

## Three-phase AC motors, general information

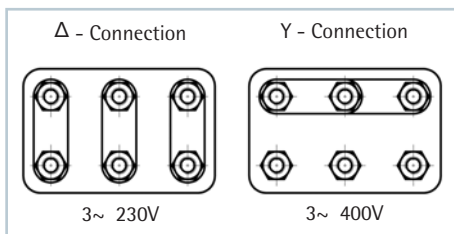


### Connection arrangement

The motors usually have a terminal board with 6 terminals and a protective earth terminal in the terminal box. The stator winding can be switched into star or delta connection using the connection links.

Star/delta starting is not suitable for screw jack systems because full torque is required immediately on starting.

For motor windings 230/400V (example)



Operating voltage 230V delta:  
Motor windings 230/400V

Operating voltage 400V delta:  
Motor windings 400/660V

### Direction of rotating

Motors can be arranged for either direction of rotation. When the line phases L1, L2, L3 are connected to the motor terminals U1, V1, W1, the direction of rotation is clockwise. Swapping over two of the supply lines reverses the direction of rotation.

### Speeds

Three-phase AC motors have different rotational speeds depending on the number of poles. Generally we recommend our standard motor with 1500 rpm (4 poles).

Other numbers of poles are available on request. Pole-changing motors allow a choice of 2 different rotational speeds.

Speed (50 Hz)	Number of poles
3000	2
1500	4 (= preferred type)
1000	6
750	8
500	12

### Geared motors

Geared motors are available for particular projects on request.

### Operation with frequency converters

Especially for larger screw jacks and systems, we recommend the use of a frequency converter to achieve smooth start-up and brake ramps. This minimizes start-up noise and extends the service life of the gearbox.

When operating with a frequency converter, remember that if the motor is to be operated for extended periods at frequencies less than 25 Hz, its fan must be driven separately. This is necessary to ensure adequate motor cooling.

When operating a braked motor with a frequency converter, a separate actuation line for the brake must be provided via the frequency converter.

### Braked motor

We recommend using a braked motor to minimise the overrun time of the system. Where a screw jack is fitted with a ball screw or a double-pitch screw, a braked motor is absolutely essential. We supply motor brakes as standard for a connection voltage of 230V AC / operating voltage 205V DC, with bridge rectifiers.

Other connection voltages (24V DC, 400V AC, 500V AC) are available on request.

### Temperature monitoring

Generally we do not supply temperature monitoring because screw jack duty cycles are normally quite low or the motor is adequately dimensioned.

Temperature control thermal resistor (PTC) or bimetal (TKÖ) is available on request.

Some types are available ex stock with thermal resistor (PTC).

## Permanent-magnet DC motors



24V DC, IP 54, with terminal box

Frame size IEC	Power [P]	Speed [rpm]	Rated torque*** [Nm]	Starting torque [Nm]	Voltage [V]	Rated current [A]	Motor length (without shaft)	Weight [kg]
Ø53	60W	3000	0.17	1.4	24V DC	2.9	128	1.2
56, B14C Ø80	85W	1500**	0.53	1.5	24V DC	4.5	149*	2.7
56, B14C Ø80	165W	1500**	1.0	3.0	24V DC	8.8	196*	4.3
56, B14C Ø80	250W	1500**	1.6	4.5	24V DC	13.5	241*	5.6

\*Optional brake available (24V DC, 13W, 2 Nm, 1.1 kg), + 44 mm length

\*\* 3000 rpm motor available on request, torque remains the same

\*\*\* Short-term operation at twice the torque is possible



Other sizes available on request