



**JSL INDUSTRIES LTD**

# “Jyoti” Totally Enclosed Fan Cooled, 3-Phase Squirrel Cage Induction Motor

## Introduction

## Features & Technical Specification

## Dimensional Details



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Robust Construction,  
Reliable insulation  
Economical Effective  
ventilation

## “Jyoti” Totally Enclosed Fan Cooled, 3-Phase Squirrel Cage Induction Motor



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## INTRODUCTION :

Backed by continuous research and development activity and adoption of modern manufacturing techniques, 'JYOTI' 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 IEC, VDE, BS and other International Standards as well.

## THE RIGHT MOTOR FOR EVERY JOBS :

'JYOTI' 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.

## SPECIFICATION :

'JYOTI' motors are continuously rated for S1 duty, suitable for altitude upto 1000 meters, Motors suitable for 415 V $\pm$ 10% Volts, 50 Hz  $\pm$ 5% including combined variations of  $\pm$ 10%, Ip55 are available, as standard,

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

## STANDARDS :

All 'JYOTI' Totally Enclosed Fan Cooled Squirrel Cage Induction Motors conform to IS-325, IEC-34, BS-5000/4999 and VDE-0530

## ENCLOSURES :

'JYOTI' totally enclosed motors meet the requirements of IP-55 protection, This provides protection against damaging ingress of dirt and harmful effects of water jet as defined in Indian Standards, Enclosure with degree of protection IP-44 and IP-54 can also be offered.

## PERFORMANCE :

All 'JYOTI' TEFC Squirrel Cage motors are designed to give rated output at 415V and 50 Hz. Use of 'F' class insulation ensures satisfactory functioning of motors, allowing max. Temperature rise of 75°C measured by the resistance method over an ambient temperature of 45°C. 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 Starter.

## 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 and low vibrations. The finned construction of stator frame offers optimum heat dissipation combined with long lasting reliability

## WINDING 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. The slot insulation material used, has very high dielectric and mechanical strength. The vacuum and pressure impregnation with synthetic thermosetting varnish and curing in precisely temperature controlled oven provides extra 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 CORE :

Stator core is 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.

## ROTOR :

The squirrel cage rotor is 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 conforming to grade 6.3 on dynamic balancing machine to ensure very low amplitude of vibrations.

## MOUNTING :

'JYOTI' 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 also available as per IS-2223.

## TERMINAL BOX :

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 / 180° 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 dust, dirt & moisture.

In case of 225 frame regreasable antifriction without sealed ball bearing are provided, lithum base grease grade 3 is recommended for regreasing.

## VENTILATION :

Efficient heat dissipation is effected by guided air flow along coling fins on motor body with the help of an external fan, Rotor fins create turbulence in 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, thermisters, space heaters on specific request. 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 / Face mounted Motors
5. Weather/House-proof Motors
6. Agriculture Motors
7. Low Vibration Motors
8. Surface Cooled Motors
9. Textile Motors
10. Vertical Hollow Shaft Motors
11. Vertical Solid Shaft Motors
12. Brake Motors
13. Increased Safety Motors

FRAME SIZE	FOR 2 POLE KW	FOR 4 POLE KW	FOR 6 POLE KW	FOR 8 POLE KW
63	0.18	-	-	-
80	0.37 to 1.1	0.37 to 0.75	0.37 to 0.55	-
90S	1.5	1.1	0.75	-
90L	2.2	1.5	1.1	-
100L	3.7	2.2	1.5	0.55 to 1.1
112M	-	3.7	2.2	1.5
132S	5.5 & 7.5	5.5	3.7	2.2
132L	-	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
225L	26, 30 & 37	26 & 30	18.5 & 22	-
225S	-	37	-	-
225M	-	45	-	-

