

Low-voltage Permanent-magnet synchronous motors



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Driving down CO₂ emissions is the greatest challenge of our time. That makes reducing energy consumption the order of the day. State-of-the-art speed-controlled electrical drive systems enable us to save maximum energy. One especially energy-efficient solution is permanent-magnet synchronous motors (PM motors).

They are exclusively operated with frequency converters and have substantially higher efficiency levels (>IE3) than asynchronous motors as well as improved partial load performance.

PM motors also have higher performance levels than asynchronous motors of the same size. For example, the magnet wheel precisely following the rotary field enables us to use PM motors on conveyor belts with several drives running synchronously. We can provide all sizes and a wide range of modifications to the standard range of motors.

VEM has positioned itself in the technology of permanent-magnet synchronous motors with its two new lines of

- permanent-magnet synchronous energy-saving motors
- permanent-magnet synchronous high-power motors

These products combine the proven design principles of the K21R/WE1R line with this cutting edge technology.

Technical details

Synchronous energy-saving motors

Frame sizes	56 – 315
Power output range	0.09 – 75 kW
Torque range	0.6 – 860 Nm
Speeds	4-, 6- and 8-pole design
Types of protection	IP 55, optionally IP 56, IP 65 according to EN 60034-5 (IEC 60034-5)
Design type	IM B3, IM B35, IM B5, IM B14, IM B34 and derived designs according to EN 60034-7
Types of cooling	According to EN 60034-6 (IEC 60034-6) <ul style="list-style-type: none">• self-ventilated, IC 411• forced-ventilated, IC 416
Coolant temperature / altitude of site	As a standard feature, -20 °C through +40 °C, altitude of site 1,000 m above sea level

Transponder	Optional, RFID System iID@2000 (13.56 Mhz based on ISO 15693)
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Synchronous high-power motors

Frame sizes	56 – 280
Power output range	0.25 – 75 kW
Torque range	0.55 – 700 Nm
Speeds	4-, 6-, 8- and 12-pole design
Types of protection	IP 55, optionally IP 56, IP 65 according to EN 60034-5 (IEC 60034-5)
Design type	IM B3, IM B35, IM B5, IM B14, IM B34 and derived designs according to EN 60034-7
Types of cooling	According to EN 60034-6 (IEC 60034-6) <ul style="list-style-type: none"> self-ventilated, IC 411
Coolant temperature / altitude of site	As a standard feature, -20 °C through +40 °C, altitude of site 1,000 m above sea level
Transponder	Optional, RFID System iID@2000 (13.56 Mhz based on ISO 15693)

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