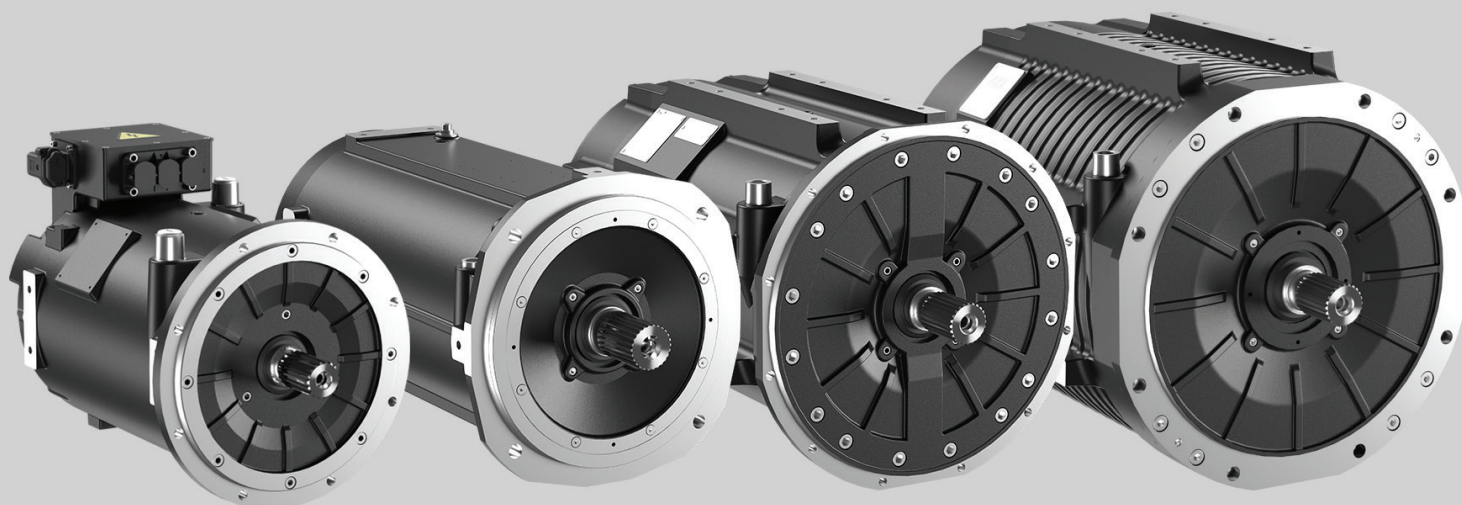

CATALOG | DECEMBER 2022

Motors for heavy electric vehicles

AMXE series

Frame sizes 132, 160, 200 & 250



Make your E-mobility journey easier and more efficient, by using ABB's powertrains and components that cover all the building blocks needed for vehicle electrification.

Motors for heavy electric vehicles

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Designed to meet your targets and your customers' demands

AMXE series

Partnering with ABB you will gain a trusted partner that offers proven e-powertrain products. This allows you to efficiently meet all the most important market demands, such as improved productivity, reduced TCO, increased uptime and improved operator environment.

Your electric vehicle partner

Efficient motors require a deep insight into design, manufacturing and integration. Motors are very different from internal combustions engines, and it is easy to underestimate the development challenges. In ABB, you have an experienced partner that will assist you from early simulations to aftermarket support. Manufacturing, service and support is always close at hand thanks to ABB's global presence.

Optimized for your application

Each motor must be adapted to the actual drive cycle. ABB's platform is based on proven parts that are combined into task-specific solutions. This ensures fast delivery and customization to your needs. Common to all motors are low energy losses throughout the drive cycle.

Motor expertise at play

We know what it takes to make e-mobility work optimally. Torque and speed are adapted to the vehicle type and its duty cycle. Low inertia motors ensure fast control. Compact design and torque density reduce the motor's outer dimensions. Different IP classes and surface treatments enable reliable use in aggressive atmospheres. All these factors are considered, configurable and customized in ABB's motors.

Safe and easy to install and operate

ABB simplicity gives you a competitive edge. Our motors' flanges and shafts are standard or customized on your request. All motors are compact and easy to install. When it comes to vehicle reliability, our century-long experience of combining motor and inverter into packaged solutions is solid proof of our capabilities against external mechanical impacts.



Designed to meet your targets and your customers' demands

AMXE series

Key features and benefits

- Configurable lengths, windings, and voltages to get the needed motor performance
- High torque capability for excellent productivity and responsiveness
- Designed for tough environments and to tolerate high shock loads and vibration levels, and wide ambient temperature ranges
- Enclosure protection (IP) ratings to meet all moisture and dirt resistance needs
- Long product life expectancy assured by extensive testing and advanced simulations



Why ABB?

- Global reach, but with local sales and technical support presence
- Modular design and range of frame sizes allow easy configuration with flexible power ratings
- Compatible with the battery solution at various voltage levels
- Electrical competence to help with system integration
- Training of your personnel, e.g. in development, service, and assembly
- Optimized power consumption/energy losses
- Compact components, enabling use within the space and weight requirements of most applications
- Safe and easy to install, with quick-plug High Voltage Interlock Connectors (HVIL)
- Inverter, motor, line converter and battery from the same supplier
- Long term relationships mean you can have impact on R&D developments



Click [here](#) to learn more about the key segments for ABB Powertrains for Sustainable Transport

Motor specification

AMXE Series

	Specification	AMXE132S	AMX132L	AMXE160L	AMXE200S	AMX200L	AMXE250L
Operating conditions	Coolant mixture	Water with glycol (40-60%)					
	Coolant temperature	≤ 65 °C					
	Volume flow rate	5-25 lpm (nominal 20 lpm)		15-25 lpm (nominal 15 lpm)	15-30 lpm (nominal 20 lpm)		15-25 lpm (nominal 15 lpm)
	Pressure drop	< 1 bar @ 20l/min 65°C					
	Operating ambient temperature	-20 °C to +40 °C					
	Max coolant pressure	3 bar		3 bar	3 bar		4 bar
Electrical and physical properties	Machine type	3-phase Permanent Magnet Synchronous Motor					
	Weight	71 kg	97 kg	190 kg	229 kg	287 kg	490 kg
	Inertia	0.0454 kg·m2	0.0730 kg·m2	0.156 kg·m22	0.283 kg·m²	0.417 kg·m²	1.22 kg·m2
	Max speed	5000 rpm		5000 rpm	5000 rpm		3500 rpm
	IP class	IP65 as a standard. Higher ratings as option		IP66	IP65 as a standard. Higher ratings as option		IP66 as a standard. Higher ratings as option
	Shock loads	Up to 50 g (ISO 16750-3 .2.2)		+ -10g in xyz direction	Up to 50 g (ISO 16750-3 4.2.2)		+ -10g in xyz direction
	Color	RAL 9005					
Interfaces	HV connection	Amphenol PowerLok 3POS X-coded		Amphenol Power-Lok X-coded	Amphenol PowerLok X-coded		Amphenol Power-Lok X-coded
	LV connection	Harting HAN Q 21 pins		M12 connectors	M12 connectors		M12 connectors
	Flange	SAE 6 (SAE J617) for B5 (IM 3001) SAE C (SAE J744) for B14 (IM 3601) (Or according to customer specification)		325 mm diameter	SAE 3 (SAE J617) (or acc. to customer specification)		400 mm diameter
	Shaft	W40 x 2 x 18 x 9g (DIN 5480) for B5 SAE C 14T 12/24 DP (ANSI B92.1b) for B14 (or acc. to customer specification)		DIN5480 – W55x2x26x9g (or acc. to customer specification)	W50 x 2 x 24 x 9g (DIN 5480) (or acc. to customer specification)		DIN5480 - W50 x 2 x 24 x 9g (or acc. to customer specification)
	Cooling connection	2 x G1/2” internal thread ports ISO 1179-1					

Variant codes

AMXE series

Variant codes specify additional options and features to the standard motor. The desired features are listed as three-digit variant codes in the motor order. Note also that there are variants that cannot be used together.

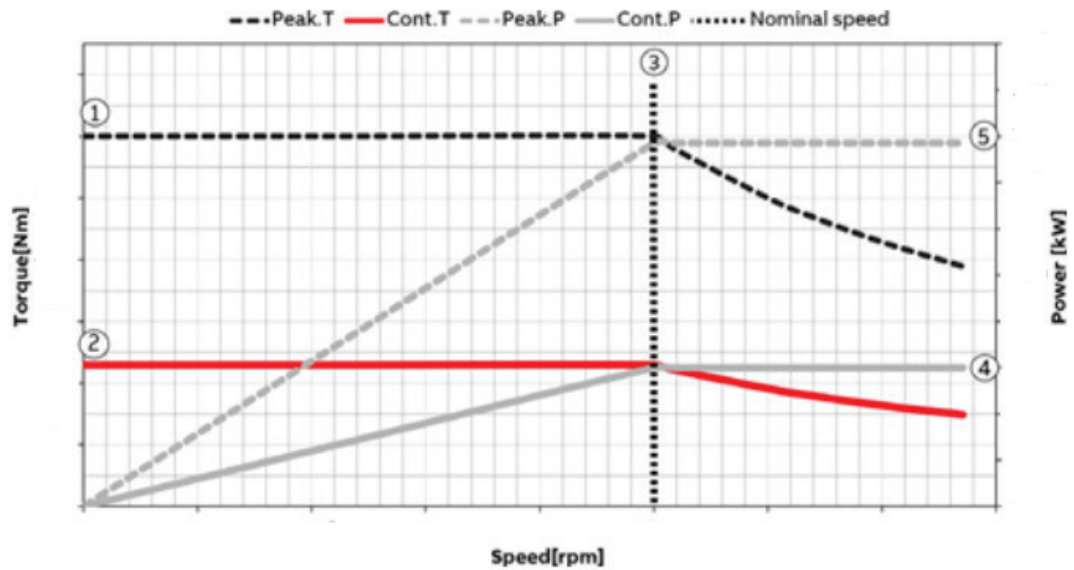
Code/Variants	Frame size			
	132	160	200	250
Rating & instruction plates				
2 Restamping voltage, frequency and output, continuous duty.	•	•	•	•
Stator winding temperature sensors				
34 2-wire PT100 resistance elements, in stator winding	○	○	○	○
Branch standard designs				
056 Float type leakage detector.	R	-	R	•
Earthing Bolt				
67 External earthing bolt	•	•	•	•
Mounting arrangements				
305 Additional lifting lugs	•	○	•	R
Administration				
531 Sea freight packing	•	•	•	•
Branch standard designs				
209 Non-standard voltage or frequency, (special winding).	•	•	•	•
Variable speed drives				
588 Shaft grounding device	•	R	•	•
701 Insulated bearing at N-end	•	R	•	-
702 Insulated bearings at both ends	•	R	•	○
848 Heavy duty resolver	•	•	•	•
Terminal box				
846 Amphenol powerlok 3pos	○	-	-	-
847 Power connector with HVIL	•	○	•	○
854 Encoded power connector	-	-	•	-
Testing				
148 Routine test report.	•	•	•	•
764 Test for one motor from specific delivery batch with ABB frequency converter available at ABB test field. ABB standard test procedure.	•	•	•	R
Heating elements				
450 Heating element, 100-120 V	•	R	•	•
451 Heating element, 200 - 240 V	•	R	•	•
Bearings and Lubrication				
853 Pt100 2-wire in bearing, NDE side	•	-	•	-
999 To be specified case by case.	R	R	R	R

○ = Included as standard | • = Available as option | - = Not applicable | R = Contact area sales responsible

Technical data

AMXE series

The performance of the AMXE motors are described through five different operating points as seen in the the torque and speed graph below.



1. Instantaneous peak torque at 65 °C coolant temperature, drawn at reference temperatures according to IEC 60349-4.
2. Continuous torque (S1 duty) at 65 °C coolant temperature.
3. Nominal speed point
4. Continuous power (S1 duty) at 65 °C coolant temperature.
5. Instantaneous peak power at 65 °C coolant temperature, drawn at reference temperatures according to IEC 60349-4.

Technical data

AMXE series

AMXE132

Motor type		Peak torque Nm	Peak power kW	Peak current A	Max speed rpm	Continuous torque Nm	Continuous power kW	Continuous current A	Nominal speed rpm
AMXE132S	3GLX134183-FA	389	61	114	2540	177	28	49	1500
	3GLX134184-FA	391	82	149	3295	176	37	63	2000
	3GLX134185-FA	393	103	187	4110	172	45	77	2500
	3GLX134186-FA	392	123	230	5000	169	53	94	3000
	3GLX134187-FA	389	163	298	5000	160	67	116	4000
AMXE132L	3GLX134583-FA	657	103	187	2465	307	48	82	1500
	3GLX134584-FA	653	137	249	3285	300	63	108	2000
	3GLX134585-FA	651	170	298	3945	292	77	127	2500
	3GLX134586-FA	654	205	375	4935	284	89	154	3000
	3GLX134587-FA	652	273	500	5000	265	111	194	4000

*B5 flange - 3GLX134x8x-BFA, B14 flange – 3GLX134x8x-CFA.

AMXE160

Motor type		Peak torque Nm	Peak power kW	Peak current A	Max speed rpm	Continuous torque Nm	Continuous power kW	Continuous current A	Nominal speed rpm
AMXE160L	3GLX162582-BEA	790	83	130	2100	530	56	88	1000
	3GLX162583-BEA	790	124	201	3100	530	83	136	1500
	3GLX162584-BEA	790	165	245	4200	530	111	169	2000
	3GLX162585-BEA	790	207	316	4900	530	139	214	2500
	3GLX162586-BEA	790	248	369	5000	530	166	251	3000
	3GLX162587-BEA	790	331	444	5000	530	222	301	4000

AMXE200

Motor type		Peak torque Nm	Peak power kW	Peak current A	Max speed rpm	Continuous torque Nm	Continuous power kW	Continuous current A	Nominal speed rpm
AMXE200S	3GLX203183-BFA	1828	287	600	3810	590	93	180	1500
	3GLX203184-BFA	1634	342	600	4130	571	120	191	2000
	3GLX203185-BFA	1365	357	600	4500	516	135	191	2500
	3GLX203186-BFA	1205	379	600	4960	484	152	200	3000
AMXE200L	3GLX203583-BFA	2813	442	900	3670	811	127	241	1500
	3GLX203584-BFA	2503	524	900	4130	843	177	283	2000
	3GLX203585-BFA	2174	569	900	4720	803	210	308	2500
	3GLX203586-BFA	1961	616	900	5000	741	233	338	3000

AMXE250

Motor type		Peak torque Nm	Peak power kW	Peak current A	Max speed rpm	Continuous torque Nm	Continuous power kW	Continuous current A	Nominal speed rpm
AMXE250L	3GLX253582-BFA	3353	263	561	2660	1500	118	257	750
	3GLX253583-BFA	3346	350	617	2920	1500	157	283	1000
	3GLX253584-BFA	3330	436	681	3240	1500	196	315	1250

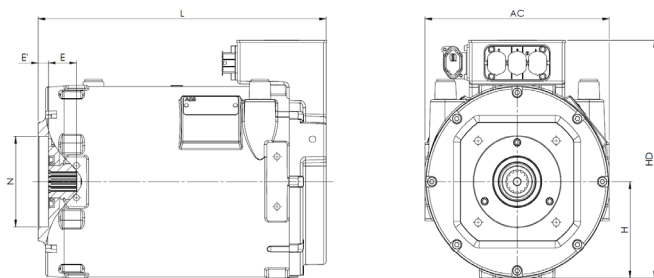
Specifications are valid with 500 Vac, coolant at 65°C (inlet) and 50%/50% water and glycol mixture, 20 lpm and in 40°C ambient temperature unless stated otherwise. Actual performance will vary with drive cycle, cooling and installation details.

Main dimensions

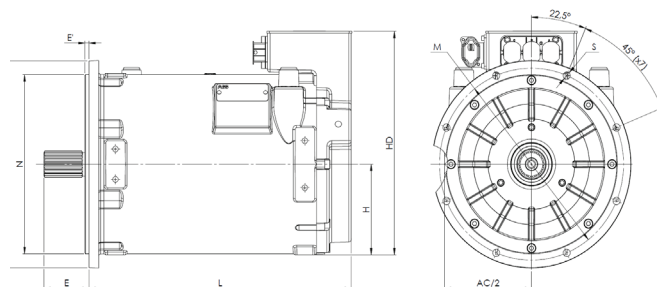
AMXE series

AMXE132

B14

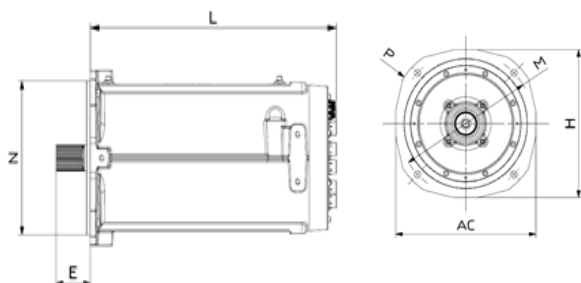


B5



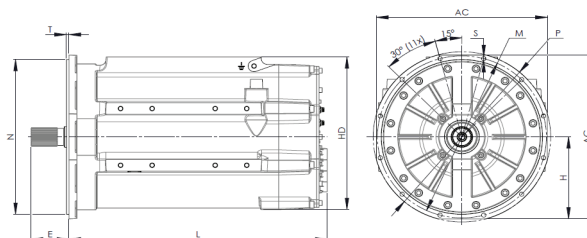
Motor type	AC	E	E'	H	HD	L	M	N	P
AMXE132S/B5	270	70	6.4	135	333	319	285.75	266.7 h6	309
AMXE132L/B5	270	70	6.4	135	333	407	285.75	266.7 h6	309
AMXE132S/B14	270	41	15	135	333	334	127 H7		
AMXE132L/B14	270	41	15	135	333	422	127 H7		

AMXE160



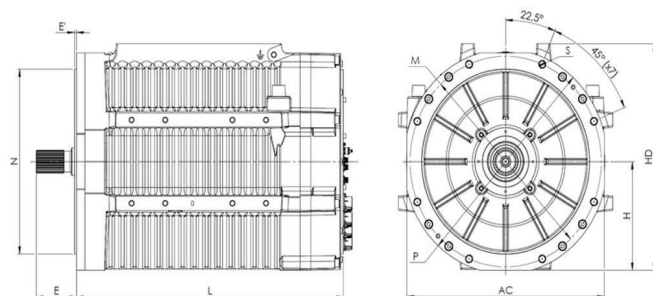
Motor type	AC	E	H	L	M	P	N
AMXE160LH4	370	90	370	646	360	400	325

AMXE200



Motor type	AC	E	H	HD	L	M	N	P	S	T
AMXE200S	434	96	217	404	550	428.62	409.58	451	11.2	6.4
AMXE200L	434	96	217	404	655	428.62	409.58	451	11.2	6.4

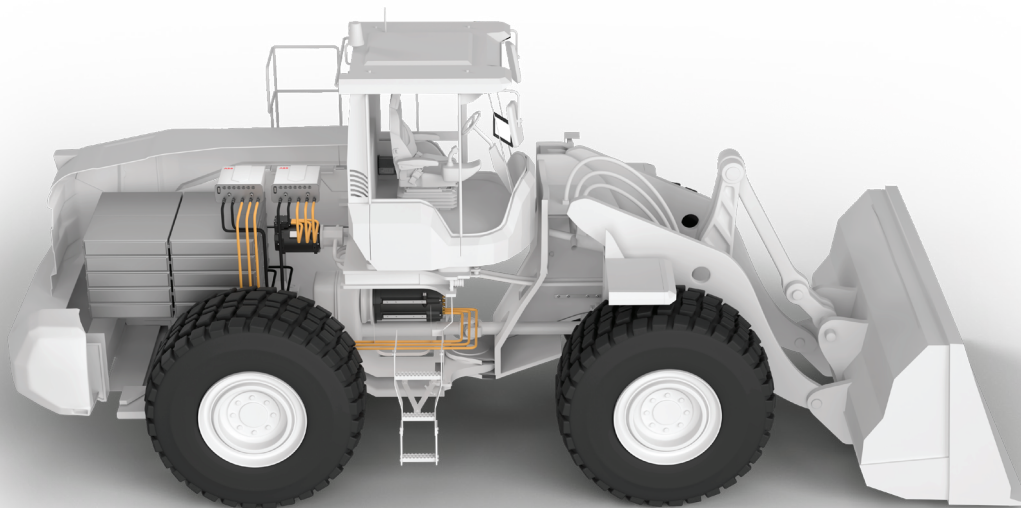
AMXE250



Motor type	AC	E	E'	H	HD	L	N
AMXE250L	470	96	5	255	510	635	400 H6

ABB Powertrains for Sustainable Transport

Electrifying the powertrains of industrial vehicles, transportation and marine



AMXE Motors

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.

HES880 Drives

The HES880 was designed to create a dependable and compact low-voltage, high-power mobile drive for heavy duty applications in heavy working machines.

Harnessflex EVO™ Conduit

Suitable for electric vehicle applications Harnessflex EVO™ (Electric Vehicle Orange) conduit is flexible nylon that is able to withstand extremes of temperatures and resistant to automotive oils and solvents.

BORDLINE® Compact Converters for MV applications

Power conversion converters with optional integration of auxiliary converters.

BORDLINE® Energy Storage System

This is a lithium-ion based onboard energy storage system that is characterized by a high safety level and long lifetime.

Mobile Controller

New possibilities open up in mobile automation with its innovative X90 mobile controllers.

[LEARN MORE](#)

Total product offering

Motors, generators with a complete portfolio of services



IEC motors

- Low voltage motors
- High voltage induction and synchronous motors
- Marine motors
- Motors for explosive atmospheres
- Motors for heavy electric vehicles
- Motors for food and beverage
- Motors for variable speed drives
- Permanent magnet motors
- Synchronous reluctance motors
- Traction motors

NEMA motors

- Low voltage motors
- High voltage induction and synchronous motors
- Marine motors
- Motors for explosive atmospheres
- Motors for variable speed drives
- Permanent magnet motors
- Servomotors
- Washdown motors

Generators

- Generators for wind turbines
- Generators for diesel and gas engine power plants
- Generators for steam and gas turbine power plants
- Generators for marine applications
- Generators for industrial applications
- Generators for traction applications
- Synchronous condensers for reactive power compensation

Life cycle services

Contact us



For more information and contact details:

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heavy-electric-vehicles](https://new.abb.com/motors-generators/iec-low-voltage-motors/heavy-electric-vehicles)