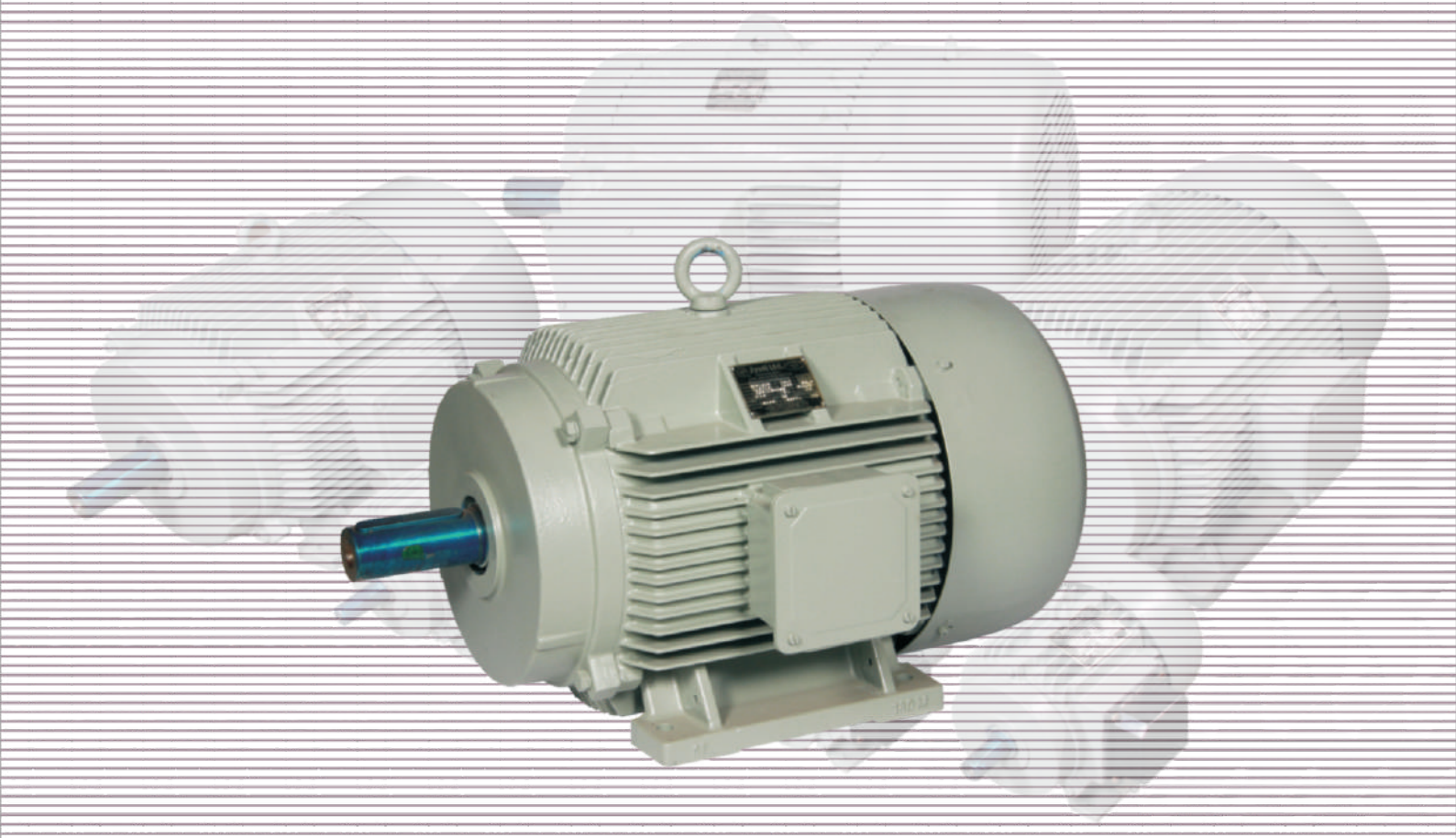
JSL INDUSTRIES LTD.

Totally Enclosed Fan Cooled, 3-Phase Squirrel Cage Energy Efficient Induction Motors



Robust Construction, Reliable Insulation,
Economical, Effective Ventilation,
Energy efficient - IE2, IE3 & IE4

IAS-ANZ
ISO 9001 : 2015

With ISI MARKING

Now with CE Marking

INTRODUCTION

Backed by continuous research and development activity and adoption of modern manufacturing techniques, 'JSL' motors manufactured under close supervision of highly qualified engineers, are rugged in construction, compact in size, lighter in weight and suitable for continuous silent running for prolonged periods. Every electric motor, leaving the works, is subjected to rigorous and strict quality control, inspection and testing so as to comply not only with Indian Standards but also with international standards like IEC, VDE, BS

RANGE

'JSL' motors are ideally suited for applications like pumps, fans, blowers, compressors, machine tools, general and special purpose machineries etc. Specially manufactured for working in environments where dirt, fluff, metal, swarf, cutting compounds and other impurities are present. All standard motors are designed for running in both directions of rotation.

JSL CTF series motors are available in frame size upto 355.

SPECIFICATIONS

All 'JSL' TEFC Squirrel Cage motors are designed to give rated output at 415V and 50 Hz.

'JSL' motors are continuously rated for S1 duty, suitable for altitude upto 1000 meters. Motors suitable for 415V±10%, 50 Hz±5% including combined variations of 10%.

Motors with other standard voltages and/or frequencies can also be supplied. Motors for higher ambient temprature and altitudes are also available on request.

All 'JSL' Totally Enclosed Fan Cooled Squirrel Cage Induction Motors conform to requirements of IS 12615:2018, IS/IEC 60034-I, BS-5000/4999 and VDE 0530.

Our standard motors are improved efficiency grade of IS 12615 : 2018. High efficiency grade motors are also available on request.

CONSTRUCTION

The stator frame and end shields of standard motors are of rigid cast iron as per grade 200 of IS-210 with integral feet providing sturdy construction for low vibration. The finned construction of stator frame offers optimum heat dissipation combined with long lasting reliability and rugged operation.

ENCLOSURES AND MOUNTING

'JSL' totally enclosed motors meet the requirement of IP-55 protection class. This provides protection against damaging ingress of dirt and harmful effects of water jet as defined in Indian/International Standards IS/IEC 60034-5.

'JSL' standard TEFC motors are supplied in horizontal foot mounted "B3" construction as per IS-2253 and mounting dimensions as per IS-1231 or IEC-72. Flange and face mounted construction are available as per IS-2223 on request.

WINDINGS AND INSULATION

The stator windings consist of modified polyester enamelled copper wire as per IS-13730 (Part-III) for superior dielectric strength and thermal properties. Use of 'F' class insulation ensures satisfactory functioning of motors allowing temperature rise of 70°C measured by the resistance method over an ambient temperature of 50°C. The slot insulation material used, has very high dielectric and mechanical strength. The Vacuum and Pressure Impregnation (VPI) with synthetic thermosetting varnish and curing in precisely temperature controlled oven provide strength to suit atmospheric conditions existing in chemicals, fertilizer, sugar and other industries, Additional coating of air drying varnish is given when motors are required to operate under highly humid atmosphere.

STATOR & ROTOR

Stator core is made of high quality low-loss silicon steel stampings conforming to IS:648. It is rigidly held by steel clamps. The complete stator core is pressed under pressure inside the body.

The squirrel cage rotor is made of die-cast aluminium EC grade 3 as per IS-4026. The rotor is shrink fitted on high grade steel shaft of 40 C8 grade as per IS-7283 and machined all over to very close tolerance. The rotor is skewed for better performance. Each rotor is dynamically balanced on confirming to grade 6.3 on highly accurate digital dynamic balancing machine to ensure very low amplitudes of vibration.

TERMINAL & TERMINAL BOX

Motors upto 2.2 kW are designed for DOL Starting and Motors above 2.2 kW are suitable for DOL as well as Star Delta starting.

The terminal box is normally on right hand side of the body when viewed from the driving end. The position of terminal box can be adjusted in steps of 90° to facilitate connection of cables from any direction.

BEARINGS

Motor upto 200 frame are provided with high grade, both side sealed antifriction & pre-lubricated ball bearings with C3 clearance which prevent ingress of dust, dirt & moisture.

For above 200 frame regreasable, antifriction ball bearing are provided. Lithum base grease grade 3 is recommended for regressing.

VENTILATION

Efficient heat dissipation is effected by guided air flow along motor frame, cooling fins with the help of an external fan. Rotor fins create turbulence within air inside and thereby prevent hot spots in overhangs. The heat inside gets transferred by conduction, from winding to stator stack and in turn to motor body and then by convection and radiation from the external frame surface. over which cooling air flows.

ACCESSORIES

The Motors can be supplied with accessories like cable gland, RTD, thermisters, space heaters on specific request for above 250 frame. For outdoor applications canopy can also be provided.

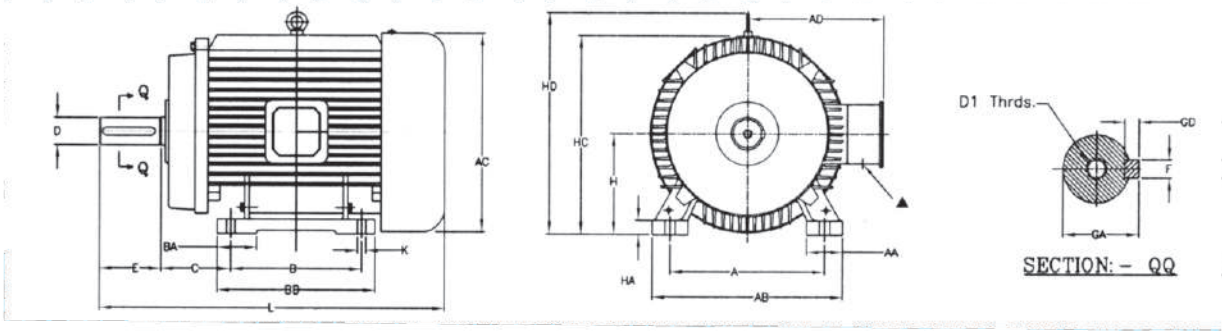
CUSTOM DESIGNED MOTORS

1. Standard/Non-standard shaft extension on either side.
2. High Slip High Torque Motors
3. Multi-Speed Motors
4. Flange mounted Motors
5. Agriculture Motors
6. Low Vibration Motors
7. Surface Cooled Motors
8. Textile Motors
9. Vertical Hollow Shaft Motors
10. Vertical Solid Shaft Motors
11. Slipring Induction Motors

FRAME SIZE	FOR 2 POLE kW	FOR 4 POLE kW	FOR 6 POLE kW	FOR 8 POLE kW **
80 **	0.37 to 1.1	0.37 to 0.75	0.37 & 0.55	--
90S	1.5	1.1	0.75	0.37
90L	2.2	1.5	1.1	0.55
100L	3.7	2.2	1.5	0.75 to 1.1
112M	--	3.7	2.2	1.5
132S	5.5 & 7.5	5.5	3.7	2.2
132M	--	7.5	5.5	--
160M	9.3, 11.0 & 15	9.3 & 11.0	7.5	3.7 & 5.5
160L	18.5	15.0	9.3 & 11.0	7.5
180M	22.0	18.5	--	--
180L	--	22.0	15.0	9.3 & 11.0
200L	26, 30 & 37	26 & 30	18.5 & 22	--
225S	--	37	--	18.5
225M	45	45	26, 30	22
250M	55	55	37	30
280S	75	67 & 75	45	37
280M	90	90	55	45
315 S/M/L	110/132/160	110/132/160	67/75/132	75/90/110
355 S/M/L	180/250/315	180/250/315	160/200/250	132/160/220

** Not covered under ISI marking

GENERAL DIMENSIONAL SKETCH OF 'JSL' T.E.F.C. FOOT MOUNTED MOTOR



FRAME	AA+*	AB+	AC+	AD+	A°	BA+*	BB+	B°	C°	D°°	E°	F°°	GA°°	GD°°	D1 Thrds.	H	HA+*	HC+	HD+	Kϕ	L+	POLE
CTF-80	27	151	160	125	125	--	125	100	50	19j6	40	6	21.5	6	M8X20	80	10	160	--	10	282	
CTF-90S	32.5	170	180	130	140	--	129	100	56	24j6	50	8	27	7	M8X20	90	10	180	211	10	308	
CTF-90L							154	125													335	
CTF-100L	43	184	197	143	160	--	176	140	63	28j6	60	8	31	7	M10X24	100	10	197	236	12	372	
CTF-112M	45	215	219	153	190	--	175	140	70	28j6	60	8	31	7	M10X24	112	10	221	252	12	393	
CTF-132S	44	264	259	180	216	38	214	140	89	38k6	80	10	41	8	M12X28	132	12	263	303	12	452	
CTF-132M								178													496	ALL
CTF-160M	58	310	320	225	254	70	250	210	108	42k6	110	12	45	8	M16X32	160	20	320	360	15	598	POLE
CTF-160L							294	254													645	
CTF-180M	65	344	351	252	279	70	281	241	121	48k6	110	14	51.5	9	M16X32	180	25	361	425	15	665	
CTF-180L							319	279													702	
CTF-200L	80	400	382	340	318	100	290	305	133	55m6	110	15	59	10	M16X32	200	25	392	454	19	753	
CTF-225S	85	440	439	356	356	115	391	286	149	55m6	110	15	59	10	M16X32	225	25	440	504	19	835	2 POLE
CTF-225M								311														
CTF-250M	87.5	485	481	382	406	100	430	349	168	60m6	140	18	64	11	M20X40	250	35	491	562	24	910	
CTF-225S	85	440	439	333	356	115	391	286	149	60m6	140	18	64	11	M20X40	225	25	440	504	19	835	4 POLE
CTF-225M								311														& MORE
CTF-250M	87.5	485	481	362	406	100	430	349	168	65m6	140	18	69	11	M20X40	250	35	491	562	24	910	
CTF-280S	120	560	525	407	457	140	490	368	190	65m6	140	18	69	11	M20X40	280	35	550	687	24	1025	2 POLE
CTF-280M								419														
CTF-280S	120	560	525	407	457	140	490	368	190	75m6	140	20	79.5	12	M20X40	280	35	550	687	24	1025	4 POLE
CTF-280M								419														&MORE
CTF-315S	120	628	652	605	508	160	540	406	216	65m6	140	18	69	11	M20X40	315	40	640	750	28	1205	2 POLE
CTF-315M							600	457													1305	
CTF-315L								508														
CTF-315S	120	628	652	605	508	160	540	406	216	80m6	170	22	85	14	M20X50	315	40	640	750	28	1205	4 POLE
CTF-315S							600	457													1305	& MORE
CTF-315M								508														
CTF-355S	120	730	720	780	610	150	660	500	254	75m6	140	20	79	12	M24X50	355	44	715	820	28	1415	2 POLE
CTF-355M								560														
CTF-355L	120	730	720	605	610	200	784	630	254	75m6	140	20	79	12	M24X50	355	44	—	835	28	1535	
CTF-355S	120	730	720	780	610	150	660	500	254	100m6	210	28	106	16	M24X50	355	44	715	820	28	1415	4 POLE
CTF-355M								560														& MORE
CTF-355L	120	730	720	605	610	200	784	630	254	100m6	210	28	106	16	M24X50	355	44	—	835	28	1535	

Note :
1. All Dimensions are in mm. Except otherwise stated.
2. + Shall not exceed by ± 0.15 mm.
3. +* These dimensions may vary by ± 0.5 mm .
4. * These dimensions may vary by ± 0.75.
5. ▲ Cable Gland provided as a special case against client requirement.
6. oo Tolerance as per IS:1231

JSL INDUSTRIES LTD.

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In Keeping with the technological strides the world is making in the engineering field, we introduce changes in the design of our products. Hence, the products as actually supplied might have features varying herefrom.