

Motors for heavy electrical vehicles

AMXE250S



The AMXE motor series combines our design expertise, experience and manufacturing footprint to offer a configurable motor that can fulfill the diverse application needs and challenges that our customers may have.

Product highlights

Compact, permanent magnet synchronous motors for high efficiency propulsion and auxiliary usage. Configure your motor with specific lengths, windings and voltages to get your needed performance.

- High torque capability for excellent productivity and performance.
- Designed and manufactured for rough and tough work environments.
- Fit for your purposes and performance, with perfect sizing.
- High speed range for improved utilization with transmission and gearboxes.
- Improved product configuration for easier installations.

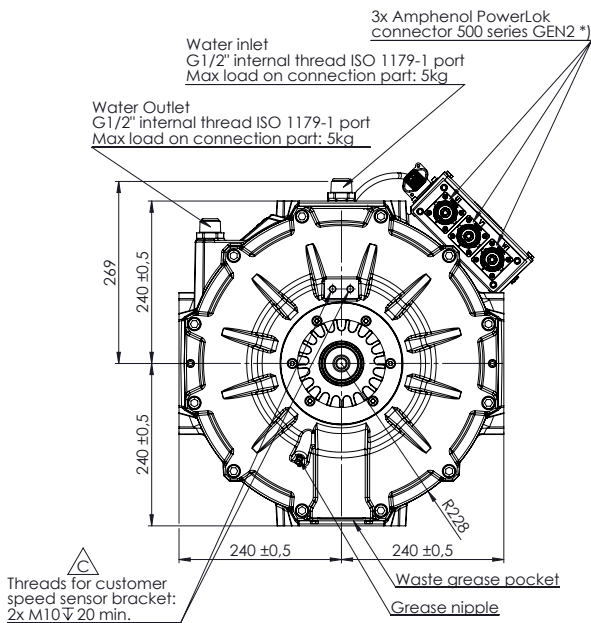
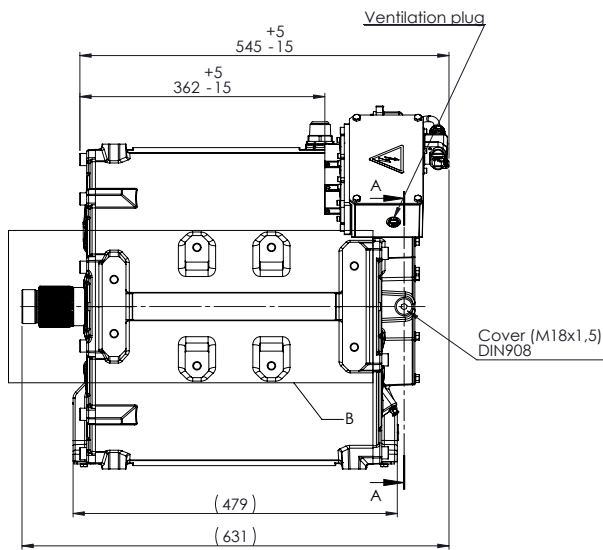
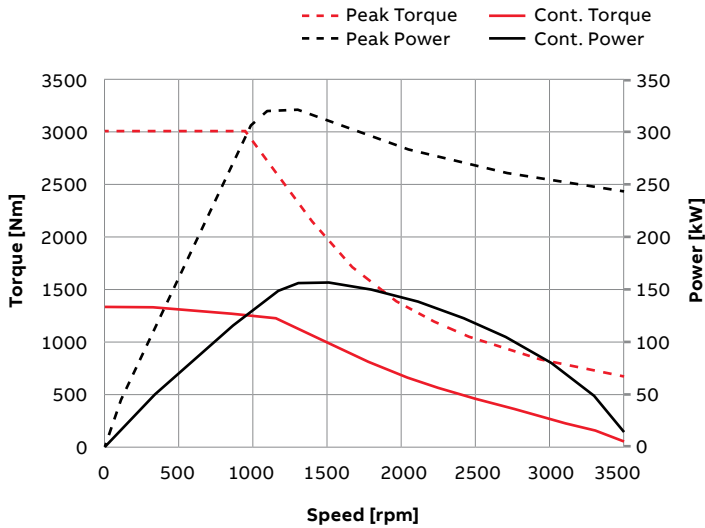
Why ABB?

- Global reach, but with local sales and technical support presence
- Electrical expertise competence to help with system integration
- Inverter, motor, line converter and battery from the same supplier

		Cont	Peak	Vmax	30 min
		RMS value	15s	15s	
Traction motor performance¹					
DC link	V	750	750	750	750
Power	kW	147	283	242	157
Phase to phase voltage	V	530	493	530	530
Current in the stator	A	168	476	318	187
Frequency	Hz	150	90	350	150
Rotation speed	rpm	1500	900	3500	1500
Torque	Nm	936	3000	661	1000

¹ Specifications are valid with volume flow rate 20 lpm, 50%/50% water and glycol mixture, and in 40 °C ambient temperature unless stated otherwise. Actual performance will vary with drive cycle, cooling and installation details.

² 15 sec rating, reference temperatures according to IEC 60349-4: The stator winding at 150 °C and the rotor magnets at 100 °C.



Motor technical specification

General Characteristics

Motor topology	3-phase Permanent Magnet Synchronous Motor
Protection class	IP65, IP67
Insulation class	Class H (IEC 60085)
Number of poles	12
Typical duty	S9 (IEC 60034-1)
Coolant type	Water/Glycol
Standard mounting	IM 3001 or IM 3601 (IEC 60034-7)

Environmental Conditions

Operating ambient temperature	-20 °C to +65 °C, (Option -40 °C)
Storage conditions	-20 °C to +85 °C, (Option -40 °C)

Cooling Characteristics

Coolant mixture	Water with glycol 40–60%. Nominal 50%. Derating required above 50% glycol content.
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Max. coolant inlet temperature	65 °C
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Volume flow rate	5–30 lpm. Nominal 20 lpm. Derating required for flow rates below 20 lpm.
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Max. coolant pressure	3 bar
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Max. pressure drop	< 500 mbar (@50% glycol, 65 °C, 20 lpm)
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Max. winding temperature limit	180 °C (IEC 60085)
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Mechanical Characteristics

Mechanical overspeed	4,000 rpm
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Shock loads	Up to 50 g (ISO 16750-3 4.2.2)
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Vibration loads	5.9 g r.m.s (ISO 16750-3 4.1.2.7)
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Interfaces

HV connector	Shielded Cable glands (3×)	Amphenol PowerLok 1POS, 500 series
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LV connector	Harting HAN Q 21 pins	
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Flange	SAE1 (SAE J617) for IM 3001	
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Shaft	DIN 5480 – W60 × 1.25 × 46 × 9p	
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Cooling connection	2 × G1/2" internal thread ports (ISO 1179-1)	
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Sensors

Speed/position sensor	Resolver (available as variant code)
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Temperature sensors	PT100 and NTC available
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	AC	E	HD	H	L	Weight (kg)
AMXE250S	500	76	536	240	502	< 300