

# Climate and battery solutions for every bus project

Driving the future of passenger transport





## The right solution for every challenge

Webasto is your reliable partner when it comes to conventional and electric heating and air-conditioning systems as well as battery systems for your bus. You get all the components you need from a single source, perfectly matched to each other. We support you with all your questions and challenges in the field of electrification as well as heating and cooling.

### Conventional solutions

- Comfort for passengers and driver thanks to pleasant temperatures
- Low noise and emissions
- Meets the most stringent environmental standards
- High-quality, extremely reliable components
- Heating and air-conditioning all year around – even under harshest weather conditions

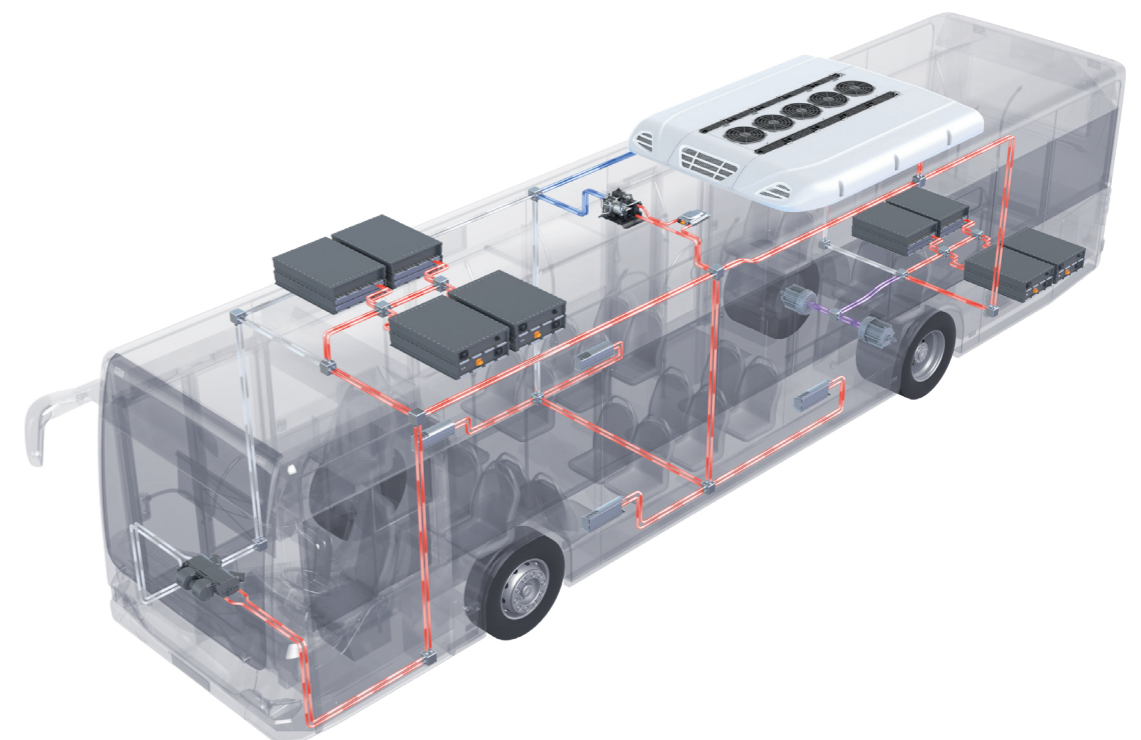
### Electric solutions

- Very comprehensive product portfolio that includes traction battery systems, fully integrated and Plug&Play thermal management solutions as well as electric heating solutions
- The highest automotive standards and efficiency thanks to innovative technologies
- Custom solutions that are tailored made for every application
- Reliable and certified safety

### Intelligent Integrated Thermal Management System for electrical buses

Many years of experience with conventional heating and cooling systems are being used for the electrification of public transport. An innovative holistic system solutions allows:

- Integration of all components with heating or cooling requirements
- Constant temperatures for passengers, battery, drive and electronics
- Range improvement of up to 25 % and extended battery life
- Modularity: all elements are compatible but not dependent on each other



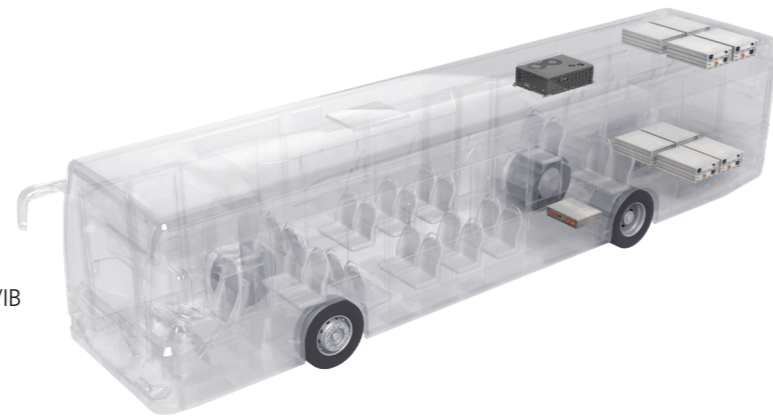
# The future of mobility: Powered by Webasto

We at Webasto are convinced of the electromobile future and contribute our automotive technology expertise, which has grown over 90 years, to the development of high quality battery systems and thermal management solutions.

Whether for a city bus, a light commercial vehicle, or a tourist bus - with us you get everything from a single source: the traction battery, thermal management, and a partner at your side. We offer products that are available immediately so you can start your projects right away - all products have already been extensively tested and certified. Start electrifying your vehicles now with Webasto as a partner at your side.

## Modular traction battery system for the electrification of commercial vehicles

The Webasto CV Standard Battery System is designed for the commercial vehicle market and offers robust packaging, automotive standard design, zero compromise quality and an efficient cooling interface.

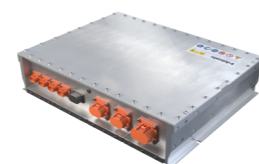


### Key facts at a glance:

- Modular system for up to 10 packs and 350 kWh with VIB or up to 18 packs and 630 kWh with VIG
- Configurable for 400 V or 800 V applications
- Highest automotive safety and quality standards
- Robust housing
- Flexible and easy integration (vertical & horizontal)
- Certified for automotive requirements with ECE-R100 and ECE-R10
- NMC cell technology for a high energy density
- Long battery lifetime thanks to matching thermal management system
- Efficient Vehicle Interface Box (VIB) or Vehicle Interface Gateway (VIG) combines the functions of power distributor, master BMS and fuses in one robust housing



CV Standard Battery System



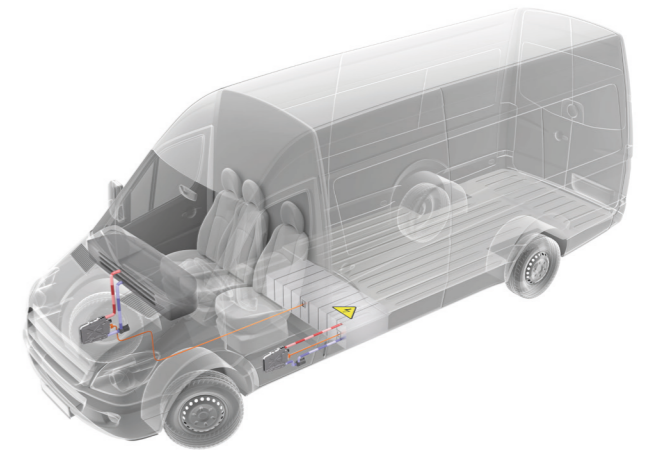
Vehicle Interface Box (VIB)



Vehicle Interface Gateway (VIG)

## High-voltage heaters Perfect climate for electric buses

The electric high-voltage heater is the ideal heating system for your electric bus: This innovative technology from Webasto utilizes an extremely thin heating layer which converts DC electric power into heat with practically no losses. The benefits to you: Extremely rapid warm-up times, high precision, maximum efficiency. The new 800 V Generation with its versions HVH 100 Compact + and HVH 120 offers various additional features such as LIN and CAN control, 12 and 24 V LV-supply and active discharge support.

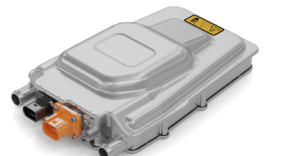


### Key facts at a glance:

- Powerful 5/7/10/12 kW heating performance
- Wide voltage range of 400 V (5/7 kW version) and up to 880 V (10/12 kW version) independent of coolant temperature
- Layer technology for extremely fast heat-up
- Highest efficiency through quick and direct heat transfer
- Stepless and exact controllability with no inrush currents
- Reliable safety concept with redundant controls
- Certified for automotive requirements with ECE-R10 and ECE-R122 type approval
- CE certified for various segments and applications



HVH 50/70 Gen 1.5  
5.0 - 7.0 kW



HVH 100  
10 kW



HVH 100 Compact &  
HVH 100 Compact +  
10 kW



HVH 120  
12 kW

## Battery Thermal Management Plug & play solution for ideal battery conditioning

The Webasto eBTM 2.0 is a universal stand-alone Battery Thermal Management Unit which ensures optimal functioning of water-cooled battery packs used in electrical commercial vehicles and ensures ideal battery cell performance over the long term.

### Key facts at a glance:

- Stand-alone Battery Thermal Management Unit
- Developed to ensure optimal functioning of water-cooled battery packs
- Simultaneous conditioning of up to 6 battery packs or 210 kWh battery capacity
- Ensures ideal battery cell performance over the long term
- Manages heat load during battery discharge and charging phases
- Easy Plug&Play installation in electrical commercial vehicles and buses
- All components required for both heating and cooling are already included



eBTM 2.0  
8.0 kW cooling  
up to 10 kW

# Conventional heating and air-conditioning solutions

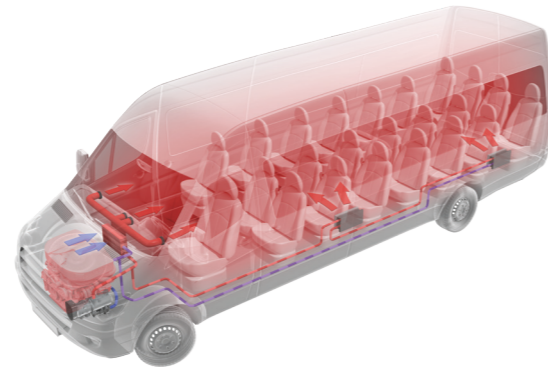
## Coolant heaters

Delivers comfort, reduces wear on the engine, protects the environment

Especially in winter, with frosty outside temperatures and snow, the Webasto water heater is a valuable addition: it pre-heats your bus, deices the windows and makes sure the vehicle is ready for service immediately. Our high-performance parking heaters ensure that the cabin is constantly being heated, providing a warm and cozy atmosphere even when passengers embark or disembark.

### Key facts at a glance:

- Immediate operational readiness thanks to a pre-heated vehicle
- Longer engine life because cold starts are avoided
- Use of engine heat to bridge short idle periods with no exhaust emissions
- Compatible when using paraffinic fuels e.g. HVO or GTL
- Uniform level of comfort, even in high-altitude mountainous areas



Thermo Pro 90  
9.1 kW



Thermo Top Pro 120/150  
12 - 15 kW

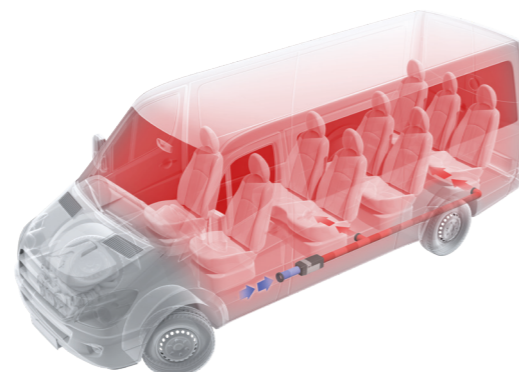
## Air heaters

Ensures rapid heating and a pleasant interior climate

An Air Top heater raises your passenger compartment to a pleasant temperature and heat is available almost as soon as the unit is turned on. Whether during particularly cold weather or even in high-altitude mountainous areas your air heater ensures rapid and continuous heat with low electricity and fuel consumption. Our Air Top heater is also suitable for electric shuttle buses and passenger vans included in the Range Plus kit for range extension. The Range Plus solution allows electric buses to heat the passenger compartment while relieving the battery and providing an alternative heat source.

### Key facts at a glance:

- Maximum performance – minimum consumption
- Low installation costs
- Short warm-up times
- Individual configuration of air distribution
- Recirculated or fresh air operation
- Continuous operation
- Ventilation function reduces trapped heat in summer
- Compatible when using paraffinic fuels e.g. HVO or GTL



Air Top 2000 STC  
2.0 kW



Air Top Evo 40/55  
4.0 - 5.5 kW

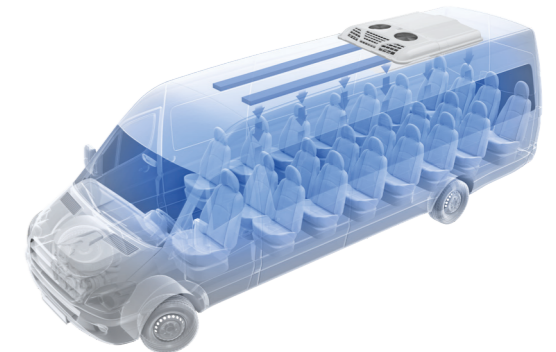
## Rooftop air-conditioning systems

Simple installation, maximum comfort

With the Webasto rooftop air-conditioning solutions you always have the ideal comfort level in your bus: even at high speeds you and your passengers are always supplied with cold and, if desired, warm air. Moreover, your rooftop air-conditioning system is very economical in terms of energy consumption and is also simple to maintain. Optionally, it can also be painted to match the color of the vehicle.

### Key facts at a glance:

- Standardized systems
- Wide portfolio with cooling capacity from 3.5 - 36.0 kW
- Compact construction and aerodynamic design
- High level of energy efficiency
- Maximum passenger comfort thanks to a constant supply of cold air. Fresh air and heating function options increase our passenger's comfort
- Easy and rapid installation with low maintenance requirements



Cool Top 110 - 140 RTC  
11.0 - 14.0 kW

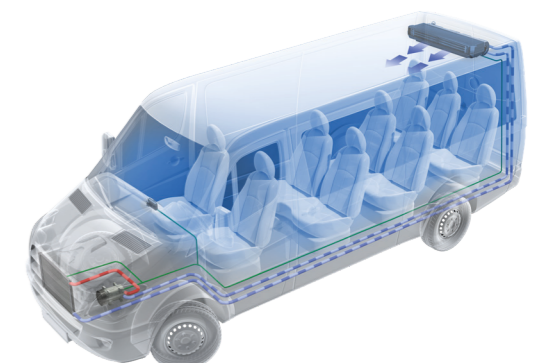
## Integrated air-conditioning systems

Optimum climate for minibuses

The integrated air-conditioning systems are extremely versatile and create a pleasant climate for you and your passengers. They can be installed under the dashboard or beneath the roof, in the vehicle's headliner or vertically in the rear wall, thereby offering a high level of flexibility. To provide a completely integrated climate solution, various models also have a heating function.

### Key facts at a glance:

- Standardized systems
- Wide product portfolio with cooling capacity from 4.0 - 16.0 kW
- Optimum integration thanks to versatile installation options: dashboard, ceiling, vertical
- High efficiency through intelligent control modalities
- High-quality and reliable components
- Very low maintenance requirements



Baltimore  
4.0 kW



Newport  
16.0 kW

## Please contact us

Do you have questions about our Webasto products?  
We are always here for you!

**Telephone: 00 800-24 27 44 64**

**E-Mail: [info@webasto.com](mailto:info@webasto.com)**

As a global innovative systems partner to the mobility industry, Webasto is one of the 100 largest suppliers to the automotive sector worldwide. In development, manufacturing and sales, the company focuses on roof systems on the one hand and on vehicle electrification on the other hand. The product range includes, openable and fixed panoramic roofs, electric high-voltage heaters and batteries, as well as thermo management solutions. Among the customers of Webasto are manufacturers of passenger cars, commercial vehicles, and boats, as well as dealers and end customers. In 2022, the Group generated sales of over 4 billion euros and employed about 16,800 people at more than 50 locations. The headquarters of the company, which was founded in 1901, is located in Stockdorf near Munich (Germany). For more information, please visit [www.webasto-group.com](http://www.webasto-group.com)