

DirectMagnet

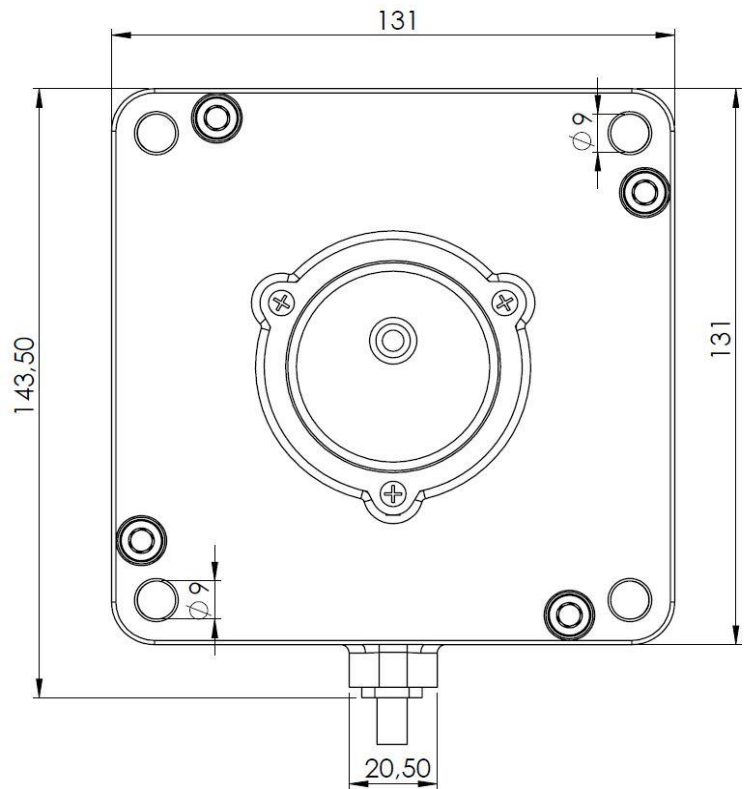
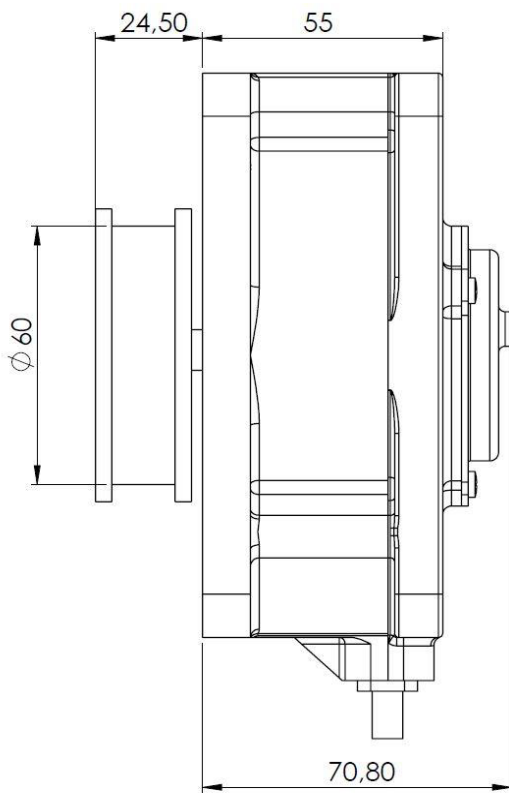


Sürekli Mıknatıslı Senkron Motor Permanent Magnet Synchronous Motor

- ✓ High Rated Torque, up to 4Nm
- ✓ High efficiency
- ✓ High Reliability
- ✓ Low torque ripple / Smooth Movement
- ✓ Compact Design (135x140x56)
- ✓ Linear Torque vs Current characteristic
- ✓ Low Thermal resistance 1.37 C /W

DirectMagnet is a new technology motor to meet direct drive need for automatic door application without any gearbox to ensure high reliability and maintenance free. Motor has low time constant and high torque constant (Nm/A) so that drive system can open and close the door with high acceleration and deceleration especially for elevator application.

Motor is driven by a special electronic that controls also the door open&close cycles by using special position feedback sensor installed in motor housing. There is no optical encoder and by the way the reliability of system is increased. FOC method is used for motor drive to get precise speed and torque control and high efficiency and smooth door movement.

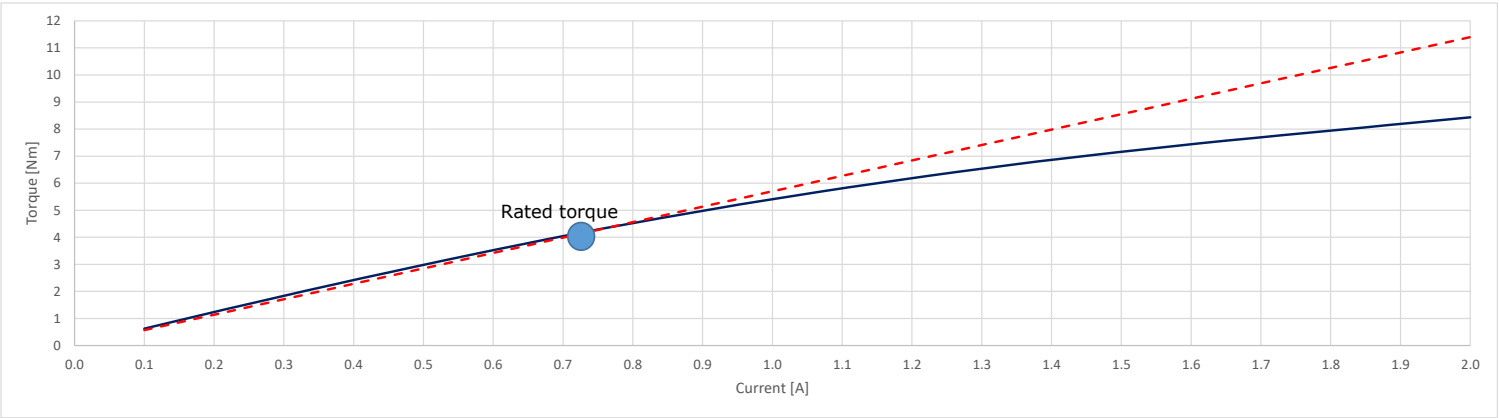
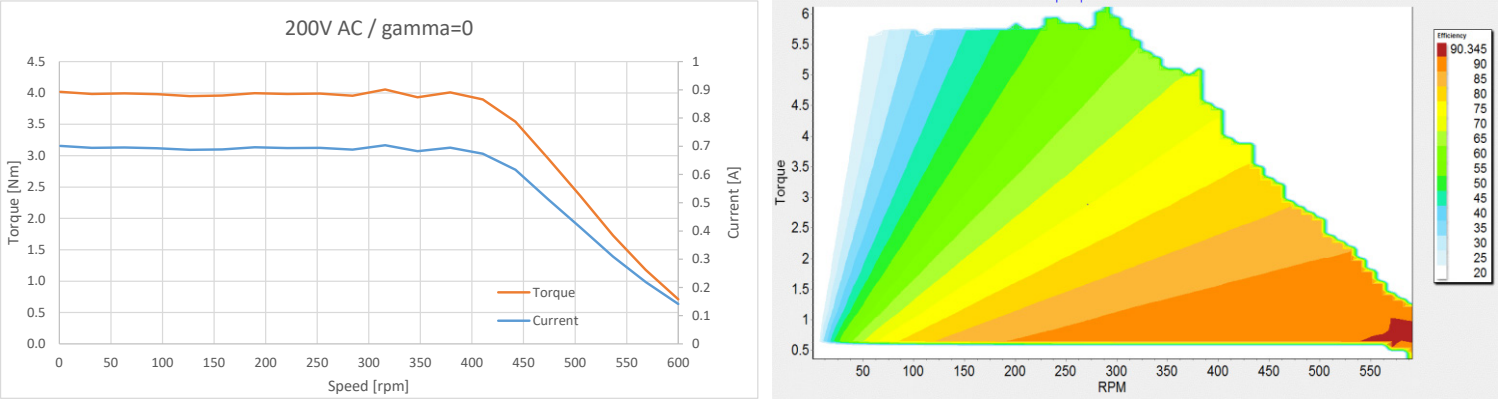


Main Technical Properties

Minimum DC Bus Voltage @ rated speed	: 213V
Rated speed	: 50cm/s
Maximum speed	: 80cm/s
Diameter of pulley	: 36.6mm
Rated motor speed @ Min. DC Bus voltage	: 260rpm
Motor base speed	: 420rpm
Rated torque up to base speed	: 4Nm
Rated motor phase current	: 0.7A
Torque constant	: 5.7Nm/A

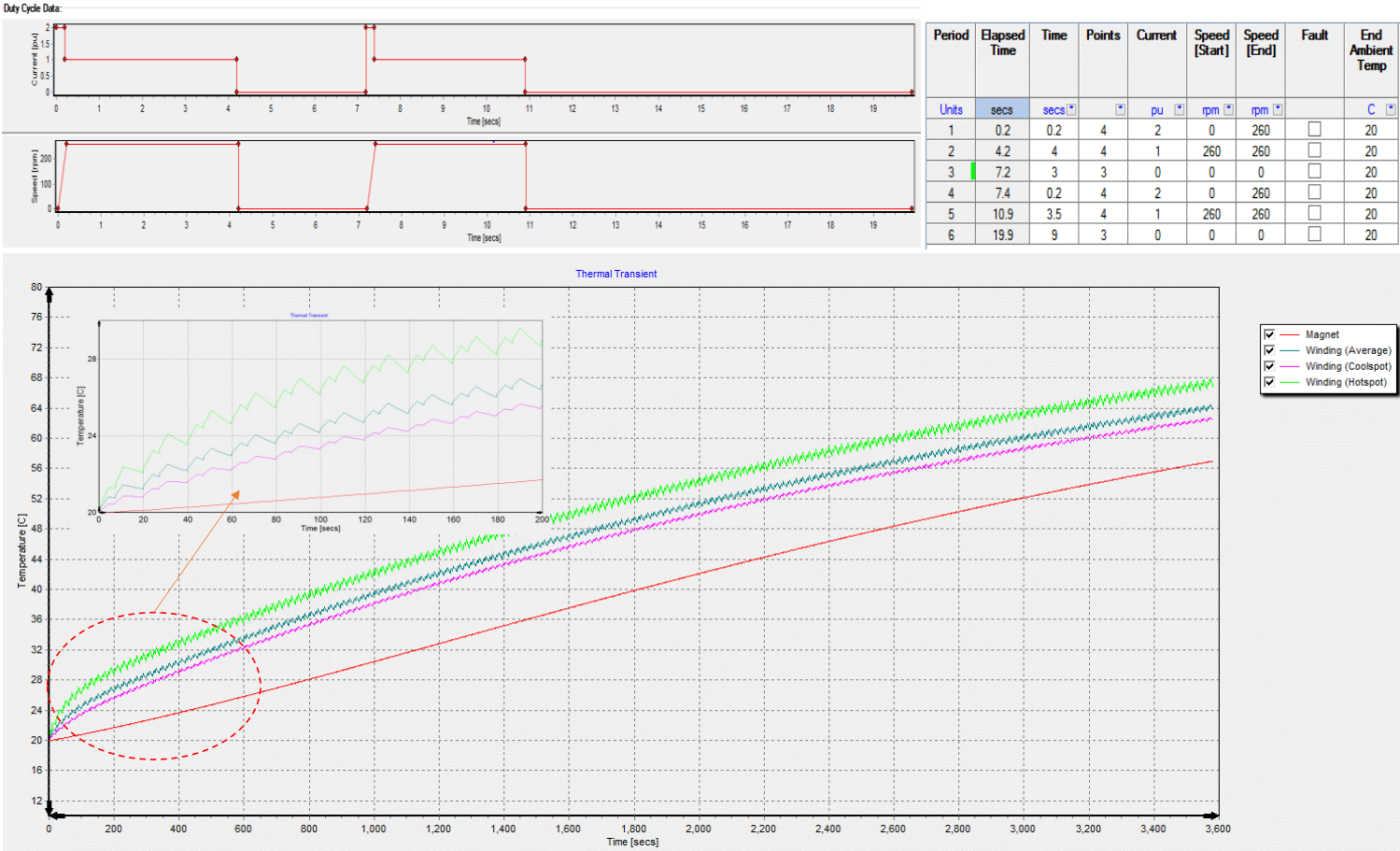
Rated driver input voltage	: 220-240V AC
Rated motor input voltage	: 200V AC
Maximum motor speed	: 600rpm
Dimensions	: 135 x 140 x 56 mm
Duty Cycle	: S4
Winding encapsulation	: Epoxy (>1W/mK)
Door weight	: up to 250kg
IP	: IP54
Insulation class	: F

Torque vs Speed Characteristic



Heating of Motor

Heating of winding for S4 duty cycle defined below graph. 180 cycles per hour with worts case.



Permanent Magnet Synchronous Motor for Direct Drive Automatic Door

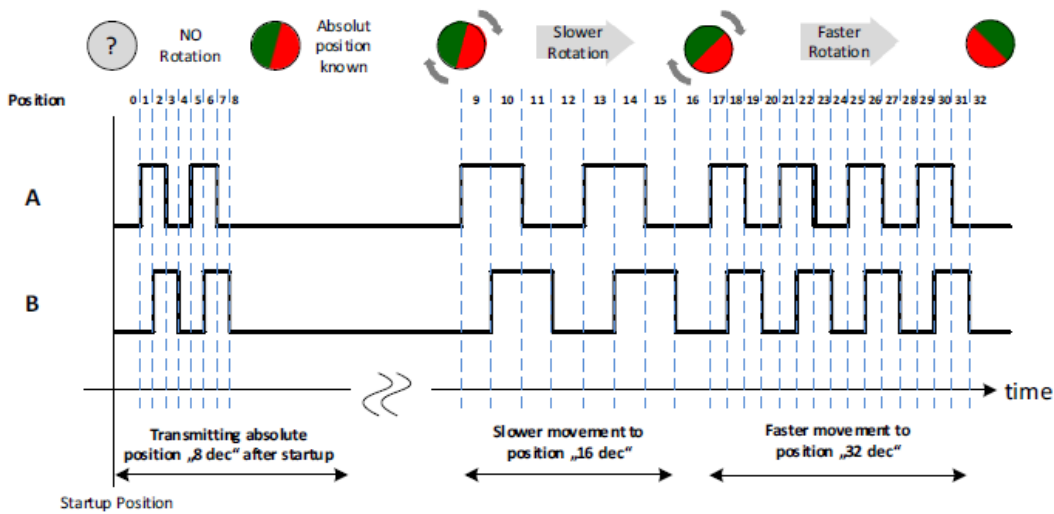
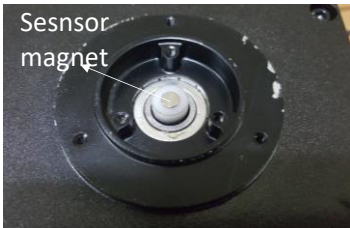
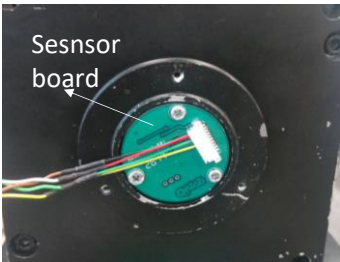
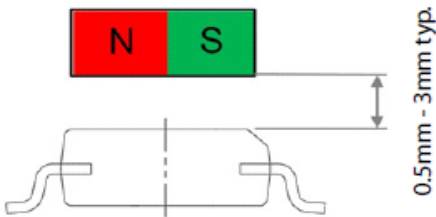
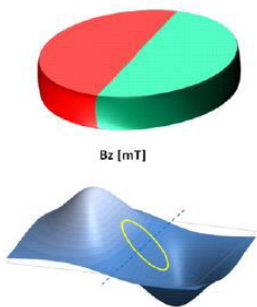
Speed and position sensor:

Motor is equipped with magnetic encoder. A sensor magnet is placed at the end of motor shaft and electronic card with GMR sensor is placed across the magnet, by the way contactless encoder sensor is obtained.

Magnetic encoder



Giant Magneto
Resistance (GMR)
sensor



up to 1024 pulse/rev

Permanent Magnet Synchronous Motor for Direct Drive Automatic Door

Driver Electronic

Motor is driven by special electronic that is designed for automataic door requirements. FOC method is used for BLAC permanent magnet motor to get precise torque and speed control. Motor and door control parameters (acceleration and deceleration time) can be set easily display on the electronic card.

- Rated input voltage 220-240V AC 50Hz
- Rated power 180W
- Design without transformer
- High efficieny vector control
- High speed and high acceleration
- Precise and continuous motor movements
- CAN-BUS connection
- Compatible to EN81-20

Supply voltage inputs

Interface connections



Motor connections

Encoder connection

Interface connections

Volt electric
motors