30T PM Machine

Otis perfectly combines permanent magnet synchronous machines with variable frequency drive technology to provide the ultimate elevator drive systems. Designed for high traffic or high rise applications, the 30T PM Machine provides optimal energy efficiency at a reduced size compared to the same power induction machines.

FEATURES

High energy efficiency

35 percent less energy than induction machines

Power factor greater than 0.93

Small footprint

40 percent less area and 60 percent less volume than equivalent induction machines

Lighter weight reduces construction costs

Perfect control

Advanced field-oriented vector control drives ensure perfect control and smooth operation

Low inertia, smooth and high acceleration

Long life

1:1 and 2:1 roping options with round traction sheave groove for extended rope life

High energy efficiency

The 30T PM machine uses permanent magnet motor technology resulting in increased efficiency and near unity power factor. This significantly decreases energy consumption and operating costs and lowers heat release in the machine room.

Small footprint

By design, the power density of a PM motor is higher than induction motors, thus reducing weight and volume. This provides for a smaller footprint and machine room space savings. Weight savings and reduced size enables easier and faster installation.

Perfect Control

The 30T PM machine utilizes advanced field-oriented vector control drives to ensure perfect velocity profile control and smooth operation. The compact rotor design reduces rotational inertia enabling high acceleration that is both smooth and adjustable.

Long Life

With 1:1 and 2:1 roping options available and round traction sheave grooves, rope life is extended. The high torque, low speed motor provides extended service life and high operational reliability.

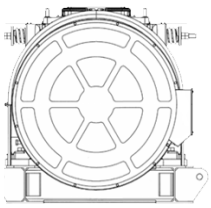
30T PM Machine

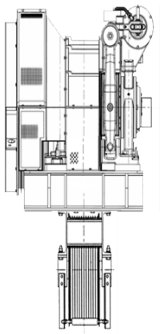
continued

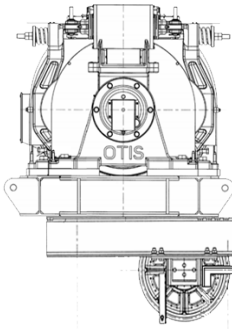
Inherent efficiency

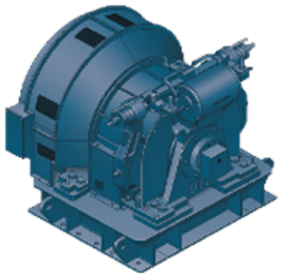
A conventional asynchronous machine (induction motor) requires an additional electric current to create the rotor magnetic field. This current represents 6-10% of the total current used by the machine to generate torque, leading to increased losses. In a PM machine, the permanent magnets provide a constant magnetic field, thus decreasing the electric current requirements and motor losses.

Dimensions









Duty load	1350 - 2250 kg
Speed	3.0 - 7.0 m/s
Maximum Acceleration	1.2 m/s
Maximum Rise	220 m
Maximum Starts per Hour	240 starts/hour, 60% ED
Motor Type	AC Permanent Magnet Synchronous
Power (rated)	69 kW
Number of Poles	36
Ventilation Type	Naturally cooled
Insulation	Class F
Protection	IP42
Traction Sheave Diameter	Ø760 mm
Roping	1:1 or 2:1

Duty load	1350 - 2250 kg
Ropes	Ø18 mm x 6, or Ø16 mm x 7
Type of traction	Double wrap, round groove
Sheave Shaft Load	30000 kg
Brake Type	Drum
Ambient Temperature Range	0°C-40°C
Ambient Humidity	Up to 95% non-condensing RH
Altitude	<1200 m
Overall dimensions	1282 mm x 1500 mm x 990 mm
Machine Weight	3250 kg