

STOCK DC MOTORS

METRIC (IEC) FRAME • SCR RATED AND LOW VOLTAGE

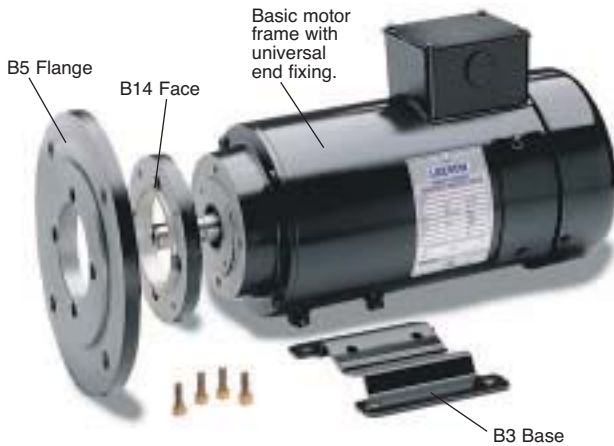


MODULAR DESIGN CONCEPT

LEESON's larger horsepower SCR rated motors, in IEC frames 71 through 100, utilize a unique modular mounting design. The basic frame is fitted with a universal end fixing and also has provisions to accept a rigid foot.

The basic frame can be field-adapted for use as a B3 footed motor, B5 or B14 flange or face mounted motor or a combination such as B3 foot with B5 flange.

The universal end fixing of the frame will accept the IEC 71, 80, 90, 100 or 112 frame B5 flange or B14 face adapter packages.



METRIC FRAME FLANGE AND FACE KITS (FRAMES 71-112)

An advantage of LEESON'S modular design concept is the possible use of a different diameter B5 flange or B14 face than is normally assigned to a motor by IEC dimensional standards. This flexibility

makes it possible to accommodate a wide variety of gear reducers, pumps and similar close coupled motor mounted loads.

B5 FLANGE KITS

IEC Frame	Catalog Number	App. Wgt. (lbs.)	BD Flange Dia. (mm)	AK Register (mm)	BF Hole (mm)	AJ Bolt Circle (mm)
71	175106	2	160	110	9	130
80	175108	3	200	130	12	165
90S/90L	175108	3	200	130	12	165
100L/112M	175137	5	250	180	15	215

B14 FACE KITS

IEC Frame	Catalog Number	App. Wgt. (lbs.)	BD Flange Dia. (mm)	AK Register (mm)	BF Tap (mm)	AJ Bolt Circle (mm)
71	175107	2	105	70	6	85
80	175109	2	120	80	6	100
90S/90L	175129	2	140	95	6	115
100L/112M	175130	3	160	110	6	130

TEFC • SCR RATED 180 VOLTS • ROUND BODY

KW/HP	Full Load RPM	IEC Frame	Catalog Number	App. Wgt. (lbs.)	F.L. Amps DC	"C" Dim. Inches (mm)
0.25/1/3	1800	71	098014	23	1.7	11.28 (286)
0.37/1/2	3000	71	098016	21	2.5	10.78 (274)
	1800	71	098015	26	2.5	11.78 (299)
0.55/3/4	3000	71	098017	24	3.6	11.78 (299)
	1800	80	108369	34	3.5	14.64 (372)
0.75/1	3000	80	108372	45	4.9	14.64 (372)
	1800	80	108370	48	4.6	17.14 (435)
1.1/1 1/2	3000	80	108373	47	7.1	16.14 (410)
	1800	80	108371	52	7.0	17.14 (435)
	1800	90L	118007	64	7.5	18.97 (482)
1.5/2	3000	90L	118009	72	10.0	18.47 (469)
	1800	90L	118008	84	9.5	20.47 (520)
	3000	90L	118010	82	16.0	19.47 (495)
1800	112M	118014	90	14.0	21.79 (553)	

IMPORTANT: These round body motors require either a B3 rigid base, B14 face or B5 flange kit. Catalog number 118014 comes complete with IEC 112 B14 face and B3 foot; shaft diameter is 24mm.

For dimensions, see drawings **G**, **H**, **I** or **J** on page 33.

⚡ Control input is 230 volts AC.

METRIC (IEC) FRAME LOW VOLTAGE (24V) • TEFC/TENV • MODULAR DESIGN

KW/HP	Full Load RPM	IEC Frame	Catalog Number	App. Wgt. (lbs.)	F.L. Amps DC	"C" Dim. Inches (mm)
0.06/1/12	3000	56	M1110025 ^A ●	5	3.3	5.97 (152)
0.06/1/12	1800	56	M1110026 ^A ●	6	3.4	6.97 (177)
0.18/1/4	3000	63	M1130206*	13	11.0	7.75 (197)
0.18/1/4	3000	63	M1130296 ^A	9	11.0	7.75 (197)
0.18/1/4	1800	63	M1130207*	13	10.0	8.75 (222)
0.18/1/4	1800	63	M1130297 ^A	9	10.0	8.75 (222)
0.18/1/4	1800	71	098065	19	11.0	10.77 (274)
0.37/1/2	3000	71	098066	23	20.0	11.27 (286)
0.37/1/2	1800	71	098067	23	20.0	12.27 (312)
0.75/1	3000	80	108456+	33	40.0	14.14 (359)
0.75/1	1800	80	108455+	52	39.0	14.64 (372)
1.10/1 1/2	3000	80	108457+	33	65.0	15.64 (397)
1.50/2	3000	80	108458+	43	78.0	17.14 (435)

IMPORTANT: These round body motors (IEC71 and 80) require either B14 face, B5 flange or B3 foot. See listings below.

For dimensions, see drawings **E**, **F**, **G**, **H** or **I** on page 33.

* Dedicated B5 Flange

^A Dedicated B14 Face

+ Studs at 12:00

● These motors are totally enclosed, non-ventilated. Other ratings are TEFC/IC41-external cooling fan on motor shaft.



B3 FOOT MOUNTING

All motors are stocked with provisions to accommodate B3 foot mountings with the packages noted below.

IEC Frame	Catalog No.
56	175142
63	175143
71	175144
80	175145
90	175146



STOCK DC MOTORS

METRIC (IEC) FRAME • SCR RATED

DC METRIC (IEC) FRAME MOTORS IP54

General Specifications:

These metric dimensioned motors are built to IEC 34-1 electrical and mechanical standards.

The IEC 63 and smaller frames are stocked with an integral B5 flange or B14 face less base. An optional B3 rigid base kit is available.

A unique modular approach for IEC 71 frame and larger allows the motor to be field modified to B3 rigid base mounted construction, B5 flange mounted or B14 face mounted construction using conversion kits. Please note that one or more of the mounting kits must be used with IEC motors of these frame sizes. See listing on next page for B5 flange and B14 face kits. B3 rigid base kits are listed below.

Electrical & Mechanical Features:

A terminal board is provided for connections. All fasteners are metric. Electrical and mechanical features are the same as listed for the NEMA frame motors on the opposite page. Tachometer mounting kits are available—please contact LEESON for data.



B5 IEC 56 & 63



B14 IEC 56 & 63



METRIC (IEC) FRAME

Specially designed low voltage DC motors for use in OEM applications. Combination of features and low cost makes these motors excellent for many uses. All feature IP44 (TENV) enclosure and dedicated B14 face mount. Rated S1 for continuous duty, and zinc plated steel frame construction.



TOTALLY ENCLOSED • SCR RATED 180 VOLTS± WITH B5 FLANGE

KW/HP	Full Load RPM	IEC Frame	Catalog Number	App. Wgt. (lbs.)	F.L. Amps DC	"C" Dim. Inches (mm)
0.06/1/12	1800	56	M1130146●	8	0.5	6.24 (158.6)
	3000	56	M1130150●	9	0.7	6.74 (171.3)
0.09/1/8	1800	56	M1130147●	10	0.7	7.55 (191.7)
	3000	56	M1130151●	9	0.9	7.55 (191.7)
0.12/1/6	1800	63	M1130148	7	0.9	8.30 (210.8)
	3000	63	M1130152●	11	1.3	8.78 (223.1)
0.18/1/4	1800	63	M1130149	13	1.3	9.50 (241.3)
	3000	63	M1130153	11	1.7	9.50 (241.3)

These motors have accommodations for B3 base mountings with the kits on page 7.

TOTALLY ENCLOSED • SCR RATED 180 VOLTS± WITH B14 FACE

KW/HP	Full Load RPM	IEC Frame	Catalog Number	App. Wgt. (lbs.)	F.L. Amps DC	"C" Dim. Inches (mm)
0.06/1/12	3000	56	M1110024●	6	0.4	6.97 (117.0)
	1800	56	M1130136●	8	0.5	6.24 (158.6)
0.09/1/8	3000	56	M1130140●	9	0.7	6.74 (171.3)
	1800	56	M1130137●	14	0.7	7.55 (191.7)
0.12/1/6	3000	56	M1130141●	10	0.9	7.55 (191.7)
	1800	63	M1130138	8	0.9	8.30 (210.8)
0.18/1/4	3000	63	M1130142●	10	1.3	8.78 (223.1)
	1800	63	M1130139	10	1.3	9.50 (241.3)
0.25/1/3	3000	63	M1130143	10	1.7	9.50 (241.3)

Except for M1110024, these motors have accommodations for B3 base mountings with the kits on page 7.

- ± For 230 VAC input controls.
- These motors are totally enclosed, non-ventilated. Other ratings utilize IC41 cooling—external cooling fan on motor shaft.

LOW VOLTAGE 12 & 24V • TENV B14 FACE MOUNT

Watts	HP	Full Load RPM	IEC Frame	Catalog Number	App. Wgt. (Kg.)	Arm. Volts DC	F.L. Amps DC	C Dim. (mm)
50	1/15	3000	56	980.159	2,3	12	6,0	116,6
		3000	56	980.143	2,3	24	3,2	116,6
100	1/8	3000	56	970.600	3,0	12	12,0	140,5
		3000	56	970.601	3,0	24	5,30	140,5
125	1/6	3000	56	970.620	3,5	12	13,0	153,0
		3000	56	970.621	3,5	24	6,50	153,0

For dimensions, see drawings Q & R on page 35.

NEMA FRAME LOW VOLTAGE MOTORS



General Specifications:

Low voltage permanent magnet DC motors are suitable for installations having battery or solar powered operations, or generator supplied low voltage DC.

Mechanical Features:

Unique brush holder design provides easy access to brushes and integral, constant pressure brush/spring assembly for servicing. Larger over-sized brushes assure longer brush life. Heavy-duty, stamped steel, bolt-on base (removable). NEMA C face mounting flange at no additional cost. High strength rolled steel frame. Rugged die cast aluminum endshields with steel bearing inserts. Permanently lubricated sealed ball bearings. May be converted to NEMA 48 frame base dimensions or NEMA 42/48 frame C face dimensions using modification kits noted on page 4.

LOW VOLTAGE ADJUSTABLE SPEED CONTROLLERS

LEESON's DC to DC controllers are a chassis type design, that accept a DC input voltage and output a DC power voltage to control the motor speed. The speed may be varied with the potentiometer that is shipped loose with the control or an external voltage signal.

Higher design efficiency results in longer running time between battery charges than is possible with traditional methods of speed control using resistance in series with the battery.



Typical Operating Features: Provides smooth 40 to 1 speed range capability for mobile equipment. Maintains variable speed control as batteries discharge. Adjustable min/max speed, IR compensation, and 200 % current limit overload protection. Inhibit pin terminals provide customer optional start-stop without breaking battery lines. Green LED power on indicator is provided.

Catalog number 175290 does not require a heat sink, and measures 6.9L x 4.44W x 2.19D. Catalog numbers 175291 & 175292 do require heat sink, which is included and measures 7.73L x 6.9W x 3.25D.

SUB-FHP LOW VOLTAGE MOTORS



General Specifications:

Precision sub-fractional horsepower low voltage direct current permanent magnet motors designed for battery or solar powered operations, or generator supplied low voltage DC.

Mechanical Features:

Compact space saving designs. Standard conduit box simplifies connections. Ball

bearings. Long-life brushes for demanding applications. Brushes easily replaced without disassembly of motor.

Electrical Features:

High starting torques for heavy load applications. Linear speed/torque characteristics over entire speed range. Capable of dynamic braking for faster stops. Reversible rotation from a simple two lead connection. Class F insulated with high temperature welded commutators.

LOW VOLTAGE (12 & 24V) • TENV NEMA C FACE WITH REMOVABLE BASE^Z

HP	Full Load RPM	NEMA Frame	Catalog Number	App. Wgt. (lbs.)	Arm. Volts DC	F.L. Amps DC	"C" Dim. (Inches)
1/4	1800	S56C	108045♣	21	12	21.0	10.44
	1800	S56C	108046♣	24	12	27.0	11.44
1/3	1800	S56C	108050♣	22	24	13.5	10.94
	1800	S56C	108047♣	29	12	39.0	12.44
1/2	1800	S56C	108051♣	29	24	20.0	11.94
	1800	S56C	108048♦♦	30	12	58.0	13.81
3/4	1800	S56C	108052**	30	24	29.0	12.81
	1800	S56C	108322♦♦	39	12	80.0	13.31
1	1800	S56C	108053♦♦	37	24	39.0	13.81

For dimensions, see drawing L on page 34.

Electrical Features:

High starting torques for heavy load applications. Linear speed/torque characteristics over entire speed range. Capable of dynamic braking for faster stops. Reversible rotation and simple two-lead connection. Convenient wiring access.

LOW VOLTAGE CONTROLS (12 & 24/36V)

Input Voltage	Max. Amp Ratings	Catalog Number	App. Wgt.(lbs.)
12/24	16	175290	2
12/24	60	175291	4
36/48	60	175292	4

LOW VOLTAGE (12 & 24v) • TENV • SQUARE FLANGE

HP▲	Full Load RPM	Frame	Catalog Number	App. Wgt. (lbs.)	Input Volts DC	F.L. Amps DC
1/20	1750	24CS	M1110006 [ⓑ]	3	12	4.4
1/10	4200				24	4.4
1/14	1750	31AS	M1120040	4	12	7.7
1/7	4200				24	7.7
1/7	1750	31ES	M1120044	9	12	13.0
1/4	3500				24	13.0
1/6	1800	31GS	M1120046	8	12	14.0
1/3	3900				24	14.0

For dimensions, see drawings on page 6.

▲ These motors may be operated at 12, 24V, or at intermediate voltages between 12 and 24V, within horsepower ranges noted.

♣ Built-in conduit box located at 12:00.
♦ Studs at 12:00.
n If base is removed, do not reinstall bolts without using washers to compensate for thickness of base.
** These motors are totally enclosed fan cooled.
ⓑ 24 frame motors have provision for an optional conduit box catalog number M1760000, see page 11.