S	6316 Z C3 S0	6316 Z C3 S0 (Insulated)
SD200 (4,6 Pole)	509-5013/S	6322 Z C3 S0[1]	6322 Z C3 S0[1]
SD200	R509-R5013	NU 322	6322 Z C3 S0[1]

1. With option L50 or L51 bearing will change to 6222 C3 S0

4.2.2. Low Voltage NEMA Motors – Bearing Sizes

4.2.2.1. GP100A, GP100, SD100, SD100 IEEE, SD661

General Purpose Low Voltage NEMA Motors - Standard Bearing Information

Motor Type	Frame	Standard Bearing Size DE	Standard Bearing Size NDE
GP100, GP100A	140T	6205 ZZ C3 S0	6205 ZZ C3 S0
GP100, GP100A	180T	6206 ZZ C3 S0	6206 ZZ C3 S0
GP100, GP100A	210T	6208 ZZ C3 S0	6208 ZZ C3 S0
GP100, GP100A	250T	6209 ZZ C3 S0	6209 ZZ C3 S0
GP100	280T/TS	6310 Z C3 S0	6210 ZZ C3 S0
GP100	320T/TS	6312 Z C3 S0	6210 ZZ C3 S0
GP100	360T/TS	6314 Z C3 S0	6214 ZZ C3 S0
GP100	400T/TS	6316 Z C3 S0	6214 ZZ C3 S0
GP100	440TS	6316 Z C3 S0	6216 ZZ C3 S0
GP100	444/445T	NU 318	6316 Z C3 S0
GP100	447/449T	NU 320	6316 Z C3 S0
GP100	B440T	6318 Z C3 S0	6216 ZZ C3 S0

Severe Duty Low Voltage NEMA Motors - Standard Bearing Information

Motor Type	Frame	Standard Bearing Size DE	Standard Bearing Size NDE	Option L65 Bearing Size DE
SD100, SD100 IEEE	140T	6205 Z C3 S0	6205 Z C3 S0	NA
SD100, SD100 IEEE	180T	6206 Z C3 S0	6206 Z C3 S0	NA
SD100, SD100 IEEE	210T	6208 Z C3 S0	6208 Z C3 S0	NU 208
SD100, SD100 IEEE	250T	6309 Z C3 S0	6309 Z C3 S0	NU 309
SD100, SD100 IEEE	280T/TS	6310 Z C3 S0	6310 Z C3 S0	NU 310
SD100, SD100 IEEE	320T/TS	6312 Z C3 S0	6312 Z C3 S0	NU 312
SD100, SD100 IEEE	360T/TS	6314 Z C3 S0	6314 Z C3 S0	NU 314
SD100, SD100 IEEE	400T/TS	6316 Z C3 S0	6316 Z C3 S0	NU 316
SD661	210T	NU 208	6208 Z C3 S0	Standard
SD661	250T	NU 309	6309 Z C3 S0	Standard
SD661	280T	NU 310	6310 Z C3 S0	Standard
SD661	320T	NU 312	6312 Z C3 S0	Standard
SD661	360T	NU 314	6314 Z C3 S0	Standard

4.2.2.2. 4.2.2.2. XP100, XP100 ID1, SD10 MS

Explosion Proof Low Voltage NEMA Motors - Standard Bearing Information

Motor Type	Frame	Standard Bearing Size DE	Standard Bearing Size NDE	Option L65 Bearing Size DE
XP100, XP100 ID1	140T	6205 Z C3 S0	6205 Z C3 S0	NA
XPJP	180JP	6007 Z C3 S0	6206 Z C3 S0	NA
XP100, XP100 ID1	180T	6206 Z C3 S0	6206 Z C3 S0	NA
XP100, XP100 ID1	210T	6208 Z C3 S0	6208 Z C3 S0	NU 208
XPJP	215JP	6009 Z C3 S0	6208 Z C3 S0	NA
XP100, XP100 ID1	250T	6309 Z C3 S0	6309 Z C3 S0	NU 309
XP100, XP100 ID1	280T/TS	6310 Z C3 S0	6310 Z C3 S0	NU 310
XP100, XP100 ID1	320T/TS	6312 Z C3 S0	6312 Z C3 S0	NU 312
XP100, XP100 ID1	360T/TS	6314 Z C3 S0	6314 Z C3 S0	NU 314
XP100, XP100 ID1	400T/TS	6316 Z C3 S0	6316 Z C3 S0	NU 316
XP100, XP100 ID1	440TS	6316 Z C3 S0	6316 Z C3 S0	NA
XP100, XP100 ID1	R444/445T	NU 318	6316 Z C3 S0	Standard
XP100, XP100 ID1	R447/449T	NU 320	6316 Z C3 S0	Standard
XP100, XP100 ID1	B440T	6318 Z C3 S0	6316 Z C3 S0	NA

Two Speed Low Voltage NEMA Motors - Standard Bearing Information

Motor Type	Frame	Standard Bearing Size DE	Standard Bearing Size NDE	Option L65 Bearing Size DE
SD10 MS	140T	6205 ZZ C3 S0	6205 ZZ C3 S0	NA
SD10 MS	180T	6206 ZZ C3 S0	6206 ZZ C3 S0	NA
SD10 MS	210T	6208 ZZ C3 S0	6208 ZZ C3 S0	NU 208
SD10 MS	250T	6309 Z C3 S0	6309 Z C3 S0	NU 309
SD10 MS	280T/TS	6310 Z C3 S0	6310 Z C3 S0	NU 310
SD10 MS	320T/TS	6312 Z C3 S0	6312 Z C3 S0	NU 312
SD10 MS	360T/TS	6314 Z C3 S0	6314 Z C3 S0	NU 314
SD10 MS	400T/TS	6316 Z C3 S0	6316 Z C3 S0	NU 316
SD10 MS	440TS	6316 Z C3 S0	6316 Z C3 S0	NA
SD10 MS	B440T	6318 Z C3 S0	6316 Z C3 S0	NA
SD10 MS	R440T	NU 318	6316 Z C3 S0	Standard

4.2.2.3. HP100, LP100

Vertical Solid Shaft Low Voltage NEMA Motors - Standard Bearing Information

Motor Type	Frame	Standard Bearing Size DE	Standard Bearing Size NDE
HP100	180HP	6206 C3 S0	6206 C3 S0 DB
HP100	210HP	6209 C3 S0	6309 C3 S0 DB
HP100	250HP	6309 C3 S0	6309 C3 S0 DB
HP100	280HP	6310 Z C3 S0	6312 Z C3 S0
HP100	320HP	6312 Z C3 S0	6314 Z C3 S0
HP100	360HP	6316 Z C3 S0	6316 Z C3 S0
HP100	400HP	6316 Z C3 S0	6316 Z C3 S0
HP100	440HP	6316 Z C3 S0	6318 Z C3 S0
LP100	180LP	6206 C3 S0	7306 BG DB
LP100	210LP	6209 C3 S0	7309 BG DB
LP100	250LP	6309 C3 S0	7309 BG DB
LP100	280LP	6312 Z C3 S0	7311 BG DB
LP100	320LP	6312 Z C3 S0	7311 BG DB
LP100	360LP	6316 Z C3 S0	7311 BG DB
LP100	400LP	6316 Z C3 S0	7311 BG DB
LP100	440LP	6316 Z C3 S0	7311 BG DB

4.2.3. Low Voltage NEMA Motors – Rated Thrust

4.2.3.1. LP100

LP100 Thrust Table

				Standard Thrust (3 years)		Standard Thrust (1 year)		Code K21 Extra High DOWN thrust (3 years)		Code K21 Extra High DOWN thrust (1 year)	
Horse Power	Pole	Frame Size	Max radial force (lb)	Down thrust (lb)	Up thrust (lb)	Down thrust (lb)	Up thrust (lb)	Up thrust (lb)	Down thrust (lb)	Up thrust (lb)	Down thrust (lb)
3	2	182LP	24	743	750	1087	1095	225[1]	1533	328[1]	2227
3	4	182LP	39	927	935	1361	1369	281[1]	1923	410[1]	2797
3	6	213LP	51	1847	1870	2702	2725	561[1]	3806	817[1]	5527
5	2	184LP	34	731	738	1075	1082	222[1]	1521	324[1]	2215
5	4	184LP	45	917	923	1351	1357	277[1]	1913	407[1]	2787
5	6	215LP	62	1831	1851	2685	2705	555[1]	3790	811[1]	5510
7.5	2	213LP	40	1268	1288	1860	1880	386[1]	2626	564[1]	3819
7.5	4	213LP	66	1582	1605	2328	2351	482[1]	3293	705[1]	4796
7.5	6	254LP	84	1794	1825	2648	2680	548[1]	3753	803[1]	5473
10	2	215LP	50	1256	1277	1848	1868	383[1]	2614	560[1]	3807
10	4	215LP	73	1571	1593	2317	2338	478[1]	3282	701[1]	4785
10	6	256LP	98	1775	1805	2629	2659	542[1]	3733	797[1]	5454
15	2	254LP	75	1218	1251	1811	1843	375[1]	2577	553[1]	3769
15	4	254LP	95	1533	1562	2279	2309	469[1]	3244	692[1]	4747
15	6	284LPH	95	2491	2548	3682	3738	764[1]	5221	1121[1]	7618
20	2	256LP	92	1197	1232	1789	1824	370[1]	2555	547[1]	3748
20	4	256LP	120	1501	1534	2247	2281	460[1]	3212	684[1]	4715
20	6	286LPH	120	2455	2516	3645	3705	755[1]	5184	1111[1]	7581
25	2	284LPH	65	1716	1768	2541	2593	530[1]	3608	777[1]	5271
25	4	284LPH	108	2133	2193	3172	3233	658[1]	4517	969[1]	6611
25	6	324LP	155	2379	2475	3569	3665	743[1]	5108	1099[1]	7505
30	2	286LPH	78	1698	1753	2523	2578	526[1]	3591	773[1]	5253
30	4	286LPH	116	2119	2177	3158	3217	653[1]	4503	965[1]	6597
30	6	326LP	172	2351	2450	3541	3640	735[1]	5080	1091[1]	7478
40	2	324LP	98	1655	1726	2480	2551	518[1]	3548	765[1]	5210
40	4	324LP	140	2053	2139	3093	3179	642[1]	4438	953[1]	6532
40	6	364LP	186	2304	2414	3494	3605	724[1]	5033	1081[1]	7430
50	2	326LP	105	1641	1710	2466	2535	513[1]	3533	760[1]	5196
50	4	326LP	180	1994	2095	3034	3135	629[1]	4378	940[1]	6473
50	6	365LP	208	2265	2376	3455	3565	713[1]	4994	1069[1]	7391
60	2	364LP	152	1561	1670	2386	2495	501[1]	3453	748[1]	5115

				Standard Thrust (3 years)		Standard Thrust (1 year)		Code K21 Extra High DOWN thrust (3 years)		Code K21 Extra High DOWN thrust (1 year)	
60	4	364LP	214	1926	2057	2965	3097	617[1]	4310	928[1]	6404
60	6	404LP	274	2160	2310	3351	3500	693[1]	4890	1050[1]	7287
75	2	365LP	175	1527	1640	2352	2465	492[1]	3419	739[1]	5082
75	4	365LP	255	1862	2006	2902	3046	602[1]	4246	913[1]	6340
75	6	405LP	310	2100	2254	3290	3444	676[1]	4829	1033[1]	7226
100	2	405LP	230	1443	1580	2269	2406	474[1]	3336	721[1]	4998
100	4	405LP	303	1775	1937	2814	2976	581[1]	4159	892[1]	6253
100	6	444LP	353	1926	2174	3116	3364	652[1]	4655	1009[1]	7052
125	4	444LP	347	1630	1871	2670	2911	561[1]	4014	873[1]	6108
125	6	445LP	455	1755	2064	2946	3254	619[1]	4485	976[1]	6882
150	4	445LP	417	1518	1795	2558	2835	539[1]	3902	850[1]	5996
150	6	447LP	529	1605	1970	2795	3161	591[1]	4334	948[1]	6731
200	4	447LP	524	1321	1664	2361	2703	499[1]	3705	810[1]	5799
200	6	449LP	673	1324	1795	2515	2985	539[1]	4053	895[1]	6451
250	4	449LP	638	1109	1531	2149	2571	459[1]	3493	771[1]	5587
250	6	449LP	679	1298	1714	2488	2904	514[1]	4027	871[1]	6424

1. Momentary load

4.3. Typical performance data

4.3.1. Next Generation Low Voltage NEMA Motors

4.3.1.1. SD200, SD200 841, DP200 HPS

Severe Duty Low Voltge NEMA Motors - 60Hz | SD200/SD200 841 | NEMA Premium | Aluminum Rotor

			Current							Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time			
			No Load		Full Load		Locked Rotor															
HP	FL RPM	Frame	460V	575V	460V	575V	460V	575V	KVA/ HP Code	1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)	NEMA Design	Approx. Weight (LBS)
75	900	444	50	40	105	84	543	434	G	93.3	93.8	93.6	54.8	65.3	68.1	443	130	200	25	32	B	1414
100	1200	444	63	50	128	102	725	580	G	94.3	95.0	95.0	57.7	71.2	77.3	423	150	260	30	35	B	1465
100	900	445	61	49	137	110	725	580	G	93.5	93.9	93.6	51.9	62.9	68.3	593	130	200	22	30	B	1495
125	3600	444	57	46	145	116	908	726	G	94.8	95.4	95.4	70.0	80.5	85.0	185	150	300	18	23	B	1528
125	1800	444	63	50	154	123	908	726	G	95.2	95.6	95.4	66.3	76.0	80.0	366	200	280	20	25	B	1548
125	1200	445	67	54	155	124	908	726	G	94.8	95.3	95.0	62.3	74.6	79.8	530	150	245	25	35	B	1579
125	900	447	81	65	165	132	908	726	G	94.7	94.8	94.1	66.5	74.7	77.2	740	140	205	20	30	B	1720
150	3600	445	58	46	170	136	1085	868	G	95.1	95.8	95.8	75.1	83.2	86.5	218	160	290	15	18	B	1689
150	1800	445	79	63	187	150	1085	868	G	96.3	96.3	96.2	63.1	73.6	78.0	440	230	290	20	30	B	1739
150	1200	447	77	62	182	146	1085	868	G	95.1	95.6	95.8	64.9	75.9	80.7	662	150	245	28	43	B	1795
150	900	449	103	82	205	164	1085	868	G	94.9	94.8	94.1	68.8	76.1	78.1	890	140	205	20	30	B	1967
200	3600	447	75	60	225	180	1450	1160	G	95.8	96.2	96.2	75.7	83.4	86.5	294	160	280	16	20	B	1843
200	1800	447	100	80	247	198	1450	1160	G	96.3	96.3	96.2	65.0	74.9	79.0	587	220	280	18	25	B	1836
200	1200	449	112	90	243	194	1450	1160	G	95.3	95.7	95.8	63.3	74.9	80.4	883	185	270	25	32	B	2125
200	900	L449	131	105	261	209	1450	1160	G	94.9	95.0	94.5	67.4	75.6	78.4	1185	125	220	15	25	B	2579
250	3600	449	97	78	275	220	1825	1460	G	95.8	96.2	96.2	75.0	83.5	87.5	370	170	290	12	18	B	2083

HP	FL RPM	Frame	Current						KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load		Full Load		Locked Rotor															
			460V	575V	460V	575V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
250	1800	449	120	96	305	244	1825	1460	G	96.6	96.5	96.2	65.8	76.0	80.0	735	200	220	18	25	B	2150
250	1200	449	139	111	306	245	1825	1460	G	95.5	95.9	95.8	64.9	76.2	82.0	1109	160	260	20	25	B	2283
250	900	L449	158	114	322	258	1825	1460	G	95.1	95.3	95.0	62.3	72.2	76.2	1478	125	220	25	32	B	2853
300	3600	449	99	79	322	258	2200	1760	G	95.9	96.3	96.2	82.0	88.0	90.0	441	160	280	12	13	B	2194
300	1800	449	144	115	365	292	2200	1760	G	96.8	96.6	96.2	66.9	80.0	80.0	882	200	220	22	30	B	2250
300	1200	L449	152	121	364	291	2200	1760	G	95.7	96.0	95.8	66.7	77.5	82.9	1334	160	260	26	33	B	2830
350	3600	L449	102	82	380	304	2550	2040	G	95.5	96.1	96.2	83.4	88.5	90.0	515	170	300	20	26	B	2680
350	1800	L449	156	125	421	337	2550	2040	G	96.1	96.2	96.2	67.6	77.0	81.0	1028	235	235	25	32	B	2723
400	3600	L449	111	89	432	346	2900	2320	G	95.7	96.2	96.2	83.9	88.9	90.0	586	170	300	17	24	B	2937
400	1800	L449	183	146	487	390	2900	2320	G	96.2	96.3	96.2	66.1	76.1	80.0	1179	235	235	21	26	B	2670

4.3.1.2. SD200, DP200 HPS – FS500

Severe Duty Low Voltage NEMA Motors - 60Hz | SD200, DP200 HPS | NEMA Premium

HP	FL RPM	Frame	Current (A)						KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load		Full Load		Locked Rotor															
			460V	575V	460V	575V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
350	1190	5010	140	112	410	328	2550	2040	G	96.6	96.6	96.2	74.3	81.5	84.1	1543	270	250	30	35	B	4387
400	3585	509S	85	70	430	345	2900	2320	G	96	96.4	96.5	85.1	89.6	90.8	585	190	230	23	28	B	4219
400	1790	509	140	112	460	368	2900	2320	G	96.2	96.7	96.5	76.3	81.8	84.4	1174.6	230	250	19	23	B	4105
400	1190	5011	160	128	470	376	2900	2320	G	96.6	96.6	96.2	74.3	81.5	84.1	1763.5	270	250	30	35	B	4529
450	3585	5010S	100	80	480	385	3250	2600	G	96	96.4	96.5	85.1	89.6	90.8	659.3	190	230	23	28	B	4357
450	1790	5010	150	120	515	412	3250	2600	G	96.4	96.7	96.5	76.7	82.7	84.8	1325.3	230	250	17	21	B	4302
450	1190	L5011	170	136	525	420	3250	2600	G	96.6	96.6	96.2	74.3	81.5	84.1	1984	270	250	30	35	B	5083
500	3585	5011S	105	84	535	430	3625	2900	G	96	96.4	96.5	85.1	89.6	90.8	732.5	190	230	19	24	B	4504
500	1790	5011	160	128	570	456	3625	2900	G	96.5	96.8	96.7	78.2	85.3	84.9	1469.2	230	250	18	22	B	4509
500	1190	5012	185	148	580	464	3625	2900	G	96.6	96.6	96.2	74.3	81.5	84.1	2204.4	270	250	30	35	B	5289
600	3585	5012S	145	115	650	520	4250	3400	G	96.3	96.8	96.7	80.6	87	89.1	877.7	190	230	17	22	–	4936
600	1790	5012	190	152	686	549	4400	3520	G	96.6	96.9	96.7	77.5	83.6	84.7	1767.6	230	250	19	23	–	4993
600	1190	5013	245	196	695	556	4518	3614	G	96.6	96.6	96.2	74.3	81.5	84.1	2644.9	270	250	30	35	–	5391
700	3585	5013S	160	128	750	600	5285	4228	G	94.8	95.6	95.8	86.5	90.4	91.1	1025.5	250	290	23	28	–	5538
700	1790	5013	305	244	830	664	5395	4316	G	97.3	97.2	96.7	81.2	85.7	81.7	2056.3	230	250	18	22	–	5592
800	3585	5013S	210	170	870	680	6300	5040	G	95.1	96	96.2	82.4	87.7	89.4	1172	250	290	19	24	–	5798
800	1790	5013	335	268	920	736	5980	4784	G	97.4	97.2	96.7	80.9	85.6	84.2	2349.9	230	250	17	21	–	5840

4.3.2. Low Voltage NEMA Motors

4.3.2.1. GP100A, GP100

General Purpose Low Voltage NEMA Motors - 60Hz | GP100A/GP100 | NEMA Premium | Aluminum Rotor

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
1	3520	143T	1.4	0.7	0.56	2.8	1.4	1.12	24	12	9.6	L	79.3	82.1	82.5	65.2	77.4	81.1	1.5	175	380	12	16	B	70
1	1755	143T	1.6	0.8	0.64	2.8	1.4	1.12	26	13	10.4	M	83.4	85.4	85.5	58.4	71.5	78.2	3	295	380	18	26	B	58
1	1165	145T	2	1	0.8	3.2	1.6	1.28	22	11	8.8	K	80.2	82.5	82.5	50.2	63.3	70.9	4.5	260	350	18	31	B	70
1	870	182T	3	1.5	1.2	4.2	2.1	1.68	18	9	7.2	J	77	80	81.5	36	47	56	6	160	280	50	68	B	86
1.5	3525	143T	2.2	1.1	0.88	4	2	1.6	38	19	15.2	M	80	83.2	84	64.2	77	83.6	2.2	270	450	14	19	B	75
1.5	1740	145T	3	1.1	0.88	4.2	2.1	1.68	38	19	15.2	M	85.8	87	86.5	58.5	71.8	77.3	4.5	330	420	15	21	B	69
1.5	1160	182T	2.8	1.4	1.12	4.8	2.4	1.92	30	15	12	J	85.3	87.6	87.5	48.4	58.4	66.9	6.8	205	330	34	46	B	101
1.5	865	184T	4.6	2.3	1.84	6	3	2.4	34	17	13.6	L	78.5	82	82.5	35	47	56	9	160	280	43	63	B	99
2	3515	145T	2.4	1.2	0.96	5	2.5	2	46	23	18.4	L	84	85.7	85.5	69	81.3	87.6	2.9	250	420	13	18	B	55
2	1740	145T	2.2	1.5	0.88	4.2	2.8	1.68	38	24	15.2	L	86	87.2	86.5	57.8	70.8	77.3	6	320	390	14	22	B	61
2	1160	184T	3.8	1.9	1.52	6.4	3.2	2.56	40	20	16	J	87.5	88.7	88.5	46.5	58.8	66.1	9.1	240	310	23	32	B	112
2	870	213T	4	2	1.6	6.6	3.3	2.64	32	16	12.8	H	84	84.5	84	51	63	67	12	170	290	22	38	B	126
3	3520	182T	3.4	1.7	1.36	7.6	3.8	3.04	60	30	24	J	84.17	86.3	86.5	69.5	79.8	85.5	4.4	185	380	20	30	B	81
3	1760	182T	4.2	2.1	1.68	8	4	3.2	66	33	26.4	K	87.8	89.4	89.5	59.5	71.7	78.5	9	235	360	17	29	B	85
3	1175	213T	5	2.5	2	8.6	4.3	3.44	64	32	25.6	K	87.8	89.3	89.5	52.1	65.4	73	13.4	265	470	23	35	B	155
3	870	215T	6	3	2.4	9.6	4.8	3.84	50	25	20	H	85.5	86.5	85.5	45	59	68	18	175	290	19	31	B	141
5	3505	184T	4	2	1.6	12	6	4.8	92	46	36.8	J	88.2	89.1	88.5	78.1	85.9	88.2	7.5	170	420	15	29	B	109
5	1755	184T	6	3	2.4	13	6.5	5.2	92	46	36.8	J	89.2	90	89.5	63.6	75.1	80.5	15	220	350	14	29	B	90
5	1165	215T	7	3.5	3.6	13.4	6.7	5.36	92	46	36.8	J	89.5	90.1	89.5	59.4	71.4	78.1	26.5	220	380	14	21	B	171
5	880	254T	11	5.5	4.4	17	8.5	6.8	66	33	26.4	G	85.5	87	86.5	43	54	61	30	155	210	65	115	B	218
7.5	3520	213T	6	3	2.4	17.6	8.8	7.04	126	63	50.4	H	89.6	90.1	89.5	78.5	86.8	89.2	11	180	490	17	30	B	209

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
7.5	1765	213T	10	5	4	19.4	9.7	7.76	126	63	50.4	H	90.73	91.7	91.7	60.5	72.3	78.9	22	270	450	25	42	B	165
7.5	1175	254T	10	5	4	20	10	8	126	63	50.4	H	91.1	91.5	91	58.4	70.2	77.2	33	165	260	26	45	B	249
7.5	875	256T	15.8	7.9	6.32	26	13	10.4	100	50	40	G	87	88	87.5	44	55	62	45	165	200	50	100	B	250
10	3515	215T	7	3.5	2.8	23	11.5	9.2	162	81	64.8	H	91	91.1	90.2	81.5	88.8	90.3	15	180	440	14	28	B	208
10	1755	215T	12.2	6.1	4.88	25	12.5	10	162	81	64.8	H	91.7	92.2	91.7	63.8	76.2	81.7	30	270	410	20	36	B	166
10	1175	256T	12.6	6.3	5.04	27	13.5	10.8	162	81	64.8	H	91.4	91.6	91	61	71.6	76.2	45	165	250	18	38	B	258
10	885	284T	22	11	8.8	34	17	13.6	162	81	64.8	H	88.2	89.8	90.2	42	53	61	59	160	240	15	30	B	418
15	3530	254T	10.2	5.1	4.08	35	17.5	14	232	116	92.8	G	90.7	91.3	91	80.6	87.4	88.2	22	210	260	24	48	B	301
15	1770	254T	17	8.5	6.8	38	19	15.2	232	116	92.8	G	92.3	92.8	92.4	64.5	74.7	80	44	185	235	21	33	B	242
15	1180	284T	22	11	8.8	42	21	16.8	232	116	92.8	G	90.9	91.8	91.7	53	66	73	67	150	240	22	48	B	409
15	885	286T	28	14	11.2	46	23	18.4	232	116	92.8	G	89.4	90.6	91	47	59	66	89	160	240	18	35	B	459
20	3515	256T	10.4	5.2	4.16	45	22.5	18	290	145	116	G	92.1	91.6	91	86.2	91.3	91.5	30	185	230	20	45	B	313
20	1770	256T	21	10.5	8.4	50	25	20	290	145	116	G	93.1	93.4	93	65.3	75.9	80.5	60	185	240	15	33	B	266
20	1180	286T	26	13	10.4	54	27	21.6	290	145	116	G	91.2	92	91.7	57	69	76	89	150	240	20	45	B	434
20	885	324T	36	18	14.4	64	32	25.6	290	145	116	G	90	90.8	91	46	58	65	119	140	200	15	35	B	616
25	3525	284TS	14	7	5.6	58	29	23.2	366	183	146.4	G	91.4	92.2	91.7	81	86	88	37	160	250	16	30	B	465
25	1775	284T	22	11	8.8	60	30	24	366	183	146.4	G	93.5	94	93.6	71	80	84	74	180	250	24	44	B	445
25	1185	324T	28	14	11.2	66	33	26.4	366	183	146.4	G	92.7	93.2	93	62	72	76	111-	170	240	28	54	B	633
25	885	326T	44	22	17.6	80	40	32	366	183	146.4	G	90.4	91.2	91	48	59	65	149	150	200	22	40	B	663

General Purpose Low Voltage NEMA Motors - 60Hz | GP100A/GP100 | NEMA Premium | Aluminum Rotor

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
30	3530	286TS	17	8.5	6.8	68	34	27.2	436	218	174.4	G	91.4	92.2	91.7	84	89	90	45	160	250	16	30	B	424
30	1775	286T	24	12	9.6	70	35	28	436	218	174.4	G	93.9	94.1	93.6	73	82	85	89	180	250	24	44	B	456
30	1185	326T	30	15	12	78	39	31.2	436	218	174.4	G	93.1	93.5	93	61	73	77	133	170	220	26	52	B	658
30	885	364T	52	26	20.8	94	47	37.6	436	218	174.4	G	90.6	92	91.7	49	61	65	178	150	200	22	40	B	854
40	3535	324TS	24	12	9.6	90	45	36	580	290	232	G	94	94.1	93.6	80	87	89	60	150	250	22	45	B	608
40	1780	324T	30	15	12	92	46	36.8	580	290	232	G	94.3	94.1	94.1	75	83	86	118	180	230	22	45	B	636
40	1185	364T	38	19	15.2	98	49	39.2	580	290	232	G	94.4	94.6	94.1	68	77	81	177	190	220	29	55	B	828
40	885	365T	72	36	28.8	126	63	50.4	580	290	232	G	90.7	92	91.7	49	60	65	237	150	200	25	40	B	950
50	3535	326TS	30	15	12	110	55	44	726	363	290.4	G	93.8	94.1	93.6	82	89	91	74	150	250	18	37	B	593
50	1780	326T	40	20	16	116	58	46.4	726	363	290.4	G	94.8	95	94.5	72	81	85	148	170	230	22	45	B	700
50	1185	365T	48	24	19.2	124	62	49.6	726	363	290.4	G	94	94.3	94.1	67	76	80	222	190	220	29	55	B	863
50	885	404T	56	28	22.4	134	67	53.6	726	363	290.4	G	93	93.1	92.4	64	73	76	297	140	200	25	40	B	111-6
60	3565	364TS	38	19	15.2	136	68	54.4	870	435	348	G	93.8	94.1	93.6	80	86	88	89	160	250	16	28	B	780
60	1780	364T	42	21	16.8	136	68	54.4	870	435	348	G	95.2	95.4	95	77	85	87	177	180	240	26	38	B	903
60	1185	404T	56	28	22.4	148	74	59.2	870	435	348	G	94.2	94.7	94.5	65	76	80	266	180	220	25	50	B	1047
60	885	405T	60	30	24	156	78	62.4	870	435	348	G	93	93.1	92.4	66	75	78	356	140	200	30	35	B	1182
75	3565	365TS	44	22	17.6	172	86	68.8	1086	543	434.4	G	93.7	94.3	94.1	81	86	88	111-	160	260	16	27	B	888
75	1780	365T	50	25	20	170	85	68	1086	543	434.4	G	95.6	95.8	95.4	78	85	87	221	180	240	25	35	B	950
75	1185	405T	68	34	27.2	186	93	74.4	1086	543	434.4	G	94.7	94.9	94.5	68	77	80	332	180	220	33	45	B	1257
75	885	444T	74	37	29.6	188	94	75.2	1086	543	434.4	G	93.5	93.9	93.6	67	76	80	445	135	200	25	32	B	1557
100	3570	405TS	–	19	15.2	–	108	86.4	–	725	580	G	94.6	94.7	94.1	89	91	92	147	120	200	25	45	B	1097
100	1780	405T	–	30	24	–	113	90.4	–	725	580	G	95.8	96	95.4	80	86	87	295	180	200	25	35	B	1097
100	1185	444T	–	39	31.2	–	117	93.6	–	725	580	G	95.1	95.3	95	73	81	84	443	160	200	30	35	B	1550

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
100	885	445T	–	48	38.4	–	123	98.4	–	725	580	G	94.2	94.5	94.1	70	78	81	593	130	200	22	30	B	1697
125	3575	444TS	–	32	25.6	–	138	110.4	–	908	726.4	G	94.5	95.1	95	84	88	89	184	120	200	18	23	B	1381
125	1785	444T	–	45	36	–	143	114.4	–	908	726.4	G	95.4	95.6	95.4	78	84	86	368	160	200	20	25	B	1601
125	1185	445T	–	48	38.4	–	144	115.2	–	908	726.4	G	95.1	95.4	95	74	82	85	554	160	200	25	35	B	1766
125	885	447T	–	54	43.2	–	152	121.6	–	908	726.4	G	94.6	94.7	94.1	70	79	82	742	130	200	20	30	B	2018
150	3575	445TS	–	37	29.6	–	164	131.2	–	1085	868	G	94.2	95	95	84	89	90	220	120	200	15	18	B	1601
150	1785	445T	–	52	41.6	–	170	136	–	1085	868	G	95.7	96	95.8	78	84	86	441	150	200	20	30	B	1753
150	1190	447T	–	59	47.2	–	172	137.6	–	1085	868	G	95.6	96	95.8	73	82	85	662	140	200	28	43	B	2006
200	3575	445TS	–	44	29.6	–	216	131.2	–	1450	868	G	95.3	95.6	95.4	83	90	91	294	120	200	16	20	B	1916
200	1785	445T	–	73	41.6	–	228	136	–	1450	868	G	96.2	96.5	96.2	75	83	85	588	160	200	18	25	B	2083
200	1190	447T	–	73	47.2	–	227	137.6	–	1450	868	G	95.6	96.2	95.8	75	83	86	883	125	200	25	32	B	2451

4.3.2.2. SD100, SD100 IEEE, SD661

Severe Duty Low Voltage NEMA Motors - 60Hz | SD100/SD100 IEEE841/SD661 | NEMA Premium Aluminum Rotor

			Current (A)										Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time			
			No Load			Full Load			Locked Rotor																
HP	FL RPM	Frame	230V	460V	575V	230V	460V	575V	230V	460V	575V	KVA/ HP Code	1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)	NEMA Design	Approx. Weight (LBS)
1	3520	143T	1.4	0.70	0.56	2.8	1.4	1.1	24	12	10	L	79.3	82.1	82.5	65.2	77.4	81.1	1.5	175	380	12	16	B	85
1	1755	143T	1.6	0.80	0.64	2.8	1.4	1.1	26	13	10	M	83.4	85.4	85.5	58.4	71.5	78.2	3	295	380	18	26	B	72
1	1165	145T	2.0	1.0	0.80	3.2	1.6	1.3	22	11	9	K	80.2	82.5	82.5	50.2	63.3	70.9	4.5	260	350	18	31	B	70
1	870	182T	3.0	1.5	1.2	4.2	2.1	1.7	18	9	7	J	77	80	81.5	36	47	56	6	160	280	50	68	B	106
1.5	3525	143T	2.2	1.1	0.88	4.0	2.0	1.6	38	19	15	M	80	83.2	84	64.2	77	83.6	2.2	270	450	14	19	B	44
1.5	1740	145T	2.2	1.1	0.88	4.2	2.1	1.7	38	19	15	M	85.8	87	86.5	58.5	71.8	77.3	4.5	330	420	15	21	B	83
1.5	1160	182T	2.8	1.4	1.1	4.8	2.4	1.9	30	15	12	J	85.3	87.6	87.5	48.4	58.4	66.9	6.8	205	330	34	46	B	121
1.5	865	184T	4.6	2.3	1.8	6.0	3.0	2.4	34	17	14	L	78.5	82	82.5	35	47	56	9	160	280	43	63	B	119
2	3515	145T	2.4	1.2	1.0	5.0	2.5	2.0	46	23	18	L	84	85.7	85.5	69	81.3	87.6	2.9	250	420	13	18	B	69
2	1740	145T	3.0	1.5	1.2	5.6	2.8	2.2	48	24	19	L	86	87.2	86.5	57.8	70.8	77.3	6	320	390	14	22	B	75
2	1160	184T	3.8	1.9	1.5	6.4	3.2	2.6	40	20	16	J	87.5	88.7	88.5	46.5	58.8	66.1	9.1	240	310	23	32	B	133
2	870	213T	4.0	2.0	1.6	6.6	3.3	2.6	32	16	13	H	84	84.5	84	51	63	67	12	170	290	22	38	B	145
3	3520	182T	3.4	1.7	1.4	7.6	3.8	3.0	60	30	24	J	84.17	86.3	86.5	69.5	79.8	85.5	4.4	185	380	20	30	B	135
3	1760	182T	4.2	2.1	1.7	8.0	4.0	3.2	66	33	26	K	87.8	89.4	89.5	59.5	71.7	78.5	9	235	360	17	29	B	132
3	1175	213T	5.0	2.5	2.0	8.6	4.3	3.4	64	32	26	K	87.8	89.3	89.5	52.1	65.4	73	13.4	265	470	23	35	B	176
3	870	215T	6.0	3.0	2.4	9.6	4.8	3.8	50	25	20	H	85.5	86.5	85.5	45	59	68	18	175	290	19	31	B	160
5	3505	184T	4.0	2.0	1.6	12.0	6.0	4.8	92	46	37	J	88.2	89.1	88.5	78.1	85.9	88.2	7.5	170	420	15	29	B	129
5	1755	184T	6.0	3.0	2.4	13.0	6.5	5.2	92	46	37	J	89.2	90	89.5	63.6	75.1	80.5	15	220	350	14	29	B	135
5	1165	215T	7.0	3.5	3.6	13.4	6.7	5.4	92	46	37	J	89.5	90.1	89.5	59.4	71.4	78.1	26.5	220	380	14	21	B	191
5	880	254T	11.0	5.5	4.4	17.0	8.5	6.8	66	33	26	G	85.5	87	86.5	43	54	61	30	155	210	65	115	B	247
7.5	3520	213T	6.0	3.0	2.4	17.6	8.8	7.0	126	63	50	H	89.6	90.1	89.5	78.5	86.8	89.2	11	180	490	17	30	B	161
7.5	1765	213T	10.0	5.0	4.0	19.4	9.7	7.8	126	63	50	H	90.73	91.7	91.7	60.5	72.3	78.9	22	270	450	25	42	B	175

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
7.5	1175	254T	10.0	5.0	4.0	20.0	10.0	8.0	126	63	50	H	91.1	91.5	91	58.4	70.2	77.2	33	165	260	26	45	B	278
7.5	875	256T	15.8	7.9	6.3	26.0	13.0	10.4	100	50	40	G	87	88	87.5	44	55	62	45	165	200	50	100	B	279
10	3515	215T	7.0	3.5	2.8	23.0	11.5	9.2	162	81	65	H	91	91.1	90.2	81.5	88.8	90.3	15	180	440	14	28	B	218
10	1755	215T	12.2	6.1	4.9	25.0	12.5	10.0	162	81	65	H	91.7	92.2	91.7	63.8	76.2	81.7	30	270	410	20	36	B	180
10	1175	256T	12.6	6.3	5.0	27.0	13.5	10.8	162	81	65	H	91.4	91.6	91	61	71.6	76.2	45	165	250	18	38	B	385
10	875	284T	18.2	9.1	7.3	30.0	15.0	12.0	162	81	65	H	89.4	90.9	91	50	61	69	60	150	220	15	30	B	361
15	3530	254T	10.2	5.1	4.1	35.0	17.5	14.0	232	116	93	G	90.7	91.3	91	80.6	87.4	88.2	22	210	260	24	48	B	331
15	1770	254T	17.0	8.5	6.8	38.0	19.0	15.2	232	116	93	G	92.3	92.8	92.4	64.5	74.7	80	44	185	235	21	33	B	286
15	1180	284T	22.0	11.0	8.8	42.0	21.0	16.8	232	116	93	G	90.9	91.8	91.7	53	66	73	67	150	240	22	48	B	440
15	875	286T	28.0	14.0	11.2	46.0	23.0	18.4	232	116	93	G	90.1	91.4	91	50	60	67	90	150	220	18	35	B	430
20	3515	256T	10.4	5.2	4.2	45.0	22.5	18.0	290	145	116	G	92.1	91.6	91	86.2	91.3	91.5	30	185	230	20	45	B	343
20	1770	256T	21.0	11.0	8.0	50.0	25.0	20.0	290	145	116	G	93.1	93.4	93	65.3	75.9	80.5	60	185	240	15	33	B	319
20	1180	286T	26.0	13.0	10.4	54.0	27.0	21.6	290	145	116	G	91.2	92	91.7	57	69	76	89	150	240	20	45	B	462
20	880	324T	36.0	18.0	14.4	62.0	31.0	24.8	290	145	116	G	90	91.2	91	50	61	67	119	140	200	15	35	B	567
25	3525	284TS	16.0	8.0	6.4	58.0	29.0	23.2	366	183	146	G	92	92.2	91.7	80	85	88	37	160	250	16	30	B	396
25	1775	284T	22.0	11.0	8.8	60.0	30.0	24.0	366	183	146	G	93.5	94	93.6	71	80	84	74	180	250	24	44	B	445
25	1185	324T	28.0	14.0	11.2	66.0	33.0	26.4	366	183	146	G	92.7	93.2	93	62	72	76	111-	170	240	28	54	B	623
25	880	326T	44.0	22.0	17.6	76.0	38.0	30.4	366	183	146	G	89.2	90.5	90.2	50	61	68	149	150	200	22	40	B	600

Severe Duty Low Voltage NEMA Motors - 60Hz | SD100/SD100 IEEE841/SD661 | NEMA Premium

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
30	3525	286TS	19	10	8	68	34	27	436	218	174	G	92	92.2	91.7	84	89	90	45	160	250	16	30	B	430
30	1775	286T	24	12	10	70	35	28	436	218	174	G	93.9	94.1	93.6	73	82	85	89	180	250	24	44	B	478
30	1185	326T	30	15	12	78	39	31	436	218	174	G	93.1	93.5	93	64	73	77	133	170	220	26	52	B	654
30	885	364T	52	26	21	94	47	38	436	218	174	G	89.9	91.3	91	50	62	66	178	150	200	22	40	B	800
40	3535	324TS	24	12	10	90	45	36	580	290	232	G	94	94.1	93.6	80	87	89	60	150	250	22	45	B	539
40	1780	324T	30	15	12	92	46	37	580	290	232	G	94.3	94.1	94.1	75	83	86	118	180	230	22	45	B	632
40	1185	364T	36	18	14	98	49	39	580	290	232	G	94.4	94.1	94.1	70	79	81	177	190	220	29	55	B	839
40	885	365T	72	36	29	126	63	50	580	290	232	G	90.7	92	91.7	49	60	65	237	150	200	25	40	B	920
50	3535	326TS	30	15	12	110	55	44	726	363	290	G	93.8	94.1	93.6	82	89	91	74	150	250	18	37	B	573
50	1780	326T	38	19	15	116	58	46	726	363	290	G	94.8	95	94.5	74	82	85	148	170	230	22	45	B	700
50	1185	365T	48	24	19	124	62	50	726	363	290	G	94	94.3	94.1	67	76	80	222	190	220	29	55	B	883
50	885	404T	56	28	22	134	67	54	726	363	290	G	93	93.1	92.4	64	73	76	297	140	200	25	40	B	111-6
60	3565	364TS	38	19	15	136	68	54	870	435	348	G	93.8	94.1	93.6	80	86	88	89	160	250	16	28	B	740
60	1780	364T	38	19	15	136	68	54	870	435	348	G	95.2	95.4	95	77	85	87	177	180	240	26	38	B	936
60	1185	404T	56	28	22	148	74	59	870	435	348	G	94.2	94.7	94.5	65	76	80	266	180	220	25	50	B	1100
60	885	405T	60	30	24	156	78	62	870	435	348	G	93	93.1	92.4	66	75	78	356	140	200	30	35	B	1182
75	3565	365TS	44	22	18	172	86	69	–	543	434	G	93.7	94.3	94.1	81	86	88	111-	160	260	16	27	B	817
75	1780	365T	50	25	20	170	85	68	1086	543	434	G	95.6	95.8	95.4	78	85	87	221	180	240	25	35	B	1000
75	1185	405T	68	34	27	186	93	74	1086	543	434	G	94.7	94.9	94.5	68	77	80	332	180	220	33	45	B	1257
100	3570	405TS	–	19	15	–	108	86	–	725	580	G	94.6	94.7	94.1	90	92	92	147	120	200	25	45	B	1097

4.3.2.3. XP100, XP100 ID1

Explosion Proof Low Voltage NEMA Motors – 60Hz | XP100/XP100 IDI | NEMA Premium

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
1	1760	143T	1.4	0.7	0.56	2.8	1.4	1.12	27.4	13.7	10.96	M	83.4	85.4	85.5	58.4	71.5	78.2	3	295	380	18	26	B	77
1	1165	145T	2	1	0.8	3.2	1.6	1.28	22	11	8.8	K	80.2	82.5	82.5	50.2	63.3	70.9	4.5	260	350	18	31	B	88
1	870	182T	3	1.5	1.2	4.2	2.1	1.68	18	9	7.2	J	77	80	81.5	36	47	56	8	160	280	50	68	B	105
1.5	3525	143T	2.2	1.1	0.88	4	2	1.6	38	19	15.2	M	80	83.2	84	64.2	77	83.6	2.2	270	450	14	19	B	55
1.5	1740	145T	2.2	1.1	0.88	4.2	2.1	1.68	38	19	15.2	M	85.8	87	86.5	58.5	71.8	77.3	4.5	330	420	15	21	B	88
1.5	1160	182T	2.8	1.4	1.12	4.8	2.4	1.92	32	16	12.8	K	85.3	87.6	87.5	48.4	58.4	66.9	6.8	205	330	34	46	B	105
1.5	865	184T	4.6	2.3	1.84	6	3	2.4	34	17	13.6	L	78.5	82	82.5	35	47	56	12	160	280	43	63	B	125
2	3515	145T	2.4	1.2	0.96	5	2.5	2	46	23	18.4	L	84	85.7	85.5	69	81.3	87.6	2.9	250	420	13	18	B	65
2	1740	145T	3	1.5	1.2	5.4	2.7	2.16	48	24	19.2	L	86	87.2	86.5	57.8	70.8	77.3	6	320	390	14	22	B	88
2	1160	184T	3.8	1.9	1.52	6.4	3.2	2.56	40	20	16	J	87.5	88.7	88.5	46.5	58.8	66.1	9.1	240	310	23	32	B	125
2	870	213T	4	2	1.6	6.6	3.3	2.64	32	16	12.8	H	84	84.5	84	51	63	67	16	170	290	22	38	B	161
3	3520	182T	3.4	1.7	1.36	7.6	3.8	3.04	60	30	24	J	84.17	86.3	86.5	69.5	79.8	85.5	4.4	185	380	20	30	B	110
3	1760	182T	4.2	2.1	1.68	8	4	3.2	66	33	26.4	K	87.8	89.4	89.5	59.5	71.7	78.5	9	235	360	17	29	B	120
3	1175	213T	5	2.5	2	8.6	4.3	3.44	64	32	25.6	K	87.8	89.3	89.5	52.1	65.4	73	13.4	265	470	23	35	B	175
3	870	215T	6	3	2.4	9.6	4.8	3.84	50	25	20	H	85.5	86.5	85.5	45	59	68	24	175	290	19	31	B	173
5	3505	184T	4	2	1.6	12	6	4.8	92	46	36.8	J	88.2	89.1	88.5	78.1	85.9	88.2	7.5	170	420	15	29	B	105
5	1755	184T	6	3	2.4	12.8	6.4	5.12	100	50	40	J	89.2	90	89.5	63.6	75.1	80.5	15	220	350	14	29	B	125
5	1165	215T	7	3.5	3.6	13.4	6.7	5.36	92	46	36.8	J	89.5	90.1	89.5	59.4	71.4	78.1	26.5	220	380	14	21	B	180
5	880	254T	11	5.5	4.4	17.6	8.8	7.04	66	33	26.4	G	85.5	87	86.5	43	54	61	41	155	210	65	115	B	270
7.5	3520	213T	6	3	2.4	17.6	8.8	7.04	126	63	50.4	H	89.6	90.1	89.5	78.5	86.8	89.2	11	180	490	17	30	B	165
7.5	1765	213T	10	5	4	19.4	9.7	7.76	126	63	50.4	H	90.73	91.7	91.7	60.5	72.3	78.9	22	270	450	25	42	B	192
7.5	1175	254T	10	5	4	20	10	8	126	63	50.4	H	91.1	91.5	91	58.4	70.2	77.2	33	165	260	26	45	B	272
7.5	875	256T	15.8	7.9	6.32	25	12.5	10	100	50	40	G	87	88	87.5	0.44	0.55	0.62	61	165	200	50	100	B	300

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
10	3515	215T	7	3.5	2.8	23	11.5	9.2	162	81	64.8	H	91	91.1	90.2	81.5	88.8	90.3	15	180	440	14	28	B	185
10	1755	215T	12.2	6.1	4.88	25	12.5	10	162	81	64.8	H	91.7	92.2	91.7	63.8	76.2	81.7	30	270	410	20	36	B	200
10	1175	256T	12.6	6.3	5.04	27	13.5	10.8	162	81	64.8	H	91.4	91.6	91	61	71.6	76.2	45	165	250	18	38	B	308
10	885	284T	22	11	8.8	34	17	13.6	162	81	64.8	H	88.2	89.8	90.2	42	53	61	59	160	240	15	30	B	486
15	3530	254T	10.2	5.1	4.08	35	17.5	14	232	116	92.8	G	90.7	91.3	91	80.6	87.4	88.2	22	210	260	24	48	B	283
15	1770	254T	17	8.5	6.8	38	19	15.2	232	116	92.8	G	92.3	92.8	92.4	64.5	74.7	80	44	185	235	21	33	B	315
15	1180	284T	22	11	8.8	42	21	16.8	232	116	92.8	G	90.9	91.8	91.7	53	66	73	67	150	240	22	48	B	484
15	885	286T	28	14	11.2	46	23	18.4	232	116	92.8	G	89.4	90.6	91	47	59	66	89	160	240	18	35	B	531
20	3515	256T	10.4	5.2	4.16	45	22.5	18	290	145	116	G	92.1	91.6	91	86.2	91.3	91.5	30	185	230	20	45	B	308
20	1770	256T	20.96	10.48	8.38	50	25	20	290	145	116	G	93.1	93.4	93	65.3	75.9	80.5	60	185	240	15	33	B	345
20	1180	286T	26	13	10.4	54	27	21.6	290	145	116	G	91.2	92	91.7	57	69	76	89	150	240	20	45	B	509
20	885	324T	36	18	14.4	64	32	25.6	290	145	116	G	90	90.8	91	46	58	65	119	140	200	15	35	B	636
25	3525	284TS	14	7	5.6	58	29	23.2	366	183	146.4	G	91.4	92.2	91.7	81	86	88	37	160	250	16	30	B	526
25	1775	284T	22	11	8.8	60	30	24	366	183	146.4	G	93.5	94	93.6	71	80	84	74	180	250	24	44	B	460
25	1185	324T	28	14	11.2	66	33	26.4	366	183	146.4	G	92.7	93.2	93	62	72	76	111-	170	240	28	54	B	805
25	885	326T	44	22	17.6	80	40	32	366	183	146.4	G	90.4	91.2	91	48	59	65	149	150	200	22	40	B	683

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HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
30	3530	286TS	17	8.5	6.8	68	34	27.2	436	218	174.4	G	91.4	92.2	91.7	84	89	90	45	160	250	16	30	B	521
30	1775	286T	24	12	9.6	70	35	28	454	227	181.6	G	93.9	94.1	93.6	73	82	85	89	180	250	24	44	B	493
30	1185	326T	30	15	12	78	39	31.2	436	218	174.4	G	93.1	93.5	93	61	73	77	133	170	220	26	52	B	685
30	885	364T	36	18	14.4	82	41	32.8	420	210	168	G	90.6	92	91.7	49	61	65	178	150	200	22	40	B	860
40	3535	324TS	24	12	9.6	90	45	36	580	290	232	G	94	94.1	93.6	80	87	89	60	150	250	22	45	B	610
40	1780	324T	30	15	12	92	46	36.8	580	290	232	G	94.3	94.1	94.1	75	83	86	118	180	230	22	45	B	653
40	1185	364T	38	19	15.2	98	49	39.2	580	290	232	G	94.4	94.6	94.1	68	77	81	177	190	220	29	55	B	606
40	885	365T	72	36	28.8	126	63	50.4	580	290	232	G	93	93.1	91.7	49	60	65	237	150	200	25	40	B	940
50	3535	326TS	30	15	12	110	55	44	726	363	290.4	G	93.8	94.1	93.6	82	89	91	74	150	250	18	37	B	600
50	1780	326T	38	19	15.2	116	58	46.4	768	384	307.2	G	94.8	95	94.5	74	82	85	148	170	230	22	45	B	695
50	1185	365T	48	24	19.2	124	62	49.6	726	363	290.4	G	94	94.3	94.1	67	76	80	222	190	220	29	55	B	850
50	885	404T	56	28	22.4	134	67	53.6	726	363	290.4	G	93	93.1	92.4	64	73	76	297	140	200	25	40	B	1050
60	3565	364TS	38	19	15.2	136	68	54.4	870	435	348	G	93.8	94.1	93.6	80	86	88	89	160	250	16	28	B	790
60	1780	364T	42	21	16.8	136	68	54.4	870	435	348	G	95.2	95.4	95	77	85	87	177	180	240	26	38	B	890
60	1185	404T	56	28	22.4	148	74	59.2	870	435	348	G	94.2	94.7	94.5	65	76	80	266	180	220	25	50	B	1055
60	885	405T	60	30	24	156	78	62.4	870	435	348	G	93	93.1	92.4	66	75	78	356	140	200	30	35	B	1050
75	3565	365TS	44	22	17.6	172	86	68.8	1086	543	434.4	G	93.7	94.3	94.1	81	86	88	111-	160	260	16	27	B	945
75	1780	365T	50	25	20	170	85	68	1086	543	434.4	G	95.6	95.8	95.4	78	85	87	221	180	240	25	35	B	947
75	1185	405T	68	34	27.2	186	93	74.4	1086	543	434.4	G	94.7	94.9	94.5	68	77	80	332	180	220	33	45	B	1025
75	885	444T	74	37	29.6	188	94	75.2	1086	543	434.4	G	93.5	93.9	93.6	67	76	80	445	135	200	25	32	B	1551
100	3570	405TS	38	19	15.2	216	108	86.4	1450	725	580	G	94.6	94.7	94.1	90	92	92	147	120	200	25	45	B	1020
100	1780	405T	60	30	24	226	113	90.4	1450	725	580	G	95.8	96	95.4	80	86	87	295	180	200	25	35	B	1189
100	1185	444T	78	39	31.2	234	117	93.6	1450	725	580	G	95.1	95.3	95	73	81	84	443	160	200	30	35	B	1551
100	885	445T	96	48	38.4	246	123	98.4	1450	725	580	G	94.2	94.5	94.1	70	78	81	593	130	200	22	30	B	1770
125	3575	444TS	64	32	25.6	276	138	110.4	1816	908	726.4	G	94.5	95.1	95	84	88	89	184	120	200	18	23	B	1450
125	1785	444T	90	45	36	286	143	114.4	1816	908	726.4	G	95.4	95.6	95.4	78	84	86	368	160	200	20	25	B	1659

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
125	1185	445T	96	48	38.4	288	144	115.2	1816	908	726.4	G	95.1	95.4	95	74	82	85	554	160	200	25	35	B	1771
125	885	447T	108	54	43.2	304	152	121.6	1816	908	726.4	G	94.6	94.7	94.1	70	79	82	742	130	200	20	30	B	2029
150	3575	445TS	74	37	29.6	328	164	131.2	2170	1085	868	G	94.8	95.2	95	84	89	90	220	120	200	15	18	B	1611
150	1785	445T	104	52	41.6	340	170	136	2170	1085	868	G	95.7	96	95.8	78	84	86	441	150	200	20	30	B	1934
150	1190	447T	118	59	47.2	344	172	137.6	2170	1085	868	G	95.6	96	95.8	73	82	85	662	140	200	28	43	B	2051
150	885	449T	122	61	48.8	360	180	144	2170	1085	868	G	94.3	94.5	94.1	72	80	83	890	130	200	20	25	B	2508
200	3575	445TS	88	44	35.2	432	216	172.8	2900	1450	1160	G	95.3	95.6	95.4	88	90	91	294	120	200	16	20	B	2250
200	1785	445T	146	73	58.4	456	228	182.4	2900	1450	1160	G	96.2	96.5	96.2	75	83	85	588	160	200	18	25	B	2503
200	1190	447T	146	73	58.4	454	227	181.6	2900	1450	1160	G	95.6	96.2	95.8	75	83	86	883	125	200	25	32	B	2450
200	885	S449LS	156	78	62.4	480	240	192	2900	1450	1160	G	95	95	94.5	71	79	83	1187	125	200	15	25	B	2450
250	3575	449TS	90	45	36	530	265	212	3650	1825	1460	G	95.7	96	95.8	89	91	91	368	120	200	12	18	B	2300
250	1785	449T	180	90	72	556	278	222.4	4200	2100	1680	H	96.1	96.3	96.2	78	85	87	735	140	200	18	25	A	2490
250	1190	449T	172	86	68.8	562	281	224.8	4100	2050	1640	H	95.7	96	95.8	81	86	87	1104	120	200	20	25	A	2498
300	3570	449TS	136	68	54.4	650	325	260	4400	2200	1760	G	95.2	95.8	95.8	86	90	91	441	100	200	12	13	B	2300
300	1785	449T	228	114	91.2	676	338	270.4	4800	2400	1920	H	96.1	96.3	96.2	75	83	86	882	140	200	22	30	A	2350

4.3.2.4. LP100, HP100

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HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
3	3520	182LP	3.4	1.7	1.36	7.6	3.8	3.04	60	30	24	J	84.17	86.3	86.5	69.5	79.8	85.5	4.4	185	380	20	30	B	118
3	1760	182LP	4.2	2.1	1.68	8	4	3.2	66	33	26.4	K	87.8	89.4	89.5	59.5	71.7	78.5	9	235	360	17	29	B	129
3	1175	213LP	5	2.5	2	8.6	4.3	3.44	64	32	25.6	K	87.8	89.3	89.5	52.1	65.4	73	13.4	265	470	23	35	B	192
5	3505	184LP	4	2	1.6	12	6	4.8	92	46	36.8	J	88.2	89.1	88.5	78.1	85.9	88.2	7.5	170	420	15	29	B	130
5	1755	184LP	6	3	2.4	13	6.5	5.2	92	46	36.8	J	89.2	90	89.5	63.6	75.1	80.5	15	220	350	14	29	B	135
5	1165	215LP	7	3.5	3.6	13.4	6.7	5.36	92	46	36.8	J	89.5	90.1	89.5	59.4	71.4	78.1	26.5	220	380	14	21	B	204
7.5	3520	213LP	6	3	2.4	17.6	8.8	7.04	126	63	50.4	H	89.6	90.1	89.5	78.5	86.8	89.2	11	180	490	17	30	B	188
7.5	1765	213LP	10	5	4	19.4	9.7	7.76	126	63	50.4	H	90.73	91.7	91.7	60.5	72.3	78.9	22	270	450	25	42	B	212
7.5	1175	254LP	10	5	4	20	10	8	126	63	50.4	H	91.1	91.5	91	58.4	70.2	77.2	33	165	260	26	45	B	294
10	3515	215LP	7	3.5	2.8	23	11.5	9.2	162	81	64.8	H	91	91.1	90.2	81.5	88.8	90.3	15	180	440	14	28	B	202
10	1755	215LP	12.2	6.1	4.88	25	12.5	10	162	81	64.8	H	91.7	92.2	91.7	63.8	76.2	81.7	30	270	410	20	36	B	220
10	1175	256LP	12.6	6.3	5.04	27	13.5	10.8	162	81	64.8	H	91.4	91.6	91	61	71.6	76.2	45	165	250	18	38	B	310
15	3530	254LP	10.2	5.1	4.08	35	17.5	14	232	116	92.8	G	90.7	91.3	91	80.6	87.4	88.2	22	210	260	24	48	B	309
15	1770	254LP	17	8.5	6.8	38	19	15.2	232	116	92.8	G	92.3	92.8	92.4	64.5	74.7	80	44	185	235	21	33	B	315
15	1180	284LPH	22	11	8.8	42	21	16.8	232	116	92.8	G	90.9	91.8	91.7	53	66	73	67	150	240	22	48	B	601
20	3515	256LP	10.4	5.2	4.16	45	22.5	18	290	145	116	G	92.1	91.6	91	86.2	91.3	91.5	30	185	230	20	45	B	337
20	1770	256LP	21	10.5	8.4	50	25	20	290	145	116	G	93.1	93.4	93	65.3	75.9	80.5	60	185	240	15	33	B	342

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
20	1180	286LPH	26	13	10.4	54	27	21.6	290	145	116	G	91.2	92	91.7	57	69	76	89	150	240	20	45	B	656
25	3525	284LPH	16	8	6.4	58	29	23.2	366	183	146.4	G	92	92.2	91.7	80	85	88	37	160	250	16	30	B	559
25	1775	284LPH	22	11	8.8	60	30	24	366	183	146.4	G	93.5	94	93.6	71	80	84	74	180	250	24	44	B	640
25	1185	324LP	28	14	11.2	66	33	26.4	366	183	146.4	G	92.7	93.2	93	62	72	76	111-	170	240	28	54	B	884
30	3525	286LPH	19	9.5	7.6	68	34	27.2	436	218	174.4	G	92	92.2	91.7	84	89	90	45	160	250	16	30	B	591
30	1775	286LPH	24	12	9.6	70	35	28	436	218	174.4	G	93.9	94.1	93.6	73	82	85	89	180	250	24	44	B	649
30	1185	326LP	30	15	12	78	39	31.2	436	218	174.4	G	93.1	93.5	93	64	73	77	133	170	220	26	52	B	920
40	3535	324LP	24	12	9.6	90	45	36	580	290	232	G	94	94.1	93.6	80	87	89	60	150	250	22	45	B	784
40	1780	324LP	30	15	12	92	46	36.8	580	290	232	G	94.3	94.1	94.1	75	83	86	118	180	230	22	45	B	848
40	1185	364LP	36	18	14.4	98	49	39.2	580	290	232	G	94.4	94.1	94.1	70	79	81	177	190	220	29	55	B	822

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HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
50	3535	326LP	30	15	12	110	55	44	726	363	290.4	G	93.8	94.1	93.6	82	89	91	74	150	250	18	37	B	799
50	1780	326LP	38	19	15.2	116	58	46.4	726	363	290.4	G	94.8	95	94.5	74	82	85	148	170	230	22	45	B	957

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
50	1185	365LP	48	24	19.2	124	62	49.6	726	363	290.4	G	94	94.3	94.1	67	76	80	222	190	220	29	55	B	855
60	3565	364LP	38	19	15.2	136	68	54.4	870	435	348	G	93.8	94.1	93.6	80	86	88	89	160	250	16	28	B	836
60	1780	364LP	38	19	15.2	136	68	54.4	870	435	348	G	95.2	95.4	95	77	85	87	177	180	240	26	38	B	885
60	1185	404LP	56	28	22.4	148	74	59.2	870	435	348	G	94.2	94.7	94.5	65	76	80	266	180	220	25	50	B	1021
75	3565	365LP	44	22	17.6	172	86	68.8	1086	543	434.4	G	93.7	94.3	94.1	81	86	88	111-	160	260	16	27	B	877
75	1780	365LP	50	25	20	170	85	68	1086	543	434.4	G	95.6	95.8	95.4	78	85	87	221	180	240	25	35	B	948
75	1185	405LP	68	34	27.2	186	93	74.4	1086	543	434.4	G	94.7	94.9	94.5	68	77	80	332	180	220	33	45	B	1088
100	3570	405LP	38	19	15.2	216	108	86.4	1450	725	580	G	94.6	94.7	94.1	90	92	92	147	120	200	25	45	B	1057
100	1780	405LP	60	30	24	226	113	90.4	1450	725	580	G	95.8	96	95.4	80	86	87	295	180	200	25	35	B	1059
100	1185	444LP	78	39	31.2	234	117	93.6	1450	725	580	G	95.1	95.3	95	73	81	84	443	160	200	30	35	B	1385
125	1785	444LP	90	45	36	286	143	114.4	1816	908	726.4	G	95.4	95.6	95.4	78	84	86	368	160	200	20	25	B	1429
125	1185	445LP	96	48	38.4	288	144	115.2	1816	908	726.4	G	95.1	95.4	95	74	82	85	554	160	200	25	35	B	1565
150	1785	445LP	104	52	41.6	340	170	136	2170	1085	868	G	95.7	96	95.8	78	84	86	441	150	200	20	30	B	1565
150	1190	447LP	118	59	47.2	344	172	137.6	2170	1085	868	G	95.6	96	95.8	73	82	85	662	140	200	28	43	B	1778
200	1785	447LP	140	70	56	452	226	180.8	2900	1450	1160	G	96.2	96.5	96.2	76	84	86	588	160	200	18	25	B	1843
200	1190	449LP	146	73	58.4	454	227	181.6	2900	1450	1160	G	95.6	96.2	95.8	75	83	86	883	125	200	25	32	B	2204
250	1785	449LP	180	90	72	556	278	222.4	4200	2100	1680	H	96.1	96.3	96.2	78	85	87	735	140	200	18	25	A	2203
250	1190	449LP	172	86	68.8	562	281	224.8	4100	2050	1640	H	95.7	96	95.8	81	86	87	1104	120	200	20	25	A	2191

Definite Purpose Low Voltage NEMA Motors – 60Hz | HP100 | NEMA Premium | Vertical Solid Shaft Motors

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
3	3520	182HP	3.4	1.7	1.36	7.6	3.8	3.04	60	30	24	J	84.17	86.3	86.5	69.5	79.8	85.5	4.4	185	380	20	30	B	118
3	1760	182HP	4.2	2.1	1.68	8	4	3.2	66	33	26.4	K	87.8	89.4	89.5	59.5	71.7	78.5	9	235	360	17	29	B	129
3	1175	213HP	5	2.5	2	8.6	4.3	3.44	64	32	25.6	K	87.8	89.3	89.5	52.1	65.4	73	13.4	265	470	23	35	B	192
5	3505	184HP	4	2	1.6	12	6	4.8	92	46	36.8	J	88.2	89.1	88.5	78.1	85.9	88.2	7.5	170	420	15	29	B	130
5	1755	184HP	6	3	2.4	13	6.5	5.2	92	46	36.8	J	89.2	90	89.5	63.6	75.1	80.5	15	220	350	14	29	B	135
5	1165	215HP	7	3.5	3.6	13.4	6.7	5.36	92	46	36.8	J	89.5	90.1	89.5	59.4	71.4	78.1	26.5	220	380	14	21	B	204
7.5	3520	213HP	6	3	2.4	17.6	8.8	7.04	126	63	50.4	H	89.6	90.1	89.5	78.5	86.8	89.2	11	180	490	17	30	B	188
7.5	1765	213HP	10	5	4	19.4	9.7	7.76	126	63	50.4	H	90.73	91.7	91.7	60.5	72.3	78.9	22	270	450	25	42	B	211
7.5	1175	254HP	10	5	4	20	10	8	126	63	50.4	H	91.1	91.5	91	58.4	70.2	77.2	33	165	260	26	45	B	294
10	3515	215HP	7	3.5	2.8	23	11.5	9.2	162	81	64.8	H	91	91.1	90.2	81.5	88.8	90.3	15	180	440	14	28	B	202
10	1755	215HP	12.2	6.1	4.88	25	12.5	10	162	81	64.8	H	91.7	92.2	91.7	63.8	76.2	81.7	30	270	410	20	36	B	220
10	1175	256HP	12.6	6.3	5.04	27	13.5	10.8	162	81	64.8	H	91.4	91.6	91	61	71.6	76.2	45	165	250	18	38	B	310
15	3530	254HP	10.2	5.1	4.08	35	17.5	14	232	116	92.8	G	90.7	91.3	91	80.6	87.4	88.2	22	210	260	24	48	B	309
15	1770	254HP	17	8.5	6.8	38	19	15.2	232	116	92.8	G	92.3	92.8	92.4	64.5	74.7	80	44	185	235	21	33	B	315
15	1180	284HP	22	11	8.8	42	21	16.8	232	116	92.8	G	90.9	91.8	91.7	53	66	73	67	150	240	22	48	B	494
20	3515	256HP	10.4	5.2	4.16	45	22.5	18	290	145	116	G	92.1	91.6	91	86.2	91.3	91.5	30	185	230	20	45	B	337
20	1770	256HP	21	10.5	8.4	50	25	20	290	145	116	G	93.1	93.4	93	65.3	75.9	80.5	60	185	240	15	33	B	342
20	1180	286HP	26	13	10.4	54	27	21.6	290	145	116	G	91.2	92	91.7	57	69	76	89	150	240	20	45	B	551
25	3525	284HP	16	8	6.4	58	29	23.2	366	183	146.4	G	92	92.2	91.7	80	85	88	37	160	250	16	30	B	454

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
25	1775	284HP	22	11	8.8	60	30	24	366	183	146.4	G	93.5	94	93.6	71	80	84	74	180	250	24	44	B	535
25	1185	324HP	28	14	11.2	66	33	26.4	366	183	146.4	G	92.7	93.2	93	62	72	76	111-	170	240	28	54	B	773
30	3525	286HP	19	9.5	7.6	68	34	27.2	436	218	174.4	G	92	92.2	91.7	84	89	90	45	160	250	16	30	B	486
30	1775	286HP	24	12	9.6	70	35	28	436	218	174.4	G	93.9	94.1	93.6	73	82	85	89	180	250	24	44	B	544
30	1185	326HP	30	15	12	78	39	31.2	436	218	174.4	G	93.1	93.5	93	64	73	77	133	170	220	26	52	B	809
40	3535	324HP	24	12	9.6	90	45	36	580	290	232	G	94	94.1	93.6	80	87	89	60	150	250	22	45	B	674
40	1780	324HP	30	15	12	92	46	36.8	580	290	232	G	94.3	94.1	94.1	75	83	86	118	180	230	22	45	B	737
40	1185	364HP	36	18	14.4	98	49	39.2	580	290	232	G	94.4	94.1	94.1	70	79	81	177	190	220	29	55	B	802

Definite Purpose Low Voltage NEMA Motors – 60Hz | HP100 | NEMA Premium | Vertical Solid Shaft Motors

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
50	3535	326HP	30	15	12	110	55	44	726	363	290.4	G	93.8	94.1	93.6	82	89	91	74	150	250	18	37	B	689
50	1780	326HP	38	19	15.2	116	58	46.4	726	363	290.4	G	94.8	95	94.5	74	82	85	148	170	230	22	45	B	846
50	1185	365HP	48	24	19.2	124	62	49.6	726	363	290.4	G	94	94.3	94.1	67	76	80	222	190	220	29	55	B	835

HP	FL RPM	Frame	Current (A)									KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time		NEMA Design	Approx. Weight (LBS)
			No Load			Full Load			Locked Rotor																
			230V	460V	575V	230V	460V	575V	230V	460V	575V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)		
60	3565	364HP	38	19	15.2	136	68	54.4	870	435	348	G	93.8	94.1	93.6	80	86	88	89	160	250	16	28	B	817
60	1780	364HP	38	19	15.2	136	68	54.4	870	435	348	G	95.2	95.4	95	77	85	87	177	180	240	26	38	B	865
60	1185	404HP	56	28	22.4	148	74	59.2	870	435	348	G	94.2	94.7	94.5	65	76	80	266	180	220	25	50	B	1000
75	3565	365HP	44	22	17.6	172	86	68.8	1086	543	434.4	G	93.7	94.3	94.1	81	86	88	111	160	260	16	27	B	857
75	1780	365HP	50	25	20	170	85	68	1086	543	434.4	G	95.6	95.8	95.4	78	85	87	221	180	240	25	35	B	928
75	1185	405HP	68	34	27.2	186	93	74.4	1086	543	434.4	G	94.7	94.9	94.5	68	77	80	332	180	220	33	45	B	1068
100	3570	405HP	38	19	15.2	216	108	86.4	1450	725	580	G	94.6	94.7	94.1	90	92	92	147	120	200	25	45	B	1023
100	1780	405HP	60	30	24	226	113	90.4	1450	725	580	G	95.8	96	95.4	80	86	87	295	180	200	25	35	B	1073
100	1185	444HP	78	39	31.2	234	117	93.6	1450	725	580	G	95.1	95.3	95	73	81	84	443	160	200	30	35	B	1372
125	1785	444HP	90	45	36	286	143	114.4	1816	908	726.4	G	95.4	95.6	95.4	78	84	86	368	160	200	20	25	B	1419
125	1185	445HP	96	48	38.4	288	144	115.2	1816	908	726.4	G	95.1	95.4	95	74	82	85	554	160	200	25	35	B	1557
150	1785	445HP	104	52	41.6	340	170	136	2170	1085	868	G	95.7	96	95.8	78	84	86	441	150	200	20	30	B	1559
150	1190	447HP	118	59	47.2	344	172	137.6	2170	1085	868	G	95.6	96	95.8	73	82	85	662	140	200	28	43	B	1786
200	1785	447HP	140	70	56	452	226	180.8	2900	1450	1160	G	96.2	96.5	96.2	76	84	86	588	160	200	18	25	B	1854
200	1190	449HP	146	73	58.4	454	227	181.6	2900	1450	1160	G	95.6	96.2	95.8	75	83	86	883	125	200	25	32	B	2216
250	1785	449HP	180	90	72	556	278	222.4	4200	2100	1680	H	96.1	96.3	96.2	78	85	87	735	140	200	18	25	A	2246
250	1190	449HP	172	86	68.8	562	281	224.8	4100	2050	1640	H	95.7	96	95.8	81	86	87	1104	120	200	20	25	A	2203

4.3.2.5. SD10 MS

Definite Purpose Low Voltage NEMA Motors | SD10 MS | Energy Efficient | Multi Speed Motors

HP	FL RPM	Frame	Current (A)			KVA/ HP Code	Nominal Efficiency (%)			Power Factor			Torque			Locked Rotor Stall Time	
			No Load	Full Load	Locked Rotor												
			460V	460V	460V		1/2 Load (%)	3/4 Load (%)	Full Load (%)	1/2 Load (%)	3/4 Load (%)	Full Load (%)	Full Load Lb-FT	Locked Rotor TA/TN (%)	Break Down Tk/TN (%)	Hot (sec)	Cold (sec)
1/0.25	1763/876	143T	1.1/0.7	1.6/.8	15.6/3.8	K	70.0/48.2	79.0/57.4	81.0/64.5	49/33	62/41	71/48	2.9/1.5	420/340	480/380	30	40
1.5/0.37	1755/870	145T	1.5/0.9	2.3/1.1	20.9/5.2	K	76/53	80/61	81.3/65.5	52/33	66/42	73/49	4.5/2.4	390/340	430/360	30	40
2/0.5	1775/880	182T	2.2/1.3	3.4/1.5	25.0/10.0	K	84.5/68.0	86.0/72.0	86.5/74.0	55/48	68/62	75/69	5.9/3.0	230/150	260/210	30	40
3/0.75	1765/875	184T	2.6/1.5	4.4/1.9	32.0/12.5	J	85.7/71.7	87.7/76.7	87.5/78.5	54/46	67/60	75/68	8.9/4.5	240/150	280/200	30	40
5/1.2	1760/865	213T	5.0/2.4	7.7/3.0	47.0/9.5	J	83.4/58.5	85.1/65.1	86.5/75.5	50/30	62.3/39.0	72/50	14.9/7.2	230/130	330/200	30	40
7.5/1.9	1755/875	215T	4.1/2.6	9.6/3.7	63.5/13.8	J	88.1/71	88.9/74.4	87.5/78.5	61/38	76.0/50.2	83/56	22.7/11.2	210/130	380/330	30	40
10/2.5	1765/880	254T	5.1/3.5	12.5/4.8	67.9/16.5	H	89.7/72.7	89.4/76.9	90.4/85.8	64/39	79.9/51.8	84/56	29.6/14.9	180/150	260/210	30	40
15/3.7	1765/880	256T	6.9/4.5	18.0/7.0	116.0/64.0	J	88.3/79.0	90.4/84.5	90.2/86.5	50/40	65/50	83/56	44.0/22.0	180/160	200/180	30	60
20/5	1770/880	284T	10/7.2	25/9.3	153/37	G	88.7/80	89/83	88.5/84	71/38	51/50	85/59	59.4/30	190/180	270/250	19	40
25/6.2	1765/880	286T	10.5/8	30/11.5	177/46	G	90.3/82.9	90.4/85.2	89.5/85.5	76/40	84/52	87/60	74/37	190/150	240/200	19	40
30/7.5	1770/885	324T	11.5/8.5	35/13	240/554	H	91.9/85	92.3/87.7	91.7/88.5	85/44	77/56	88/61	89/45	220/150	270/200	20	40
40/10	1770/885	326T	16/11.2	46/17	340/81	H	92.7/85.8	92.9/88.4	92.4/88.5	73/41	83/53	88/61	124/59	200/150	260/220	20	40
50/12.5	1780/890	364T	20.5/15.5	58/22.5	425/97	H	93.3/86.4	93.5/88.8	93/89.5	73/38	83/50	86/58	147/74	180/130	240/200	22	42
60/15	1780/885	365T	26/18.5	93.3/86.2	458/103	G	93.3/86.2	93.5/81	93/88.5	73/39	81/51	85/59	178/89	160/125	240/200	22	45
75/19	1785/890	405T	26.5/20	86/32	568/120	G	90.5/85.8	92.6/88.1	93/88.5	79/45	84/56	86/63	220/112	160/140	250/190	23	42
100/25	1790/890	444TS	41.5/31	118/46	804/178	H	94/88.4	94.1/90.4	93.6/91	73/40	81/51	84/59	293/147	220/150	280/200	28	36
125/31	1790/890	445TS	46/39	158/57	1045/223	H	92.7/88.9	93.2/90.9	93/91.7	67/38	77/48	81/56	367/182	190/150	240/200	20	23
150/37.5	1785/890	447TS	64.5/45.5	176/68	1260/273	H	92.1/87.6	93.2/89.6	93.6/90.2	73/39	82/50	85/58	441/221	210/170	270/200	24	29

4.4. Additional technical tables

4.4.1. Paint System Chart

Paint Systems for Low Voltage NEMA Motors

	Standard ABB Paint System	Special Paint Systems Offered by ABB					
	Standard Alkyd + Epoxy	2 Part Epoxy (N01)	3 Part Epoxy (N02)	Prime Only (N03)	3 Part Epoxy Paint (Coastal-Offshore High Salt) (N05)	2 Part Epoxy Paint C4 (N06)	2 Part Epoxy Paint C5-I/ C5-M (N07)
Priming of internal and external surfaces							
Type	Modified Alkyd or Epoxy polyamide	Primetal EB	Zinc Inorganic	Modified Alkyd or Epoxy polyamide	Zinc Inorganic	Zinc Inorganic	Zinc Inorganic
Color	Red/ Grey	Red Iron Oxide	Metallic Gray	Red/ Grey	Metallic Gray	Metallic Gray	Metallic Gray
Sheen	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Dry film thickness	2.0 – 3.0 mils.	8.0 - 12.0 mils	3.0 - 5.0 mils	1.5 - 2.0 mils	3.0 - 5.0 mils	5.0 -6.0 mils	5.0 -6.0 mils
Intermediate coat of external surfaces							
Type	–	–	Epoxy	–	Epoxy	–	–
Color	–	–	White	–	White	–	–
Sheen	–	–	Flat	–	Flat	–	–
Dry film thickness	–	–	5.0 – 6.0 mils	–	5.0 – 6.0 mils	–	–
Top coat on external surfaces							
Type	Modified NC Alkyd or Epoxy	Prometal APU	Modified polyurethane	–	Modified polyurethane	EPX-80 (Epoxy)	EPX-80 (Epoxy)
Color	Dark Charcoal Gray	Dark Charcoal Gray	Dark Charcoal Gray	–	Dark Charcoal Gray	Dark Charcoal Gray	Dark Charcoal Gray
Sheen	Flat	Semi-Gloss	Gloss	–	Gloss	Gloss	Gloss
Dry film thickness	3.0 – 6.0 mils.	3.0 - 4.0 mils	3.0 - 4.0 mils	–	5.0 – 6.0 mils	7.0 – 9.0 mils	8.0 – 11.0 mils
Total film thickness	**5.0 – 9.0 mils**	**11.0 - 16.0 mils**	**11.0 - 15.0 mils**	**1.5 - 2.0 mils**	**13.0 – 17.0 mils**	**12.0 – 15.0 mils**	**13.0 –17.0 mils**
Salt Spray resistance (hours)	400	1500	2000		2000+	2000	2000+
Corrosivity Category	C2	C3	C4		C5I & C5M	C4	C5I & C5M

4.4.2. Balance Table

Balance	NEMA	Precision Balance (M69)		Extra Precision Balance (M70)		
Frames	**140-449**	**140-320**	**360-449**	**140-256**	**280-320**	**360-449**
RPM						
			Maximum amplitude, inches, peak to peak (mils P/P)			
0 - 999	2.5	0.5	0.75	0.2	0.3	0.4
1000 - 1999	2.0	0.5	0.75	0.2	0.3	0.4
2000 - 2999	1.5	0.5	0.75	0.2	0.3	0.4
3000 - 4000	1.0	0.5	0.75	0.2	0.3	0.4
			Velocity, inches, inches/seconds (in/sec)			
0 - 999	0.1308	0.0262	0.0392	0.105	0.0157	0.0209
1000 - 1999	0.2093	0.0523	0.0785	0.0209	0.0314	0.0419
2000 - 2999	0.2355	0.0785	0.1178	0.0314	0.0471	0.0628
3000 - 4000	0.2094	0.1047	0.1571	0.0419	0.0628	0.0838

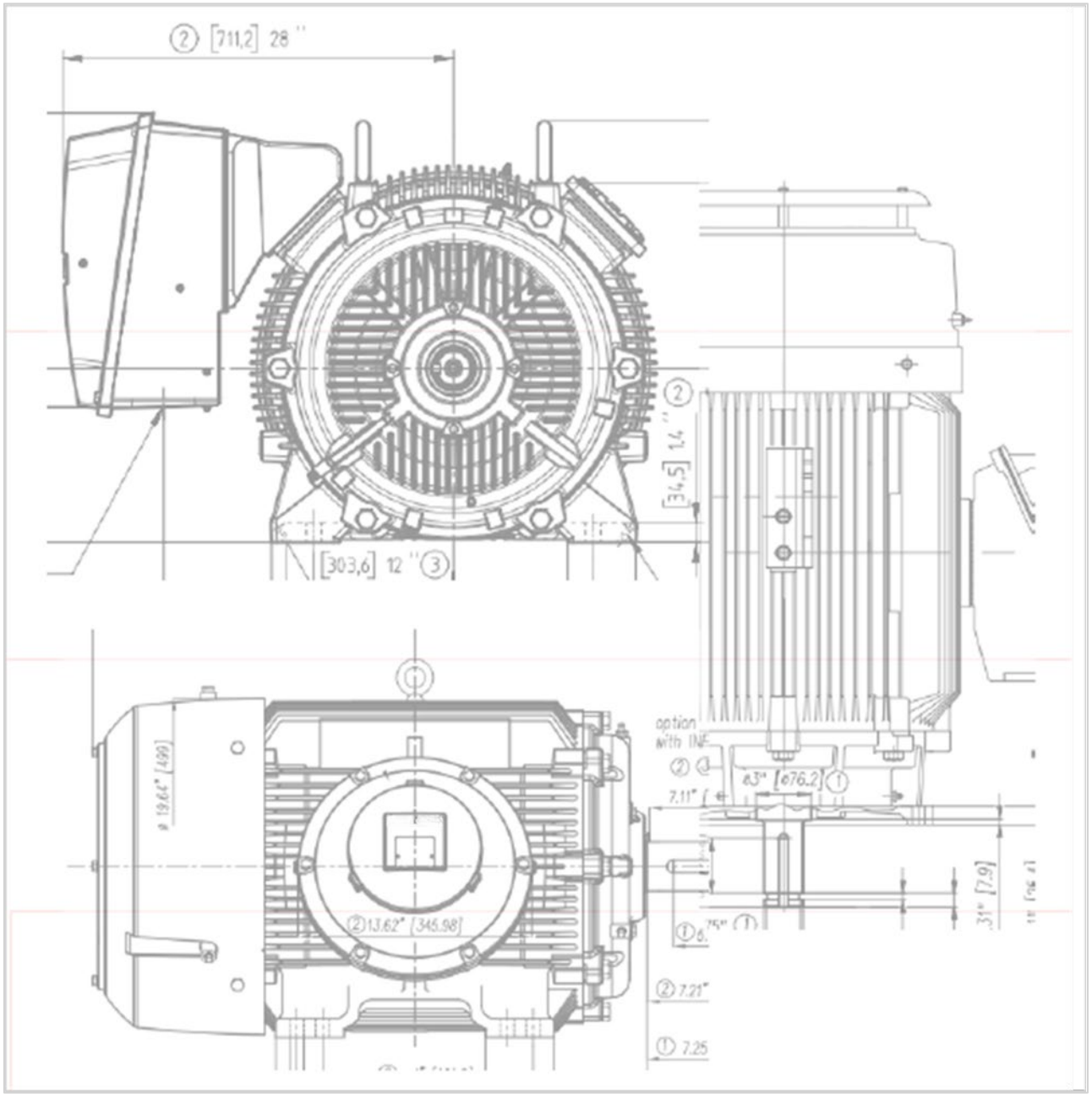
5. Drawings and Dimensions

General motor drawings, dimensions of accessories, general packing weights and dimensions

5.1. Drawings and dimensions

Overview

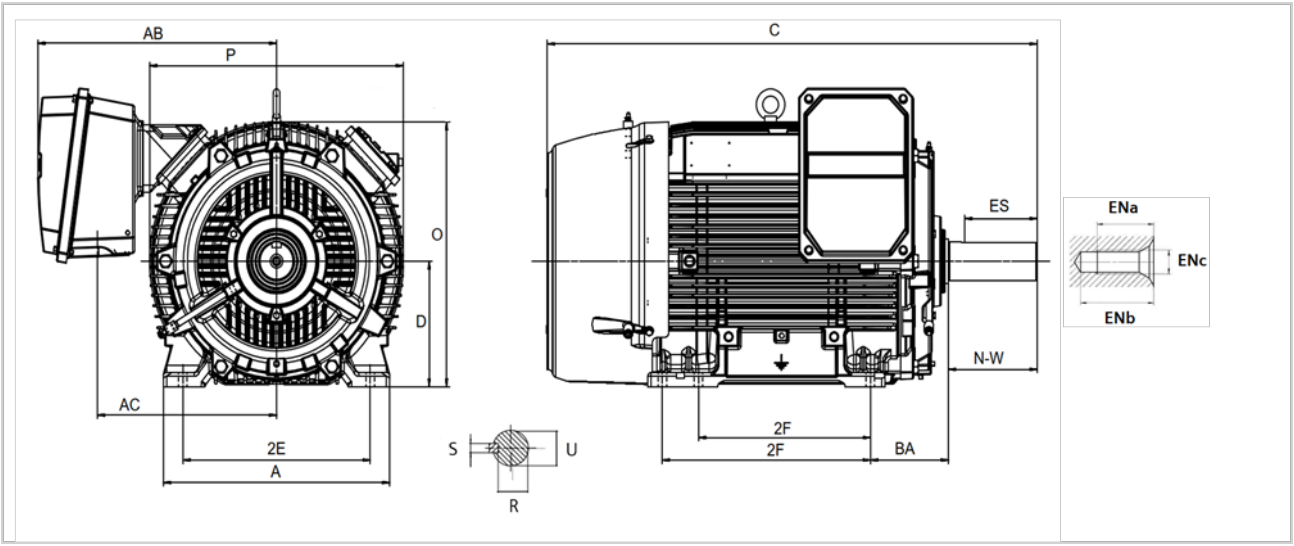
ABB low voltage NEMA motors are built to meet the dimension criteria set by the NEMA MG-1 standards. Mounting dimensions will be per NEMA unless otherwise noted. Seals may alter the expected usable shaft length of the motor. When INPRO seal in selected or when a product has a standard INPRO seal the usable shaft length will be equal to the N-W less the values shown in Table 5.1. Dimensions in this section are typical dimensions of standard motor designs and are subject to change without notification. Certified standard and configured drawings are available through order codes listed in the modification section.



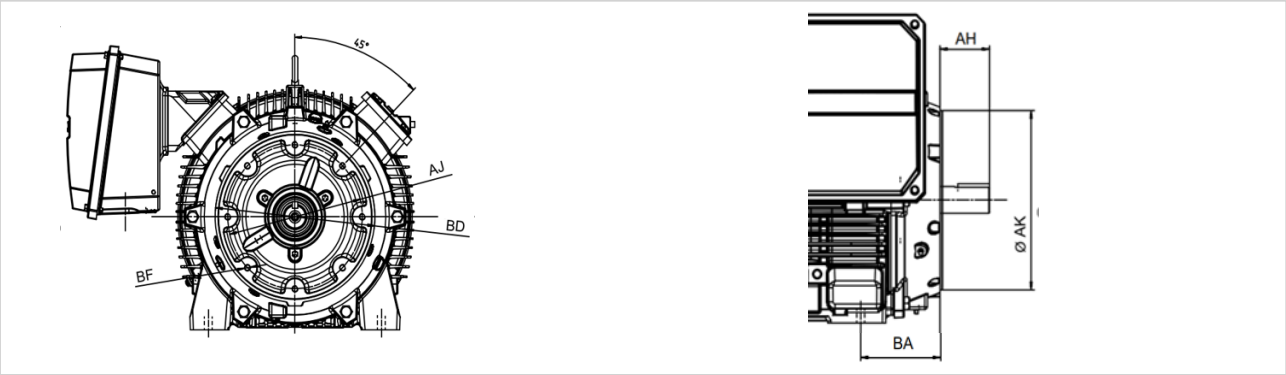
5.1.1. Next Generation – Schematics

5.1.1.1. SD200, SD200 841 – 444 – L449 Frame

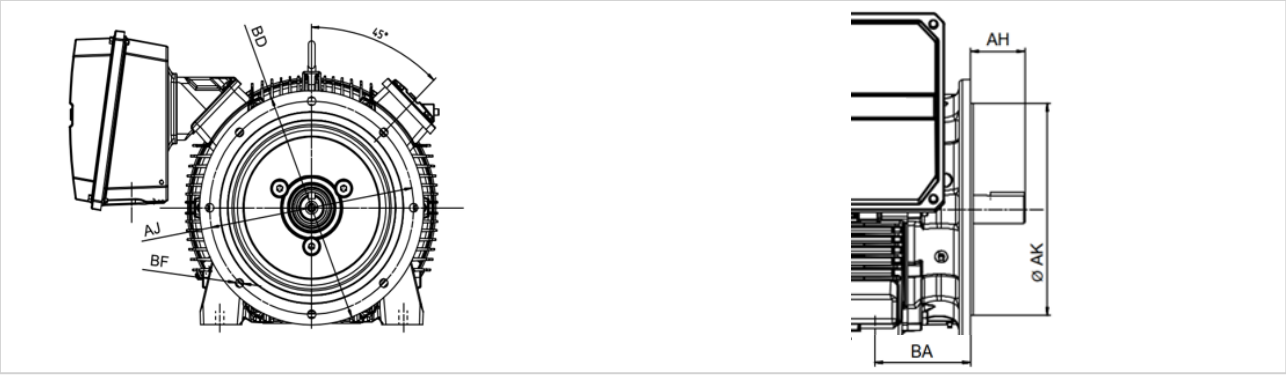
Foot Mount



C-Face



D-Flange



Dimension in Inches; Typical dimensions data, not guaranteed

Note: See Technical Notes for drip cover and accessory dimensions

Frame	A	C	2F	2F[1]	P	BA	AB	AC	2E	D	O
444T	21.76	43.6	14.5	16.5	24.39	7.5	22.93	17.21	18	11	23.19
445T	21.76	43.6	16.5	14.5	24.39	7.5	22.93	17.21	18	11	23.19
444TS	21.76	39.81	14.5	16.5	24.39	7.5	22.93	17.21	18	11	23.19
445TS	21.76	39.81	16.5	14.5	24.39	7.5	22.93	17.21	18	11	23.19
447T	21.76	47.03	20	16.5	24.39	7.5	22.93	17.21	18	11	23.19
447TS	21.76	43.28	20	16.5	24.39	7.5	22.93	17.21	18	11	23.19
449T	21.76	52.06	25	20	24.39	7.5	23.46	17.31	18	11	23.19
449TS	21.76	48.31	25	20	24.39	7.5	23.46	17.31	18	11	23.19
L449T	21.79	60.06	25	20	24.39	7.5	23.76	17.65	18	11	23.78
L449TS	21.79	56.43	25	20	24.39	7.5	23.76	17.65	18	11	23.78

Shaft Dimensions

Frame	N-W	U	ENa	ENb	ENc	Key seat		
						R	S	ES
444T	8.5	3.38	37	48	5/8”-11NC	2.880	0.875	6.88
445T	8.5	3.38	37	48	5/8”-11NC	2.880	0.875	6.88
444TS	4.75	2.38	37	48	5/8”-11NC	2.021	0.625	3.05
445TS	4.75	2.38	37	48	5/8”-11NC	2.021	0.625	3.05
447T	8.5	3.38	37	48	5/8”-11NC	2.880	0.875	6.88
447TS	4.75	2.38	37	48	5/8”-11NC	2.021	0.625	3.05
449T	8.5	3.38	37	48	5/8”-11NC	2.880	0.875	6.88
449TS	4.75	2.38	37	48	5/8”-11NC	2.021	0.625	3.05
L449T	8.5	3.38	37	48	5/8”-11NC	2.880	0.875	6.88
L449TS	4.75	2.38	37	48	5/8”-11NC	2.021	0.625	3.05

C-Face

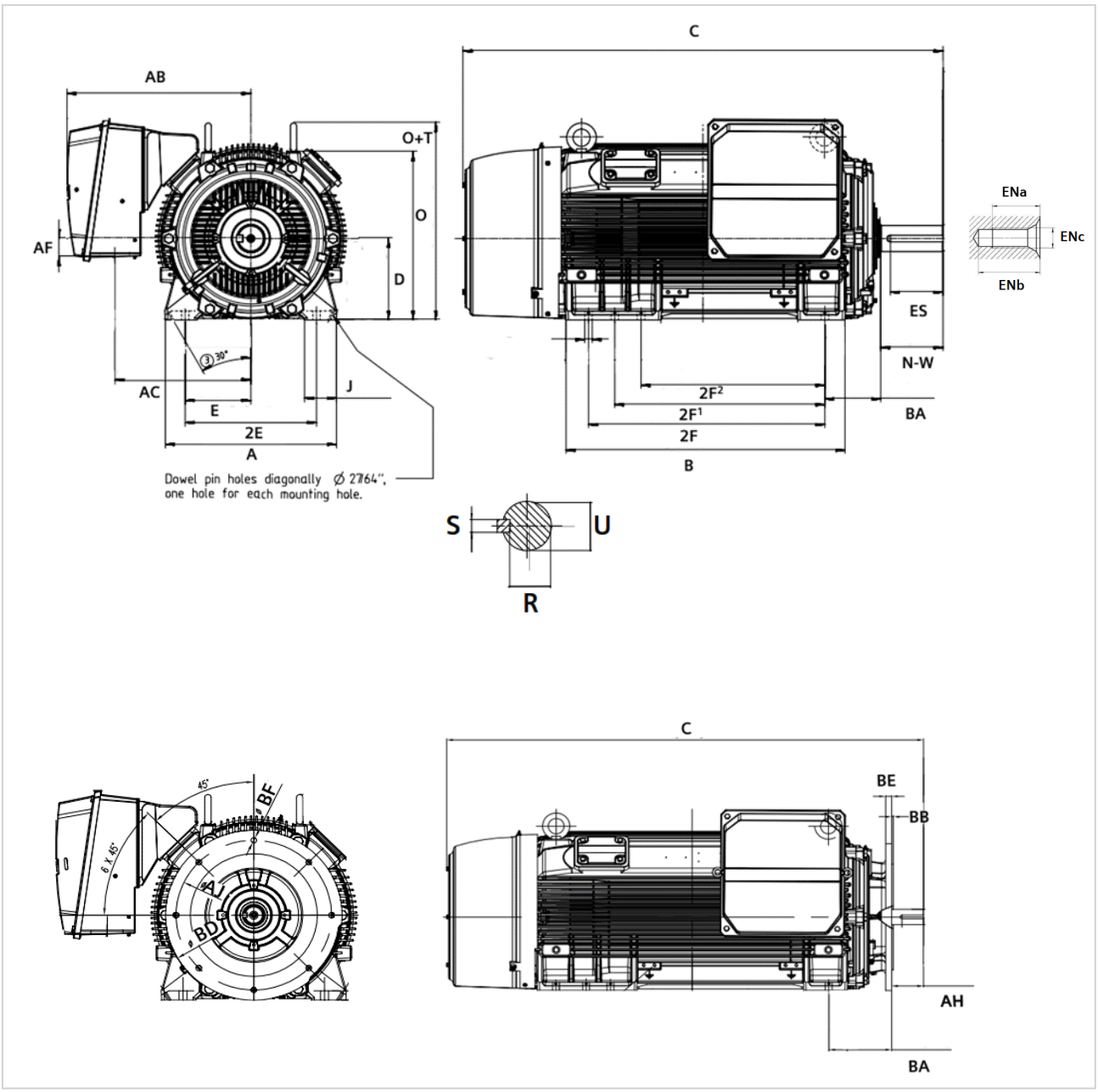
Frame	BA	AH	AJ	AK	BD	BF #	BF
444TC	7.5	8.25	14	16	18	8	5/8"-11 NC
445TC	7.5	8.25	14	16	18	8	5/8"-11 NC
444TSC	7.5	4.5	14	16	18	8	5/8"-11 NC
445TSC	7.5	4.5	14	16	18	8	5/8"-11 NC
447TC	7.5	8.25	14	16	18	8	5/8"-11 NC
447TSC	7.5	4.5	14	16	18	8	5/8"-11 NC
449TC	7.5	8.25	14	16	18	8	5/8"-11 NC
449TSC	7.5	4.5	14	16	18	8	5/8"-11 NC
L449TC	7.5	8.25	14	16	18	8	5/8"-11 NC
L449TSC	7.5	4.5	14	16	18	8	5/8"-11 NC

D-Flange

Frame	C	BA[2]	AH	AJ	AK	BD	BF #	BF
444TD	44.47	8.38	8.50	20	18	22	8	0.81
445TD	44.47	8.38	8.50	20	18	22	8	0.81
444TSD	40.72	8.38	4.75	20	18	22	8	0.81
445TSD	40.72	8.38	4.75	20	18	22	8	0.81
447TD	47.94	8.38	8.50	20	18	22	8	0.81
447TSD	44.19	8.38	4.75	20	18	22	8	0.81
449TD	52.98	8.38	8.50	20	18	22	8	0.81
449TSD	49.23	8.38	4.75	20	18	22	8	0.81
L449TD	61.60	8.38	8.50	20	18	22	8	0.81
L449TSD	57.85	8.38	4.75	20	18	22	8	0.81

2. Not according to NEMA
Dimension in Inches; Typical dimensions data, not guaranteed
Note: See Technical Notes for drip cover and accessory dimensions
Note: D-Flange may change standard “C” dimension as noted

5.1.1.2. SD200, DP200 HPS – 500 Frame



Dimension in Inches; Typical dimensions data, not guaranteed

Note: See Technical Notes for drip cover and accessory dimensions

Frames	A	2E	AC	AB	AF	O	D	C	2F	2F[1]	2F[2]	B	BA
509									–	–	28		
5010	26.1	20.00	20.70	28.00	2.80	25.7	12.5	73.1	–	32	–	42.5	8.5
5011									36.00	–	–		
L5011									–	–	36.00		
5012	26.1	20.00	20.70	28.00	2.80	25.7	12.5	81	–	40.00	–	51.1	8.5
5013									45.00	–	–		
509S									–	–	28.00		
5010S	26.1	20.00	20.70	28.00	2.80	25.7	12.5	81	–	32.00	–	42.5	8.5
5011S									36.00	–	–		
L5011S									–	–	36.00		
5012S	26.1	20.00	20.70	28.00	2.80	25.7	12.5	81	–	40.00	–	51.1	8.5
5013S									45.00	–	–		

Shaft Dimensions

Frame	N-W	U	ENa	ENb	ENc	Keyseat		
						R	S	ES
509-5013	9.5	4.00	47	58	5/8”-11NC	3.4	1.000	8.0
509S-5013S	5.2	2.625	47	58	5/8”-11NC	2.275	625	3.6

D-Flange

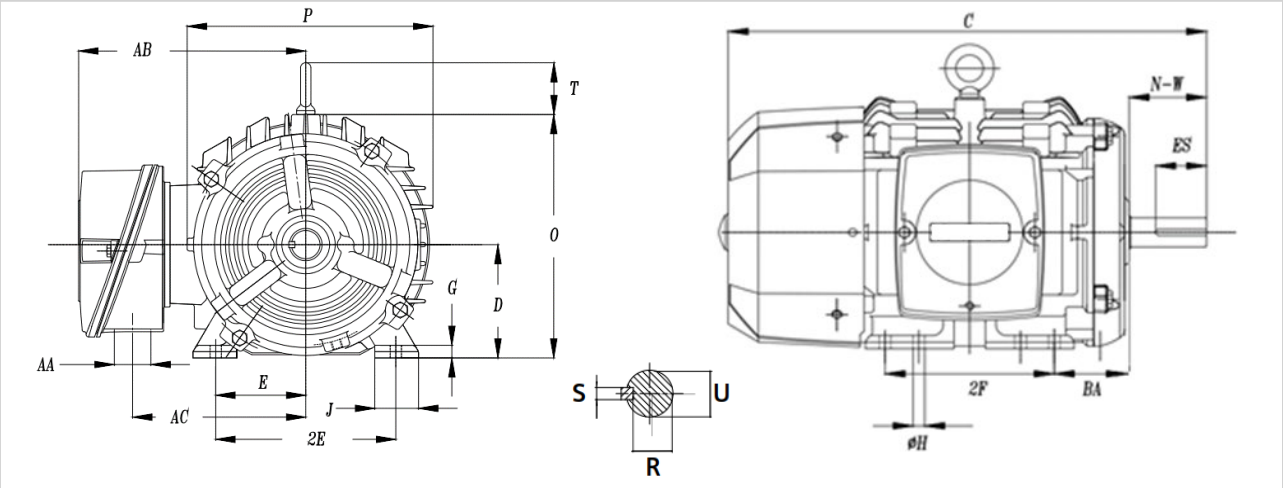
Frame	BD	AJ	C	BA[3]	AH	BE	BB	BF
509D – 5011D	25	22.00	73.99	10.37	8.50	1.00	0.25	0.81
L5011D – 5013D	25	22.00	81.89	10.37	8.50	1.00	0.25	0.81
509SD – 5011SD	25	22.00	70.80	10.37	5.25	1.00	0.25	0.81
L5011SD – 5013SD	25	22.00	78.60	10.37	5.25	1.00	0.25	0.81

3. Not according to NEMA
Dimension in Inches; Typical dimensions data, not guaranteed
Note: See Technical Notes for drip cover and accessory dimensions
Note: D-Flange may change standard “C” dimension

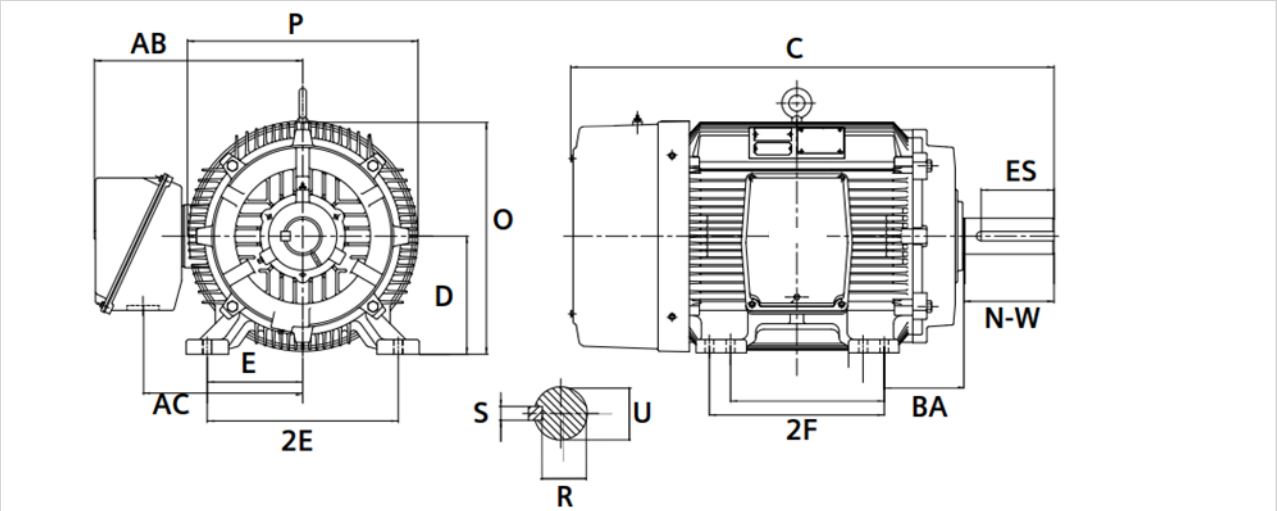
5.1.2. Low Voltage NEMA Motors – Schematics

5.1.2.1. GP100A, GP100 – 140-320 Frame

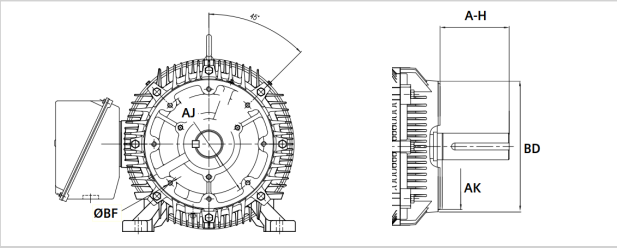
140-250 Frame Foot Mount



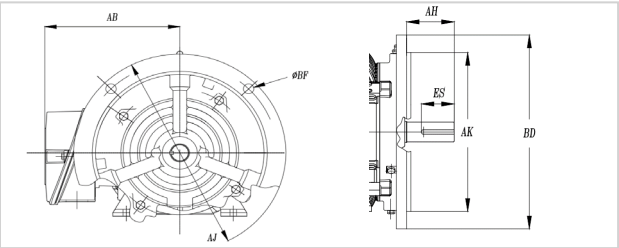
280-320 Frame Foot Mount



C-Face



D-Flange



Dimension in Inches; Typical dimensions data, not guaranteed

Note: See Technical Notes for drip cover and accessory dimensions

Frame Dimensions

Frame	C	2F	P	BA	AB	2E	D	O
143T 145T	13.44	4.0 5.5	7.98	2.25	6.9	5.5	3.5	7.55
182T 184T	15.74	4.5 5.5	9.6	2.75	7.8	7.5	4.5	11.10
213T 215T	19.15	5.5 7.0	11.19	3.5	9.25	8.5	5.25	10.66
254T 256T	26.16	8.25 10.0	12.9	4.25	10.20	10.0	6.25	12.75
284T 286T	29.38	9.5 11.0	15.8	4.75	13.63	11.0	7	14.87
284TS 286TS	28.00	8.5 11.0	15.8	4.75	13.63	11.0	7	14.87
324T 326T	32.07	10.5 12.0	17.7	5.25	14.14	12.5	8	16.66
324TS 326TS	30.57	10.5 12.0	17.7	5.25	14.14	12.5	8	16.66

Shaft Dimensions

Frame	N-W	U	ENa	ENb	ENc	Keyseat		
						R	S	ES
143T-145T	2.25	0.875	–	–	–	0.771	0.188	1.41
182T-184T	2.75	1.125	–	–	–	0.986	0.250	1.81
213T-215T	3.38	1.375	–	–	–	1.201	0.312	2.44
254T-256T	4	1.625	–	–	–	1.416	0.375	2.91
284T-286T	4.63	1.875	28	34	7/16”-14NC	1.59	0.500	3.25
284TS-286TS	3.25	1.625	28	34	7/16”-14NC	1.42	0.375	1.88
324T-324TS	5.25	2.125	28	34	7/16”-14NC	1.85	0.500	3.88
324TS-326TS	3.75	1.785	28	34	7/16”-14NC	1.59	0.500	2

C-Face

Frame	BA*	AH	AJ	AK	BD	BF #	BF
143/5TC	2.25	2.12	5.875	4.5	6.60*	4	3/8-16" NC
182/4TC	2.75	2.62	7.25	8.5	8.90	4	1/2-13" NC
213/5TC	3.5	3.12	7.25	8.9	8.90	4	1/2-13" NC
254/6TC	4.25	3.75	7.25	8.5	9.30	4	1/2-13" NC
284/6TC	4.75	4.38	9.00	10.5	11.25	4	1/2-13" NC
284/6TSC	4.75	3	9.00	10.5	11.25	4	1/2-13" NC
324/6TC	5.25	5	11.00	12.5	14.00	4	5/8-11" NC
324/6TSC	5.25	3.5	11.00	12.5	14.00	4	5/8-11" NC

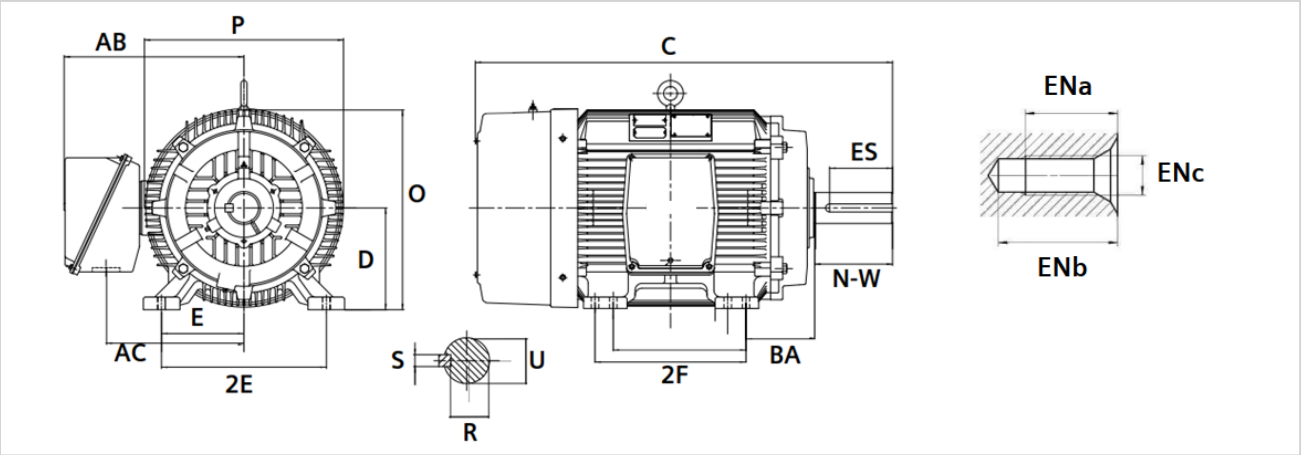
D-Flange

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
143/5TD	2.25	2.25	10.0	9.0	10.90	4	0.53
182/4TD	2.75	2.75	10.0	9.0	11.00	4	0.53
213/5TD	3.50	3.38	10.0	9.0	10.90	4	0.53
254/6TD	4.25	4.00	12.5	11.0	13.90	4	0.81
284/6TD	5.88	4.62	12.5	11.0	14.00	4	0.81
284/6TSD	5.88	3.25	12.5	11.0	14.00	4	0.81
324/6TD	6.25	5.25	16	14.0	18.00	4	0.81
324/6TSD	6.25	3.75	16	14.0	18.00	4	0.81

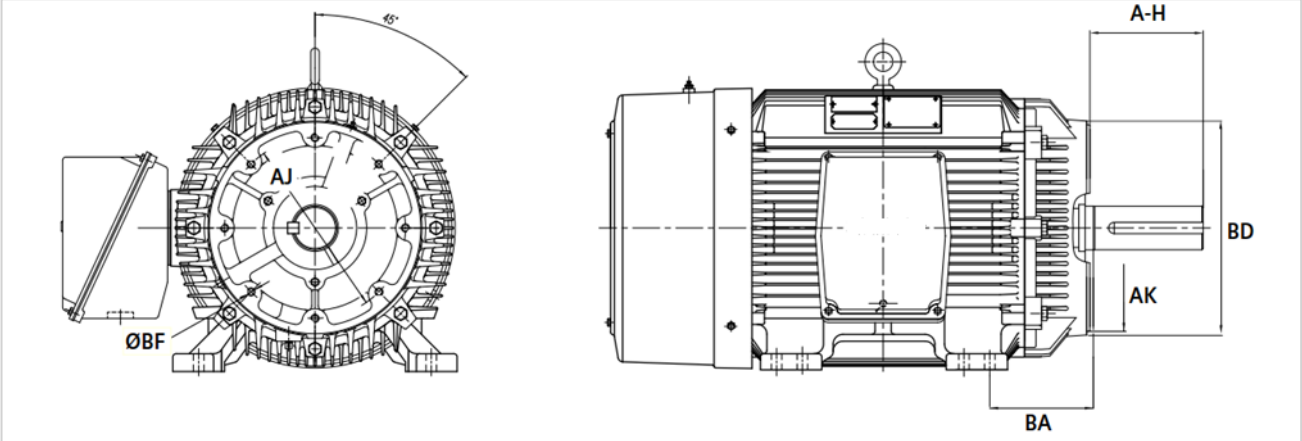
1. Not according to NEMA
Dimension in Inches; Typical dimensions data, not guaranteed
Note: See Technical Notes for drip cover and accessory dimensions
Note: D-Flange may change standard “C” dimension

5.1.2.2. GP100 – 360 - 440 Frame

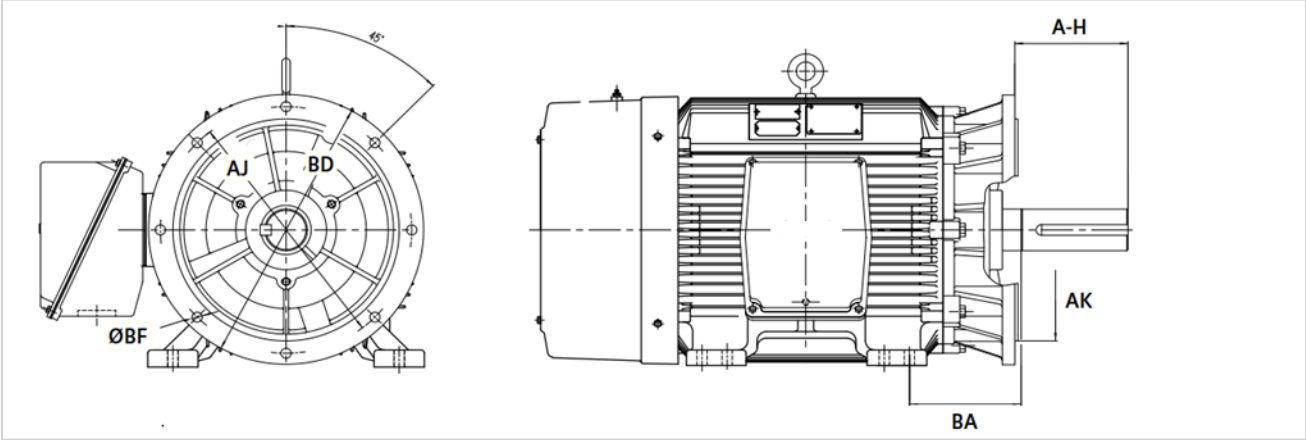
360-440 Frame Foot Mount



C-Face



D-Flange



Dimension in Inches; Typical dimensions data, not guaranteed

Note: See Technical Notes for drip cover and accessory dimensions

Frame Dimensions

Frame	C	2F	P	BA	AB	2E	D	O
364T 365T	35.53	11.25 12.3	19.6	5.88	17.56	14.0	9	18.48
364TS 365TS	33.40	11.3 12.25	19.6	5.88	17.56	14.0	9	18.48
404T 405T	39.50	12.25 13.75	19.6	6.62	17.68	16.0	10	19.60
404TS 405TS	36.50	12.25 13.75	19.6	6.62	17.68	16.0	10	19.60
444T 445T	45.60	14.50 16.5	21.8	7.5	18.88	18.0	11	21.80
444TS 445TS	41.80	14.50 16.5	21.8	7.5	18.88	18.0	11	21.80
447T	49.10	20.00	21.8	7.5	18.88	18.0	11	21.80
447TS	45.40	20.00	21.8	7.5	18.88	18.0	11	21.80
449T	54.10	25.00	21.8	7.5	18.88	18.0	11	21.80
449TS	50.30	25.00	21.8	7.5	18.88	18.0	11	21.80

Shaft Dimensions

Frame	N-W	U	ENa	ENb	ENc	Keyseat		
						R	S	ES
364T - 365T	5.88	2.375	30	36	7/16”-14NC	2.02	0.625	4.25
364TS - 365TS	3.75	1.875	30	36	7/16”-14NC	1.59	0.500	2
404T – 405T	7.25	2.875	30	36	7/16”-14NC	2.45	0.750	5.63
404TS – 405TS	4.25	2.125	30	36	7/16”-14NC	1.85	0.500	2.75
444T – 449T	8.5	3.375	37	48	5/8”-11NC	2.88	0.875	6.88
444TS – 449TS	4.75	2.375	37	48	5/8”-11NC	2.02	0.625	3

C-Face

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
364/5TC	5.88	5.63	11	12.5	14	8	5/8-11" NC
364/5TSC	5.88	3.5	11.00	12.5	14.00	8	5/8-11" NC
404/5TC	6.62	7	11.00	12.5	15.50	8	5/8-11" NC
404/5TSC	6.62	4	11.00	12.5	15.50	8	5/8-11" NC
444TC	7.5	8.25	14.00	16	18.00	8	5/8-11" NC
445TSC	7.5	8.25	14.00	16	18.00	8	5/8-11" NC
444TSC	7.5	4.5	14.00	16	18.00	8	5/8-11" NC
445TSC	7.5	4.5	14.00	16	18.00	8	5/8-11" NC
447TC	7.5	8.25	14.00	16	18.00	8	5/8-11" NC
447TSC	7.5	4.5	14.00	16	18.00	8	5/8-11" NC
449TC	7.5	8.25	14.00	16	18.00	8	5/8-11" NC
449TSC	7.5	4.5	14.00	16	18.00	8	5/8-11" NC

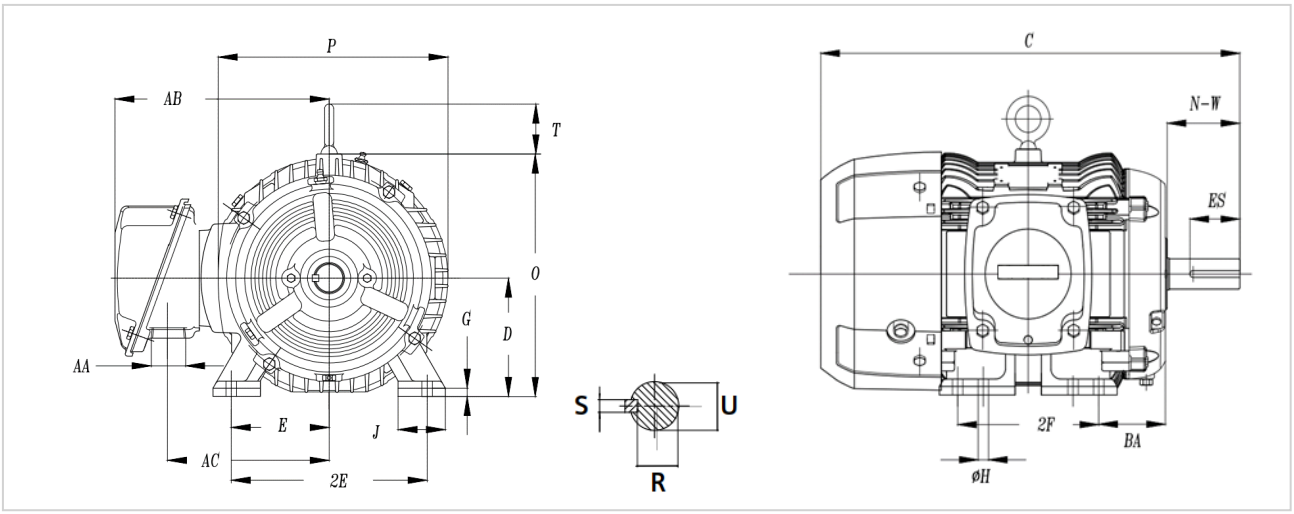
D-Flange

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
364/5TD	6.75	5.88	16.0	14.0	18.00	4	0.81
364/5TSD	6.75	3.75	16.0	14.0	18.00	4	0.81
404/5TD	7.12	7.25	20.0	18.0	22.00	8	0.81
404/5TSD	7.12	4.25	20	18.0	22.00	8	0.81
444TD	8.38	8.50	20	18.0	22.00	8	0.81
445TSD	8.38	8.50	20	18.0	22.00	8	0.81
444TSD	8.38	4.75	20	18.0	22.00	8	0.81
445TSD	8.38	4.75	20	18.0	22.00	8	0.81
447TD	8.38	8.50	20	18.0	22.00	8	0.81
447TSD	8.38	4.75	20	18.0	22.00	8	0.81
449TD	8.38	8.50	20	18.0	22.00	8	0.81
449TSD	8.38	4.75	20	18.0	22.00	8	0.81

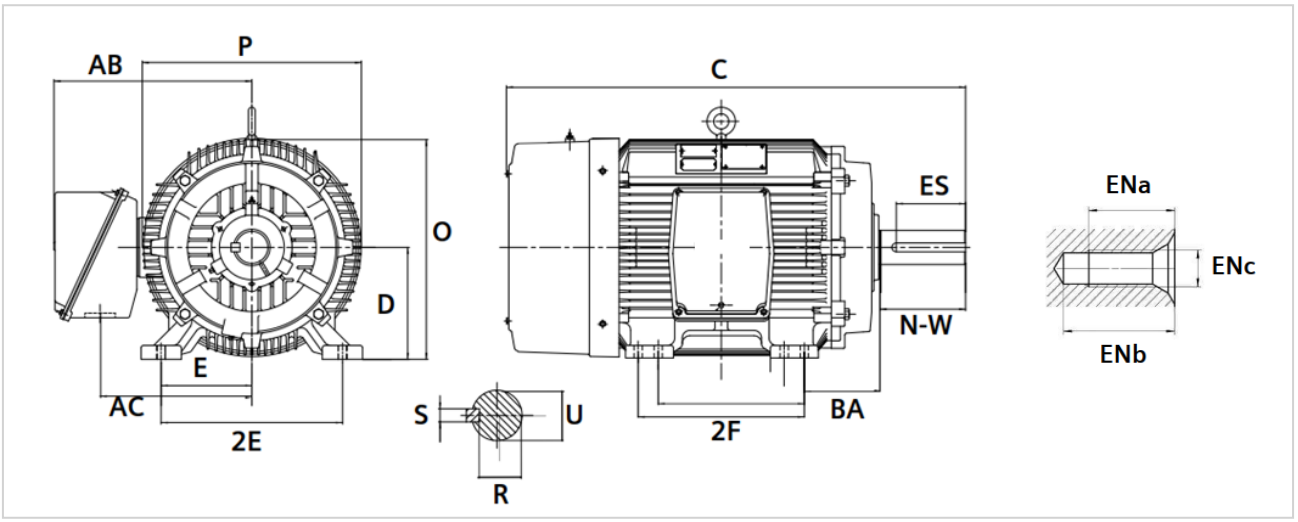
1. Not according to NEMA
Dimension in Inches; Typical dimensions data, not guaranteed
Note: See Technical Notes for drip cover and accessory dimensions
Note: D-Flange may change standard “C” dimension

5.1.2.3. SD100 – 140 – 320 Frame

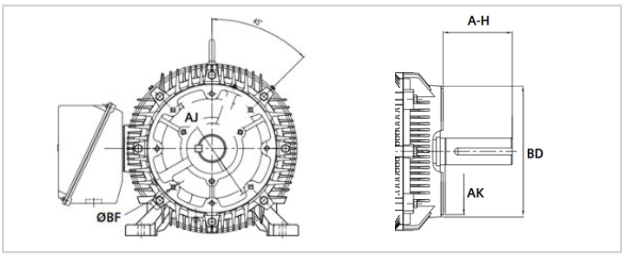
140-250 Frame Foot Mount



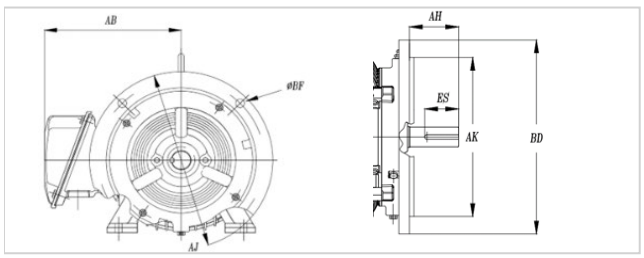
280-320 Frame Foot Mount



C-Face



D-Flange



Dimension in Inches; Typical dimensions data, not guaranteed.
Note: See Technical Notes for drip cover and accessory dimensions

Frame Dimensions

Frame	C	2F	P	BA	AB	2E	D	O
143T 145T	14.20	4.0 5.0	8.2	2.25	7.4	5.5	3.5	7.50
182T 184T	16.40	4.5 5.5	9.6	2.75	8.2	7.5	4.5	11.10
213T 215T	20.20	5.5 7.0	10.7	3.5	10.39	8.5	5.25	10.66
254T 256T	25.80	8.25 10.0	12.9	4.25	11.14	10.0	6.25	12.75
284T 286T	29.40	9.5 11.0	15.8	4.75	14.3	11.0	7	14.87
284TS 286TS	28.00	9.5 11.0	15.8	4.75	14.33	11.0	7	14.87
324T 326T	32.10	10.5 12.0	17.7	5.25	15.99	12.5	8	16.66
324TS 326TS	30.60	10.50 12.0	17.7	5.25	15.99	12.5	8	16.66

Shaft Dimensions

Frame	N-W	U	ENa	ENb	ENc	Keyseat		
						R	S	ES
143T-145T	2.25	0.875	–	–	–	0.771	0.188	1.41
182T-184T	2.75	1.125	–	–	–	0.986	0.250	1.81
213T-215T	3.38	1.375	–	–	–	1.201	0.312	2.44
254T-256T	4	1.625	–	–	–	1.416	0.375	2.91
284T-286T	4.63	1.875	28	34	7/16”-14NC	1.59	0.500	3.25
284TS-286TS	3.25	1.625	28	34	7/16”-14NC	1.42	0.375	1.88
324T-324TS	5.25	2.125	28	34	7/16”-14NC	1.85	0.500	3.88
324TS-326TS	3.75	1.875	28	34	7/16”-14NC	1.59	0.500	2

C-Face

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
143/5TC	2.25	2.12	5.875	4.5	6.5	4	3/8"-16 NC
182/4TC	2.75	2.62	7.25	8.5	9.00	4	1/2"-13 NC
213/5TC	3.5	3.12	7.25	8.5	9.00	4	1/2"-13 NC
254/6TC	4.25	3.75	7.25	8.5	10.00	4	1/2"-13 NC
284/6TC	4.75	4.38	9.00	10.5	11.25	4	1/2"-13 NC
284/6TSC	4.75	3	9.00	10.5	11.25	4	1/2"-13 NC
324/6TC	5.25	5	11.00	12.5	14.00	4	5/8"-11 NC
324/6TSC	5.25	3.5	11.00	12.5	14.00	4	5/8"-11 NC

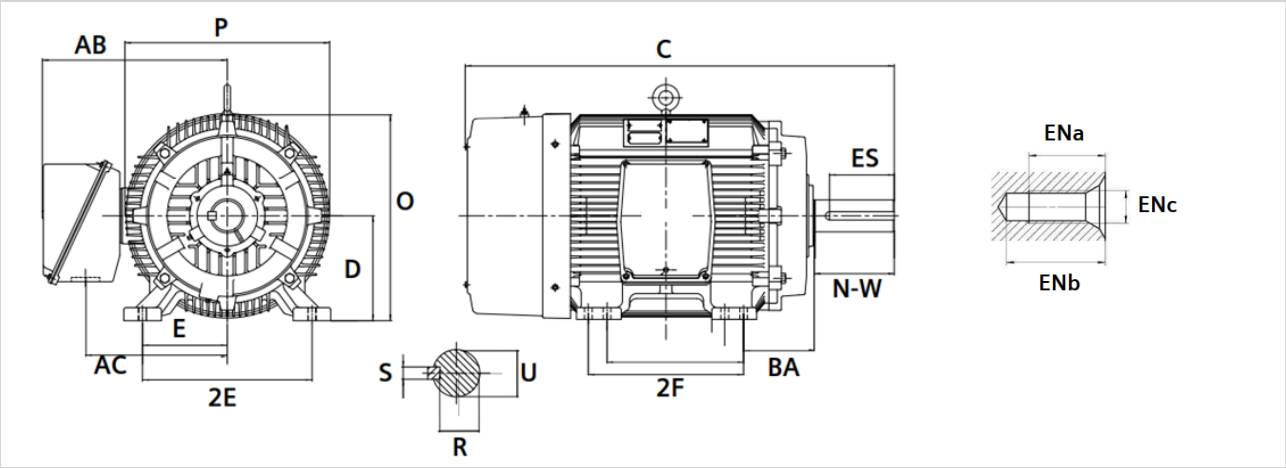
D-Flange

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
143/5TD	2.25	2	10.0	9.0	11.00	4	0.53
182/4TD	2.75	2.5	10.0	9.0	11.00	4	0.53
213/5TD	3.5	3.13	10	9.0	11.00	4	0.53
254/6TD	4.25	3.75	12.5	11.0	14.00	4	0.53
284/6TD	5.88	4.37	12.5	11.0	14.00	4	0.53
284/6TSD	5.88	4.38	12.5	11.0	14.00	4	0.81
324/6TD	6.25	5.00	16	14.0	18.00	4	0.81
324/6TSD	6.25	5.00	16	14.0	18.00	4	0.81

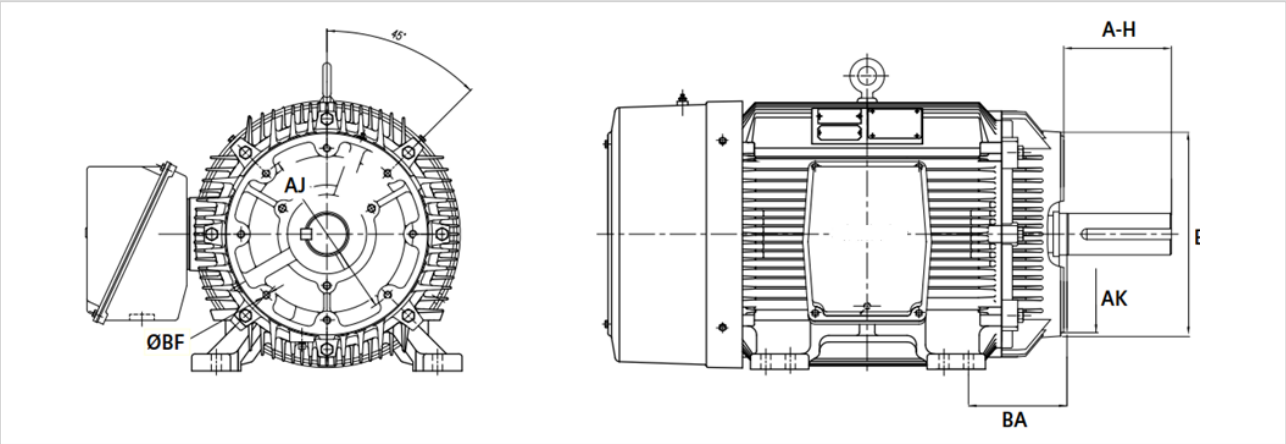
1. Not according to NEMA
Dimension in Inches; Typical dimensions data, not guaranteed
Note: See Technical Notes for drip cover and accessory dimensions
Note: D-Flange may change standard “C” dimension

5.1.2.4. SD100 – 360 – 400 Frame

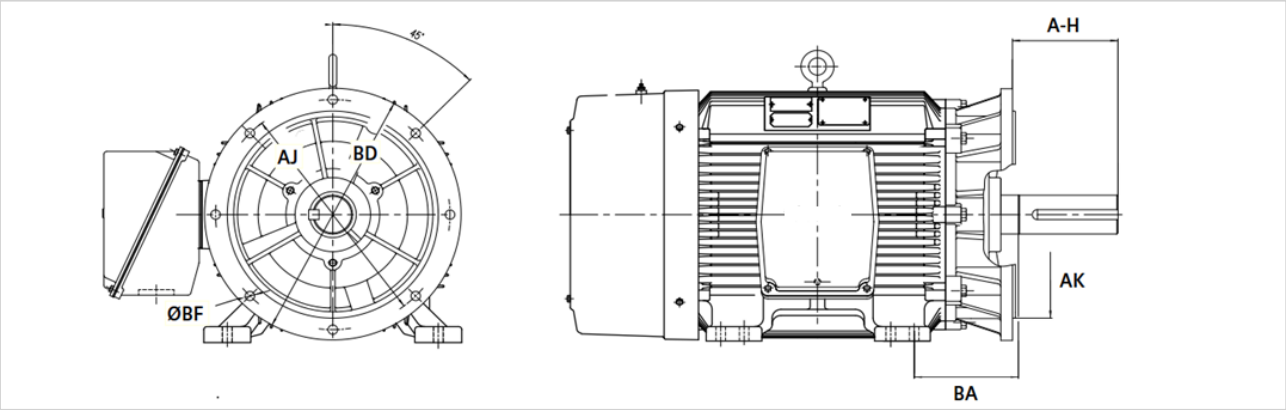
360-440 Frame Foot Mount



C-Face



D-Flange



Dimension in Inches; Typical dimensions data, not guaranteed
Note: See Technical Notes for drip cover and accessory dimensions

Frame Dimensions

Frame	C	2F	P	BA	AB	2E	D	O
364T 365T	35.50	11.25 12.25	19.6	5.88	18.57	14.0	9	18.48
364TS 365TS	33.40	11.25 12.25	19.6	5.88	18.57	14.0	9	18.48
404T 405T	39.40	12.25 13.75	19.6	6.62	18.38	16.0	10	19.60
404TS 405TS	36.40	12.25 13.75	19.6	6.62	18.38	16.0	10	19.60

Shaft Dimensions

Frame	N-W	U	ENa	ENb	ENc	Keyseat		
						R	S	ES
364T - 365T	5.88	2.375	30	36	7/16”-14NC	2.02	0.625	4.25
364TS - 365TS	3.75	1.875	30	36	7/16”-14NC	1.59	0.500	2
404T – 405T	7.25	2.875	30	36	7/16”-14NC	2.45	0.750	5.63
404TS – 405TS	4.25	2.125	30	36	7/16”-14NC	1.85	0.500	2.75

C-Face

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
364/5TC	5.88	5.63	11.00	12.5	12.75	8	5/8"-11 NC
364/5TSC	5.88	3.5	11.00	12.5	12.75	8	5/8"-11 NC
404/5TC	6.62	7	11.00	12.5	15.50	8	5/8"-11 NC
404/5TSC	6.62	4	11.00	12.5	15.50	8	5/8"-11 NC

D-Flange

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
364/5TD	6.75	5.63	16.0	14.0	18.00	4	0.81
364/5TSD	6.75	3.5	16.0	14.0	18.00	4	0.81
404/5TD	7.12	7.25	20	18.0	22.00	4	0.81
404/5TSD	7.12	4.25	20	18.0	22.00	4	0.81

1. Not according to NEMA
2. 2 pole only

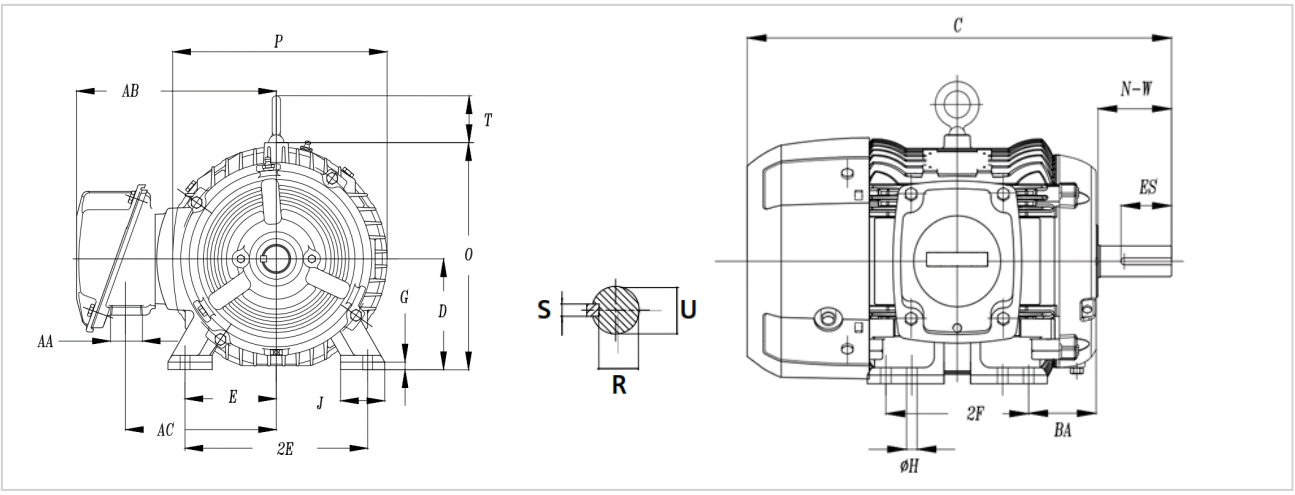
Dimension in Inches; Typical dimensions data, not guaranteed

Note: See Technical Notes for drip cover and accessory dimensions

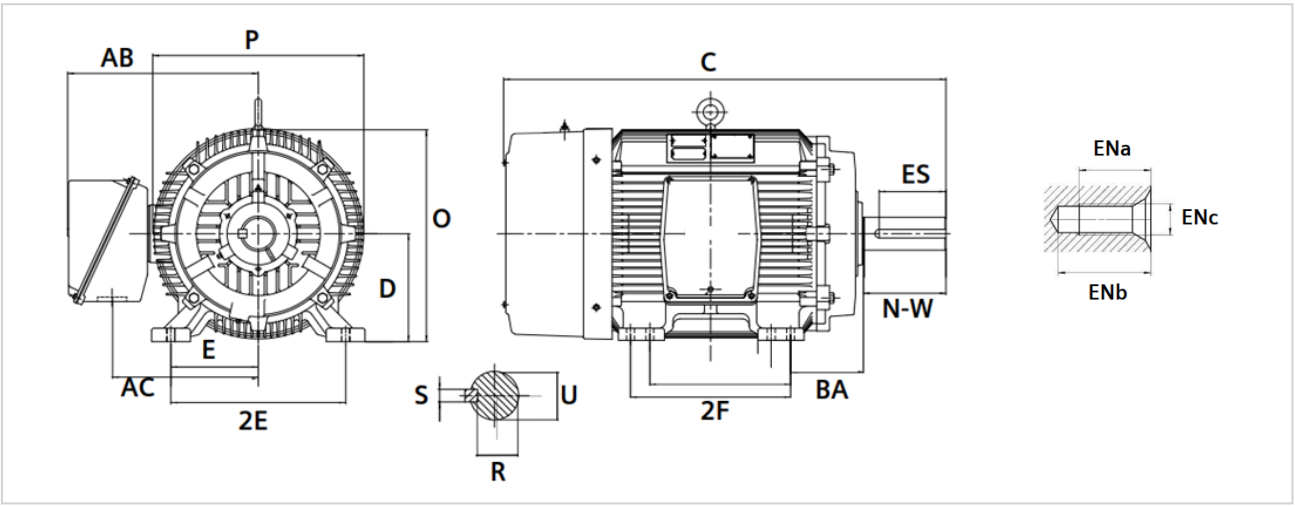
Note: D-Flange may change standard “C” dimension

5.1.2.5. SD100 IEEE, SD661 – 140 – 320 Frame

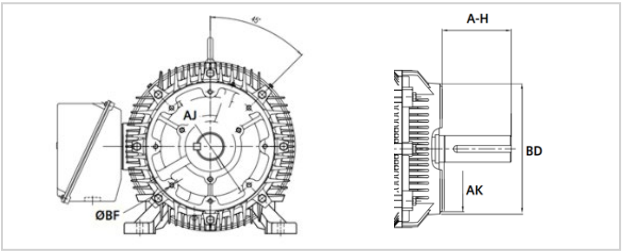
140-250 Frame Foot Mount



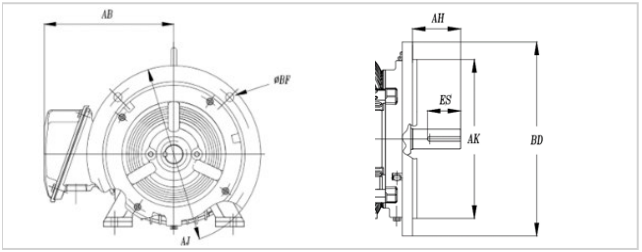
280-320 Frame Foot Mount



C-Face



D-Flange



Dimension in Inches; Typical dimensions data, not guaranteed.
Note: See Technical Notes for drip cover and accessory dimensions

Frame Dimensions

Frame	C	2F	P	BA	AB	2E	D	O
143T 145T	14.00	4.0 5.0	8.1	2.25	7.05	5.5	3.5	7.42
182T 184T	16.40	4.5 5.5	10.8	3.03	8.58	7.5	4.5	9.74
213T 215T	20.30	5.5 7.0	12.2	4.03	10.63	8.5	5.25	11.35
254T 256T	25.80	8.25 10.0	14.4	4.78	11.62	10.0	6.25	13.34
284T 286T	29.40	9.5 11.0	15.8	5.29	14.3	11.0	7	14.87
284TS 286TS	28.00	9.5 11.0	15.8	5.28	14.33	11.0	7	14.87
324T 326T	32.10	10.5 12.0	17.7	5.4	15.99	12.5	8	16.66
324TS 326TS	30.60	10.5 12.0	17.7	5.75	15.99	12.5	8	16.66

Shaft Dimensions

Frame	N-W	U	ENa	ENb	ENc	Keyseat		
						R	S	ES
143T-145T	2.25	0.875	–	–	–	0.771	0.188	1.41
182T-184T	2.75	1.125	–	–	–	0.986	0.250	1.81
213T-215T	3.38	1.375	–	–	–	1.201	0.312	2.44
254T-256T	4	1.625	–	–	–	1.416	0.375	2.91
284T-286T	4.63	1.875	28	34	7/16”-14NC	1.59	0.500	3.25
284TS-286TS	3.25	1.625	28	34	7/16”-14NC	1.42	0.375	1.88
324T-324TS	5.25	2.125	28	34	7/16”-14NC	1.85	0.500	3.88
324TS-326TS	3.75	1.875	28	34	7/16”-14NC	1.59	0.500	2

C-Face

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
143/5TC	2.38	2.12	5.875	4.5	6.5	4	3/8"-16 NC
182/4TC	2.87	2.62	7.25	8.5	9.00	4	1/2"-13 NC
213/5TC	3.72	3.12	7.25	8.5	9.00	4	1/2"-13 NC
254/6TC	4.42	3.75	7.25	8.5	10.00	4	1/2”-13NC
284/6TC	5.29	4.38	9.00	10.5	11.25	4	1/2”-13NC
284/6TSC	5.29	3.00	9.00	10.5	11.25	4	1/2”-13NC
324/6TC	5.80	5.00	11.00	12.5	14.00	4	5/8”-11NC
324/6TSC	5.75	3.50	11.00	12.5	14.00	4	5/8”-11NC

D-Flange

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
143/5TD	2.38	2.25	10.0	9.0	11.00	4	0.53
182/4TD	2.87	2.75	10.0	9.0	11.00	4	0.53
213/5TD	3.72	3.32	10.0	9.0	11.00	4	0.53
254/6TD	4.42	4.00	12.5	11.0	14.00	4	0.81
284/6TD	5.88	4.62	12.5	11.0	14.00	4	0.81
284/6TSD	5.88	3.25	12.5	11.0	14.00	4	0.81
324/6TD	6.25	5.25	16.0	14.0	18.00	4	0.81
324/6TSD	6.25	3.75	16.0	14.0	18.00	4	0.81

INPRO Seals

Frame	Reduction in usable shaft
140T	0.13
180T	0.13
210T	0.21
250T	0.17
280T	0.16
280TS	0.15
320T	0.17
320TS	0.17

1. Not according to NEMA
2. Usable shaft length will be reduced by seal. See Table 5.1 for reduction in usable shaft

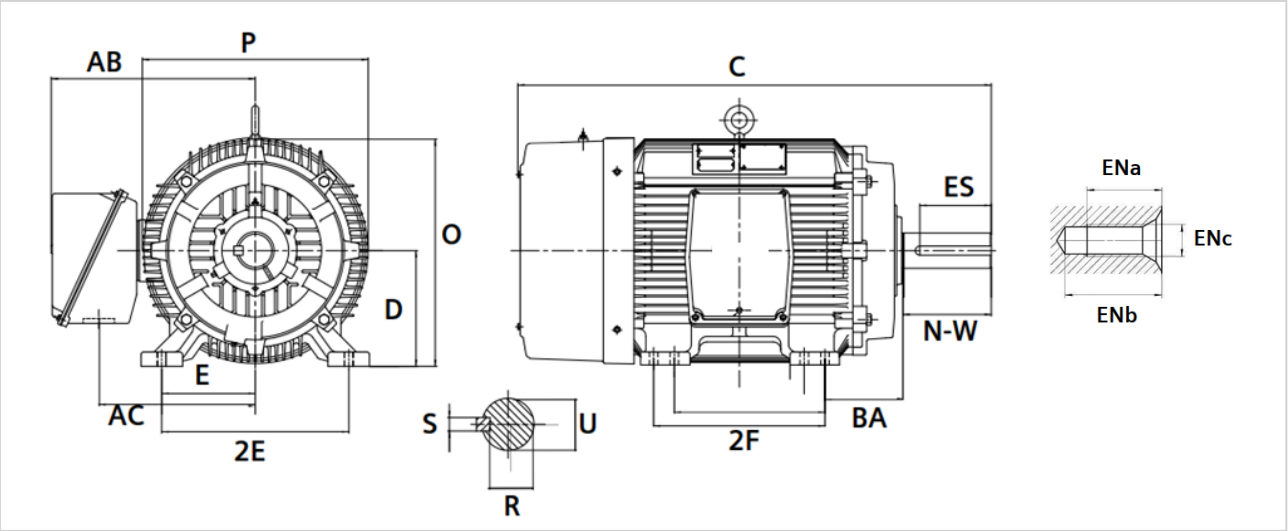
Dimension in Inches; Typical dimensions data, not guaranteed.

Note: See Technical Notes for drip cover and accessory dimensions

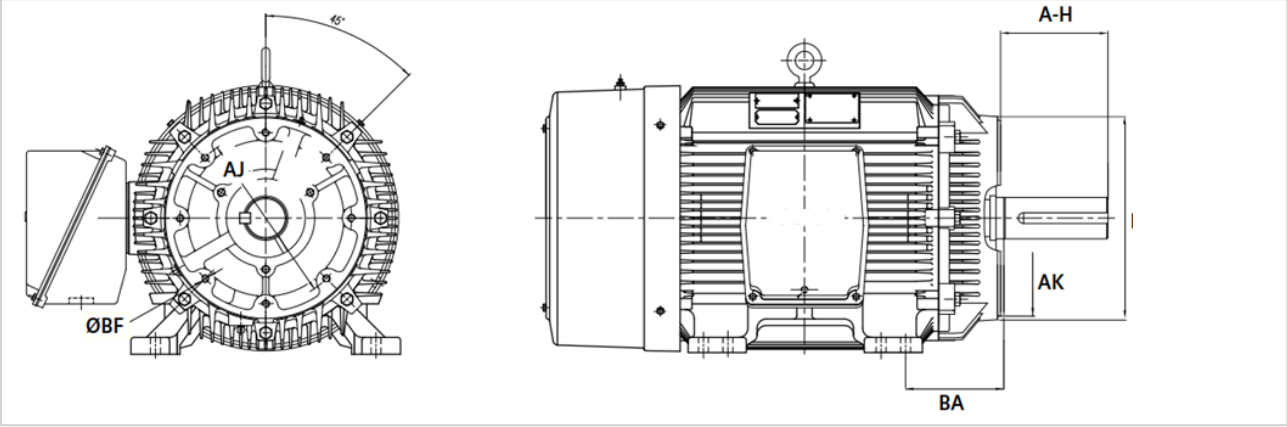
Note: D-Flange may change standard “C” dimension

5.1.2.6. SD100 IEEE, SD661 – 360 – S440 Frame

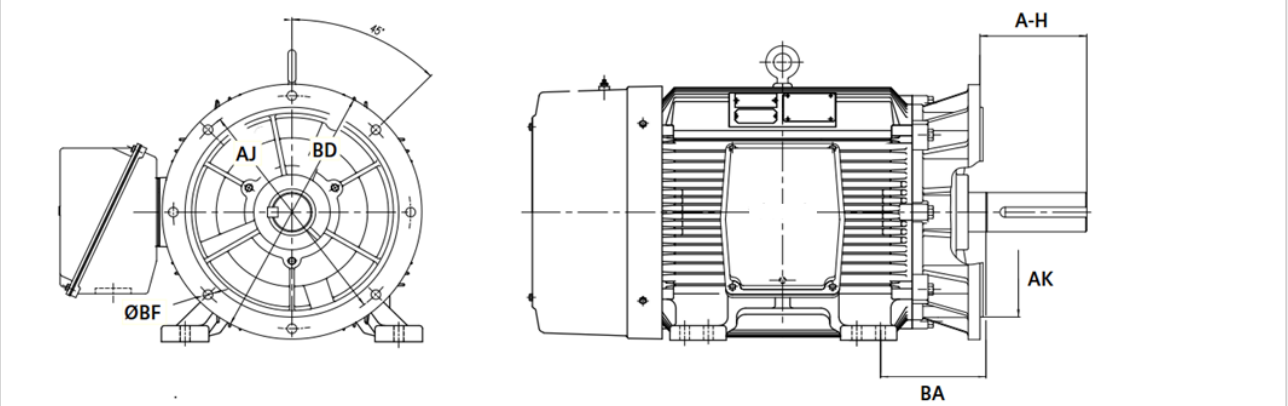
360-440 Frame Foot Mount



C-Face



D-Flange



Dimension in Inches; Typical dimensions data, not guaranteed.
Note: See Technical Notes for drip cover and accessory dimensions

Frame Dimensions

Frame	C	2F	P	BA	AB	2E	D	O
364T 365T	35.5	11.25 12.25	19.6	5.88	18.57	14.0	9	18.48
364TS 365TS	33.4	11.3 12.25	19.6	5.88	18.57	14.0	9	18.48
404T 405T	39.4	12.25 13.75	19.6	6.62	18.38	16.0	10	19.60
404TS 405TS	36.4	12.25 13.75	19.6	6.62	18.38	16.0	10	19.60

Shaft Dimensions

Frame	N-W[2]	U	ENa	ENb	ENc	Keyseat		
						R	S	ES
364T - 365T	5.88	2.375	30	36	7/16”-14NC	2.02	0.625	4.25
364TS - 365TS	3.75	1.875	30	36	7/16”-14NC	1.59	0.500	2
404T – 405T	7.25	2.875	30	36	7/16”-14NC	2.45	0.750	5.63
404TS – 405TS	4.25	2.125	30	36	7/16”-14NC	1.85	0.500	2.75

C-Face

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
364/5TC	6.35	5.63	11.00	12.5	12.75	8	5/8”-11NC
364/5TSC	6.35	3.5	11.00	12.5	12.75	8	5/8”-11NC
404/5TC	7.1	7	11.00	12.5	15.50	8	5/8”-11NC
404/5TSC	7.38	4	11.00	12.5	15.50	8	5/8”-11NC

D-Flange

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
364/5TD	6.75	5.88	16.0	14.0	18.00	4	0.81
364/5TSD	6.75	3.75	16.0	14.0	18.00	4	0.81
404/5TD	6.73	7.25	20	18.0	22.00	8	0.81
404/5TSD	6.73	4.25	20	18.0	22.00	8	0.81

INPRO Seals

Frame	Reduction in usable shaft
140T	0.13
180T	0.13
210T	0.21
250T	0.17
280T	0.16
280TS	0.15
320T	0.17
320TS	0.17
360T	0.20
360TS	0.19
400T	0.13
400TS	0.13

1. Not according to NEMA
2. Usable shaft length will be reduced by seal. See INPRO Seals table for reduction in usable shaft
3. 6 & 8 pole
4. 2 & 4 pole

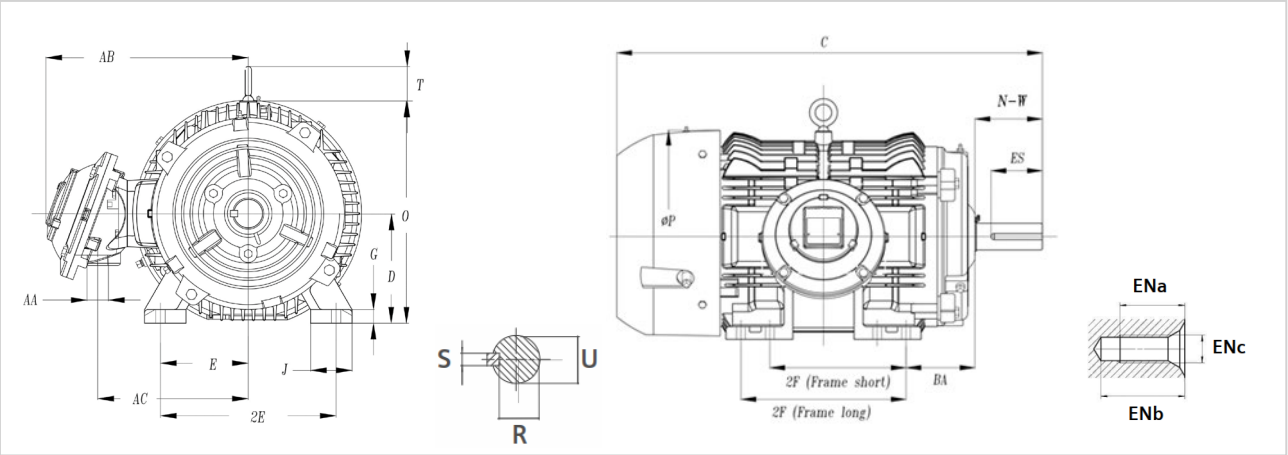
Dimension in Inches; Typical dimensions data, not guaranteed.

Note: See Technical Notes for drip cover and accessory dimensions

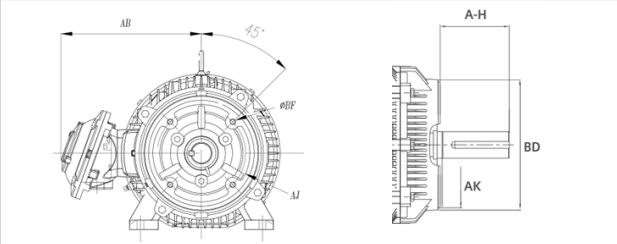
Note: D-Flange may change standard “C” dimension

5.1.2.7. XP100, XP100 ID1– 140 – 320 Frame

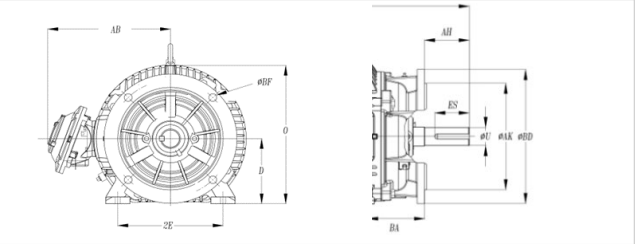
140-320 Frame Foot Mount



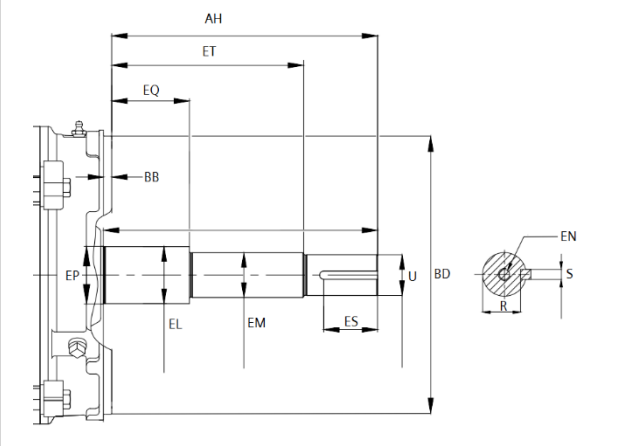
C-Face



D-Flange



JP Shaft



Dimension in Inches; Typical dimensions data, not guaranteed

Note: See Technical Notes for drip cover and accessory dimensions

Frame Dimensions

Frame	C	2F	P	BA	AB	2E	D	O
143T 145T	15.27	4.0 5.0	8.2	2.25	8.75	5.5	3.5	9.19
182T 184T	16.87	4.5 5.5	9.6	2.75	9.3	7.5	4.5	9.34
213T 215T	19.97	5.5 7.0	10.7	3.5	10.54	8.5	5.25	10.68
254T 256T	25.77	8.25 10.0	12.9	4.25	11.52	10.0	6.25	12.67
284T 286T	29.40	9.5 11.0	15.8	4.75	12.85	11.0	7	14.85
284TS 286TS	28.03	9.5 11.0	15.8	4.75	12.85	11.0	7	14.85
324T 326T	32.08	10.5 12.0	17.7	5.25	17.35	12.5	8	16.69
324TS 326TS	30.58	10.5 12.0	17.7	5.25	17.35	12.5	8	16.69

Shaft Dimensions

Frame	N-W	U	ENa	ENb	ENc	Keyseat		
						R	S	ES
143T-145T	2.25	0.875	–	–	–	0.771	0.188	1.41
182T-184T	2.75	1.125	–	–	–	0.986	0.250	1.81
213T-215T	3.38	1.375	–	–	–	1.201	0.312	2.44
254T-256T	4	1.625	–	–	–	1.416	0.375	2.91
284T-286T	4.63	1.875	28	34	7/16”-14NC	1.59	0.500	3.25
284TS-286TS	3.25	1.625	28	34	7/16”-14NC	1.42	0.375	1.88
324T-324TS	5.25	2.125	28	34	7/16”-14NC	1.85	0.500	3.88
324TS-326TS	3.75	1.875	28	34	7/16”-14NC	1.59	0.500	2

C-Face

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
143/5TC	2.25	2.12	4.5	5.875	6.6	4	3/8-16NC
182/4TC	2.75	2.62	8.50	7.25	8.90	4	1/2-13NC
213/5TC	3.5	3.12	8.50	7.25	8.90	4	1/2-13NC
254/6TC	4.23	3.75	8.50	7.25	9.29	4	1/2-13NC
284/6TC	4.75	4.38	9.00	10.5	11.25	4	1/2”-13NC
284/6TSC	4.75	3	9.00	10.5	11.25	4	1/2”-13NC
324/6TC	5.25	5	11.00	12.5	14.00	4	5/8”-11NC
324/6TSC	5.25	3.5	11.00	12.5	14.00	4	5/8”-11NC

D-Flange

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
284/6TD	5.88	4.38	12.5	11.0	13.88	4	0.81
284/6TSD	5.88	3.00	12.5	11.0	13.88	4	0.81
324/6TD	6.24	5.00	16	14.0	17.87	4	0.81
324/6TSD	6.24	3.50	16	14.0	17.87	4	0.81

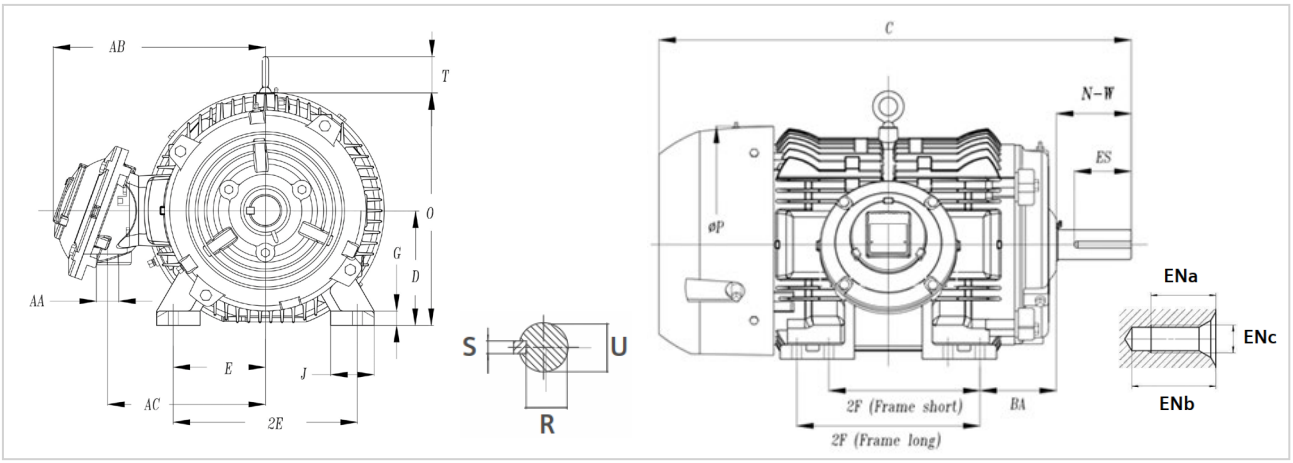
JP Shaft

Frame	Shaft								Keyset			Flange			
	AH	ET	EQ	U	EM	EL	EP	EN	R	S	ES	AJ	BD	BF#	BF
182/4JP	7.342	5.945	1.575	0.875	1.000	1.250	1.378	3/8"-16NC	0.771	0.188	1.650	5.875	6.580	4	3/8"-16NC
213/5JP	8.150	5.890	2.380	1.250	1.370	1.750	1.770	1/2"-13NC	1.112	0.252	1.650	7.250	8.500	4	1/2”-13NC

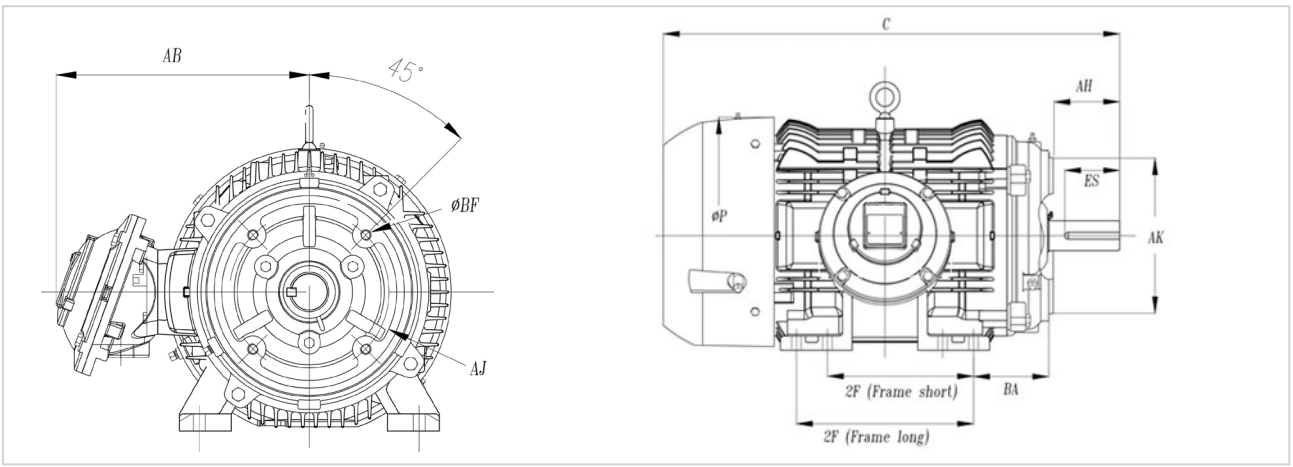
1. Not according to NEMA
Dimension in Inches; Typical dimensions data, not guaranteed
Note: See Technical Notes for drip cover and accessory dimensions
Note: D-Flange may change standard “C” dimension

5.1.2.8. XP100, XP100 ID1 – 360 – 440 Frame

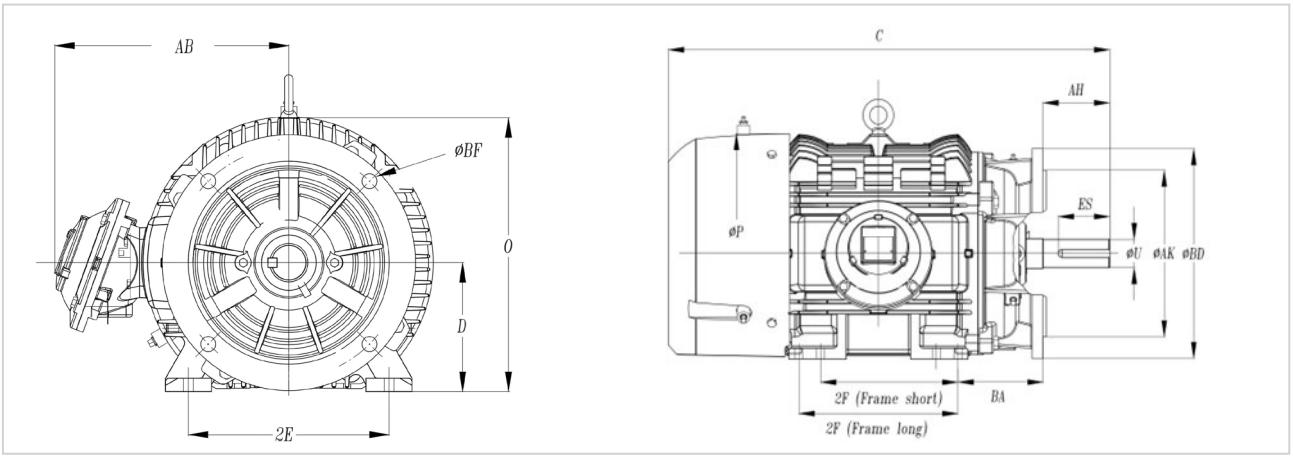
360-440 Frame Foot Mount



C-Face



D-Flange



Dimension in Inches; Typical dimensions data, not guaranteed

Note: See Technical Notes for drip cover and accessory dimensions

Frame Dimensions

Frame	C	2F	P	BA	AB	2E	D	O
364T 365T	35.28	11.25 12.25	19.6	5.88	18.18	14.0	9	18.65
364TS 365TS	33.16	11.3 12.25	19.6	5.88	18.18	14.0	9	18.65
404T 405T	39.52	12.25 13.75	19.6	6.62	20.34	16.0	10	19.61
404TS 405TS	36.52	12.25 13.75	19.6	6.62	20.34	16.0	10	19.61
444T 445T	45.58	14.5 16.5	21.7	7.5	21.59	18.0	11	21.98
444TS 445TS	41.83	14.50 16.5	21.7	7.5	21.59	18.0	11	21.98
447T	49.08	20.00	21.7	7.5	21.59	18.0	11	21.98
447TS	45.33	20.00	21.7	7.5	21.59	18.0	11	21.98
449T	54.08	25.00	21.7	7.5	23.46	18.0	11	21.98
449TS	50.33	25.00	21.7	7.5	23.46	18.0	11	21.98

Shaft Dimensions

Frame	N-W	U	ENa	ENb	ENc	Keyseat		
						R	S	ES
364T - 365T	5.88	2.375	30	36	7/16”-14NC	2.02	0.625	4.25
364TS - 365TS	3.75	1.875	30	36	7/16”-14NC	1.59	0.500	2
404T – 405T	7.25	2.875	30	36	7/16”-14NC	2.45	0.750	5.63
404TS – 405TS	4.25	2.125	30	36	7/16”-14NC	1.85	0.500	2.75
444T – 449T	8.5	3.375	37	48	5/8”-11NC	2.88	0.875	6.88
444TS – 449TS	4.75	2.375	37	48	5/8”-11NC	2.02	0.625	3

C-Face

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
364/5TC	6.62	5.62	11.00	12.5	14	8	5/8”-11NC
364/5TSC	6.62	3.5	11.00	12.5	14.00	8	5/8”-11NC
404/5TC	6.62	7	11.00	12.5	15.50	8	5/8”-11NC
404/5TSC	6.62	4	11.00	12.5	15.50	8	5/8”-11NC
444/5TC	7.5	8.25	14.00	16	18.00	8	5/8”-11NC
444/5TSC	7.5	4.5	14.00	16	18.00	8	5/8”-11NC
447/9TC	7.5	8.25	14.00	16	18.00	8	5/8”-11NC
447/9TSC	7.5	4.5	14.00	16	18.00	8	5/8”-11NC

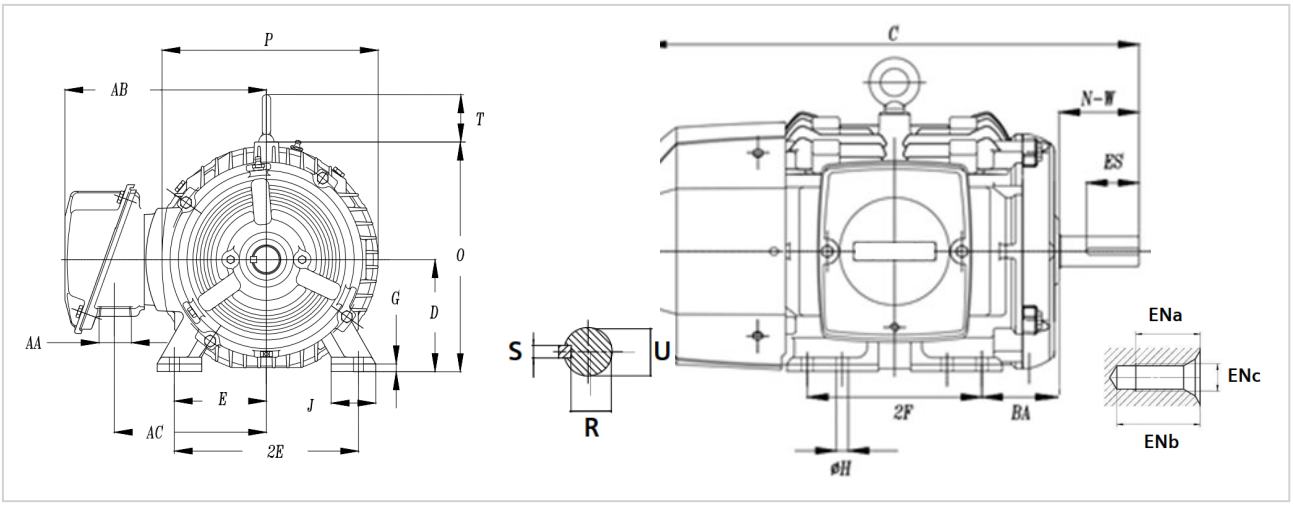
D-Flange

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
364/5TD	6.75	5.62	16	14	18	4	0.81
364/5TSD	6.75	3.5	16	14	18	4	0.81
404/5TD	7.18	7	16	14	22	8	0.81
404/5TSD	7.18	4	16	14	22	8	0.81
444/5TD	8.38	8.5	14	18.0	22.00	8	0.81
444/5TSD	8.38	4.50	14	18.0	22.00	8	0.81
447/9TD	8.38	8.5	14	18.0	22.00	8	0.81
447/9TSD	8.38	4.50	14	18.0	22.00	8	0.81

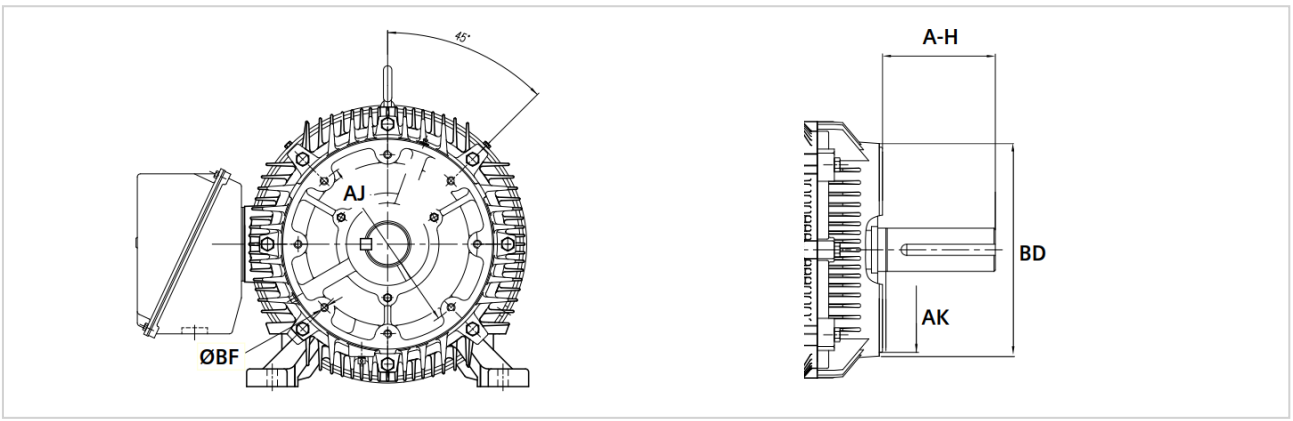
1. Not according to NEMA
Dimension in Inches; Typical dimensions data, not guaranteed.
Note: See Technical Notes for drip cover and accessory dimensions
Note: D-Flange may change standard "C" dimension

5.1.2.9. 140-320 Frame Foot Mount

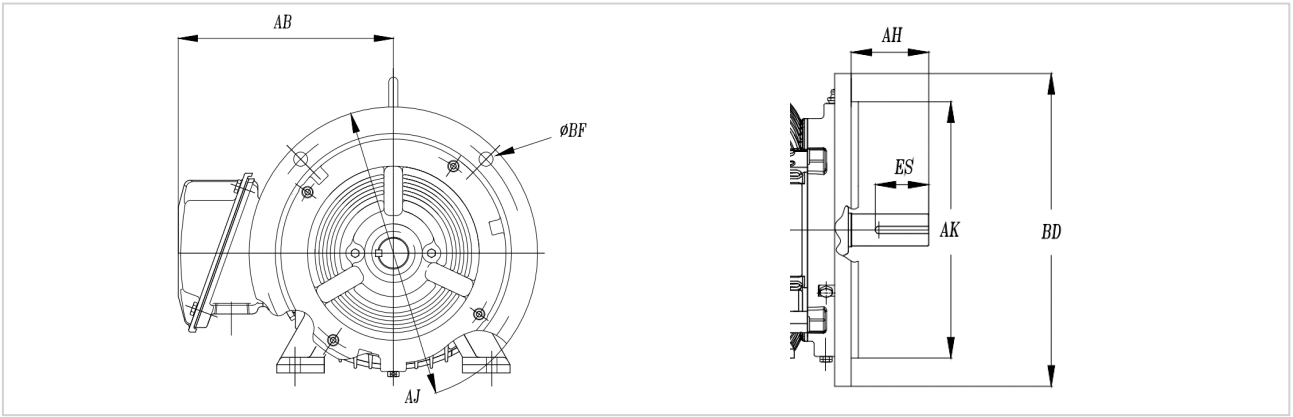
140-320 Frame Foot Mount



C-Face



D-Flange



Dimension in Inches; Typical dimensions data, not guaranteed.
Note: See Technical Notes for drip cover and accessory dimensions

Frame Dimensions

Frame	C	2F	P	BA	AB	2E	D	O
143T 145T	14.37	4.0 5.0	7.6	2.25	7	5.5	3.5	7.28
182T 184T	16.68	4.5 5.5	8.7	2.75	6.94	7.5	4.5	8.87
213T 215T	20.65	5.5 7.0	10.3	3.5	8.27	8.5	5.25	10.41
254T 256T	26.16	8.25 10.0	12.4	4.25	9.35	10.0	6.25	12.43
284T 286T	27.40	9.5 11.0	15.5	13.4	4.75	11.0	7	14.19
284TS 286TS	26.00	9.5 11.0	15.5	13.4	4.75	11.0	7	14.19
324T 326T	32.00	10.5 12.0	17.1	15.75	5.25	12.5	8	15.94
324TS 326TS	30.00	10.5 12.0	17.1	15.75	5.25	12.5	8	15.94

Shaft Dimensions

Frame	N-W	U	ENa	ENb	ENc	Keyseat		
						R	S	ES
143T-145T	2.25	0.875	–	–	–	0.771	0.188	1.41
182T-184T	2.75	1.125	–	–	–	0.986	0.250	1.81
213T-215T	3.38	1.375	–	–	–	1.201	0.312	2.44
254T-256T	4	1.625	–	–	–	1.416	0.375	2.91
284T-286T	4.63	1.875	28	34	7/16”-14NC	1.59	0.500	3.25
284TS-286TS	3.25	1.625	28	34	7/16”-14NC	1.42	0.375	1.88
324T-324TS	5.25	2.125	28	34	7/16”-14NC	1.85	0.500	3.88
324TS-326TS	3.75	1.875	28	34	7/16”-14NC	1.59	0.500	2

C-Face

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
143/5TC	2.25	2.12	5.875	4.5	6.6	4	3/8”-16NC
182/4TC	2.75	2.62	7.25	8.5*	8.90	4	1/2”-13NC
213/5TC	3.5	3.12	7.25	8.5	8.90	4	1/2”-13NC
254/6TC	4.25	3.75	7.25	8.5	9.30	4	1/2”-13NC
284/6TC	4.75	4.38	9.00	10.5	10.75	4	1/2”-13NC
284/6TSC	4.75	3	9.00	10.5	10.75	4	1/2”-13NC
324/6TC	5.25	5	11.00	12.5	12.75	4	5/8”-11NC
324/6TSC	5.25	3.5	11.00	12.5	12.75	4	5/8”-11NC

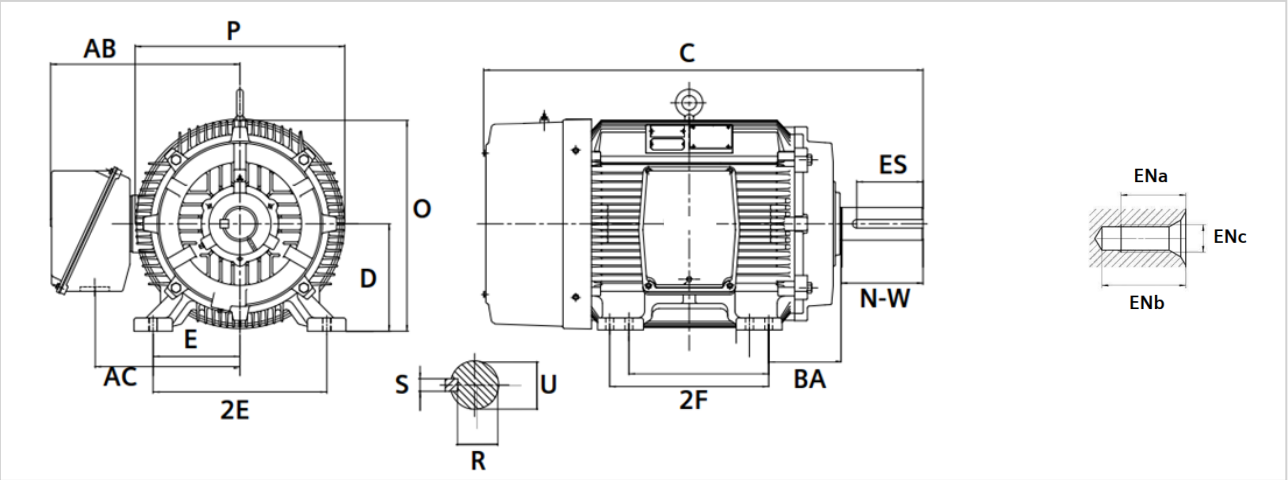
D-Flange

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
143/5TD	2.25	2.25	10.0	9.0	10.90	4	0.53
182/4TD	2.75	2.75	10.0	9.0	11.00	4	0.53
213/5TD	3.5	3.38	10	9.0	10.90	4	0.53
254/6TD	4.25	4.00	12.5	11.0	13.90	4	0.81
284/6TD	5.88	4.62	12.5	11.0	13.88	4	0.81
284/6TSD	5.88	3.25	12.5	11.0	13.88	4	0.81
324/6TD	6.25	5.25	16	14.0	17.88	4	0.81
324/6TSD	6.25	3.75	16	14.0	17.88	4	0.81

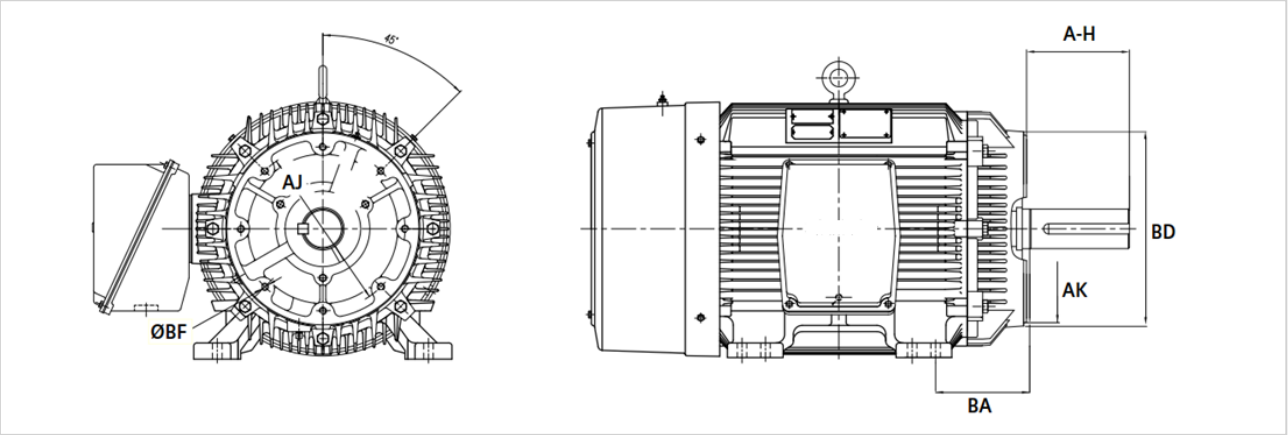
1. Not according to NEMA
Dimension in Inches; Typical dimensions data, not guaranteed.
Note: See Technical Notes for drip cover and accessory dimensions
Note: D-Flange may change standard “C” dimension

5.1.2.10. SD10 MS – 360 – 440 Frame

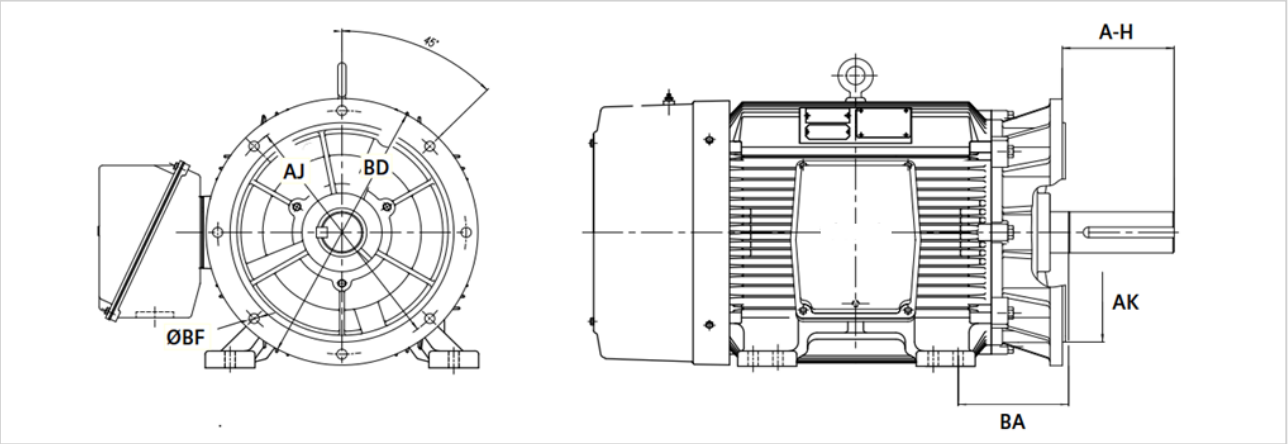
360-440 Frame Foot Mount



C-Face



D-Flange



Dimension in Inches; Typical dimensions data, not guaranteed.
Note: See Technical Notes for drip cover and accessory dimensions

Frame Dimensions

Frame	C	2F	P	AB	BA	2E	D	O
364T 365T	34.20	11.25 12.25	18.5	17.69	5.88	14.0	9	17.81
364TS 365TS	32.10	11.3 12.25	18.5	17.69	5.88	14.0	9	17.81
404T 405T	39.50	12.25 13.75	19.6	17.5	6.62	16.0	10	19.90
404TS 405TS	36.40	12.25 13.75	19.6	18.38	6.62	16.0	10	19.60
444T 445T	45.60	14.50 16.50	21.7	19.94	7.5	18.0	11	21.90
444TS 445TS	41.80	14.50 16.50	21.7	19.94	7.5	18.0	11	21.90
447T	49.10	20.00	21.8	19.94	7.5	18.0	11	21.90
447TS	45.40	20.00	21.8	19.94	7.5	18.0	11	21.90
449T	54.10	25.00	21.8	22	7.5	18.0	11	21.90
449TS	50.30	25.00	21.8	22	7.5	18.0	11	21.90

Shaft Dimensions

Frame	N-W	U	ENa	ENb	ENc	Keyseat		
						R	S	ES
364T - 365T	5.88	2.375	30	36	7/16”-14NC	2.02	0.625	4.25
364TS - 365TS	3.75	1.875	30	36	7/16”-14NC	1.59	0.500	2
404T – 405T	7.25	2.875	30	36	7/16”-14NC	2.45	0.750	5.63
404TS – 405TS	4.25	2.125	30	36	7/16”-14NC	1.85	0.500	2.75
444T – 449T	8.5	3.375	37	48	5/8”-11NC	2.88	0.875	6.88
444TS – 449TS	4.75	2.375	37	48	5/8”-11NC	2.02	0.625	3

C-Face

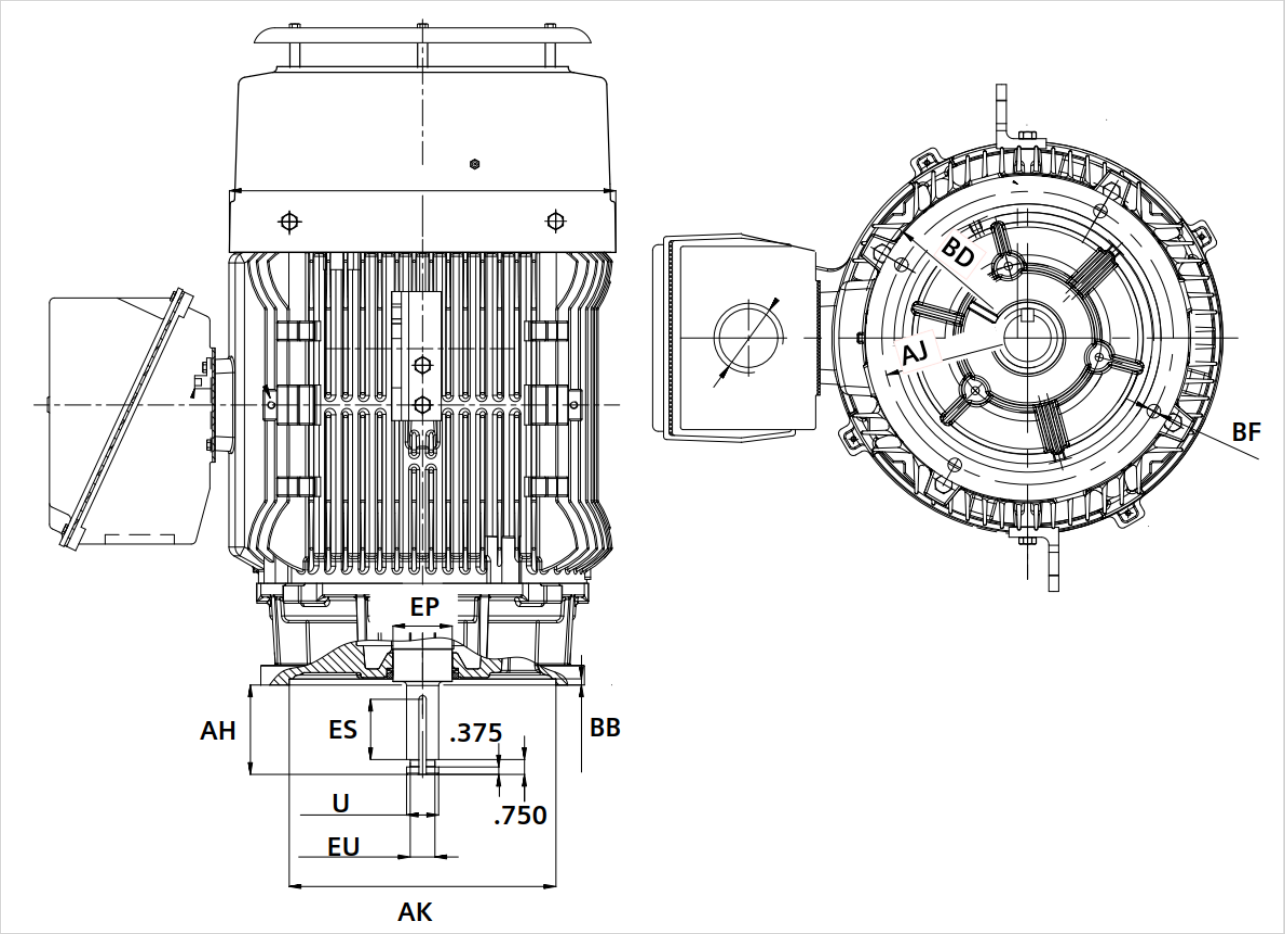
Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
364/5TC	5.88	5.62	11.00	12.5	12.75	8	5/8”-11NC
364/5TSC	5.88	3.5	11.00	12.5	12.75	8	5/8”-11NC
404/5TC	6.63	7	11.00	12.5	13.50	8	5/8”-11NC
404/5TSC	6.63	4	11.00	12.5	13.50	8	5/8”-11NC
444/5TC	7.5	8.25	14.00	16	16.62	8	5/8”-11NC
444/5TSC	7.5	4.5	14.00	16	16.62	8	5/8”-11NC
447/9TC	7.5	8.25	14.00	16	16.62	8	5/8”-11NC
447/9TSC	7.5	4.5	14.00	16	16.62	8	5/8”-11NC

D-Flange

Frame	BA[1]	AH	AJ	AK	BD	BF #	BF
364/5TD	6.75	5.88	16.0	14.0	17.88	4	0.81
364/5TSD	6.75	3.75	16.0	14.0	17.88	4	0.81
404/5TD	7.12	7.25	20	18.0	21.88	8	0.81
404/5TSD	7.12	4.25	20	18.0	21.88	8	0.81
444/5TD	8.38	8.50	20	18.0	21.88	8	0.81
444/5TSD	8.38	4.75	20	18.0	21.88	8	0.81
447/9TD	8.38	8.50	20	18.0	21.88	8	0.81
447/9TSD	8.38	4.75	20	18.0	21.88	8	0.81

1. Not according to NEMA
Dimension in Inches; Typical dimensions data, not guaranteed.
Note: See Technical Notes for drip cover and accessory dimensions
Note: D-Flange may change standard "C" dimension

5.1.2.11. HP100, LP100 – 180 – 440 Frame



Dimension in Inches; Typical dimensions data, not guaranteed

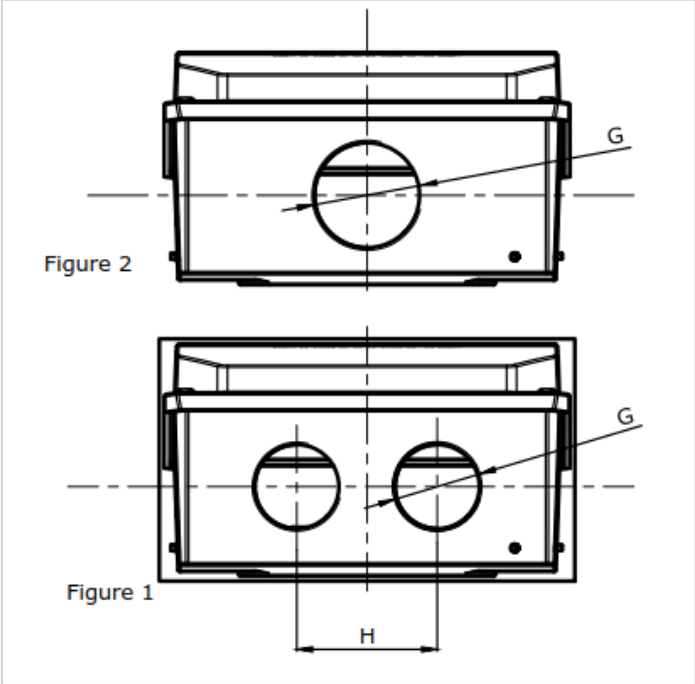
Frame	U	EU	EP	BD	AH	AJ	AK	BF	Keyseat		
									R	S	ES
182/4LP	1.125	0.875	1.18	10.0	2.76	9.125	8.25	0.438	0.986	0.250	2.03
213/5LP	1.625	1.250	1.77	10.0	2.76	9.125	8.25	0.438	1.416	0.375	2.03
254/6LP	1.625	1.250	1.77	10.0	2.80	9.125	8.25	0.438	1.416	0.375	2.03
284/6LP	2.125	1.750	2.36	10.0	4.5	9.125	8.25	0.438	1.845	0.500	3.03
284/6LPH	2.125	1.750	2.36	16.5	4.5	14.75	13.50	0.688	1.845	0.500	3.03
324/6LP	2.125	1.750	2.36	16.5	4.5	14.75	13.50	0.688	1.845	0.500	3.03
364/5LP	2.125	1.750	3.00	16.5	4.5	14.75	13.50	0.688	1.845	0.500	3.03
404/5LP	2.125	1.750	3.00	16.5	4.5	14.75	13.50	0.688	1.845	0.500	3.00
444/5LP	2.125	1.750	3.00	16.5	4.5	14.75	13.50	0.688	1.845	0.500	3.00
447/9LP	2.125	1.750	3.00	16.5	4.5	14.75	13.50	0.688	1.845	0.500	3.00

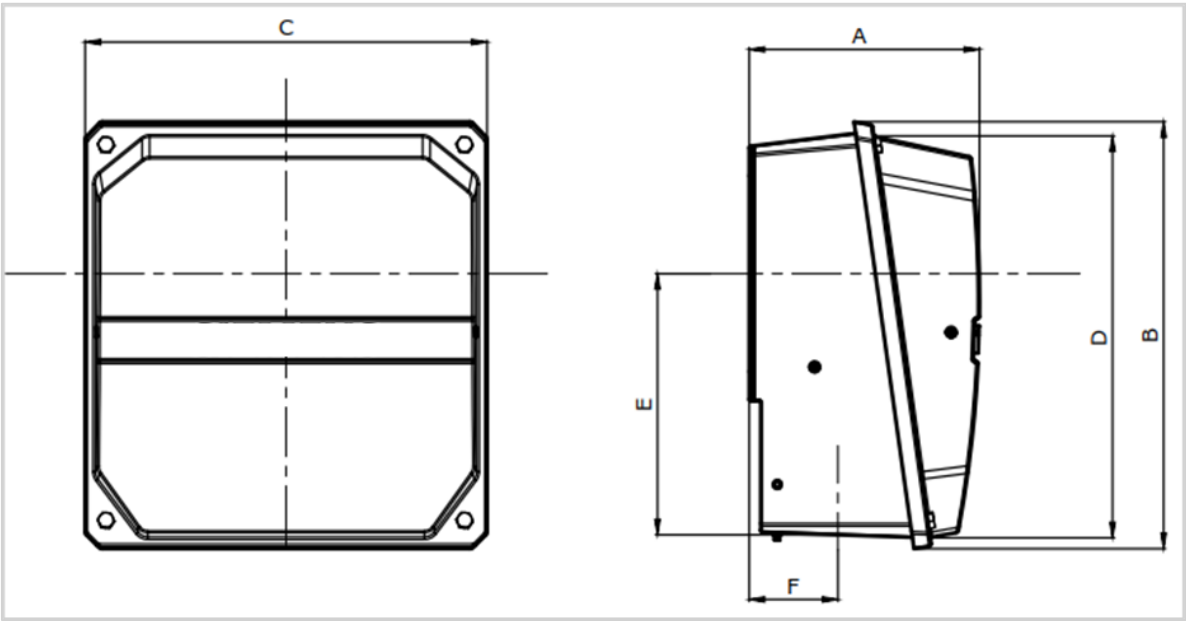
Frame	U	EU	EP	BD	AH	AJ	AK	BF	Keyseat		
									R	S	ES
182/4HP	1.125	0.875	1.18	10.0	2.76	9.125	8.25	0.438	0.986	0.250	2.03
213/5HP	1.125	0.874	1.77	10.0	2.76	9.125	8.25	0.438	0.896	0.250	2.03
254/6HP	1.125	0.875	1.77	10.0	2.76	9.125	8.25	0.438	0.986	0.250	2.03
284/6HP	1.125	0.875	1.97	10.0	2.75	9.125	8.3	0.438	0.986	0.250	1.35
324/6HP	1.625	1.250	2.36	16.5	4.5	14.75	13.5	0.688	1.416	0.375	3.09
364/5HP	1.250	1.625	3.00	16.5	4.5	14.75	13.5	0.688	1.416	0.375	3.03
404/5HP	1.625	1.250	3.00	16.5	4.5	14.75	13.5	0.688	1.416	0.375	3.00
444/5HP	2.125	1.750	3.00	16.5	4.5	14.75	13.5	0.688	1.845	0.500	3.00
447/9HP	2.125	1.750	3.00	16.5	4.5	14.75	13.5	0.688	1.845	0.500	3.00

Dimension in Inches; Typical dimensions data, not guaranteed

5.1.3. Terminal Boxes – Schematics

5.1.3.1. SD200, SD200 841, DP200 HPS





Typical dimensions data, not guaranteed

Frame	General Dimensions							Qty.	H	Figure	Approx. internal volume (in^3)	Number of cover bolts
	A	B	C	D	E	F	G					
444-447	10.15	15.31	11.02	13.86	8.59	4.43	3 - NPT	1	–	2	1066	4
444-447	10.15	15.31	11.02	13.86	8.59	4.43	2.5 – NPT	2	3.54	1	1066	4
449-L449	10.54	16.87	15.35	15.42	8.98	4.43	4 - NPT	1	–	2	1718	4
449-L449	10.54	16.87	15.35	15.42	8.98	4.43	4 - NPT	2	5.80	1	1718	4
500	11.73	21.71	20.47	20.43	13.28	4.52	4 - NPT	2	7.10	1	3480	4
500	11.73	21.71	20.47	20.43	13.28	4.52	5 - NPT	1	–	2	3480	4

Typical dimensions data, not guaranteed

5.1.3.2. GP100A, GP100

Figure 1

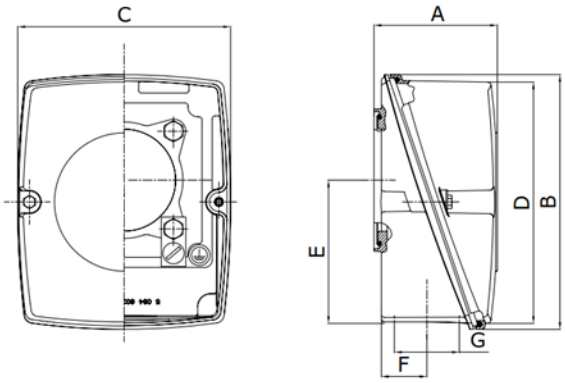


Figure 2

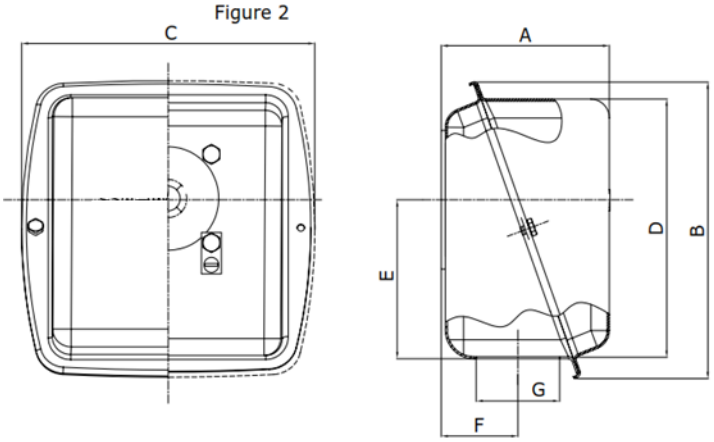
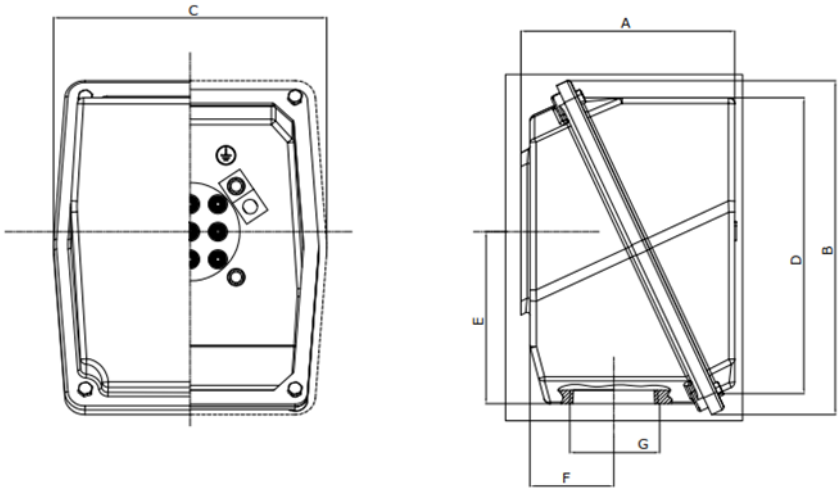


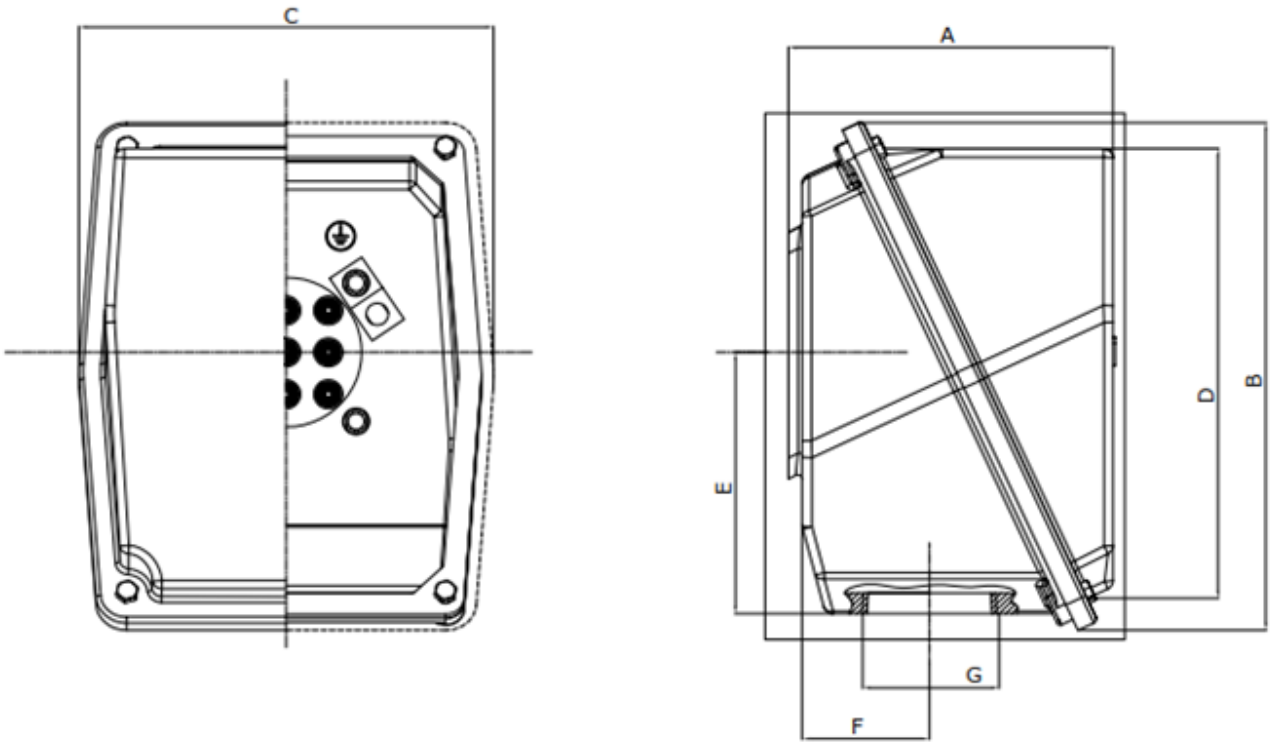
Figure 3



Typical dimensions data, not guaranteed

	External Dimensions (in)										
Frames	**A**	**B**	**C**	**D**	**EP**	**F**	**G**	**Vol Int approx. (in^3)**	**No. screws on cover**	**Fig**	**Material**
140	2.79	5.31	4.41	4.98	2.69	0.95	0.75 NPT	37	2	1	Cast Aluminum
180	2.79	5.31	4.41	4.98	2.69	0.95	0.75 NPT	37	2	1	Cast Aluminum
210	3.30	6.89	5.71	6.52	3.87	1.18	1 NPT	87	2	1	Cast Aluminum
250	3.30	6.89	5.71	6.52	3.87	1.18	1.25 NPT	87	2	1	Cast Aluminum
280	5.00	8.60	8.70	7.48	4.60	2.28	2 NPT	230	2	2	Stamped Steel
320	5.00	8.60	8.70	7.48	4.60	2.28	2.5 NPT	230	2	2	Stamped Steel
360	7.44	9.94	9.69	9.69	4.72	3.10	3 NPT	465	2	2	Stamped Steel
400	7.44	9.94	9.69	9.69	4.72	3.10	3 NPT	465	2	2	Stamped Steel
440	8.60	13.59	10.99	12.03	7.00	3.37	3 NPT	748	4	3	Cast Iron

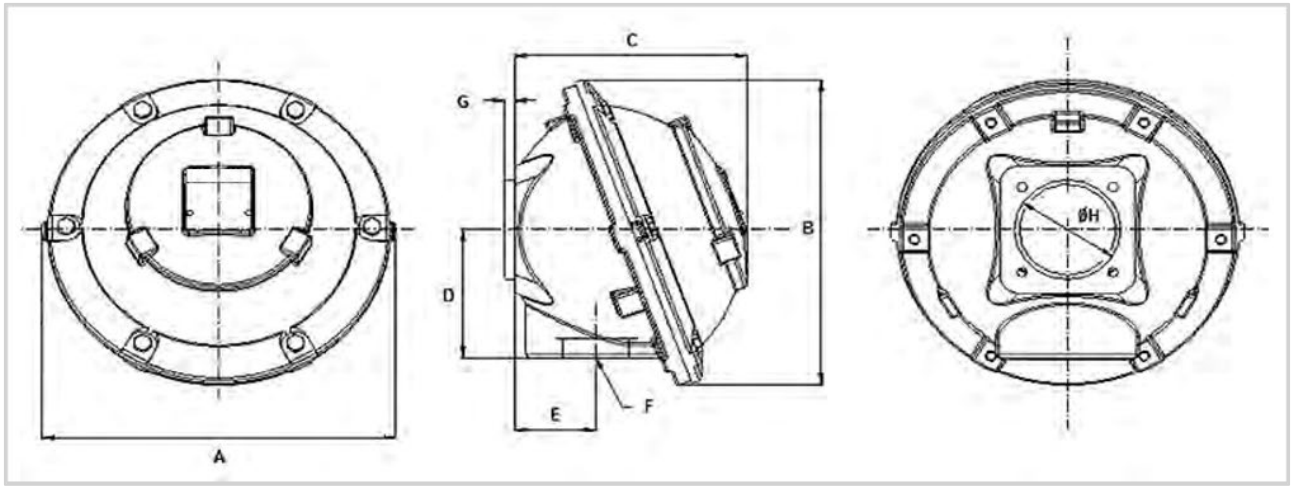
5.1.3.3. SD100, SD100 IEEE, SD10 MS, HP100, LP100



	External Dimensions (in)								
Frames	A	B	C	D	EP	F	G	Vol Int approx. (in^3)	No. screws on top
140	3.23	5.98	4.96	5.46	2.28	1.18	0.75 NPT	41	4
180	3.23	5.98	4.96	5.46	2.28	1.18	0.75 NPT	41	4
210	4.24	7.11	5.94	6.42	3.43	1.69	1 NPT	86	4
250	4.24	7.11	5.94	6.42	3.43	1.69	1.25 NPT	86	4
280	6.00	8.19	7.74	8.19	4.75	2.37	1.5 NPT	222	4
320	7.05	11.07	8.92	9.90	5.50	3.00	2 NPT	400	4
360	8.60	13.59	10.99	12.03	7.00	3.37	3 NPT	748	4
400	8.60	13.59	10.99	12.03	7.00	3.37	3 NPT	748	4
444-447	8.60	13.59	10.99	12.03	7.00	3.37	3 NPT	748	4
449	10.55	16.75	14.00	15.01	8.50	5.00	3 NPT	1696	4

Typical dimensions data, not guaranteed

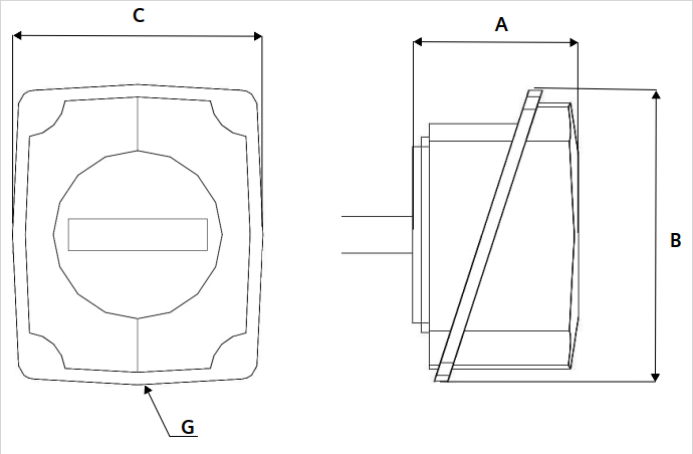
5.1.3.4. XP100, XP100 ID1



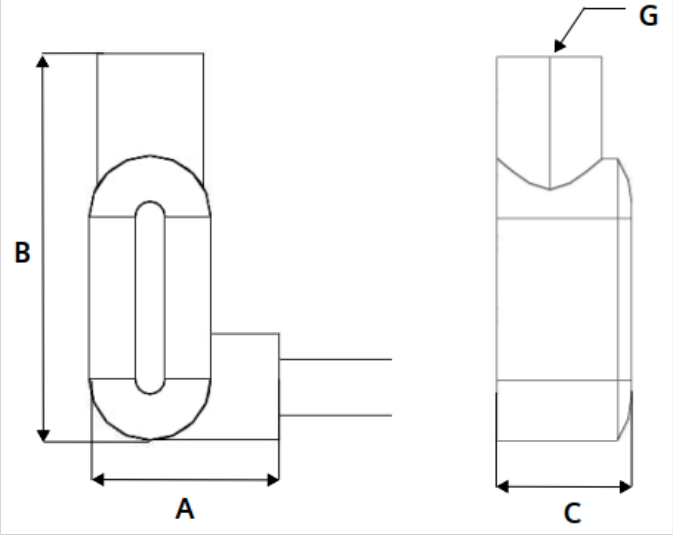
	External Dimensions (in)									
Frames	A	B	C	D	EP	F	G	H	Vol Int approx. (in^3)	No. screws on top
140	7.28	6.65	4.07	2.56	1.61	3/4”-14 NPT	0.35	2.20	39.0	4
180	7.28	6.65	4.07	2.56	1.61	3/4”-14 NPT	0.35	2.20	39.0	4
210	8.07	7.40	4.66	2.95	1.73	1”-11.5NPT	0.35	2.83	64.0	4
250	8.07	7.40	4.66	2.95	1.73	1”-11.5NPT	0.35	2.83	64.0	4
280	8.07	7.40	4.66	2.95	1.73	1.5”-11.5NPT	0.35	2.83	64.0	4
320	12.00	11.13	7.90	4.65	2.76	2”-11.5NPT	0.35	3.62	278.4	6
360	12.00	11.13	7.90	4.65	2.76	3”-8NPT	0.35	3.62	278.4	6
400	14.09	13.11	9.88	5.83	4.17	3”-8NPT	0.35	4.72	552.0	6
444/445	14.09	13.11	9.88	5.83	4.17	3”-8NPT	0.35	4.72	552.0	6
447	14.09	13.11	9.88	5.83	4.17	3”-8NPT	0.35	4.72	552.0	6
449	17.24	16.14	11.75	6.89	5.45	3”-8NPT	0.35	4.72	972.0	6

Dimension in Inches; Typical dimensions data, not guaranteed.
Note: See Technical Notes for drip cover and accessory dimensions

5.1.3.5. Auxiliary Boxes



		External Dimensions (in)			
Frames	**Option**	**A**	**B**	**C**	**G**
320-500	Stator RTD Box	5.83	9.53	7.74	1” NPT
210-500	Cast Iron Aux Box	3.50	6.10	5.47	¾” NPT



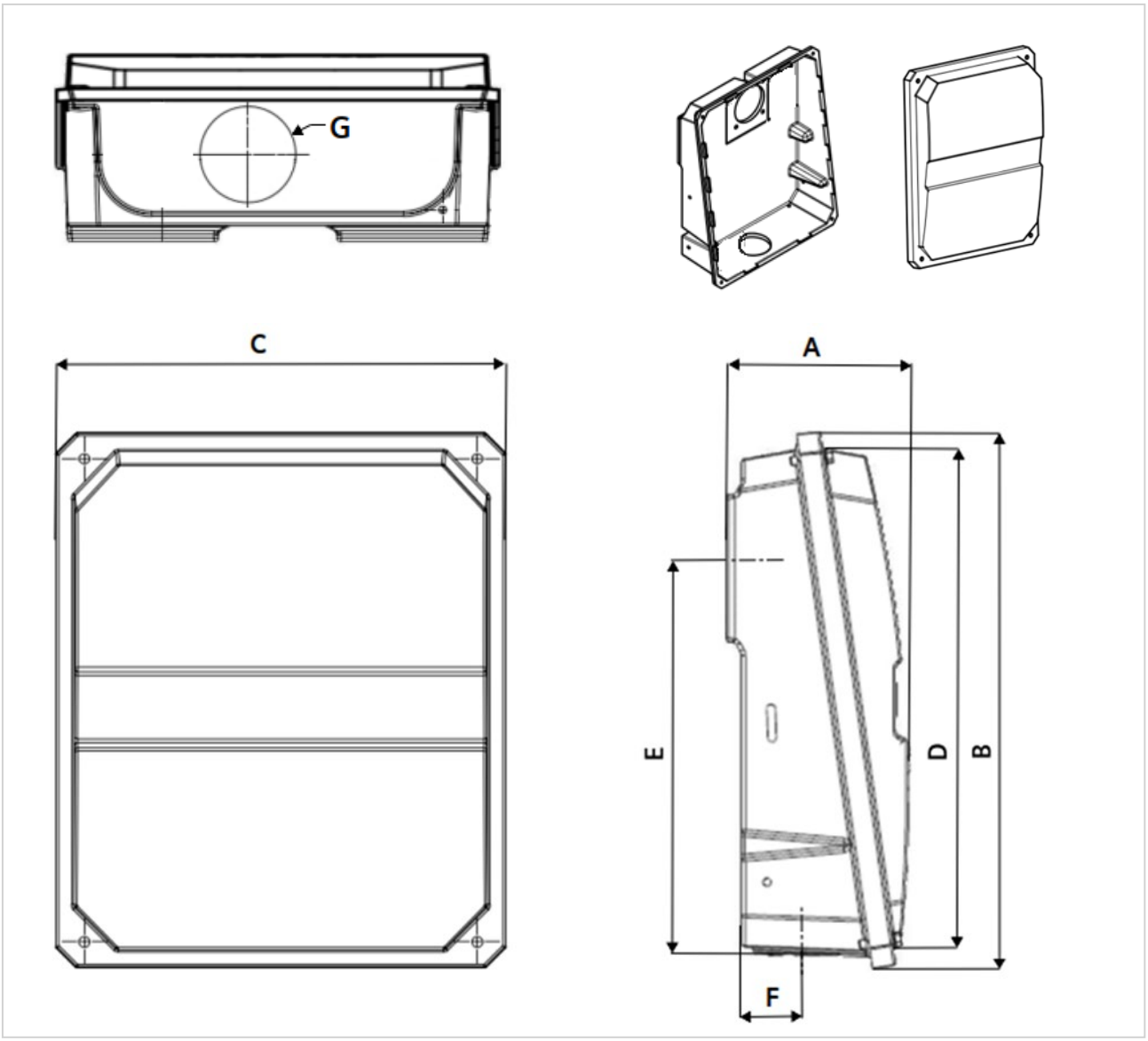
		External Dimensions (in)			
Frames	**Option**	**A**	**B**	**C**	**G**
140-500	Condulet Aux box	2.438	5.188	1.625	3/4” NPT

Note: Condulet may be LL, LR or LB type depending on configuration

Typical dimensions data, not guaranteed

5.1.3.6. Special Oversized Boxes

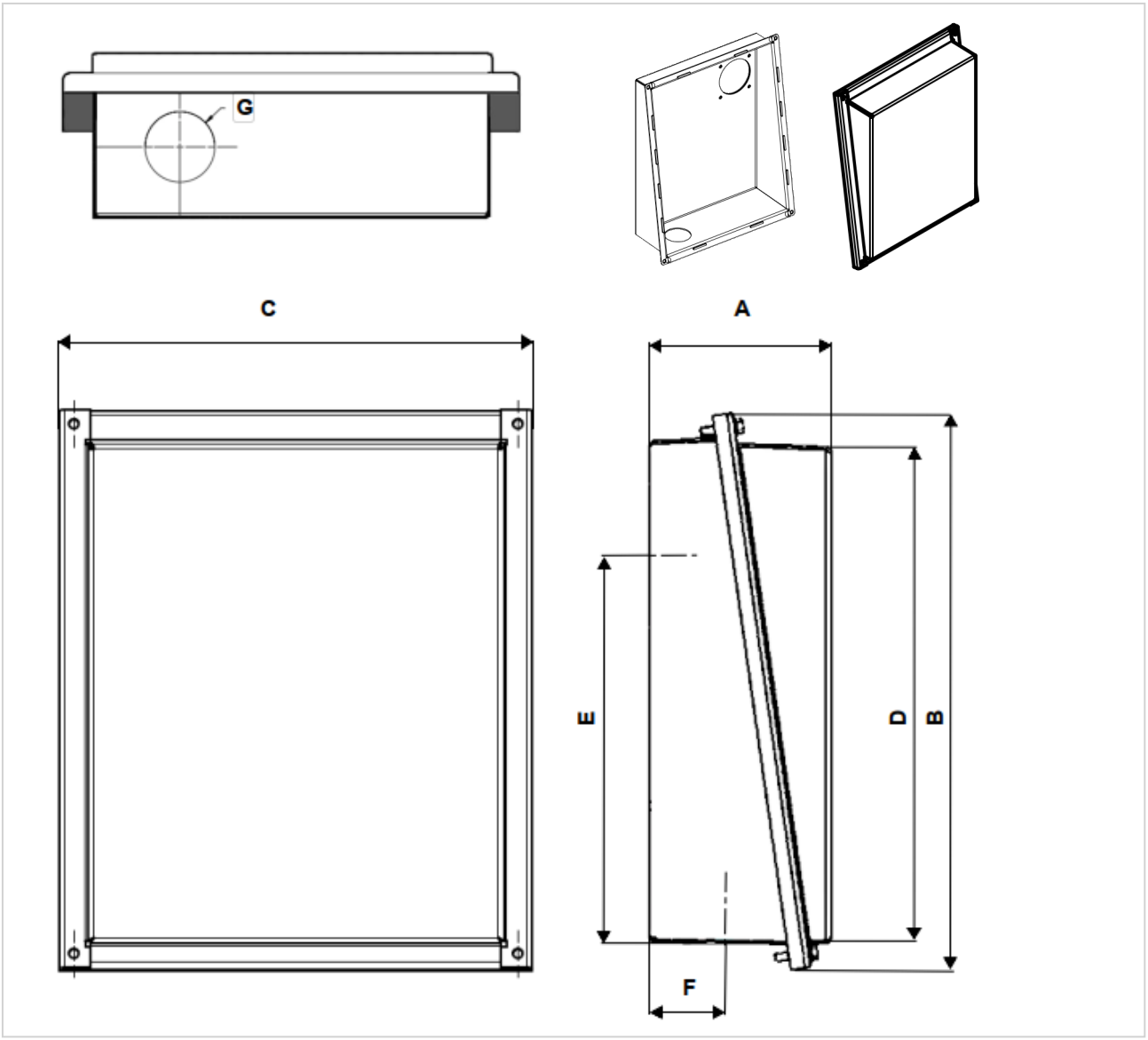
SD200 Option T11



Frame	Motor Type	Option	General Dimensions A	B	C	D	E	F	G	Qty.	Approx. internal volume (in³)	Number of cover bolts
444-449	SD200	T11	9.51	24.41	20.55	22.63	17.85	3.15	4” NPT	1	2778	4

Typical dimensions data, not guaranteed

SD200 Option T03/T06



Frame	Motor Type	Option	General Dimensions A	B	C	D	E	F	G	Qty.	Approx. internal volume (in³)	Number of cover bolts
444-449	SD200	T03	7.44	24.41	20.57	21.67	16.88	3.30	3.25	1	3046	4
444-449	SD200	T06	7.44	24.41	20.57	21.67	16.88	–	–	0	3046	4

Typical dimensions data, not guaranteed

SD200 Option T04

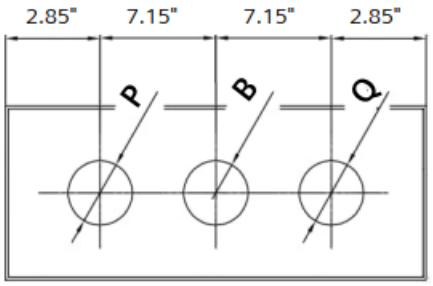


Figure 1

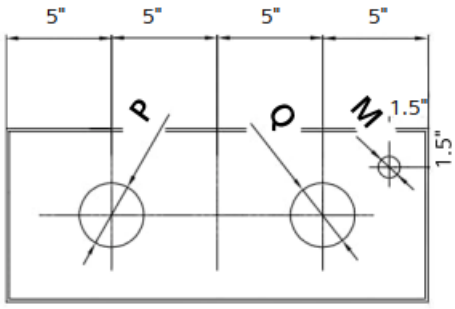
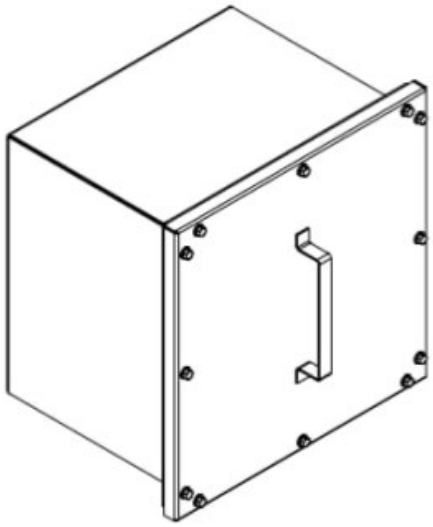
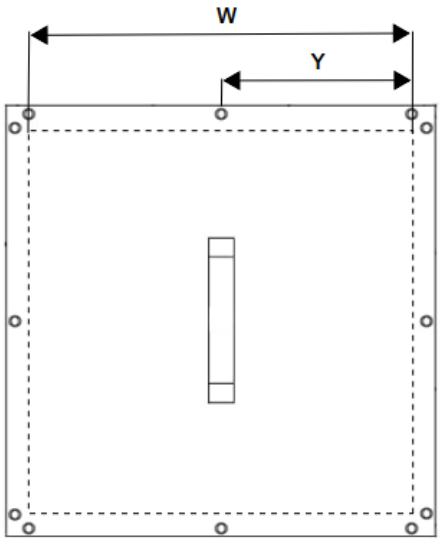
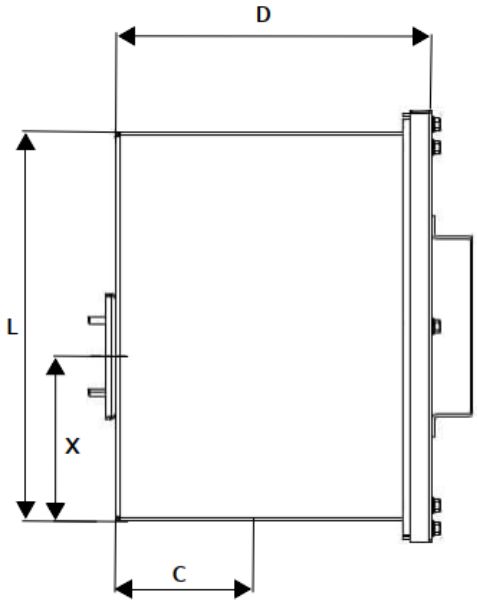


Figure 2







Typical dimensions data, not guaranteed

Frame	Motor Type	Options	General Dimensions										Figure	Approx. internal volume (in^3)	Number of cover bolts
			P	B	Q	M	C	D	L	W	X	Y			
444-447	SD100	T04	–	–	–	–	8	16	20	20	7	10	–	6400	12
444-449	SD100	T04	–	–	–	–	8	16	20	20	8.46	10	–	6400	12
444-447	SD200	T04	–	–	–	–	8	16	20	20	8.5	10	–	6400	12
449-L449	SD200	T04	–	–	–	–	8	16	20	20	8.85	10	–	6400	12
500	SD200	T04	–	–	–	–	8	16	20	20	13.13	10	–	6400	12
444-447	SD100	T05	–	–	–	–	10	20	28.5	24.4	7	12.2	–	13,908	12
444-449	SD100	T05	–	–	–	–	10	20	28.5	24.4	8.46	12.2	–	13,908	12
444-447	SD200	T05	–	–	–	–	10	20	28.5	24.4	8.5	12.2	–	13,908	12
449-L449	SD200	T05	–	–	–	–	10	20	28.5	24.4	8.85	12.2	–	13,908	12
500	SD200	T05	–	–	–	–	10	20	28.5	24.4	13.3	12.2	–	13,908	12

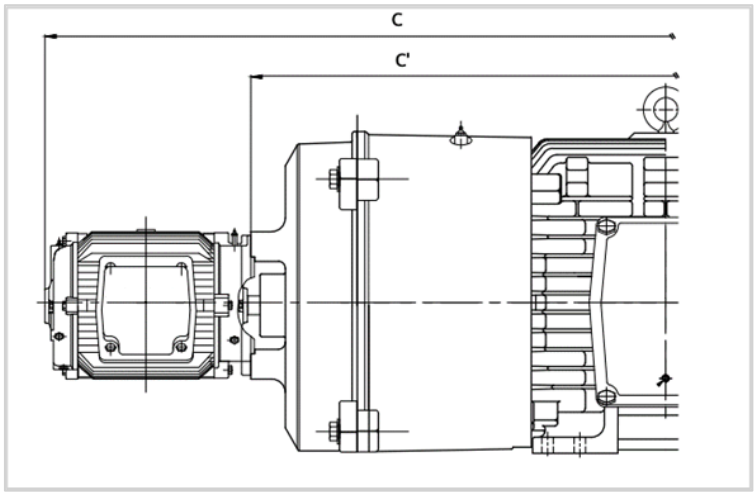
Options T04 and T05 will be without entry holes as standard. Entry holes may be added using option Y96 with values for dimensions P, B, and/or Q

Typical dimensions data, not guaranteed

5.2. Dimensions of accessories

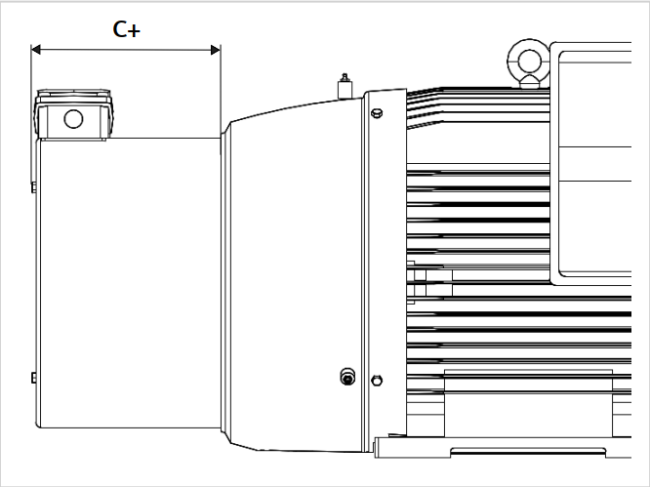
5.2.1. Blower Dimensions

Added Dimensions for Blower Cooled (M08) – SD100



Frame	C'	C
143-145T	–	–
182-184T	–	–
213-215T	–	–
254-256T	30.58	40.17
284-286T	34.21	43.8
324-326T	37.93	47.52
364-365T	40.44	50.04
404-405T	43.53	53.12
444-449T	49.76	59.35

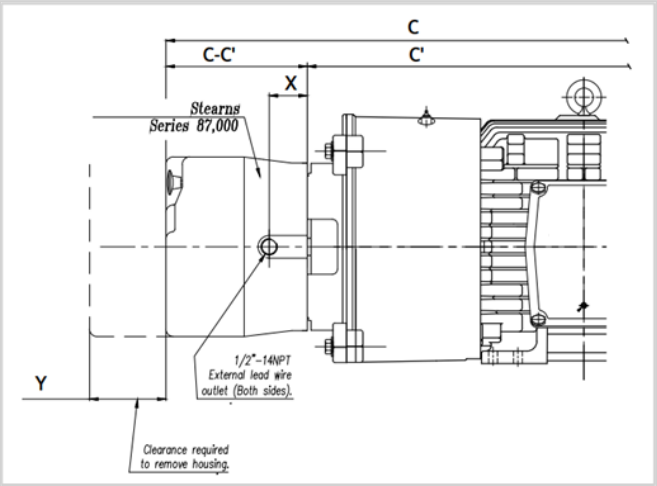
Added Dimensions for Blower Cooled (M08) – SD200



Frame	C+
444-L449	11.87
509-5013	–

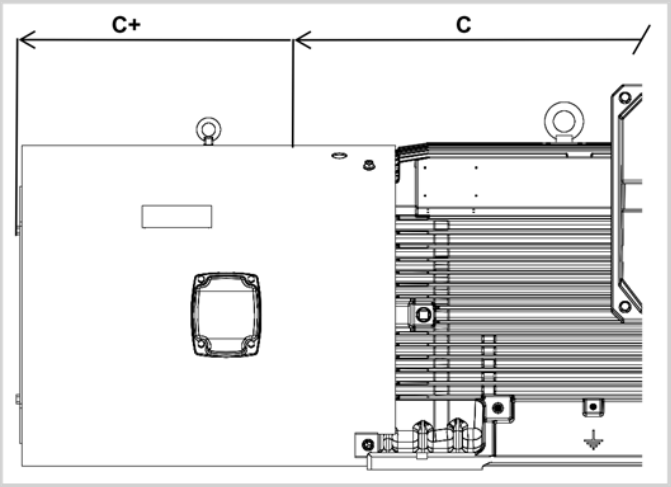
5.2.2. Brake Dimensions/Data

Data and Dimensions for Added Brake (H04) – SD100



Motor Rating				Brake Details					
2 Pole	4 Pole	6 Pole	8 Pole						
HP	HP	HP	HP	IP##	lb-ft	Type	C-C'	X	Y
1-1.5	1	–	–	IP55	3	56,000	4.06"	0.61"	2.94"
3	1.5-2	1	–	IP55	6	56,000	4.06"	0.61"	2.94"
5	3	1.5	–	IP55	10	56,000	4.51"	0.61"	2.94"
–	–	–	1	IP55	10	56,000	4.51"	0.61"	2.94"
7.5	5	2	1.5	IP55	15	56,000	4.51"	0.61"	2.94"
–	–	3	2	IP55	20	56,000	4.51"	0.61"	2.94"
10	–	–	3	IP55	25	56,000	4.51"	0.61"	2.94"
15	7.5	5	–	IP55	35	87,000	7.38"	1.81"	4.69"
20-25	10	7.5	5	IP55	50	87,000	7.88"	2.31"	4.69"
30	15	10	7.5	IP55	75	87,000	8.12"	2.5"	4.69"
40	20-25	15	10	IP55	105	87,000	8.62"	3"	4.69"
–	30	20	15	IP55	125	87,000	8.56"	2.81"	4.69"
–	40	25	20	IP54	175	81,000	11.45"	2.75"	6"
–	50	30	25	IP54	230	81,000	11.95"	3.25"	6"
–	60-75	40-50	30-40	IP54	330	82,000	12.76"	4.5"	6"
–	100	60	50	IP54	440	82,000	14.01"	5.75"	6"
–	125	75	60	IP54	500	86,000	13.57"	5.38"	6"
–	150	–	75	IP54	750	86,000	13.57"	5.38"	6"
–	200-250	100-125	100	IP54	1000	86,000	13.57"	5.38"	6"

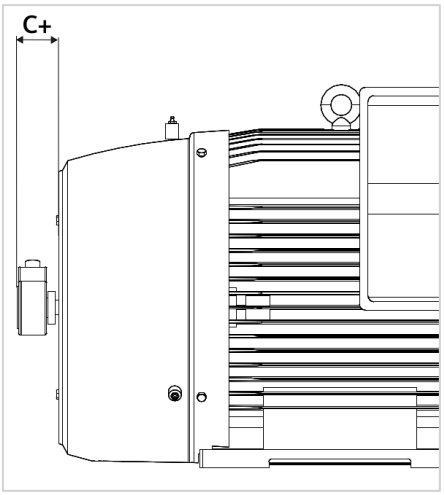
Data and Dimensions for Added Brake (H04) – SD200



Motor Rating			Brake Details		
4 Pole	6 Pole	8 Pole			
HP	HP	HP	IP##	lb-ft	C+
125, 150	100	75	IP55	750	20”
200, 250	125, 150	100, 125	IP55	1000	20”
300	200	150	IP55	1200	20”

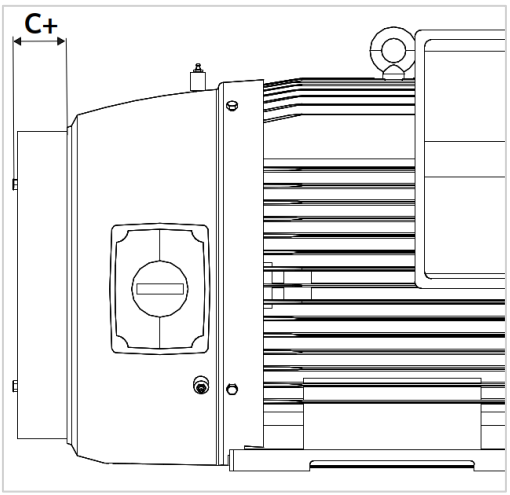
5.2.3. Encoder Dimensions

Added Dimensions Shaft Mounted Encoder (G05)



Frame	C
All	2.86

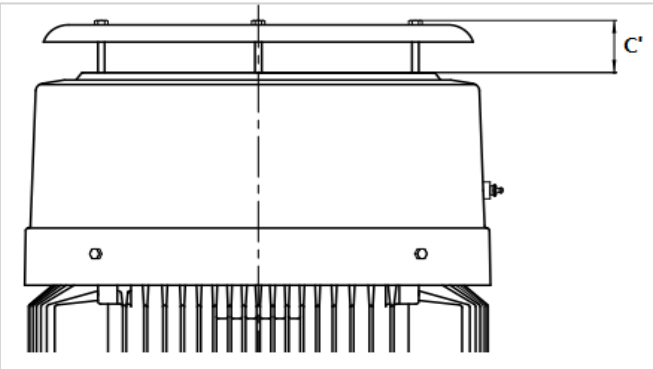
Added Dimensions C-Face Mounted Encoder (G06) – SD200



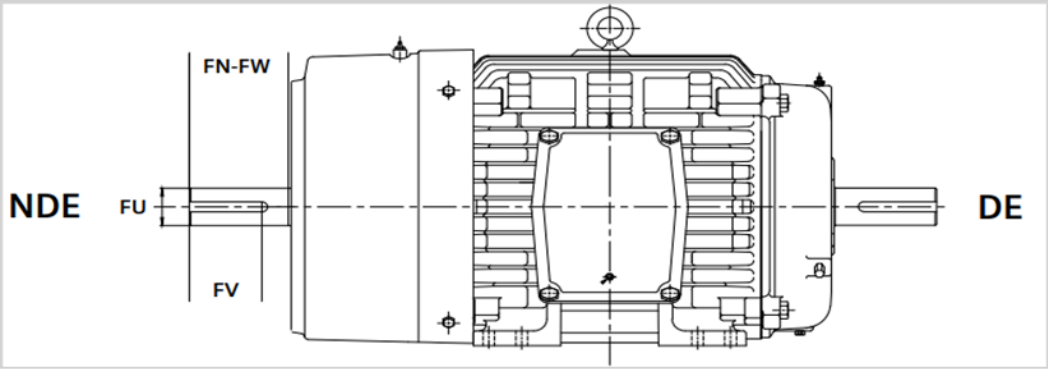
Frame	C
444-L449	2.97

5.2.4. Drip Cover and NDE Shaft

Drip Cover Dimensions



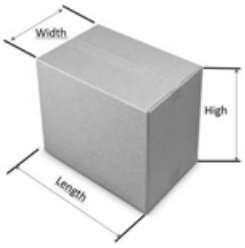
Frame	C'
140	1.54
180	1.7
210	1.49
250	2.15
280	2.15
320	2.15
360	2.15
400	2.15
440	2.68



			Order Code = M53			Order Code = M52		
			NEMA Standard Short Shaft			NEMA Standard Long Shaft		
Frame	**FU**	**Key**	**FN-FW**	**FV**	**Key Length**	**FN-FW**	**FV**	**Key Length**
143-145T	0.625	0.188	–	–	–	1.62	1.38	0.91
182-184T	0.875	0.188	–	–	–	2.25	2	1.41
213-215T	1.125	0.25	–	–	–	2.75	2.5	1.75
254-256T	1.375	0.312	–	–	–	3.37	3.12	2.37
284-286T	1.625	0.375	3.75	3	1.87	4	3.75	2.87
324-326T	1.875	0.5	0.375	3.5	2	4.62	4.37	3.25
364-365T	1.875	0.5	3.75	3.5	2	4.62	4.37	3.25
404-405T	2.125	0.5	4.25	4	2.75	5.25	5	3.87
444-449T	2.375	0.625	4.75	4.5	3	5.87	5.62	4.25

5.3. General packing weights and dimensions

5.3.1. Standard Packing

	Pallet Dimensions				Cardboard Box Dimensions				Cartons per pallet	
										
Frame	**Length (inches)**	**Width (inches)**	**Height (inches)**	**Weight (lbs)**	**Length (inches)**	**Width (inches)**	**Height (inches)**	**Weight (lbs)**	**Cartons per layer**	**Total per pallet**
140	47.24	39.37	39.57[1]	61.6	15.35	12.60	9.45	2.4	8	32
180	47.24	39.37	44.49[1]	61.6	19.49	13.58	11.02	4.0	6	18
180 (XP and IEEE)	47.24	39.37	36.61[1]	61.6	20.08	15.55	12.99	6.2	6	18
210	47.24	39.37	36.61[1]	61.6	24.02	17.52	17.72	7.7	4	8
250	59.06	42.52	40.16[1]	83.6	29.33	20.08	19.29	10.6	4	8
280	36.61	25.20	6.30	39.6	–	–	–	–	1	
320	26.77	28.35	6.30	46.2	–	–	–	–	1	
360	41.34	34.65	6.30	66	–	–	–	–	1	
400	47.24	34.65	6.30	99	–	–	–	–	1	
444	50.39	40.94	6.30	121	–	–	–	–	1	
447	56.30	40.94	6.30	149.6	–	–	–	–	1	
449	62.99	40.94	6.30	158.4	–	–	–	–	1	
S449	73.23	47.24	6.30	209	–	–	–	–	1	
500	87.40	49.21	9.45	303.6	–	–	–	–	1	

1. Height with cartons considering full pallet

Note: Weight of wood pallets are for estimate purpose only and may change due to climate conditions

5.3.2. Export Packing

Frame	Length (inches)	Width (inches)	Height (inches)	Weight lLbs)	Motors per box
140-210	26.1	18.9	19.4	39.6	1
250	31.7	22.8	23.4	52.8	1
280	37.6	25.0	24.3	77.0	1
320	36.4	28.5	26.7	96.8	1
360	39.2	32.0	28.7	114.4	1
400	47.2	39.9	33.5	160.6	1
444-447	57.3	48.0	36.5	215.6	1
449	61.4	40.4	33.5	231.0	1
S449	73.0	42.0	35.9	308.0	1
500	98.4	49.2	41.3	396.0	1

Note: Weight of wood creates are for estimate purpose only and may change due to climate conditions

6. Indexes

6.1. Short Code Index (alphabetical)

		Next Generation Low Voltage NEMA Motors		Low Voltage NEMA Motors	
Codes	Description	Technical	Pricing	Technical	Pricing
A46	Space Heaters 115V Single Phase, Max Temp 160°C	i	$	i	$
A47	Space Heaters 230V Single Phase, Max Temp 160°C	i	$	i	$
A48	Space Heaters 115/230V Single Phase, Max Temp 160°C	i	$	i	$
A50	Install BRG RTD's-100 Ohm Platinum- Both Ends & Terminal Heads/Block	i	$	–	–
A51	Bearing RTD's-100 Ohm Platinum – Both Ends & Terminal Heads/Block	i	$	i	$
A66	ROBERTSHAW Vibration Detectors, Model 366-D8 120VAC			i	$
A67	Provision Only for Vibration Sensors	i	$	i	$
A68	Metrix Sensors Installed on DE and NDE, top of the end shield	i	$	–	–
A90	Control Module	i	$	i	$
B07	Stackable Crate Packing			i	$
B09	Export Packaging Sea Freight – ABB Standard	i	$	i	$
B10	Export Packaging Special Export Box				
B11	Export Packaging Sea Freight – ABB Standard + sensors	i	$	i	$
B27	+40°C to -30°C Ambient Temp	i	$	i	$
B28	+40°C to -40°C Ambient Temp	i	$	i	$
B29	+40°C to -50°C Ambient Temp	i	$	i	$
C00	Insulation Class H	–	–	i	$
C01	Insulation Vacuum Pressure Impregnation (VPI)	i	$	i	$
C03	Spike Resistant Wire	i	$	i	$
C04	Insulation Moisture/Powerhouse (Extra Dip & Bake)	i	$	i	$
C07	Insulation Fungus Protection - No UL	i	$	i	$
C08	Insulation Tropicalization (Extra Dip & Bake + Fungus Spray)	i	$	i	$
C40	Re-rate 400V to 415V, 50HZ	–	–	i	$
C41	Re-rate 400V to 380V, 50HZ	–	–	i	$
D05	Documentation in Spanish	i	$	i	$
F00	Certificate of Compliance	i	$	i	$
F01	Certificate of Origin - Stamped by Chamber of Commerce	i	$	i	$
F03	Standard Performance Curves	i	$	i	$
F04	Acceleration Time Calculation	i	$	i	$
F05	Polarization Index	i	$	i	$
F07	Special Calculated Data	i	$	i	$
F08	Shaft Torsional Analysis (includes shaft drawing)	i	$	i	$
F09	Bearing L10 Calculation	i	$	i	$

		Next Generation Low Voltage NEMA Motors		Low Voltage NEMA Motors	
F10	Routine Test Report	i	$	i	$
F12	Routine Test Report (Witnessed)	i	$	i	$
F15	Complete Test	i	$	i	$
F17	Complete Test (Witnessed)	i	$	i	$
F20	Routine Test + Vibration	i	$	i	$
F22	Routine Test + Vibration (Witnessed)	i	$	i	$
F27	Performance Load Test (Curve Report)	i	$	i	$
F30	Noise Test	i	$	i	$
F32	Noise Test (Witnessed)	i	$	i	$
F36	Routine Test Report of Electrical Duplicate Design	i	$	i	$
F37	Type Test Report of Electrical Duplicate Design	i	$	i	$
F40	Stall Time Curve (Thermal Limit Curve)	i	$	i	$
F42	Standard Dimensional Sheet	i	$	i	$
F43	Non-Standard Dimension Sheet	i	$	i	$
F44	Conduit Box Dimension Sheet	i	$	i	$
F45	Wiring Diagram	i	$	i	$
F46	Instruction and Operation Manual in English	i	$	i	$
F47	Renewal Parts	i	$	i	$
F48	CAD Drawing (Dwg Format) Customer/Application Specific	i	$	i	$
F49	Performance Data Sheets	i	$	i	$
F50	Customer Specific Data Sheets	i	$	i	$
F51	Shaft Profile Detail (included materials data)	i	$	i	$
F60	Visual Inspection Proof (Max 8X Photos)	i	$	i	$
F70	Inspection Test Plan	i	$	i	$
F71	Paint Report (thickness and adherence)	i	$	i	$
F81	Advanced Document Package	i	$	i	$
F82	Project Document Package	i	$	i	$
G05	DYNAPAR Encoder HS35 1024 PPR	i	$	i	$
G06	C-Face Mounted SLIM Tach Encoder	i	$	i	$
H04	C-Face Mounted Brake	–	–	i	$
Jx0	Separate Condulet on Main Box Side	–	–	i	$
Jx2	Condulet to Main Box	–	–	i	$
Jx3	Aux Box to Main Box	–	–	i	$
Jx4	Condulet Opposite to Main Box Side	–	–	i	$
Jx5	Aux Box Opposite to Main Box Side	–	–	i	$
Jx6	Explosion Proof Condulet Opposite to Main Box Side	–	–	i	$
Jx7	Aux Box to Left of Main Box	–	–	i	$
J84	Conduit Box Orientation 90º CCW (Entry from DE)	i	$	i	$

		Next Generation Low Voltage NEMA Motors		Low Voltage NEMA Motors	
J85	Conduit Box Orientation 180º CCW (Entry from Top)	i	$	i	$
J86	Conduit Box Orientation 270º CCW (Entry from ODE)	i	$	i	$
K10	IEEE 841 Features	i	$	i	$
K20	API 610	–	–	i	$
K21	Extra High Thrust	–	–	i	$
K33	Drip Cover	i	$	i	$
K34	Vertical Lifting Devices (No Drip Cover)	–	–	i	$
K38	Provisions for Dowel Holes	i	$	i	$
K41	Keyless Shaft	i	$	i	$
K42	Retrofit S449 Shaft Extension	i	$	–	–
K70	Rotation Arrow Bidirectional (Not for Uni-Directional)	i	$	i	$
K71	Rotation Arrow Clockwise (From NDE)	i	$	i	$
K72	Rotation Arrow Counterclockwise (From NDE)	i	$	i	$
K80	BURNDY HYDENT YA Type Terminals	i	$	i	$
K81	Special Cable Leads, 60” Long	i	$	–	–
K82	Special Cable Leads, 120” Long	i	$	–	–
K83	Terminal Block - 3 Lead Only	i	$	i	$
K89	Sealed Leads	i	$	i	$
L01	Cast Iron Main Terminal Box in Lieu of Aluminum	–	–	i	$
L20	Lifting Eyebolt	–	–	i	$
L22	Stainless Steel Hardware (Includes T Drain SS)	i	$	i	$
L27	Ground Bolts - Qty 2	i	$	i	$
L29	Shaft Grounding Brush	i	$	i	$
L45	SS T-Slot Breather Drain	i	$	i	$
L46	CROUSE HINDS UL Approved Breather Drain	i	$	i	$
L49	Automatic Grease Relief Fitting	i	$	–	–
L50	Bearing Insulation for DE	i	$	–	–
L51	Bearing Insulation for NDE	i	$	–	–
L54	Provisions for Oil Mist	i	$	i	$
L55	Oil Mist Ready	i	$	i	$
L57	MOBIL 28 - High or Low - Special Grease	i	$	i	$
L58	MOBILITH SHC 100 - Special Grease	i	$	i	$
L60	ALEMITE and Grease Relief Fitting	–	–	i	$
L61	Insulated Bearing - INSOCOAT (Both Ends)	i	$	i	$
L62	Insulated Bearing - INSOCOAT (On DE)	i	$	i	$
L64	Insulated Bearing - INSOCOAT (On NDE)	i	$	i	$
L65	Roller Instead of Ball Bearings	–	–	i	$
L66	Insulated Bearings on Both Ends	–	–	i	$

		Next Generation Low Voltage NEMA Motors		Low Voltage NEMA Motors	
L67	Insulated NDE Only	–	–	i	$
L68	Sealed Ball Bearings (Both Ends)	i	$	i	$
L69	Hybrid (Ceramic Ball) Bearings - Both Ends	i	$	i	$
L70	Hybrid (Ceramic Ball) Bearings – NDE	i	$	i	$
L71	Hybrid (Ceramic Ball) Bearings – DE	i	$	i	$
L76	Shaft Slinger & O Ring	i	$	i	$
L79	INPRO/SEAL DE	i	$	i	$
L80	INPRO/SEAL ODE	i	$	i	$
L81	INPRO/SEAL Both Ends	i	$	i	$
L84	Brass Seal	–	–	i	$
L86	INPRO/SEAL MGS Shaft Grounding – on DE	i	$	i	$
L90	IP66 Ingress Protection	–	–	i	$
L91	IP56 Ingress Protection	i	$	i	$
L92	IP65 Ingress Protection	–	–	i	$
M05	Larger Fan	–	–	i	$
M08	Separately Driven Fan	i	$	i	$
M09	Aluminum Fan	–	–	i	$
M10	Bronze Fan	i	$	i	$
M18	Non-Reverse Ratchet	–	–	i	$
M21	Additional Nameplate (Without Logos)	i	$	i	$
M25	Class II, Division 2, Groups F & G, T4A Temp Code	i	$	i	$
M28	Stainless Steel Eyebolt	–	–	i	$
M2Y	Special Voltage (200 - 600V)	–	–	i	$
M6Y	Special Winding (200-600V)	i	$	–	–
M32	Class II, Group E Hazardous Area	–	–	i	$
M39	Vertical Jacking Provisions	i	$	i	$
M42	Shaft Ring Brush (Steel) – NDE (AEGIS)	–	–	i	$
M52	NEMA Std Long Shaft – NDE	i	$	i	$
M53	NEMA Std Short Shaft – NDE	i	$	i	$
M57	(C4140) Carbon Steel Shaft	i	$	i	$
M69	Precision Balance	i	$	i	$
M70	Extra Precision Balance	i	$	i	$
N01	2 Part Epoxy (Industrial – Coastal Low Salt)	i	$	i	$
N02	3 Part Epoxy (Industrial – Coastal Moderate Salt)	i	$	i	$
N03	Primer Only	i	$	i	$
N05	3 Part Epoxy (Coastal – Offshore High Salt)	i	$	i	$
N06	2 Part Epoxy C4 (Industrial-Coastal Moderate Salt)	i	$	i	$
N07	2 Part Epoxy C5I/C5M (Coastal-Offshore High Salt)	i	$	i	$

		Next Generation Low Voltage NEMA Motors		Low Voltage NEMA Motors	
*Rx0	Cast Iron Aux Box for - Position 1 (F1 DE)	i	$	–	–
*Rx1	Cast Iron Aux Box for - Position 2 (F2 DE)	i	$	–	–
*Rx2	Cast Iron Aux Box for - Position 4 (F1 NDE)	i	$	–	–
*Rx3	Cast Iron Aux Box for - Position 5 (F2 NDE)	i	$	–	–
*Rx4	Condulet Box for - Position 1 (F1 DE)	i	$	–	–
*Rx5	Condulet Box for - Position 2 (F2 DE)	i	$	–	–
*Rx6	Condulet Box for - Position 4 (F1 NDE)	i	$	–	–
*Rx7	Condulet Box for - Position 5 (F2 NDE)	i	$	–	–
T00	Main Terminal Box – at 45º Angle	i	$	–	–
T03	Main Terminal Box – Oversized Steel (Centered Cable Entry)	i	$	–	–
T04	Steel terminal box - oversized 20X20X16(in) with blank entry	i	$	i	$
T05	Steel terminal box - oversized 28.5X24.4X20(in) with blank entry	i	$	–	–
T06	Steel terminal box - oversized 18.5X22X7.5(in) with blank entry	i	$	–	–
T50	Dual Entry Hole Terminal Box	i	$	–	–
Y50	Special Shaft on Drive End	i	$	i	$
Y51	Special Shaft on Non-Drive End	i	$	i	$
Y60	Special Color (Provide RAL#)	i	$	i	$
Y61	Special color with Special Paint system (Provide RAL#)	i	$	i	$
Y80	Derate-Alt-Amb (Nameplate Change)	i	$	i	$
Y82	Auxiliary Nameplate Max. 40 Characters (Aux Tag)	i	$	i	$
Y85	Special Cable Length	–	–	i	$
Y96	Non-Standard NPT entry	i	$	–	–

6.2. Low Voltage NEMA to Next Generation Crossover index

			Phase Out - NEMA Motor SD100			Next Generation NEMA SD200		
HP	RPM	Voltage	Frame	Type	Part Number	Frame	Type	Part Number
125	3600	460	444TS	SD100	1LE23214DA112AA3	444TS	SD200	1LE63214FA112AA1
150	3600	460	445TS	SD100	1LE23214DA212AA3	445TS	SD200	1LE63214FA212AA1
200	3600	460	447TS	SD100	1LE23214DA312AA3	447TS	SD200	1LE63214GA112AA1
250	3600	460	449TS	SD100	1LE23214DA512AA3	449TS	SD200	1LE63214GA212AA1
300	3600	460	449TS	SD100	1LE23214DA612AA3	449TS	SD200	1LE63214GA312AA1
350	3600	460	S449SS	SD100	1LE23214GA112AA3	L449TS	SD200	1LE63214HA112AA1
400	3600	460	S449SS	SD100	1LE23214GA312AA3	L449TS	SD200	1LE63214HA212AA1
125	1800	460	B444T	SD100	1LE23214EB112AA3	444T	SD200	1LE63214BB112AA1
125	1800	460	444TS	SD100	1LE23214DB112AA3	444TS	SD200	1LE63214FB112AA1
125	1800	460	444T	SD100	1LE23214CB112AA3	R444T	SD200	1LE63214SB112AA1
150	1800	460	B445T	SD100	1LE23214EB212AA3	445T	SD200	1LE63214BB212AA1
150	1800	460	445TS	SD100	1LE23214DB212AA3	445TS	SD200	1LE63214FB212AA1
150	1800	460	445T	SD100	1LE23214CB212AA3	R445T	SD200	1LE63214SB212AA1
200	1800	460	B447T	SD100	1LE23214EB312AA3	447T	SD200	1LE63214CB112AA1
200	1800	460	447TS	SD100	1LE23214DB312AA3	447TS	SD200	1LE63214GB112AA1
200	1800	460	447T	SD100	1LE23214CB312AA3	R447T	SD200	1LE63214TB112AA1
250	1800	460	B449T	SD100	1LE23214EB512AA3	449T	SD200	1LE63214CB212AA1
250	1800	460	449TS	SD100	1LE23214DB512AA3	449TS	SD200	1LE63214GB212AA1
250	1800	460	449T	SD100	1LE23214CB512AA3	R449T	SD200	1LE63214TB212AA1
300	1800	460	B449T	SD100	1LE23214EB612AA3	449T	SD200	1LE63214CB312AA1
300	1800	460	449TS	SD100	1LE23214DB612AA3	449TS	SD200	1LE63214GB312AA1
300	1800	460	449T	SD100	1LE23214CB612AA3	R449T	SD200	1LE63214TB312AA1
350	1800	460	S449SS	SD100	1LE23214GB212AA3	L449TS	SD200	1LE63214HB112AA1
350	1800	460	S449LS	SD100	1LE23214FB212AA3	RL449T	SD200	1LE63214UB112AA1
400	1800	460	S449SS	SD100	1LE23214GB312AA3	L449TS	SD200	1LE63214HB212AA1
400	1800	460	S449LS	SD100	1LE23214FB312AA3	R509	SD200	1LE63215RB112AK1
100	1200	460	B444T	SD100	1LE23214EC112AA3	444T	SD200	1LE63214BC112AA1
100	1200	460	444TS	SD100	1LE23214DC112AA3	444TS	SD200	1LE63214FC112AA1
100	1200	460	444T	SD100	1LE23214CC112AA3	R444T	SD200	1LE63214SC112AA1

			Phase Out - NEMA Motor SD100			Next Generation NEMA SD200		
125	1200	460	B445T	SD100	1LE23214EC212AA3	445T	SD200	1LE63214BC212AA1
125	1200	460	445TS	SD100	1LE23214DC212AA3	445TS	SD200	1LE63214FC212AA1
125	1200	460	445T	SD100	1LE23214CC212AA3	R445T	SD200	1LE63214SC212AA1
150	1200	460	B447T	SD100	1LE23214EC312AA3	447T	SD200	1LE63214CC112AA1
150	1200	460	447TS	SD100	1LE23214DC312AA3	447TS	SD200	1LE63214GC112AA1
150	1200	460	447T	SD100	1LE23214CC312AA3	R447T	SD200	1LE63214TC112AA1
200	1200	460	B449T	SD100	1LE23214EC512AA3	449T	SD200	1LE63214CC212AA1
200	1200	460	449TS	SD100	1LE23214DC512AA3	449TS	SD200	1LE63214GC212AA1
200	1200	460	449T	SD100	1LE23214CC512AA3	R449T	SD200	1LE63214TC212AA1
250	1200	460	B449T	SD100	1LE23214EC612AA3	449T	SD200	1LE63214CC312AA1
250	1200	460	449TS	SD100	1LE23214DC612AA3	449TS	SD200	1LE63214GC312AA1
250	1200	460	449T	SD100	1LE23214CC612AA3	R449T	SD200	1LE63214TC312AA1
300	1200	460	S449LS	SD100	1LE23214FC112AA3	RL449T	SD200	1LE63214UC112AA1
75	900	460	B444T	SD100	1LE23214ED112AA3	444T	SD200	1LE63214BD112AA1
75	900	460	444TS	SD100	1LE23214DD112AA3	444TS	SD200	1LE63214FD112AA1
75	900	460	444T	SD100	1LE23214CD112AA3	R444T	SD200	1LE63214SD112AA1
100	900	460	B445T	SD100	1LE23214ED212AA3	445T	SD200	1LE63214BD212AA1
100	900	460	445TS	SD100	1LE23214DD212AA3	445TS	SD200	1LE63214FD212AA1
100	900	460	445T	SD100	1LE23214CD212AA3	R445T	SD200	1LE63214SD212AA1
125	900	460	B447T	SD100	1LE23214ED312AA3	447T	SD200	1LE63214CD112AA1
125	900	460	447TS	SD100	1LE23214DD312AA3	447TS	SD200	1LE63214GD112AA1
125	900	460	447T	SD100	1LE23214CD312AA3	R447T	SD200	1LE63214TD112AA1
150	900	460	B447T	SD100	1LE23214ED412AA3	449T	SD200	1LE63214CD212AA1
150	900	460	447TS	SD100	1LE23214DD412AA3	449TS	SD200	1LE63214GD212AA1
150	900	460	447T	SD100	1LE23214CD412AA3	R449T	SD200	1LE63214TD212AA1
200	900	460	S449SS	SD100	1LE23214GD112AA3	L449TS	SD200	1LE63214HD112AA1
200	900	460	S449LS	SD100	1LE23214FD112AA3	RL449T	SD200	1LE63214UD112AA1
250	900	460	S449LS	SD100	1LE23214FD212AA3	RL449T	SD200	1LE63214UD212AA1
125	3600	575	444TS	SD100	1LE23214DA113AA3	444TS	SD200	1LE63214FA113AA1
150	3600	575	445TS	SD100	1LE23214DA213AA3	445TS	SD200	1LE63214FA213AA1
200	3600	575	447TS	SD100	1LE23214DA313AA3	447TS	SD200	1LE63214GA113AA1
250	3600	575	449TS	SD100	1LE23214DA513AA3	449TS	SD200	1LE63214GA213AA1
300	3600	575	449TS	SD100	1LE23214DA613AA3	449TS	SD200	1LE63214GA313AA1

			Phase Out - NEMA Motor SD100			Next Generation NEMA SD200		
350	3600	575	S449SS	SD100	1LE23214GA113AA3	L449TS	SD200	1LE63214HA113AA1
400	3600	575	S449SS	SD100	1LE23214GA313AA3	L449TS	SD200	1LE63214HA213AA1
125	1800	575	B444T	SD100	1LE23214EB113AA3	444T	SD200	1LE63214BB113AA1
125	1800	575	444TS	SD100	1LE23214DB113AA3	444TS	SD200	1LE63214FB113AA1
125	1800	575	444T	SD100	1LE23214CB113AA3	R444T	SD200	1LE63214SB113AA1
150	1800	575	B445T	SD100	1LE23214EB213AA3	445T	SD200	1LE63214BB213AA1
150	1800	575	445TS	SD100	1LE23214DB213AA3	445TS	SD200	1LE63214FB213AA1
150	1800	575	445T	SD100	1LE23214CB213AA3	R445T	SD200	1LE63214SB213AA1
200	1800	575	B447T	SD100	1LE23214EB313AA3	447T	SD200	1LE63214CB113AA1
200	1800	575	447TS	SD100	1LE23214DB313AA3	447TS	SD200	1LE63214GB113AA1
200	1800	575	447T	SD100	1LE23214CB313AA3	R447T	SD200	1LE63214TB113AA1
250	1800	575	B449T	SD100	1LE23214EB513AA3	449T	SD200	1LE63214CB213AA1
250	1800	575	449TS	SD100	1LE23214DB513AA3	449TS	SD200	1LE63214GB213AA1
250	1800	575	449T	SD100	1LE23214CB513AA3	R449T	SD200	1LE63214TB213AA1
300	1800	575	B449T	SD100	1LE23214EB613AA3	449T	SD200	1LE63214CB313AA1
300	1800	575	449TS	SD100	1LE23214DB613AA3	449TS	SD200	1LE63214GB313AA1
300	1800	575	449T	SD100	1LE23214CB613AA3	R449T	SD200	1LE63214TB313AA1
350	1800	575	S449SS	SD100	1LE23214GB213AA3	L449TS	SD200	1LE63214HB113AA1
350	1800	575	S449LS	SD100	1LE23214FB213AA3	RL449T	SD200	1LE63214UB113AA1
400	1800	575	S449SS	SD100	1LE23214GB313AA3	L449TS	SD200	1LE63214HB213AA1
400	1800	575	S449LS	SD100	1LE23214FB313AA3	R509	SD200	1LE63215RB113AK1
100	1200	575	B444T	SD100	1LE23214EC113AA3	444T	SD200	1LE63214BC113AA1
100	1200	575	444TS	SD100	1LE23214DC113AA3	444TS	SD200	1LE63214FC113AA1
100	1200	575	444T	SD100	1LE23214CC113AA3	R444T	SD200	1LE63214SC113AA1
125	1200	575	B445T	SD100	1LE23214EC213AA3	445T	SD200	1LE63214BC213AA1
125	1200	575	445TS	SD100	1LE23214DC213AA3	445TS	SD200	1LE63214FC213AA1
125	1200	575	445T	SD100	1LE23214CC213AA3	R445T	SD200	1LE63214SC213AA1
150	1200	575	B447T	SD100	1LE23214EC313AA3	447T	SD200	1LE63214CC113AA1
150	1200	575	447TS	SD100	1LE23214DC313AA3	447TS	SD200	1LE63214GC113AA1
150	1200	575	447T	SD100	1LE23214CC313AA3	R447T	SD200	1LE63214TC113AA1
200	1200	575	B449T	SD100	1LE23214EC513AA3	449T	SD200	1LE63214CC213AA1
200	1200	575	449TS	SD100	1LE23214DC513AA3	449TS	SD200	1LE63214GC213AA1
200	1200	575	449T	SD100	1LE23214CC513AA3	R449T	SD200	1LE63214TC213AA1

			Phase Out - NEMA Motor SD100			Next Generation NEMA SD200		
250	1200	575	B449T	SD100	1LE23214EC613AA3	449T	SD200	1LE63214CC313AA1
250	1200	575	449TS	SD100	1LE23214DC613AA3	449TS	SD200	1LE63214GC313AA1
250	1200	575	449T	SD100	1LE23214CC613AA3	R449T	SD200	1LE63214TC313AA1
300	1200	575	S449LS	SD100	1LE23214FC113AA3	RL449T	SD200	1LE63214UC113AA1
75	900	575	B444T	SD100	1LE23214ED113AA3	444T	SD200	1LE63214BD113AA1
75	900	575	444TS	SD100	1LE23214DD113AA3	444TS	SD200	1LE63214FD113AA1
75	900	575	444T	SD100	1LE23214CD113AA3	R444T	SD200	1LE63214SD113AA1
100	900	575	B445T	SD100	1LE23214ED213AA3	445T	SD200	1LE63214BD213AA1
100	900	575	445TS	SD100	1LE23214DD213AA3	445TS	SD200	1LE63214FD213AA1
100	900	575	445T	SD100	1LE23214CD213AA3	R445T	SD200	1LE63214SD213AA1
125	900	575	B447T	SD100	1LE23214ED313AA3	447T	SD200	1LE63214CD113AA1
125	900	575	447TS	SD100	1LE23214DD313AA3	447TS	SD200	1LE63214GD113AA1
125	900	575	447T	SD100	1LE23214CD313AA3	R447T	SD200	1LE63214TD113AA1
150	900	575	B447T	SD100	1LE23214ED413AA3	449T	SD200	1LE63214CD213AA1
150	900	575	447TS	SD100	1LE23214DD413AA3	449TS	SD200	1LE63214GD213AA1
150	900	575	447T	SD100	1LE23214CD413AA3	R449T	SD200	1LE63214TD213AA1
200	900	575	S449SS	SD100	1LE23214GD113AA3	L449TS	SD200	1LE63214HD113AA1
200	900	575	S449LS	SD100	1LE23214FD113AA3	RL449T	SD200	1LE63214UD113AA1
250	900	575	S449LS	SD100	1LE23214FD213AA3	RL449T	SD200	1LE63214UD213AA1

			Phase Out - NEMA Motor SD100 IEEE841			Next Generation NEMA SD200 841		
HP	RPM	Voltage	Frame	Type	Part Number	Frame	Type	Part Number
125	3600	460	444TS	SD100 IEEE841	1LE24214DA112AA3	444TS	SD200 841	1LE63224FA112AA1
150	3600	460	445TS	SD100 IEEE841	1LE24214DA212AA3	445TS	SD200 841	1LE63224FA212AA1
200	3600	460	447TS	SD100 IEEE841	1LE24214DA312AA3	447TS	SD200 841	1LE63224GA112AA1
250	3600	460	449TS	SD100 IEEE841	1LE24214DA512AA3	449TS	SD200 841	1LE63224GA212AA1
300	3600	460	449TS	SD100 IEEE841	1LE24214DA612AA3	449TS	SD200 841	1LE63224GA312AA1
350	3600	460	S449SS	SD100 IEEE841	1LE24214GA112AA3	L449TS	SD200 841	1LE63224HA112AA1
400	3600	460	S449SS	SD100 IEEE841	1LE24214GA312AA3	L449TS	SD200 841	1LE63224HA212AA1
125	1800	460	B444T	SD100 IEEE841	1LE24214EB112AA3	444T	SD200 841	1LE63224BB112AA1
125	1800	460	444TS	SD100 IEEE841	1LE24214DB112AA3	444TS	SD200 841	1LE63224FB112AA1
125	1800	460	444T	SD100 IEEE841	1LE24214CB112AA3	R444T	SD200 841	1LE63224SB112AA1
150	1800	460	B445T	SD100 IEEE841	1LE24214EB212AA3	445T	SD200 841	1LE63224BB212AA1
150	1800	460	445TS	SD100 IEEE841	1LE24214DB212AA3	445TS	SD200 841	1LE63224FB212AA1
150	1800	460	445T	SD100 IEEE841	1LE24214CB212AA3	R445T	SD200 841	1LE63224SB212AA1
200	1800	460	B447T	SD100 IEEE841	1LE24214EB312AA3	447T	SD200 841	1LE63224CB112AA1
200	1800	460	447TS	SD100 IEEE841	1LE24214DB312AA3	447TS	SD200 841	1LE63224GB112AA1
200	1800	460	447T	SD100 IEEE841	1LE24214CB312AA3	R447T	SD200 841	1LE63224TB112AA1
250	1800	460	B449T	SD100 IEEE841	1LE24214EB512AA3	449T	SD200 841	1LE63224CB212AA1
250	1800	460	449TS	SD100 IEEE841	1LE24214DB512AA3	449TS	SD200 841	1LE63224GB212AA1
250	1800	460	449T	SD100 IEEE841	1LE24214CB512AA3	R449T	SD200 841	1LE63224TB212AA1
300	1800	460	S449SS	SD100 IEEE841	1LE24214GB112AA3	449TS	SD200 841	1LE63224GB312AA1
300	1800	460	S449LS	SD100 IEEE841	1LE24214FB112AA3	R449T	SD200 841	1LE63224TB312AA1
350	1800	460	S449SS	SD100 IEEE841	1LE24214GB212AA3	L449TS	SD200 841	1LE63224HB112AA1
350	1800	460	S449LS	SD100 IEEE841	1LE24214FB212AA3	RL449T	SD200 841	1LE63224UB112AA1
400	1800	460	S449SS	SD100 IEEE841	1LE24214GB312AA3	L449TS	SD200 841	1LE63224HB212AA1
400	1800	460	S449LS	SD100 IEEE841	1LE24214FB312AA3	RL449T	SD200 841	1LE63224UB212AA1
100	1200	460	B444T	SD100 IEEE841	1LE24214EC112AA3	444T	SD200 841	1LE63224BC112AA1
100	1200	460	444TS	SD100 IEEE841	1LE24214DC112AA3	444TS	SD200 841	1LE63224FC112AA1
100	1200	460	444T	SD100 IEEE841	1LE24214CC112AA3	R444T	SD200 841	1LE63224SC112AA1
125	1200	460	B445T	SD100 IEEE841	1LE24214EC212AA3	445T	SD200 841	1LE63224BC212AA1
125	1200	460	445TS	SD100 IEEE841	1LE24214DC212AA3	445TS	SD200 841	1LE63224FC212AA1
125	1200	460	445T	SD100 IEEE841	1LE24214CC212AA3	R445T	SD200 841	1LE63224SC212AA1
150	1200	460	B447T	SD100 IEEE841	1LE24214EC312AA3	447T	SD200 841	1LE63224CC112AA1

			Phase Out - NEMA Motor SD100 IEEE841			Next Generation NEMA SD200 841		
150	1200	460	447TS	SD100 IEEE841	1LE24214DC312AA3	447TS	SD200 841	1LE63224GC112AA1
150	1200	460	447T	SD100 IEEE841	1LE24214CC312AA3	R447T	SD200 841	1LE63224TC112AA1
200	1200	460	B449T	SD100 IEEE841	1LE24214EC512AA3	449T	SD200 841	1LE63224CC212AA1
200	1200	460	449TS	SD100 IEEE841	1LE24214DC512AA3	449TS	SD200 841	1LE63224GC212AA1
200	1200	460	449T	SD100 IEEE841	1LE24214CC512AA3	R449T	SD200 841	1LE63224TC212AA1
250	1200	460	B449T	SD100 IEEE841	1LE24214EC612AA3	449T	SD200 841	1LE63224CC312AA1
250	1200	460	449TS	SD100 IEEE841	1LE24214DC612AA3	449TS	SD200 841	1LE63224GC312AA1
250	1200	460	449T	SD100 IEEE841	1LE24214CC612AA3	R449T	SD200 841	1LE63224TC312AA1
300	1200	460	S449SS	SD100 IEEE841	1LE24214GC112AA3	L449TS	SD200 841	1LE63224HC112AA1
300	1200	460	S449LS	SD100 IEEE841	1LE24214FC112AA3	RL449T	SD200 841	1LE63224UC112AA1
75	900	460	B444T	SD100 IEEE841	1LE24214ED112AA3	444T	SD200 841	1LE63224BD112AA1
75	900	460	444TS	SD100 IEEE841	1LE24214DD112AA3	444TS	SD200 841	1LE63224FD112AA1
75	900	460	444T	SD100 IEEE841	1LE24214CD112AA3	R444T	SD200 841	1LE63224SD112AA1
100	900	460	B445T	SD100 IEEE841	1LE24214ED212AA3	445T	SD200 841	1LE63224BD212AA1
100	900	460	445TS	SD100 IEEE841	1LE24214DD212AA3	445TS	SD200 841	1LE63224FD212AA1
100	900	460	445T	SD100 IEEE841	1LE24214CD212AA3	R445T	SD200 841	1LE63224SD212AA1
125	900	460	B447T	SD100 IEEE841	1LE24214ED312AA3	447T	SD200 841	1LE63224CD112AA1
125	900	460	447TS	SD100 IEEE841	1LE24214DD312AA3	447TS	SD200 841	1LE63224GD112AA1
125	900	460	447T	SD100 IEEE841	1LE24214CD312AA3	R447T	SD200 841	1LE63224TD112AA1
150	900	460	B449T	SD100 IEEE841	1LE24214ED512AA3	449T	SD200 841	1LE63224CD212AA1
150	900	460	449TS	SD100 IEEE841	1LE24214DD512AA3	449TS	SD200 841	1LE63224GD212AA1
150	900	460	449T	SD100 IEEE841	1LE24214CD512AA3	R449T	SD200 841	1LE63224TD212AA1
200	900	460	S449LS	SD100 IEEE841	1LE24214FD112AA3	RL449T	SD200 841	1LE63224UD112AA1
250	900	460	S449LS	SD100 IEEE841	1LE24214FD212AA3	RL449T	SD200 841	1LE63224UD212AA1
125	3600	575	444TS	SD100 IEEE841	1LE24214DA113AA3	444TS	SD200 841	1LE63224FA113AA1
150	3600	575	445TS	SD100 IEEE841	1LE24214DA213AA3	445TS	SD200 841	1LE63224FA213AA1
200	3600	575	447TS	SD100 IEEE841	1LE24214DA313AA3	447TS	SD200 841	1LE63224GA113AA1
250	3600	575	449TS	SD100 IEEE841	1LE24214DA513AA3	449TS	SD200 841	1LE63224GA213AA1
300	3600	575	449TS	SD100 IEEE841	1LE24214DA613AA3	449TS	SD200 841	1LE63224GA313AA1
350	3600	575	S449SS	SD100 IEEE841	1LE24214GA113AA3	L449TS	SD200 841	1LE63224HA113AA1
400	3600	575	S449SS	SD100 IEEE841	1LE24214GA313AA3	L449TS	SD200 841	1LE63224HA213AA1
125	1800	575	B444T	SD100 IEEE841	1LE24214EB113AA3	444T	SD200 841	1LE63224BB113AA1
125	1800	575	444TS	SD100 IEEE841	1LE24214DB113AA3	444TS	SD200 841	1LE63224FB113AA1

			Phase Out - NEMA Motor SD100 IEEE841			Next Generation NEMA SD200 841		
125	1800	575	444T	SD100 IEEE841	1LE24214CB113AA3	R444T	SD200 841	1LE63224SB113AA1
150	1800	575	B445T	SD100 IEEE841	1LE24214EB213AA3	445T	SD200 841	1LE63224BB213AA1
150	1800	575	445TS	SD100 IEEE841	1LE24214DB213AA3	445TS	SD200 841	1LE63224FB213AA1
150	1800	575	445T	SD100 IEEE841	1LE24214CB213AA3	R445T	SD200 841	1LE63224SB213AA1
200	1800	575	B447T	SD100 IEEE841	1LE24214EB313AA3	447T	SD200 841	1LE63224CB113AA1
200	1800	575	447TS	SD100 IEEE841	1LE24214DB313AA3	447TS	SD200 841	1LE63224GB113AA1
200	1800	575	447T	SD100 IEEE841	1LE24214CB313AA3	R447T	SD200 841	1LE63224TB113AA1
250	1800	575	B449T	SD100 IEEE841	1LE24214EB513AA3	449T	SD200 841	1LE63224CB213AA1
250	1800	575	449TS	SD100 IEEE841	1LE24214DB513AA3	449TS	SD200 841	1LE63224GB213AA1
250	1800	575	449T	SD100 IEEE841	1LE24214CB513AA3	R449T	SD200 841	1LE63224TB213AA1
300	1800	575	S449SS	SD100 IEEE841	1LE24214GB113AA3	449TS	SD200 841	1LE63224GB313AA1

			Phase Out - NEMA Motor SD100			Next Generation NEMA SD200		
HP	RPM	Voltage	Frame	Type	Part Number	Frame	Type	Part Number
300	1800	575	S449LS	SD100 IEEE841	1LE24214FB113AA3	R449T	SD200 841	1LE63224TB313AA1
350	1800	575	S449SS	SD100 IEEE841	1LE24214GB213AA3	L449TS	SD200 841	1LE63224HB113AA1
350	1800	575	S449LS	SD100 IEEE841	1LE24214FB213AA3	RL449T	SD200 841	1LE63224UB113AA1
400	1800	575	S449SS	SD100 IEEE841	1LE24214GB313AA3	L449TS	SD200 841	1LE63224HB213AA1
400	1800	575	S449LS	SD100 IEEE841	1LE24214FB313AA3	RL449T	SD200 841	1LE63224UB213AA1
100	1200	575	B444T	SD100 IEEE841	1LE24214EC113AA3	444T	SD200 841	1LE63224BC113AA1
100	1200	575	444TS	SD100 IEEE841	1LE24214DC113AA3	444TS	SD200 841	1LE63224FC113AA1
100	1200	575	444T	SD100 IEEE841	1LE24214CC113AA3	R444T	SD200 841	1LE63224SC113AA1
125	1200	575	B445T	SD100 IEEE841	1LE24214EC213AA3	445T	SD200 841	1LE63224BC213AA1
125	1200	575	445TS	SD100 IEEE841	1LE24214DC213AA3	445TS	SD200 841	1LE63224FC213AA1
125	1200	575	445T	SD100 IEEE841	1LE24214CC213AA3	R445T	SD200 841	1LE63224SC213AA1
150	1200	575	B447T	SD100 IEEE841	1LE24214EC313AA3	447T	SD200 841	1LE63224CC113AA1
150	1200	575	447TS	SD100 IEEE841	1LE24214DC313AA3	447TS	SD200 841	1LE63224GC113AA1
150	1200	575	447T	SD100 IEEE841	1LE24214CC313AA3	R447T	SD200 841	1LE63224TC113AA1
200	1200	575	B449T	SD100 IEEE841	1LE24214EC513AA3	449T	SD200 841	1LE63224CC213AA1
200	1200	575	449TS	SD100 IEEE841	1LE24214DC513AA3	449TS	SD200 841	1LE63224GC213AA1
200	1200	575	449T	SD100 IEEE841	1LE24214CC513AA3	R449T	SD200 841	1LE63224TC213AA1
250	1200	575	B449T	SD100 IEEE841	1LE24214EC613AA3	449T	SD200 841	1LE63224CC313AA1

			Phase Out - NEMA Motor SD100			Next Generation NEMA SD200		
250	1200	575	449TS	SD100 IEEE841	1LE24214DC613AA3	449TS	SD200 841	1LE63224GC313AA1
250	1200	575	449T	SD100 IEEE841	1LE24214CC613AA3	R449T	SD200 841	1LE63224TC313AA1
300	1200	575	S449SS	SD100 IEEE841	1LE24214GC113AA3	L449TS	SD200 841	1LE63224HC113AA1
300	1200	575	S449LS	SD100 IEEE841	1LE24214FC113AA3	RL449T	SD200 841	1LE63224UC113AA1
75	900	575	B444T	SD100 IEEE841	1LE24214ED113AA3	444T	SD200 841	1LE63224BD113AA1
75	900	575	444TS	SD100 IEEE841	1LE24214DD113AA3	444TS	SD200 841	1LE63224FD113AA1
75	900	575	444T	SD100 IEEE841	1LE24214CD113AA3	R444T	SD200 841	1LE63224SD113AA1
100	900	575	B445T	SD100 IEEE841	1LE24214ED213AA3	445T	SD200 841	1LE63224BD213AA1
100	900	575	445TS	SD100 IEEE841	1LE24214DD213AA3	445TS	SD200 841	1LE63224FD213AA1
100	900	575	445T	SD100 IEEE841	1LE24214CD213AA3	R445T	SD200 841	1LE63224SD213AA1
125	900	575	B447T	SD100 IEEE841	1LE24214ED313AA3	447T	SD200 841	1LE63224CD113AA1
125	900	575	447TS	SD100 IEEE841	1LE24214DD313AA3	447TS	SD200 841	1LE63224GD113AA1
125	900	575	447T	SD100 IEEE841	1LE24214CD313AA3	R447T	SD200 841	1LE63224TD113AA1
150	900	575	B449T	SD100 IEEE841	1LE24214ED513AA3	449T	SD200 841	1LE63224CD213AA1
150	900	575	449TS	SD100 IEEE841	1LE24214DD513AA3	449TS	SD200 841	1LE63224GD213AA1
150	900	575	449T	SD100 IEEE841	1LE24214CD513AA3	R449T	SD200 841	1LE63224TD213AA1
200	900	575	S449LS	SD100 IEEE841	1LE24214FD113AA3	RL449T	SD200 841	1LE63224UD113AA1
250	900	575	S449LS	SD100 IEEE841	1LE24214FD213AA3	RL449T	SD200 841	1LE63224UD213AA1

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