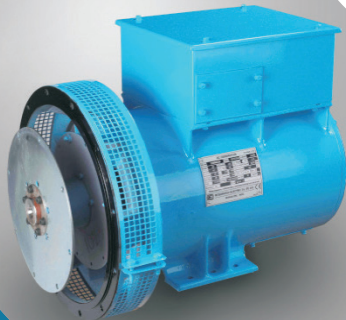
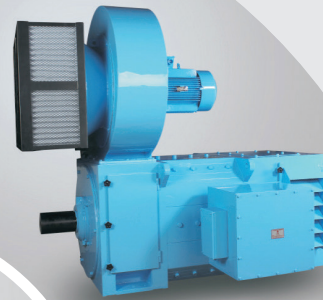
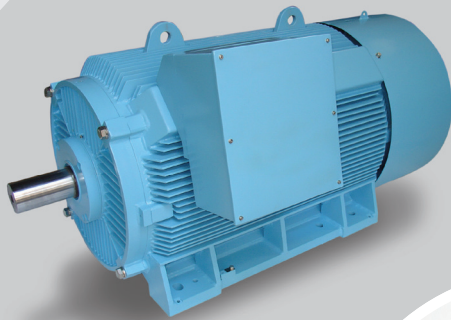




INTEGRATED ELECTRIC CO. PVT. LTD.,

Bengaluru, India



**Rotating Electrical Machines & Motion
Control Solutions**

www.int-elec.com

About Us

Established in 1982, Integrated Electric (IEC) manufactures high quality electrical rotating machines and drives in a wide range and variety. Its product basket includes DC Motors between 0.37 and 2500kW, Variable speed AC Motors between 0.37 and 1500 kW, Re-rolling mill duty slip ring motors between 600 and 2000 kW, Special purpose PM Motors, Synchronous Reluctance Motors. Special Generators between 7.5 and 320kVA and Variable Frequency Drives, Active Front End Converters, Custom Power Converter, Educational & Research Solutions. IEC's AC Motors are divided into four types depending on the configuration.

The IEI Series of Inverter Duty AC Motors range from 0.37kW to 1500kW in frame sizes 90 to 560. These motors are made suitable for lower speed (minimum 10% rated) operation by using a separately driven constant speed cooling fan. They are suitable for both constant torque operation (by maintaining constant V/f ratio) and for constant kW operation (by weakening the flux) and can be used in applications like rolling mills, extruders, lifts, fans, winders etc. Custom design solutions are provided for different base frequencies to reduce the current rating.

The IE Synchronous Reluctance Motor Series has been developed, which operate at very high efficiencies for various applications like compressors, fan, pumps, etc., Details can be provided on enquiry.

The IESL Series of Re-Rolling Mill Duty Slip Ring AC Motors range from 600 kW to 2000kW in frame sizes 500 and 560. These are High Starting Torque motors with capability to operate at variable speed under controlled starting and speed adjustment via external resistors in the rotor circuit.

The IEL Series of Compact AC Motors range from 3.7kW to 1500kW in frame sizes 100 to 355. These are usually open type motors and have a high power to weight ratio. They are cooled with a separate fan and are suitable for low speed operation using an inverter. These rotors have a low inertia and are ideal for application requiring superior dynamic response.

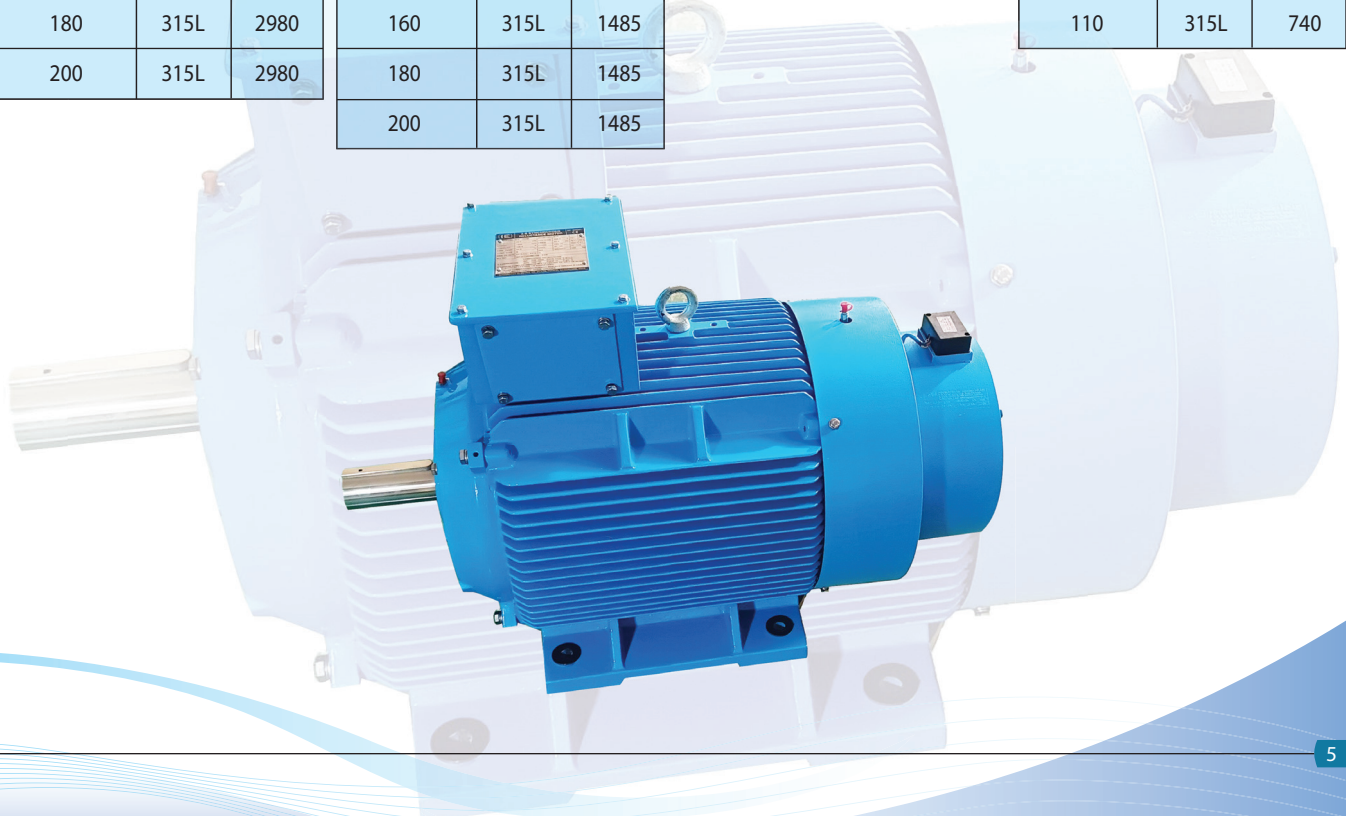
There are two dedicated manufacturing facilities available for the manufacture of these machines. The production is organized to provide flexibility and short lead times. IEC's major strength is in the manufacture of special products that meet specific application requirements. The company has been ISO 9001 certified since 1998 and spares no effort to ensure that a high level of quality is maintained. The process of continuous improvement permeates throughout the organization and results in our delivering better value to the customer year after year.

General Specifications

- Design Ambient is 50°C and Altitude is 1000m above MSL
- Class F insulation (Class H optional) is used with temperature rise restricted to Class B limits
- Motors have CE certification
- Dual coated enameled wire of Class 200°C is used on all motors. All IEC products are subject to VPT for superior insulation & longevity of the motors.
- Terminal box is mounted on top upto Frame 315 (RHS/LHS optional) and RHS/LHS for Frames 355 to 450
- Terminal Boards are with 3/6 terminals
- Duty Cycle: Standard designs are of S1 duty. Motors for duty cycles S2 to S8 can be offered on request. However since these are variable speed motors they can be designed for custom application.
- Cooling: IC416 for IEL motors, 100 to 180 frame IEL motors & Synchronous Reluctance Motors, IC06 for IEL motors of Frame 100 and above, IC01 for IESL motors
- Protection: IP55 for IEL, 100 to 180 frame IEL motors & Synchronous Reluctance Motors and IP23 for IEL motors and IESL motors.
- Optional accessories like Thermistors, RTDs, BTDs, Space heaters etc. can be provided
- Bearings:
 - Sealed for life bearings for IEL frames 90-160, IEL frames 100 & 112
 - Regreasable bearings for IEL frames 180 – 560, IEL frames 132 – 355
 - Roller bearings on DE side for IEL by default for frames 280 – 560 (non 2 pole motors) and IEL frames 132-355. Optionally can be provided for IEL frames 180-250
- Mountings available are B3/B5/B6/B7/B14/B34/B35/V1/V3/V5/V6
- Standards adhered to are:
 - Efficiency: IS12615:2018 and IEC60034-30 for IEL machines with 2/4/6/8 poles
 - Performance: IEC60034-1
 - Dimensions: IS1231, IS2223 and IS2254 as applicable
 - Protection: IEC60034-5
 - Cooling: IEC60034-6
 - Mechanical Vibration: IS12075 and IEC60034-14
 - Noise: IS12065 and IEC60034-09
 - Methods of determining losses and efficiency: IEC60034-2
 - Tolerances on Main Parameters: IEC60034-1

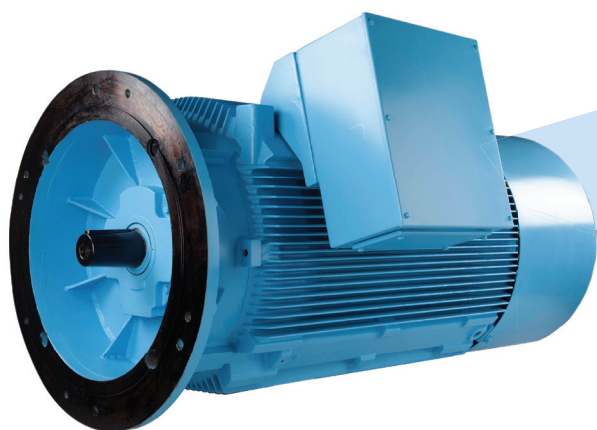
INVERTER DUTY MOTORS

3000RPM			1500RPM			1000RPM			750RPM		
2 POLE			4 POLE			6 POLE			8 POLE		
Output(kW)	Frame	RPM	Output (kW)	Frame	RPM	Output (kW)	Frame	RPM	Output (kW)	Frame	RPM
1.5	90S	2850	1.1	90S	1400	0.75	90S	935	0.37	90S	700
2.2	90L	2855	1.5	90L	1405	1.1	90L	935	0.55	90L	700
3.7	100L	2860	2.2	100L	1410	1.5	100L	940	0.75	100L	700
5.5	132S	2880	3.7	112M	1435	2.2	112M	950	1.1	100L	700
7.5	132S	2880	5.5	132S	1440	3.7	132S	955	1.5	112M	710
9.3	160M	2890	7.5	132M	1450	5.5	132M	955	2.2	132S	715
11	160M	2925	9.3	160M	1450	7.5	160M	965	3.7	160M	722
15	160M	2925	11	160M	1455	11	160L	965	5.5	160M	722
18.5	160L	2930	15	160L	1465	15	180L	975	7.5	160L	722
22	180M	2930	18.5	180M	1470	18.5	200L	980	11.0	180L	730
30	200L	2935	22	180L	1470	22	200L	980	15.0	200L	730
37	200L	2935	30	200L	1472	30	225M	985	18.5	225S	735
45.0	225M	2940	37.0	225S	1475	37.0	250M	985	22	225M	735
55.0	250M	2955	45.0	225M	1472	45.0	280S	990	30	250M	740
75	280S	2960	55	250M	1480	55	280M	990	37	280S	740
90	280M	2970	75	280S	1485	75	315S	990	45	280M	740
110	315S	2970	90	280M	1485	90	315M	990	55	315S	740
132	315M	2980	110	315S	1485	110	315L	990	75	315M	740
160	315L	2980	132	315M	1485	132	315L	990	90	315L	740
180	315L	2980	160	315L	1485				110	315L	740
200	315L	2980	180	315L	1485						
			200	315L	1485						



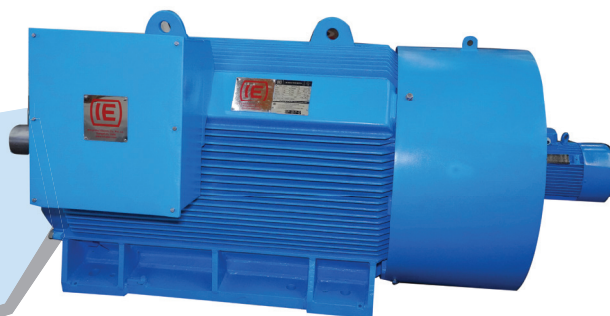
DUAL AIR CIRCUIT INVERTER DUTY MOTORS

1500RPM			1000RPM			750RPM		
4 POLE			6 POLE			8 POLE		
Output(kW)	Frame	RPM	Output (kW)	Frame	RPM	Output (kW)	Frame	RPM
225	355	1488	200	355	989	160	355	740
250	355	1488	225	355	989	180	355	740
280	355	1488	250	355	989	200	355	740
315	355	1488	280	355	989	225	355	740
355	355	1488	315	355	990	250	355	741
400	355	1488	355	355	990	315	355	741
500	355	1488	400	355	990	355	400	742
560	400	1490	450	400	991	400	400	742
630	400	1490	500	400	991	450	400	742
710	400	1490	560	400	991	500	450	744
800	450	1490	630	450	991	560	450	744
900	450	1490	710	450	991	630	450	744
1000	450	1490	800	450	991	650	500	744
1100	500	1490	900	500	991	710	500	744
1200	500	1490	1000	500	991	800	560	744
1400	560	1490	1100	560	991	900	560	744
1500	560	1490	1200	560	991			



BUILT TO LAST

**ENGINEERED
TO PERFORM**



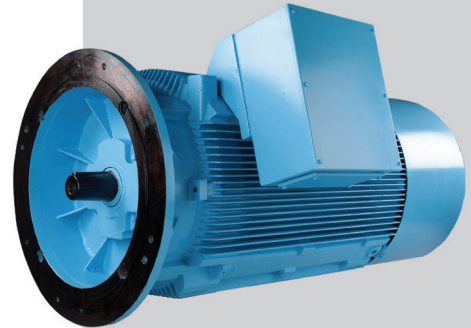
MOTORS FOR SPECIAL APPLICATIONS

Drive Solution for Batch type Sugar Centrifuge Application

IEC has developed a complete system solution for 2250, 1750, 1500, 1250Kg basket batch type sugar centrifuge. The system includes AC Motor, harmonic filter, front-end converter, sensor less vector control based inverter, PLC, HMI and required protection switchgear.

Typical Motor Rating – 250kW/8pole – Vertical Flange Mounting – V1

Any other sugar centrifuge basket capacity can also be supplied upon request.



Brake Motors

Combination of AC Motor and Electromagnetic DC Brake. Brake is a "Fail Proof Type" i.e., brake comes into action immediately and stops the driven equipment instantly when the power to the motor is switched off or if power fails. Motors are available in frames 63 to 315 in 2/4/6/8P in IEL versions & IEL versions. Provision for mounting of encoder can also be provided.

Crane Duty Motors

Motors specially designed for Crane duty are available.

Frame: 71 to 315 **kW:** 0.37kW to 160kW **Poles:** 4/6/8

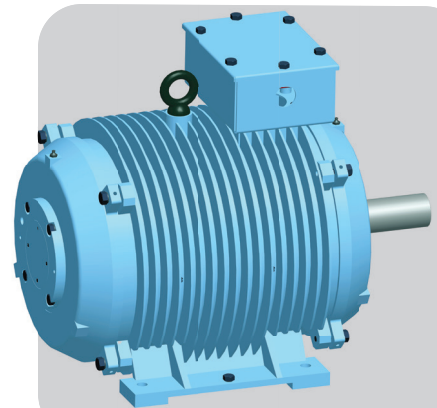
Enclosure: IP55 **Suitable for:** AC Drive as well as DOL starting

Cooling: IC411 or IC416 depending on the requirement

Ambient Temperature: 50 Deg C

Insulation: Class "F" **Duty:** S4

CDF: 25% 40% 60% **No of Starts/Hour:** 150, 300



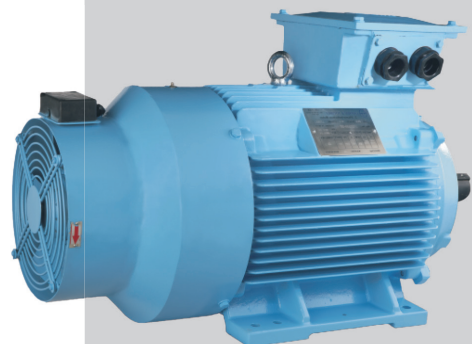
Ginning & Textile Motors

Specially designed for Ginning application requiring low temperature rise and low No Load Current. Motors are fitted with a special fan cowl (Canopy). And ring frame machines for textile solutions.

Dual Speed and Three Speed Motors

IEC can also offer Dual as well as Three Speed motors against specific enquiries.

Range available for frames 80 to 315.





® INTEGRATED ELECTRIC COMPANY PVT LTD

PB No. 5888, 497A, IV Phase, Peenya Industrial Area, Bengaluru - 560 058, India

Tel: +91 80 41391400/41391428/41391437/41391438 Fax: +91 80 41391457

E-mail: mktbang@int-elec.com Web: www.int-elec.com

BRANCH OFFICE: GURUGRAM

iecgur@int-elec.com

+91 98109 81479 / +91 96506 95291

+91 95409 67940

KOLKATA

ieckol@int-elec.com

+91 98300 46016

MUMBAI

iecmum@int-elec.com

+91 98211 61912