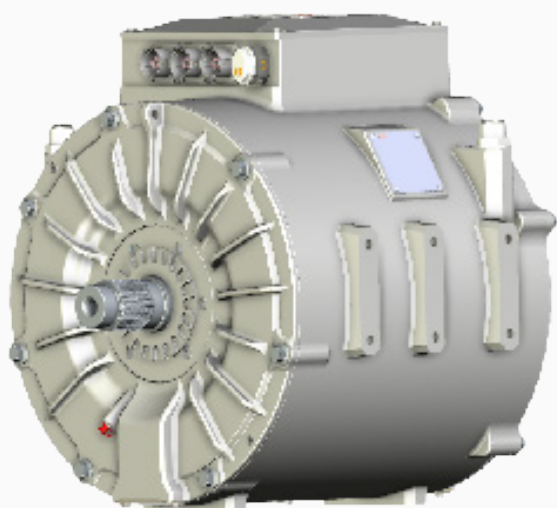


DATA SHEET (PRELIMINARY)

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?

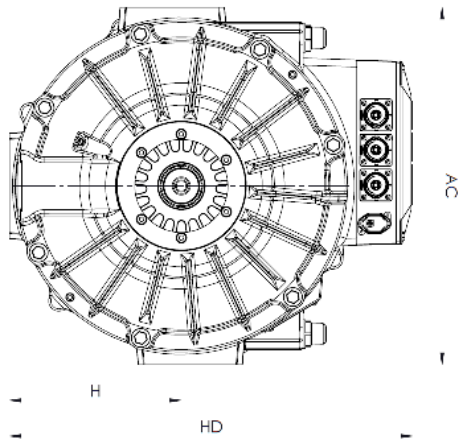
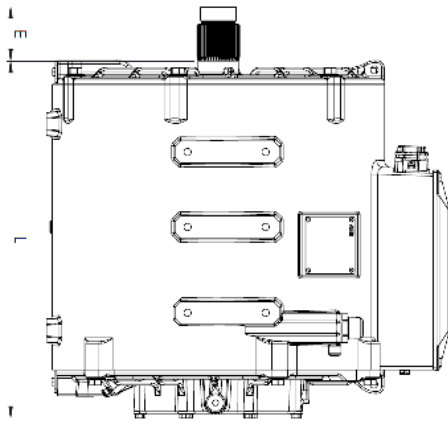
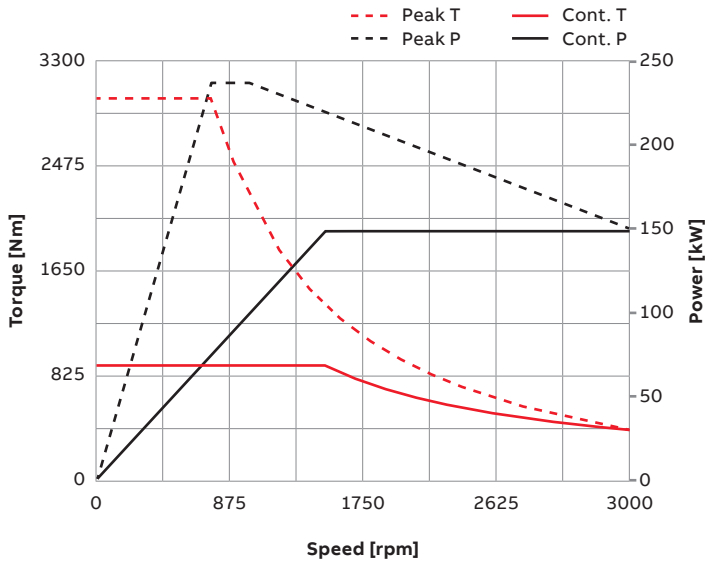
- Global reach, but with local sales and technical support presence
- Electrical expertise competence to help with system integration
- Inverter, motor, line converter and battery from the same supplier

Motor performance data¹

Parameter		30 min rating	Peak ²	Vmax
DC link	V	750	750	750
Power	kW	140	236	140
Phase to phase voltage (RMS)	V [r.m.s.]	410	443	530
current in the stator	A	220	486	195
Frequency	Hz	150	75	350
Rotation speed	rpm	1500	750	3500
Torque	Nm	891	2998	382
Efficiency	%	96.4	86.3	94.7

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.
Max. coolant inlet temperature	65 °C

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
Max. pressure drop	< 500 mbar (@50% glycol, 65 °C, 20 lpm)
Max. winding temperature limit	180 °C (IEC 60085)

Mechanical Characteristics

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

Interfaces

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

Sensors

Speed/position sensor	Resolver (available as variant code) Kitas 2171-50 Speed sensor (available as variant code)
Temperature sensors	2 pcs PT100 2-wire in winding

	AC	E	HD	H	L	Weight (kg)
AMXE250S	500	76	563	240	500	< 300

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