ROLLER TABLE MOTORS

Roller Table Motors - General Technical Information

LHP Roller Table Motors are designed taking into consideration the experience of users in steel plants over the years.

Applications

- In steel plants for conveying steel billets for processing through roller mills
- Suitable for Geared Motors operating with VVVF source

Applicable Standards

IPSS No: 1-03-007-14	Specification for ac Roller Table Motors
IEC 60034-1 / IS 5999-1	Specifications for 3 phase induction motors
IS -4691/IEC 60034-5	Degrees of protection provided by enclosure for rotating electrical machinery

Range	Torque : 1Kgm - 75kgm
Pole	4/6/8
Mounting	Standard / Special as per IPSS specifications
Frame	Up to 450L
Voltage	415V AC or (up to 690V)
Frequency	50Hz
Stalled rotor with stand time	Up to 15 minutes max or as per customer requirement
Insulation	H Class
Duty	S3, S4, S1,S5, S6, S7, S8 & S9
Frame with circular fines design	

ROLLER TABLE MOTORS

Up to 355 Frame

Application requirement

- Roller table motors are special driving elements for the steel rolling mill industry. Particularly in case of working and conveying roller tables, these motors are subject to extremely hard electrical and mechanical requirements.
- This fact results from the very different modes of operation and cases of load with their variants such as continuous duty, intermittent duty and short-time duty as well as starting duty, electrical braking duty and reversing duty.
- The motors must be suitable to operate under overloads conditions e.g. blockings caused through jammed rolled material. LHP roller table motors have proved functional efficiency and operational reliability.
- Starting from these experiences, LHP has developed various variants of roller table motors adapted to the conditions of the modern drive engineering.
- Generally, the motors are delivered in a robust grey cast iron version. Motors are provided with horizontal / vertical cooling ribs and in case of the heavy type series they are provided with ribs arranged across the axial direction. The housings have a high mechanical resistance and a very good thermal capacity. Motors connection box can be executed on the top, right or left based on requirements. Even terminal box can be arranged at the non-driving side end shield.
- The design torque in Nm given at the motor shaft is calculated by

  M = 9550 X (p/n) where P = design output in kW n = speed in RPM
- All LHP motors shall be suitable for ambient temperatures from –35° C up to +70° C.

Special stator winding :

- Motors are suitable for higher ambient temperature requirements. Motors shall be suitable for temperature rise to class B/ class F/ class H insulation based on the requirements
- LHP can supply motors with higher locked rotor withstand time at cold or hot conditions based on applications.
- Motor are with class F insulation as a standard and also can be supplied with class H insulation on request.
- Dual coat class H wires are used for roller table applications to suit high harmonics and peak voltage form invertors.
- Winding joints are strengthen by applying RTV silicon sealant.
- Motor have Vacuum pressure impregnation process with double dipping and baking process to ensure high grade of withstanding capacity.
- Motor frame : FG200 grade cast iron material as standard. MS fabricated construction
- End Shields : CI with FG200 grade or MS fabricated.
- Shaft : EN8 material. EN24 with heat treatment can be given.
- Terminal box : CI or MS.
- Motor shall have aluminum pressure die-casting.
- Motors can be provided with Surface cooled Totally enclosed fan cooled Separately force cooled arrangement
- LHP roller table motors are equipped with antifriction Double Groove, C3 clearance ball bearings upto 200 frame and open type bearings with re-greasing arrangement for frames 225 and above.
- The bearings have a nominal service life of at least 20,000 hours for maximum permissible load conditions. For motors without additional axial loading, the nominal service life is 40,000 hours for direct coupling.

Lubrication :

- Life time pre-lubricated for frames upto 200.
- Re-greasing arrangement for frames 225 and above.

Finish System

- Anticorrosive polyurethane paint. Epoxy paint can be provided.
- Standard color
- RAL 7015 Slate-grey

Motors shall be suitable for below overload conditions

- 1.5 times the rated current for 2 min.
- 1.6 times the rated torque for 15 Seconds

The following motor protection variants are available on request

- Motor protection with PTC temperature sensors in the stator winding
- Bimetallic temperature sensors in the stator winding.
- Resistance temperature detectors (RTDs) for monitoring the winding or bearing temperature on request
- Motors can be provided with space heaters on request.
- Motors with encoder can also be supplied on request.
- Motors with electromagnetic brake can be supplied if application demands.