Hansa-Motoren

Installation, Operating & Maintenance Manual

Round 90 years of experience with electric motors !!!

INNOVATION PERFORMANCE DRIVE

Storage & Transport

The motors are to be protected against mechanical damages and, if possible, they are to be stored in closed and dry rooms only. In case of short-term outdoor storage they have to be protected against all harmful environmental influences. Never transport or store the motors on the fan cowl. During transportation the motors should be kept from any damage.

Mounting

When pulling a transmission component (clutch, pinion or belt pulley) onto the shaft it is absolutely necessary to use a pull-on device or to warm up the component to be pulled on. To prevent shaft, bearings and other parts from damages the transmission components must never be driven onto the shaft by hammer blows.

Balancing

All the components attached to the shaft end are to be balanced dynamically. On the part of the manufacturer the rotors are balanced with half key.

Installation

If possible, the motors are to be installed free from vibration. In the case of direct coupling the motor is to be accurately aligned to the driven machine. The axles of both machines must be in line and no stresses should occur.

Ventilation

Vent holes and cooling fins are to be kept free and the required minimum distances must be observed. It is to be avoided that the heated up cooling air is taken in again. In case of installation in the open the motors are to be protected against direct environmental influences (rain, snow and ice, freezing of the fan).

Commissioning

- All operations have to be carried out by skilled staff with the motor in dead state.
- The power supply data (voltage and frequency) have to correspond with the data on the motor's rating plate. Permissible voltage tolerance(DIN VDE 0530): for design voltage $\pm$ 10 % for design voltage range +/- 5 %
- The dimensions of the connection cables are to be adapted to the rated motor currents.

Overload Protection

In case of direct starting, the motors are to be provided with triple-pole motor protection switches. An additional motor protection switch is also recommended for star/delta starting. For motors with PTC-thermistors a corresponding tripping device is required. For motors with bi-metal thermistors it is recommended to switch off the motor through a contactor (auxiliary circuit) in case of overload.

Direction of Rotation

The motor's direction of rotation is to be checked before coupling the machine. If necessary, the rotation direction can be altered by changing the connections of two phases.

Terminal Box

Before closing the terminal box check whether :

- All terminal box connections are tightened;
- The inside is clean and free from any particles;
- Unused cable entries are closed and threaded plugs are tightened;
- The packing in the terminal box lid is inserted correctly and all packing surfaces are in good condition according the class of protection.

Switching On & Off

Before switching the motor on, during motor operation and when switching it off it should be checked whether all safety regulations are followed. When switching the motor on, the current consumption under load should be observed in order to detect possible overloads immediately.

Insulation Test

Before starting a new motor and after long periods of inactivity or storage, the insulation resistance of the windings is to be measured.
The resistance should be higher than 5 MΩ at 25°C ambient temperature. If this value cannot be obtained, the winding is damp and must be dried by a skilled company.

Maintenance

The motor as well as possible accessories should always be kept clean, free from dust traces, oil or other grime. As a good rule it is recommended to periodically check whether

- The motor operates without any vibrations or anomalous noises,
- The tension of a possible driving belt is correct,
- The inlet of the ventilation circuit is not obstructed causing overheating of the windings.

Insulation

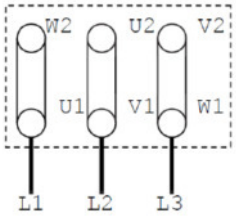
The motors have in standard the insulation class „F“ according to EN 60034-1.

The following chart shows the increase of temperatre (DT*) and the hottest winding point (T_{max}) :

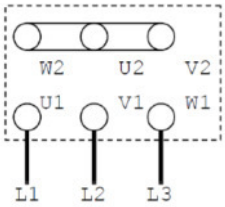
Insulation class	ΔT*	T_{max}
B	80 K	125°C
F	105 K	155°C
H	125 K	180°C

Wiring Diagrams

Delta connection

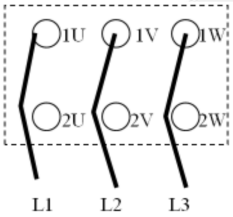


Star connection

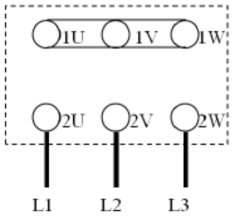


Dahlander

Low speed

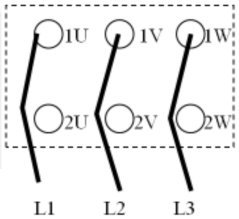


High speed

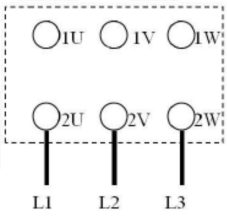


2 windings

Low speed



High speed



Bearings

All motors are fitted with high-quality, lifetime-lubricated bearings of the manufacturers FAG or SKF. The nominal rating life of the bearings used in horizontal mounted motors without any axial load is 40 000 working hours, for power take-off via shaft coupling. Under use of maximal load the lifetime of the bearings is minimum 20 000 working hours. From frame size 315 all motors have open bearings and lubrication devices.
On customers request smaller motors with lubrication devices are available.

Bearing Sizes

Baugröße	Drive end		Non-drive end	
	2-pole	4/6/8-poles	2-pole	4/6/8-poles
80	6204.ZZ.C3		6204.ZZ.C3	
90	6205.ZZ.C3		6205.ZZ.C3	
100	6206.ZZ.C3		6206.ZZ.C3	
112	6306.ZZ.C3		6306.ZZ.C3	
132	6308.ZZ.C3		6308.ZZ.C3	
160	6309.ZZ.C3		6309.ZZ.C3	
180	6311.ZZ.C3		6311.ZZ.C3	
200	6312.ZZ.C3		6312.ZZ.C3	
225	6313.ZZ.C3		6313.ZZ.C3	
250	6314.ZZ.C3		6314.ZZ.C3	
280	6314.C3	6314.C3	6317.C3	6314.C3
315	6317.C3	6317.C3	6319.C3	6317.C3
355	6317.C3	6322.C3	6317.C3	6322.C3
400	6317.C3	6326.C3	6317.C3	6326.C3
450	6319.C3	6328.C3	6319.C3	6328.C3
500		6330.C3		6330.C3
560		6334.C3		6334.C3

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