



Kids Are the Future Secure Rides Powered by Microvast



Microvast Holdings, Inc.

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Safer. Smarter. Ready.



COMPANY PROFILE

Microvast (NASDAQ: MVST) powers the future of electric school transportation with advanced battery systems and electric powertrain components engineered for the U.S. school bus market. Designed for safety, reliability, and everyday performance, our solutions help OEMs bring efficient and dependable electric school buses to market with confidence.

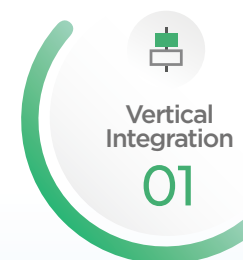
From advanced cell technology to battery systems, motors, motor controls, and thermal management, Microvast provides a strong foundation for school bus electrification. Our integrated approach helps streamline system development, enhance performance compatibility, and support reliable operation in demanding real-world conditions.

With high energy density, fast charging, long cycle life, and strong safety performance, Microvast solutions are built to improve uptime, support predictable route operations, and reduce total cost of ownership. Supported by vertically integrated manufacturing, deep engineering expertise, and a commitment to quality and sustainability, Microvast is helping drive the future of safe and efficient student transportation.



VALUE PROPOSITION

Microvast battery solutions with high energy density, strong safety performance, fast-charging capability, and long cycle life, improving energy efficiency, supporting lower total cost of ownership, accelerating clean energy adoption & sustainable development.



Vertical
Integration
01



Global Patent
Portfolio
02



High Standards
Products
03

ABOUT US

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Integrated KAF™ Electric School Bus Powertrain System

Microvast's KAF™ platform integrates both the traction drivetrain and the power system into one coordinated electrification solution for school buses. The drivetrain includes the electric drive and vehicle propulsion functions, while the power system combines LFP battery packs, onboard charging, thermal management, vehicle auxiliaries, and an independent nitrogen inerting safety subsystem. This modular system design supports scalable vehicle range, strong traction performance, controlled electrical and thermal operation, and streamlined OEM integration. The nitrogen generation and storage subsystem helps maintain dry, low-oxygen conditions within the battery packs to reduce the risk of thermal runaway and thermal propagation.

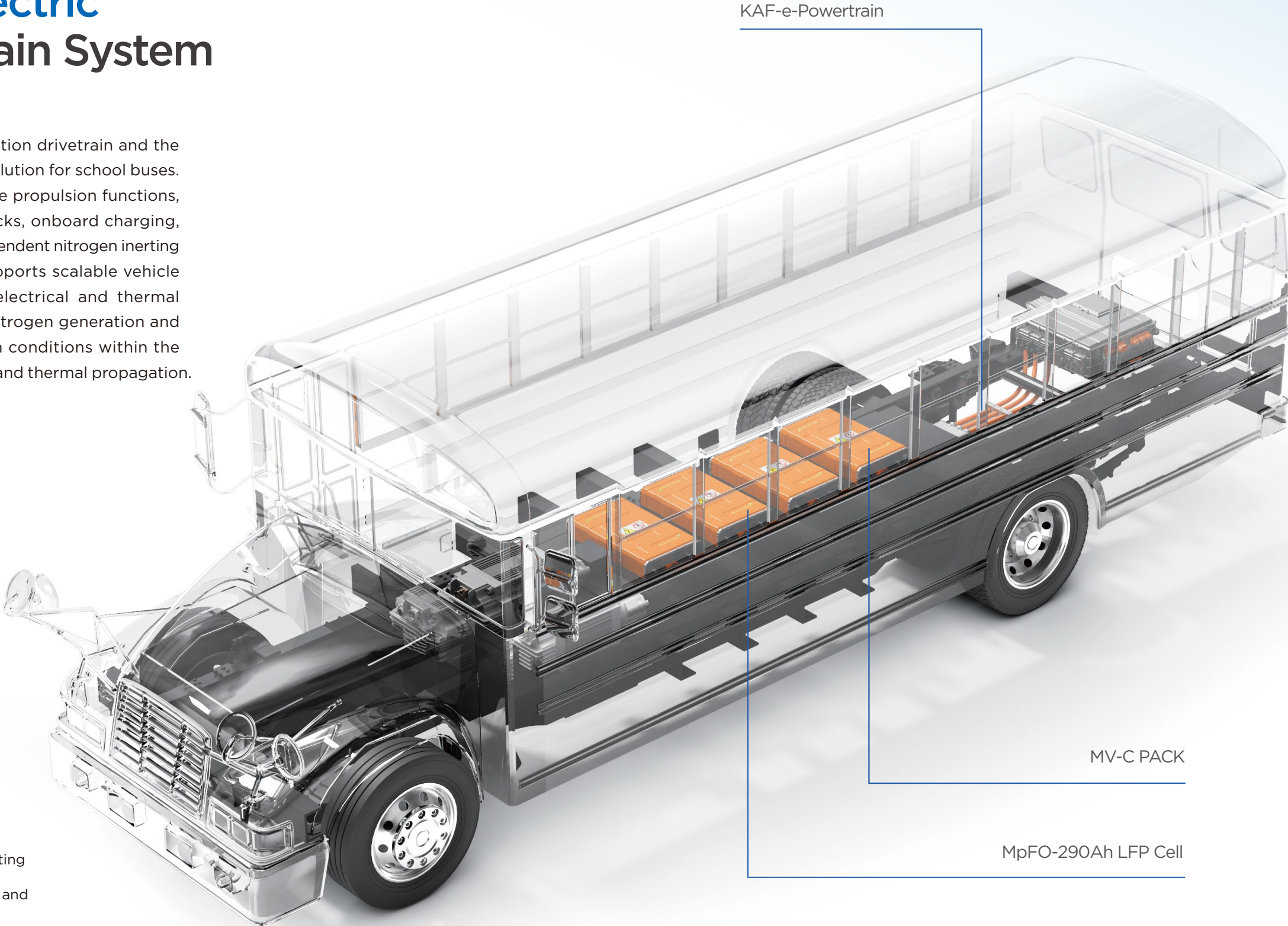
190–380kWh

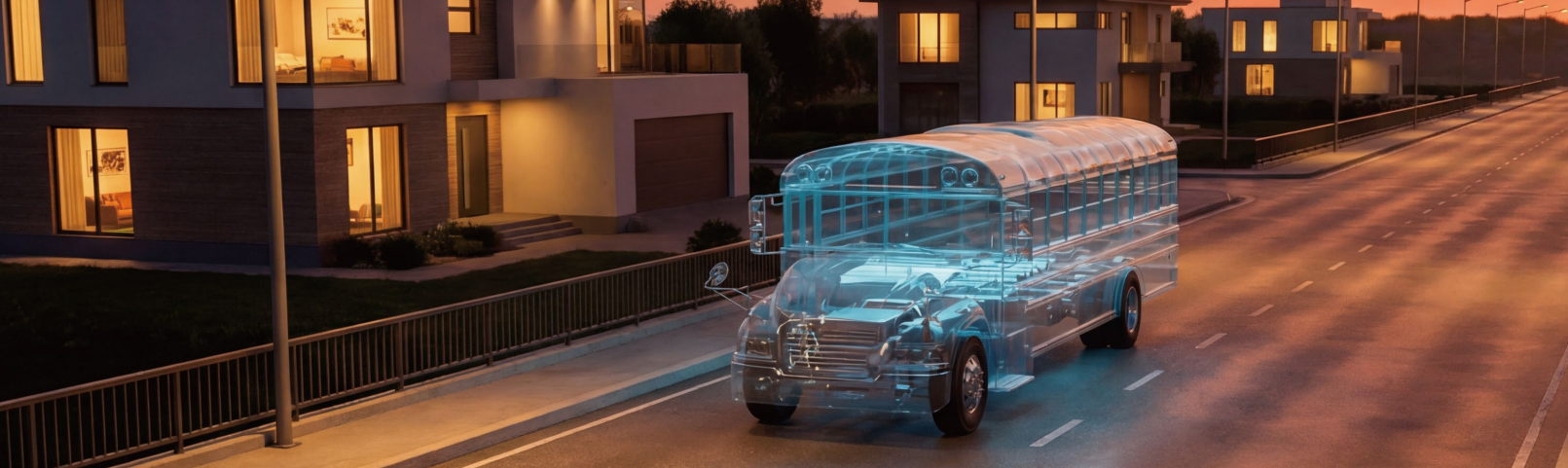
Battery System

19.2kW(AC)

Charging

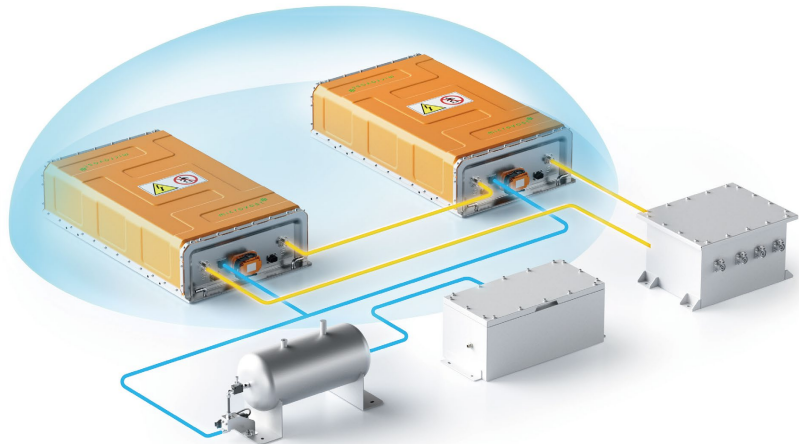
- Battery System: 190–380 kWh LFP pack
- Traction Drivetrain: 180 kW rated / 330 kW peak
- Charging(AC): 19.2 kW onboard charger
- Battery Thermal Management: 8 kW cooling / 6 kW heating
- Drivetrain Cooling: 35 kW thermal module
- Battery Inerting Safety: on-demand nitrogen generation and storage for dry internal pack conditions, low oxygen concentration, and abnormal-event mitigation





KAF™ Battery System and Battery Control Junction Box

Battery System



Item	Specification
Cell Chemistry	LiFePO ₄ (LFP)
Pack Configuration (per string)	5 MV-C packs in series
System Configuration	Up to 2 strings in parallel
Nominal Voltage (High)	656 V
Operating Voltage Range (High)	513-748 V
Rated Energy	190-380 kWh
Operating Temperature	-30-+55 °C
Operating Humidity	≤ 95 % RH (no condensation)
Maximum Operating Altitude	-200-+4,000 m above sea level

* Specifications are subject to system configuration and operating conditions.
* Ambient temperature, derating may occur.

High-Voltage Control Box



Item	Specification
Nominal Voltage	DC 24 V
Operating Voltage Range	DC 9-32 V
IP Grade	IP67
Dimensions (L × W × H)	435 × 355 × 245 mm
Operating Temperature	-30-+55 °C
Operating Humidity	≤ 95 % RH (no condensation)
Maximum Operating Altitude	-200-+4,000 m above sea level
Integrated Function	Pyrofuse + high-safety BMS
Safety Features	Thermal runaway detection / wake-up logic

• The KAF™ battery system provides the high-voltage energy source for vehicle propulsion and auxiliaries, while the battery control and power junction box integrates pyrofuse protection and a safety-focused BMS for system monitoring, HV isolation, and abnormal-event response.



Core Battery Platform: MV-C Pack and 290Ah LFP Cell

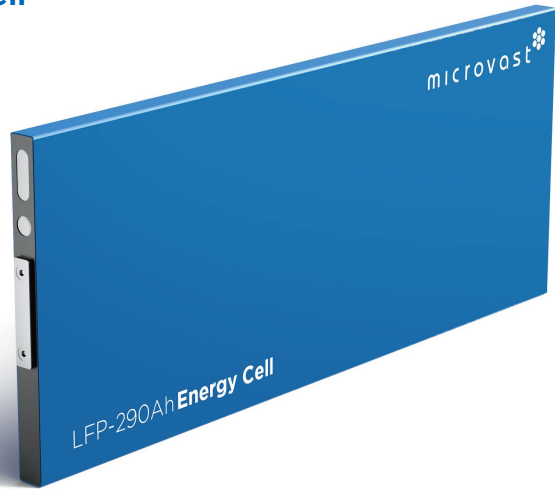
MV-C PACK



Item	Specification
Model	MV-C-LFP290
Nominal Capacity	290 Ah
Nominal Voltage	131 V
Nominal Energy	38 kWh
Cycle Life	≥ 3,000 cycles
Continuous C-Rate	1C
Dimensions (L x W x H)	1,060 x 630 x 248 mm

* Specifications are subject to operating conditions and system configuration.

MpFO-290Ah LFP Cell



Item	Specification
Model	MpFO-290Ah
Nominal Capacity	290 Ah
Nominal Voltage	3.2 V
Voltage Range	2.5-3.65 V
Energy Density	≥ 169 Wh/kg
Cycle Life	≥ 4,000 cycles
Continuous C-Rate	1C
Operating Temperature	-30-+55 °C
Dimensions (L x W x T)	555 x 225.3 x 20.2 mm
Safety Design	Dual-side pressure relief

* Specifications are subject to operating conditions and test protocol.

- The MV-C pack and 290Ah LFP cell form the core energy platform of the KAF™ system. This system combines modular pack design, high-capacity LFP cells, pack-level monitoring, and nitrogen-assisted abnormal-event mitigation to support scalable energy, durability, and reliable school bus operation.



Nitrogen Generation and Storage for Battery Pack Inerting

Nitrogen Device



Item	Specification
Function	On-demand nitrogen generation for battery pack inerting
Nominal Voltage	DC 24 V
Operating Voltage Range	DC 9-32 V
Operating Temperature	-40~+65 °C
Operating Humidity	≤ 95% RH (no condensation)
Dimensions	540 x 281 x 217 mm
Weight	12 kg

Nitrogen Storage Tank



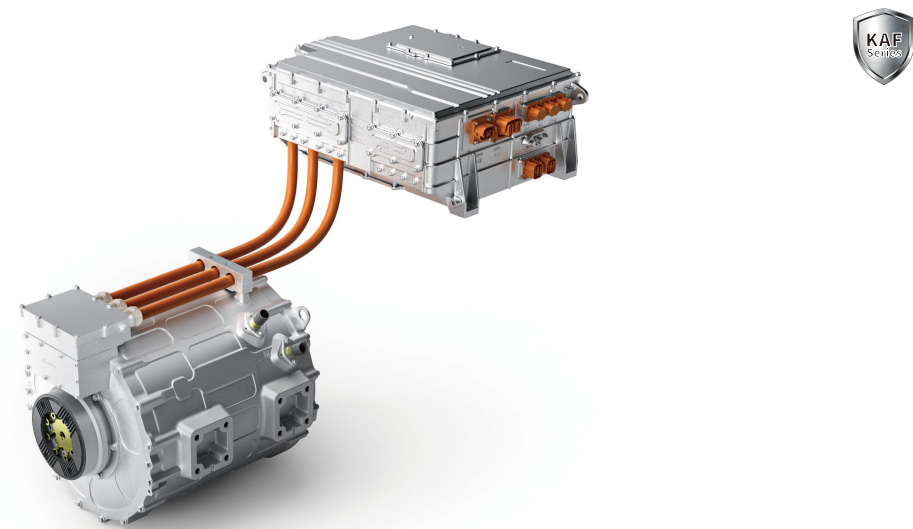
Item	Specification
Function	Nitrogen storage and controlled pack injection
Rated Volume	12 L
Integrated Components	Flow valves + pressure sensors
Nominal Voltage	DC 24 V
Operating Voltage Range	DC 9-32 V
Operating Temperature	-40~+85 °C
Dimensions	589 x 210 x 315 mm
Weight	12 kg

- The nitrogen generation and storage subsystem helps maintain dry, low-oxygen conditions within the battery packs to reduce the risk of thermal runaway and thermal propagation.



Traction Drivetrain and Electric Air Compressor

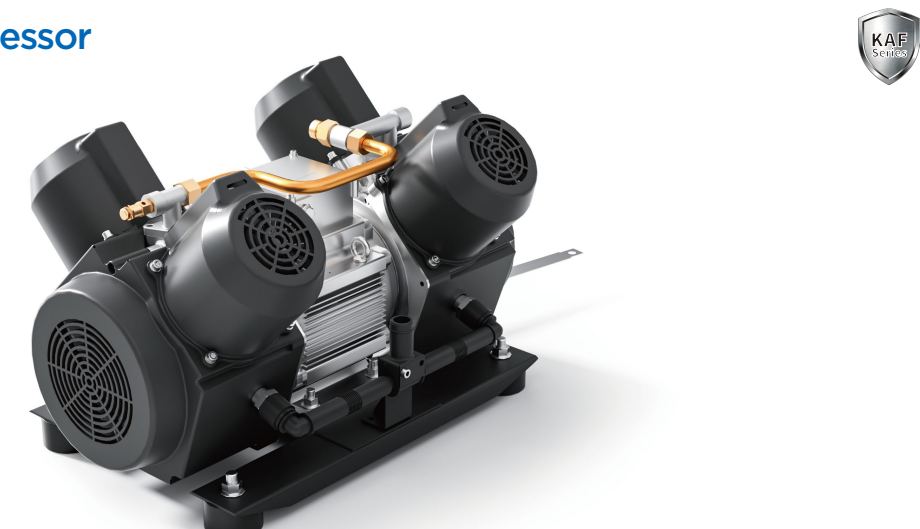
KAF-e-Powertrain



Item	Specification
Model	KAF-180INV & KAF-180MOR
Rated input voltage	600 VDC
Rated Power	180 kW
Peak Power	330 kW
Rated Torque	1,720 N·m
Maximum Torque	3,500 N·m (120s)
Rated speed	1,000 r/min
Maximum speed	3,000 r/min
Rated Efficiency	96%

* Performance values are for reference only and depend on vehicle configuration, payload, and operating conditions.

Electric Air Compressor



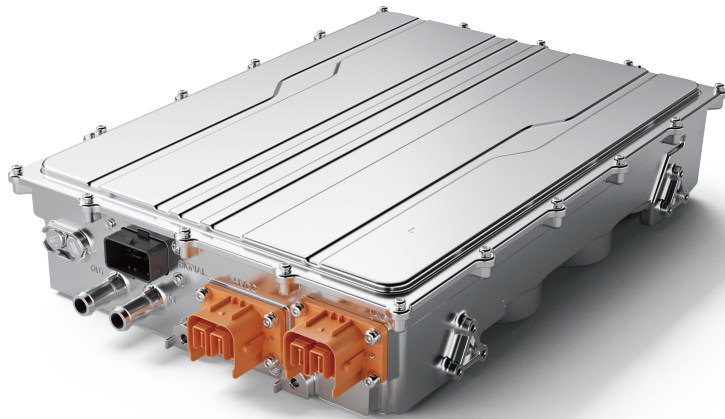
Item	Specification
Model	KAF-004EAC
Rated Power	4 kW
Peak Power	8 kW
Rated Voltage	380 VAC
Motor Type	Permanent magnet synchronous motor
Air Flow Rate	0.38 m ³ /min
Operating Pressure	1.0 MPa
Set Pressure	1.55 MPa
Noise Level	≤ 75 dB(A)
Operating Ambient temperature	-40~+65°C
Service Life	>10,000 hrs

- The KAF™ traction drivetrain delivers the torque and power required for school bus duty cycles, while the electric air compressor efficiently supports auxiliary pneumatic functions with low noise and long service life.



On-Board Charger and Electric Steering Pump

On-Board Charger



Item	Specification
Model	KAF-019OBC
LV-Supply	DC 9-32 V
Input Voltage/Current Range	AC 85-288 V@1P / 80 A (max)
AC Frequency Range	45-65 Hz
Output Voltage/Current Range	DC 400-860 V / 36 A (max)
Rated Charging Power	19.2 kW
Operating Temperature	-40~+85 °C
HV Connector Protection Rating	IP6K7D / IP6K9KD
Dimensions (L x W x H)	506.6 x 355 x 97 mm
Peak Efficiency	≥ 96.5%

* Specifications are subject to operating conditions and system configuration.

Electric Steering Pump



Item	Specification
Model	KAF-007ESP
Input Voltage	380 V AC (HV motor) / 24 V DC (LV motor)
Rated Input Current	8 A (HV)
Rated Input Power	3 kW (HV)
Peak Input Power	7.5 Kw (HV) / 2kW(LV)
Pump Flow	20 ± 2 L/min @ 1500r/min 0.5 MPa
Operating Pressure	15 ± 0.3 MPa (max)
Pump Displacement	13 mL/r
Noise Level	≤ 65 dB(A) (Unloaded)
Operating Ambient Temperature	-40~+85 °C

- The onboard charger enables flexible AC charging for the high-voltage battery system, while the electro-hydraulic steering pump provides efficient and reliable steering assist for daily vehicle operation. Together, these components support both energy replenishment and safe vehicle control.

Battery Thermal Management System

BTMS



Item	Specification
Model	KAF-008BTS
Rated Cooling Capacity	8 kW (Standard condition: 45 ℃, outlet 15 ℃)
Rated Heating Capacity	6 kW
Condenser Airflow	4,000 m³/h (at 175 Pa)
Rated Input Power for Cooling	≤ 4 kW
Circulating Water Flow	50 L/min @ 140 kPa
Compressor	50 cc/r, DC 400-750 V
Fans x 3	Rated voltage 24 VDC, rated power ≤ 1,000 W
Water Pump	Rated voltage 24 VDC, rated power 300 W
Control Power Supply	Rated voltage 24 VDC, rated power ≤ 30 W
Refrigerant	R1234yf
Overall Dimensions (L x W x H)	870 x 545 x 316 mm

- The BTMS provides dedicated battery cooling and heating to maintain the battery pack within a controlled temperature range across varying duty cycles and ambient conditions.

