



**THOUSANDS** OF SOLUTIONS.  
ONE MATCHED **PERFECTLY**  
**TO YOUR** NEEDS.



# PRODUCT CATALOG

ELECTRIC MOTORS, GEARMOTORS AND DRIVES  
SUB-FRACTIONAL TO 700 HP



# THOUSANDS OF MOTOR AND CONTROL SOLUTIONS. ONE MATCHED PERFECTLY TO YOUR NEEDS.

The LEESON® brand spans more than 6,000 stock AC and DC motors, gearmotors and variable-speed control solutions. All are built for rugged commercial and industrial applications. Whether you need thousands of motors for OEM applications or a single replacement motor, count on our twenty-three stocking warehouses in the USA to get it there right when you need it. Whether you need a motor that withstands extreme temperatures, utilizes a unique mount or other requirement, we have solutions. Look to Regal and its LEESON brand motors for innovative custom solutions, and personalized service through your local sales office.

To turn ideas into reality, contact your local sales office or visit [regalbeloit.com](http://regalbeloit.com)



## AC & DC MOTORS OF ALL TYPES

- ♦ Sub-fractional to 5,000 HP
- ♦ Permanent Magnet AC & DC
- ♦ General Purpose 1 & 3 Phase
- ♦ Agricultural Duty
- ♦ Explosion Proof
- ♦ IEC Metric Motors
- ♦ Severe Duty and IEEE841
- ♦ Washdown Duty
- ♦ Inverter Duty
- ♦ HVAC—Fan Motors
- ♦ AC & DC Gearmotors
- ♦ Brakemotors
- ♦ Definite Purpose Motors
- ♦ Special Voltage

## ADJUSTABLE SPEED DRIVES

### SCR, PWM, Regenerative & Low Voltage DC Controls

#### AC Control Families include:

##### Micro Series

- ♦ 115 Volt, 230 Volt and 460 Volt input options
- ♦ 1/4 HP through 150 HP ratings
- ♦ IP20, IP31 & IP65 enclosure protection
- ♦ English readout display

##### SM & SM-Plus Series

- ♦ 115 Volt, 230 Volt and 460 Volt input options
- ♦ 1/4 HP through 25 HP ratings
- ♦ IP20 enclosure protection
- ♦ Three digit LED display

##### SM2 & SM4 Vector Series

- ♦ 115 Volt, 230 Volt and 460 Volt input options
- ♦ 1/3 HP through 60 HP ratings
- ♦ IP31 and IP65 enclosure protection
- ♦ Four digit LED display

##### VSD & VSD-Plus Series

- ♦ 230 Volt and 460 Volt input options
- ♦ 1/3 HP through 30 HP ratings
- ♦ IP20 enclosure protection
- ♦ Permanent magnet AC & Induction AC motor capable



**24 SALES OFFICES  
AND/OR WAREHOUSES  
ACROSS THE U.S.**



- ALLENTOWN, PA
- ATLANTA, GA
- BOSTON, MA
- CHARLOTTE, NC
- CHICAGO, IL
- CINCINNATI, OH
- CLEVELAND, OH
- DALLAS, TX
- DENVER, CO
- DES MOINES, IA
- GRAND RAPIDS, MI
- HOUSTON, TX
- INDIANAPOLIS, IN
- KANSAS CITY, MO
- LOS ANGELES, CA
- MILWAUKEE, WI
- MINNEAPOLIS, MN
- OKLAHOMA CITY, OK
- PALM DESERT, CA
- SALT LAKE CITY, UT
- SAN FRANCISCO, CA
- SEATTLE, WA
- ST. LOUIS, MO
- TAMPA, FL



## IEC Metric Motors

### DC Metric Motors

#### Low Voltage - DC Metric - IP54



#### General Specifications:

- Built to IEC 34-1 electrical and mechanical standards
- IEC 63 and smaller frames supplied with an integral B5 Flange or B14 face
- Optional B3 Rigid base kit available
- IEC 71 frame and larger can be field modified for B3 Rigid Base, B5 Flange, or B14 face construction using conversion kits
- Tachometer mounting kits available for 71 and 80 frames only

#### Features:

- Cast aluminum conduit box
- Terminal board provided for connections
- All metric fasteners
- Easy brush access for field service
- Oversize brushes for extended life
- High strength rolled steel frame
- Die cast aluminum endshields with steel bearing inserts
- Permanently lubricated sealed ball bearings
- Reversible rotation
- Simple 2-lead connection
- Convenient wiring access
- Tachometer mounting kits available for 71 and 80 frames only



## 24 Volt - TEFC/TENV - Modular Design

HP/AW	Full Load RPM	IEC Frame	Catalog Number	Stock	List Price	Model Number	App. Wgt. (lbs)	DC Voltage	FL. Amps DC	"C" Dim. (Inches)	Notes
1/12/0.06	3000	56	M1110025.00	✓	435	980.543	5	24	3.3	5.34	S, US, 12, >
1/12/0.06	1750	56	M1110026.00	✓	490	980.544	6	24	3.4	6.34	S, US, 12, >
1/4/0.18	3000	63	M1130206.00	✓	554	C1M34D30FD2	13	24	11.0	7.75	S, US, α
1/4/0.18	3000	63	M1130296.00	✓	601	C1M34D30FC7	9	24	11.0	7.75	S, US, >
1/4/0.18	1750	63	M1130207.00	✓	633	C1M34D18FD6	13	24	10.0	8.75	S, US, α
1/4/0.18	1750	63	M1130297.00	✓	688	C1M34D18FC10	9	24	10.0	8.75	S, US, >
1/4/0.18	1750	71	098065.00	✓	759	C142D17FT6	19	24	11.0	10.77	S, US
1/20.37	3000	71	098066.00	✓	852	C142D34FT7	23	24	20.0	11.27	S, US
1/20.37	1750	71	098067.00	✓	831	C142D17FT7	23	24	20.0	12.27	S, US
1/0.75	3000	80	108456.00	✓	913	C14D34FT5	33	24	40.0	14.14	S, US, 35
1/0.75	1750	80	108455.00	✓	1,158	C14D17FT6	52	24	39.0	14.64	S, US, 35
1 1/2/1.1	3000	80	108457.00	✓	1,099	C14D34FT6	33	24	65.0	15.64	S, US, 35
2/1.5	3000	80	108458.00	✓	1,165	C14D34FT7	43	24	78.0	17.14	S, US, 35

Note 12 - TENV

Note 35 - Terminal bolts at 12:00

IMPORTANT: IEC 71 and 80 frame motors in this chart are round body and require either B14 face, B5 flange or B3 foot from kits shown on page 314.

□ Dedicated B5 Flange  
> Dedicated B14 Face

♥ Note listing on inside back flap  
Specifications are subject to change without notice



## IEC Metric Motors

### DC Metric Motors

#### Low Voltage Commercial Duty Metric (IEC) Frame Motors



#### Features:

- Specially designed low voltage DC for use in OEM applications
- Combination of features and low cost make these ideal for many uses
- IP44(TENV) enclosure
- Dedicated B14 face mount
- Rated S1 for continuous duty

### 12, 24 & 90 Volt - TENV - B14 Mount

HP	Full Load RPM	IEC Frame	Catalog Number	Stock	List Price	Model Number	App. Wgt. (lbs)	DC Voltage	FL Amps DC	Notes
1/1.5	3000	56	980.159	✓	242	980.159	2.3	12	6.4	S, US
1/1.5	3000	56	980.143	✓	222	980.143	2.3	24	3.2	S, US
1/1.5	3000	56	980.549	✓	212	980.549	2.3	90	0.8	S, US
1/8	3000	56	970.600	✓	255	970.600	3.0	12	12.0	S, US
1/8	3000	56	970.601	✓	255	970.601	3.0	24	5.3	S, US
1/8	3000	56	970.576	✓	255	970.576	3.0	90	1.2	S, US
1/6	3000	56	970.620	✓	277	970.620	3.5	12	13.1	S, US
1/6	3000	56	970.621	✓	277	970.621	3.5	24	6.8	S, US
1/6	3000	56	970.577	✓	264	970.577	3.5	90	1.6	S, US

♥ Note listing on inside back flap  
Specifications are subject to change without notice

## The formulas for success.

Once you get to know the LEESON® IEC motor product line, you'll find a world of applications waiting for these solutions. To know the product is one thing—understanding the technical relationships with NEMA® motors is another. We are confident that the formulas below will help you when specifying a LEESON Passport Series IEC motor.

<b>HORSEPOWER AND KILOWATTS</b>	<p>HP → kW:  <math>HP \times 0.746 = kW</math></p> <p>kW → HP:  <math>kW \times 1.3410 = HP</math></p>	<p>Example: HP to kW            Motor: 25HP NEMA  <math>(25 \times 0.746) = 18.7kW</math></p>
<b>FULL LOAD TORQUE AND HORSEPOWER</b>	<p>Full Load Torque:  <math>FLTRQ = (HP \times 5252) / RPM</math></p> <p>Horsepower:  <math>HP = (TRQ \times FL RPM) / 5252</math></p>	<p>Example: Full Load Torque            Motor: 50HP, 1800 RPM  <math>(50 \times 5252) / 1800 = 145.9 \text{ ft-lbs}</math></p>
<b>NEWTON METERS AND FOOT POUNDS</b>	<p>Newton Meters:  <math>Nm = \sqrt{3} \times \text{ft-lbs}</math></p> <p>Foot Pounds:  <math>LB-FT = 1.36 \times Nm</math></p> <p>NOTE: Torque units = ft-lbs</p>	<p>Example: Ft-Lbs to Nm            Motor: 10HP, 1800 RPM = 30 ft-lbs  <math>30 \times 1.36 = 40.8 Nm</math></p>
<b>KVA/HP AND LOCKED ROTOR AMPS (STARTING AMPS)</b>	<p>LRA:  <math>LRA = (KVA/HP \times 1000 \times HP) / (V \times \sqrt{3})</math></p> <p>KVA/HP:  <math>KVA/HP = (\sqrt{3} \times V \times LRA) / (1000 \times HP)</math></p>	<p>Example: LRA            Motor: 93kW (125HP), NEMA Code G, 480V  <math>(6.29 \times 1000 \times 125) / (480 \times 1.73205) = 987 \text{ Amps}</math></p> <p>Example: KVA/HP            Motor: 93kW (125HP), NEMA Code G, 480V  <math>(1.73205 \times 480 \times 987) / (1000 \times 125) = 6.29</math></p>
<b>KILOVOLT-AMPS AND 3-PHASE FULL LOAD AMPS</b>	<p>KVA:  <math>KVA = \sqrt{3} \times V \times FLA / 1000</math></p> <p>3-Phase FLA:  <math>FLA = (746 \times HP) / (0.66 \times \text{Eff} \times PF \times \sqrt{3})</math></p>	<p>Example: 3-Phase FLA            Motor: 93kW (125HP), 95.4% Efficiency, 86.0% PF  <math>(746 \times 125) / (480 \times .954 \times .86 \times 1.73205) = 143</math></p>



Pump Motors

Washguard Motors

Agricultural Duty Motors

HVAC / Fan Motors

Special Voltage Motors

Definite Purpose Motors

Brake Motors

IEC Motors

DC Motors

## DC Motors

Pump  
Motors

Washguard  
Motors

Agricultural  
Duty Motors

HVAC / Fan  
Motors

Special Voltage  
Motors

Definite  
Purpose Motors

Brake Motors

IEC Motors

DC Motors



- NEMA®DC, explosion proof, Sub-FHP, washdown, IEC and low voltage motors available
- Permanent magnet designs
- PWM or SCR rated and low voltage input voltage designs
- Removable bolt-on base
- Oversized brushes for long brush life
- Easy access to brushes
- Constant torque throughout speed range
- DC Controls available to change the speed of the motors

### Applications:

DC motors are typically used in applications requiring motor speed adjustment, constant torque throughout the speed range and reversing capabilities. Applications include: pumps, conveyors, turntables, textile machinery, treadmills, reeling equipment, sports equipment and medical equipment.



## Mechanical / Electrical Features:

- Brush holder design provides easy access to brushes
- Large oversized brushes assure long brush life
- Removable bolt-on base
- NEMA® C face designs
- 115 or 230 volt input power ratings – 90 / 180 volt output
- Capable of dynamic braking
- PWM or SCR type controller rated
- High starting torque
- Permanently lubricated sealed bearings
- LEESON® SCR controls available to power motors
- Higher HP and speed achievable using PWM type DC controls
- UL and CSA listed
- Meets NEMA MG1 standards
- Dynamically balanced armatures
- 30:1 constant torque operation

