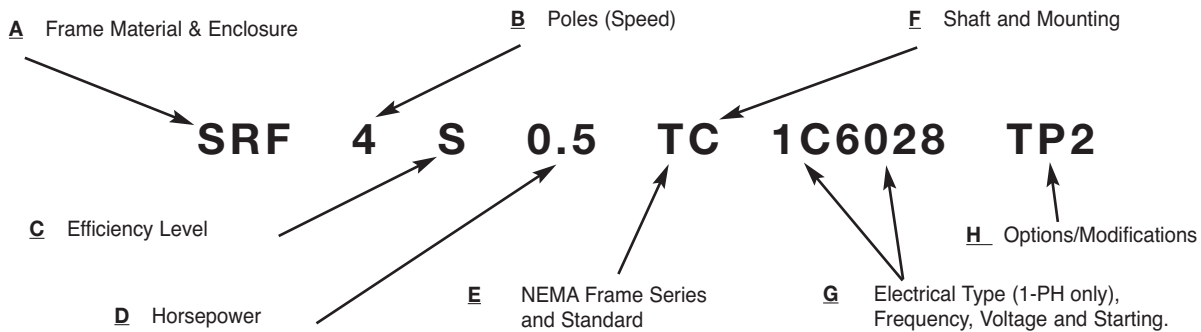


A TYPICAL SINGLE PHASE MOTOR MODEL NUMBER



A Frame Material:

- A, AA = Extruded aluminum
- AV = Alum 63 frame
- AP = Alum 71 frame
- AR = Alum 80 frame
- C = Cast iron
- M = Steel (encapsulated windings, 284T-445T frames)
- S = Steel (143T-449T frames)

Signature Series Motors

- SP = Steel (48 frames)
- SR = Steel (56 frames)
- SS = Steel (143T-215T frames)
- CC = Cast iron (143T and larger)

Enclosure (follows Frame Material*):

- A = TEAO
- B = TEBC
- D = ODP
- E = ODP-Encapsulated
- EW = Wash-Thru™ Motor
- F = TEFC
- RN = Steel TENV 48 frame
- N = TENV
- P = Severe Duty IEEE 841
- S = Severe Duty
- FW = TEFC, Washdown
- FX = TE, Explosion-proof
- NW = TENV, Washdown
- RA = TEAO, Steel
- NX = XP, TENV
- YF = TEFC, Metric
- PA = Steel 48 frame
- PN = Steel TENV 48 frame
- RN = Steel TENV 48 frame

B Number of Magnetic Poles: this leads to motor synchronous speed (rpm).

Poles	Speed	
	60 Hz	50 Hz
2	3600 RPM	3000 RPM
4	1800	1500
6	1200	1000
8	900	750

Single speed motors:
4 = 1800 (60 Hz) or 1500 (50 Hz)

Two speed motors:
2/4/1 = 3600 and 1800 (60 Hz), one winding
4/8/2 = 1800 and 900 (60 Hz), two windings

C Efficiency Level:

- B = Exceeds NEMA MG-1 Table 12-10
- G = Below NEMA MG-1 Table 12-10, GM7EQ
- P = Meets EPAAct, NEMA MG-1 Table 12-10 and GM-7EH.
- S, H = Below NEMA MG-1 Table 12-10

D Horsepower:

Single speed motor examples: 0.25, 0.5, 1.5, 75, 800
Horsepower range example: 5-7 = 5 to 7
Two speed motor example:
10/2.5 = 10 HP high speed, 2.5 HP low speed

E NEMA Frame Series and Dimensions:

- T or U = sets frame number and dimensions in accordance with NEMA T or U design standards for the motor's HP, speed and enclosure.
- E = Metric design IEC

F Shaft and Mounting:

- AD = Auger drive
- C = C-Face, B14
- D = D-Flange, B5
- J = Jet Pump
- JM = JM Pump Mount
- JP = JP Pump Mount
- L = Locked bearing
- N = No feet
- R = Resilient mount
- S = NEMA short shaft
- Y = special mounting (ie. extended thru-bolts)
- Z = non-standard shaft dimensions (-1, -2, -3, etc. will appear at the end of the Model Number)

Double shaft motors are identified by two symbols, the first for the "normal drive end" and the second for the "opposite normal drive end": SD4B30TTM61Y and SD4P75TSTS61Y

Each end of the double shaft can have its own mounting: MD4S125TSC TSC61 and CS6P15TTMC61Y

Mounting symbols are listed in alphabetical order when more than one is specified: SSD2S25TJMN61

G Electrical Type (Single Phase Only):

- 1A = permanent split capacitor
- 1B = capacitor start, capacitor run
- 1C = capacitor start, induction run
- 1N = split phase start, capacitor run
- 1S = split phase

Frequency:

6_ = 60 Hz and 5_ = 50 Hz

Voltage:

The specific number has no significance. Lincoln will assign the next number in sequence to a new, previously unmanufactured voltage when it is ordered.

Commonly used voltage codes:

60 Hz	50 Hz
61 = 230/460 V	51 = 220/380 V
62 = 200/400	52 = 240/415
63 = 208	53 = 230/400
64 = 460	54 = 200/400
65 = 575	55 = 380
66 = 230	56 = 400
67 = 440	57 = 415
68 = 380	58 = 440
69 = 480	59 = 220/440
6003 = 220/380/5001 = 190/380	
6004 = 220/440/5007 = 346	
6020 = 2300	5012 = 550
6021 = 4000	5014 = 380-415
6024 = 2300/4000	
6026 = 208-230/460	
6027 = 115/230	
6028 = 115/208-230	
6029 = 208-220/440	

Reduced Voltage Start Capability:

- P = Part winding start (PWS)
- Y = Wye-delta start (YDS)
- PY = PWS and YDS

H Options/Modifications:

If a motor has more than one Option / Modification, the symbols will appear in alphabetical order.

- AP1 CE Compliant Motor
- AP5 Fire Pump certified
- AP7 Farm Duty, High Torque
- AP8 Farm Duty, Extra High Torque
- AP9 Grain Stirring
- AP10 PSC Variable Speed

H Options/Modifications (cont'd):

- AP11 PSC Variable Speed, expanded speed range
- AP13 UL Listed Class 1 Groups C & D and Class 2 Groups F & G, thermostats
- AP14 UL Listed Class 1 Groups C & D and Class 2 Groups F & G, auto reset thermal protector
- AP15 UL Listed Class 1 Group D and Class 2 Groups F & G, thermostats
- AP21 China sourced
- AP23 India sourced
- AP25 China sourced
- B F-2 Mount
- C_ Ceiling Mount - NEMA position follows "C"; 1-2
- E3 Class H Insulation
- E5 Class H Insulation & High Temperature Grease
- F Fungus Proofing (Tropicalization)
- H4 Leads exit motor at 12 o'clock position
- HS Precision Dynamic Balance
- HT1 Space Heater, 120V
- HT2 Space Heater, 240 V
- K Omit Terminal Box
- L_ Additional Lead Length - "L" followed by additional length in inches
- MB3 Insulated bearings, both ends
- MB6 Double sealed bearings, both ends
- MK_ Brake installed on motor
- Q10 CTAC® Inverter Duty Motor with provision for mounting feedback device
- Q15 CTAC Inverter Duty Motor with factory installed Dynapar 625 1024 ppr encoder
- Q15_ CTAC Inverter Duty Motor with factory installed encoder - letter following "Q15" represents brand and ppr rating of encoder, A through S.
- Q20 CTAC Inverter Duty motor without provision for mounting feedback device
- Q40 CTAC Inverter Duty Motor without provision for mounting feedback device
- QS10 Crop dryer (single phase, auto reset)
- QS11 Crop dryer (single phase, thermostats)
- QS12 Crop dryer (three phase, thermostats)
- RB Roller bearing on drive end
- T1 Thermostats, Class F, 3 in series
- T5 Thermostats (2) Class F
- TD1,2 RTD - Winding, 100 Ω platinum
- TD4 RTD - Winding, 10 Ω copper
- TD6 RTD - Winding, 120 Ω nickel
- TP1 Overload protection, manual reset
- TP2 Overload protection, auto reset
- TX1 Thermistors, 3 in series
- W_ Wall Mount - W followed by NEMA position number, 1-8
- X_ Paint color deviation

This edition of the LEESON stock catalog supersedes the following publication(s):

LC1050 Revised issue effective March 31, 2008

All list prices in this catalog are in U.S. dollars.

NEMA

Lincoln adheres to and in most cases improves upon the motor performance values and dimensional tolerances detailed in the latest edition of the National Electrical Manufacturers Association (NEMA) MG1 standard.

Web: www.nema.org

Motors Designed For Use In The Automotive Industry

Automotive Duty 56 frame and U Frame motors (pages 233-240) are designed to meet automotive industry specifications from General Motors (GM-7EQ, GM-7EH), Ford (EM1) and Chrysler (NPEM-100). Actual qualifications for individual ratings are indicated in the footnotes on the price pages.

Automotive Duty T Frame motors (pages 233-240) are designed to meet or exceed Ford EM1-1996 specification(see footnotes on the price pages).

UL Recognized Component Listing

Low voltage (< 600 V) motors in frames 48-449T and 182U-445U listed in this catalog (excludes REW, SREW, SEW, SSEW, MD and SE models) carry UL Recognized Component Listing (contact Lincoln for file number).



Web: www.ul.com

NAFTA

A NAFTA (North American Free Trade Agreement) Certificate of Origin can be supplied on request.

Canadian Standards Association (CSA)

Low voltage (< 600 V) motors in frames 48-449T and 182U-445U listed in this catalog have Canadian Standards Association approval (contact Lincoln for file number).



Web: www.csa-international.org

CE (Conformité Européene)

Lincoln offers a variety of CE-compliant motors. Copies of Lincoln's Declaration of Conformity for the Low Voltage Directive and Manufacturer's Declaration for the Machinery Directive are available on request.

Motors for Hazardous Locations

NEMA defines an explosion-proof motor as follows: "a totally-enclosed machine designed and constructed to withstand an explosion of a specified gas or vapor which may occur within it and to prevent ignition of specified gas or vapor surrounding the machine by sparks, flashes or explosions of the specified gas or vapor which may occur within the machine casing".

Typical applications include petroleum and chemical plants or pipelines, gasoline pumps and natural gas compressors.

A **dust-ignition-proof** motor is "a totally enclosed machine whose enclosure is designed and constructed in a manner which will exclude ignitable amounts of dust or amounts which might affect performance or rating, and which will not permit arcs, sparks, or heat otherwise generated or liberated inside of the enclosure to cause ignition of exterior accumulations or atmospheric suspensions of a specific dust on or in the vicinity of the enclosure. Successful operation of this type of machine requires avoidance of overheating from such causes as excessive overloads, stalling, or accumulation of excessive quantities of dust on the machine".

Typical applications include grain elevators, coal handling equipment, feed and cereal mills, sugar refineries and chemical plants. Both types of motors are submitted to Underwriters Laboratories (UL) for approval.

The following is a brief description of the hazardous locations of both gaseous and dusty atmospheres as classified by the National Fire Protection Association's (NFPA) National Electrical Code (NEC) and printed from the 1996 Handbook. Consult the National Electrical Code for more information on explosion proof regulations.

Class 1 Group Classifications:

Class C - Atmospheres containing ethyl ether, ethylene, or gases or vapors of equivalent hazard.

Class D - Atmospheres such as acetone, ammonia, benzene, butane, cyclopropane, ethanol, gasoline, hexane, methanol, methane, natural gas, naphtha, propane, or gases or vapors of equivalent hazard.

Class 2 Group Classifications:

Group F - atmospheres containing carbonaceous dusts, including carbon black, charcoal, coal or coke dusts that have more than 8% total entrapped volatiles, or dusts that have been sensitized by other materials so that they present an explosion hazard.

Group G - atmospheres containing combustible dusts not included in Group E or F, including flour, grain, wood, plastic, and chemicals.

Lincoln Explosion-Proof motors are UL listed in the following NEC locations (indicated by ✓ mark):

Model Number Suffix	Class 1, Division 1		Class 2, Division 1	
	Group C	Group D	Group F	Group G
AP13	✓	✓	✓	✓
AP14	✓	✓	✓	✓
AP15	-	✓	✓	✓

Because these motors are suitable for Division 1 locations, they are also suitable for Division 2 locations of the same Class and Group.

Method of Measuring Efficiency

Full Load Nominal Efficiency values are determined in accordance with IEEE Standard 112 Test Method B.

Web: www.ieee.com

Energy Policy Act of 1992 Conformance

All Lincoln motors comply with the requirements of EPAAct 92.



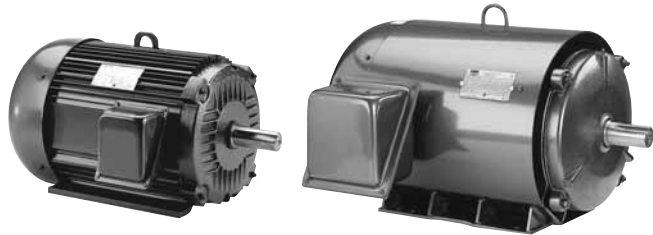
CEE & NEMA PREMIUM

The Consortium for Energy Efficiency is a national, non-profit organization that promotes energy-efficient products and services. The consortium has agreed to adopt the same standards as NEMA Premium.

Ultimate E® Motors

All Ultimate E motors include these outstanding construction features (1):

- Premium Class F Plus Insulation system
- High-quality double shielded ball bearings
- Non-wicking leads
- UL Recognized Component Listing and CSA



Signature Series Motors – Steel Frames

All Signature Series™ Motors include these outstanding construction features (1):

- Premium Class B or F Insulation system
- High-quality double sealed or double-shielded ball bearings
- Non-wicking leads
- UL Recognized Component Listing and CSA
- Phosphate coated drive shaft (48, 56 & 140T frames)
- See individual catalog sections



Product Line		Signature Series	Ultimate E	Signature Series	Ultimate E	Ultimate E
Enclosure / Degrees of Protection		ODP / Note 2	ODP / IP 22	TEFC / IP 44	TEFC / IP 54	TEFC / IP 54
Model Number Prefix		SPD, SRD, SSD	SD	SPF, SRF, SSF	AF, AAF	SF
Frame Sizes		48-256T	284T-449T	48-215T	182T-286T	324T-449T
Frame Material		steel	steel	steel	extruded aluminum	steel
Nameplate		mylar	stainless steel	mylar	stainless steel	stainless steel
End Bracket Material		cast aluminum	cast iron	cast aluminum	cast iron	cast iron
Fan Cover Material		N/A	N/A	plastic	steel	steel
Fan Material		N/A	N/A	plastic	plastic	plastic
Terminal Box Material		steel	steel	steel	steel	steel
Drive End Shaft Slinger		no	yes	no	yes	yes
Number of Varnish Dips	48-256	single	N/A	single	single (Note 3)	N/A
	284-449	N/A	double	N/A	double	double
Standard Voltage • 3-Phase (Number of Leads)	48-256	230/460 (9)	N/A	230/460 (9)	230/460 (9)	N/A
	284-405	N/A	230/460 (12) YDS	N/A	230/460 (12) YDS	230/460 (12) YDS
Reduced Voltage Start Capability	444-449	N/A	460 (6) YDS	N/A	N/A	460 (6) YDS
Standard Voltage • 1-Phase (Number of Leads)		115/208-230 (6 or TB)	N/A	115/208-230 (6 or TB)	N/A	N/A
Tapped Grounding Hole		ground screw	no	ground screw	no	no
Finish Paint – Color / Type	gray / powder paint frames 48-145T, enamel spray frames 182T-286T and water-based acrylic frames 284T and larger					

NOTES:

1. Features listed in specific catalog sections supersede the information presented here.
 2. Contact Local Sales office for degrees of protection.
 3. Inverter Duty CTAC® motors receive double dip of varnish.
- TB = Terminal board provided in terminal box, 1 HP and smaller.

Specifications subject to change without notice.

Signature Series Motors – Cast Iron Frames

All Signature Series™ cast iron frame motors include these outstanding construction features (1):

- Premium Class F Insulation system
- High-quality double sealed or double-shielded ball bearings
- Stainless steel nameplates
- Non-wicking leads
- UL Recognized Component Listing and CSA
- See individual catalog sections



Product Line		Signature Series T-Frame	Signature Series T-Frame	Signature Series T-Frame	Signature Series T-Frame	Signature Series U-Frame
Enclosure		ODP	TEFC	Severe Duty	Severe Duty	TEFC
Degrees of Protection		Contact Lincoln	IP 44	IP 54	contact Lincoln	N/A
Model Number Prefix		CCD	CCF, CCN	CCS	CCS	CCF, CCN
Efficiency Code		B	P, B	P	B	P, G
Frame Sizes		254T-256T	143T-449T	143T-449T	182T-444T	182-445U
Frame Material		cast iron	cast iron	cast iron	cast iron	cast iron
End Bracket Material		cast iron	cast iron	cast iron	cast iron	cast iron
Fan Cover Material	143-286	N/A	plastic or steel	cast iron	cast iron	cast iron
	324-449	N/A	cast iron	cast iron	cast iron	cast iron
Fan Material		N/A	plastic	plastic	plastic	plastic
Terminal Box Material		steel	steel or cast iron	cast iron	cast iron	cast iron
Drive End Shaft Slinger		no	yes	yes	yes	yes
Condensate Drain		weep hole	weep hole	corrosion resistant drain/breather	one-way, corrosion resistant drain	removable plug
Standard Voltage • 3-Phase (Number of Leads)	143-256	230/460 (9)	230/460 (9)	230/460 (9)	230/460 (9)	460 (3)
	284-405	N/A	230/460 (12) YDS	230/460 (12) YDS	230/460 (12) YDS	460 (3)
Reduced Voltage Start Capability	444-449	N/A	460 (6) YDS	460 (6) YDS	230/460 (12) YDS	460 (3)
Tapped Grounding Hole		ground screw	ground screw	lug in t-box	lug in t-box	–
Finish Paint – Color / Type		gray / powder paint frames 143T-145T, enamel spray frames 182T-449T		gray / epoxy	acrylic enamel	gray / epoxy
Meets or Exceeds Spec		N/A	N/A	Ford EM1-1996 (3 lead model)	CEE	GM-7EH & EQ, Ford EM1 and Chrysler NPEM-100

NOTES:

1. Features listed in specific catalog sections supersede the information presented here.