



CLIMATE CONTROL SYSTEMS / PERSONAL TRANSPORT

PERFECT THERMAL MANAGEMENT FOR PERSONAL TRANSPORT

Heating & Air Conditioning Solutions -
Connected with Digital Services

EBERSPÄCHER GROUP



- Enhanced application expertise for heating and cooling
- Extensive product portfolio for heating and cooling
- Accessories for a wide variety of applications
- A/C and heating specialists

INNOVATIVE MARKET AND CUSTOMIZED SOLUTIONS



EXPERTS IN COOLING AND HEATING.

FOR SPECIAL VEHICLES

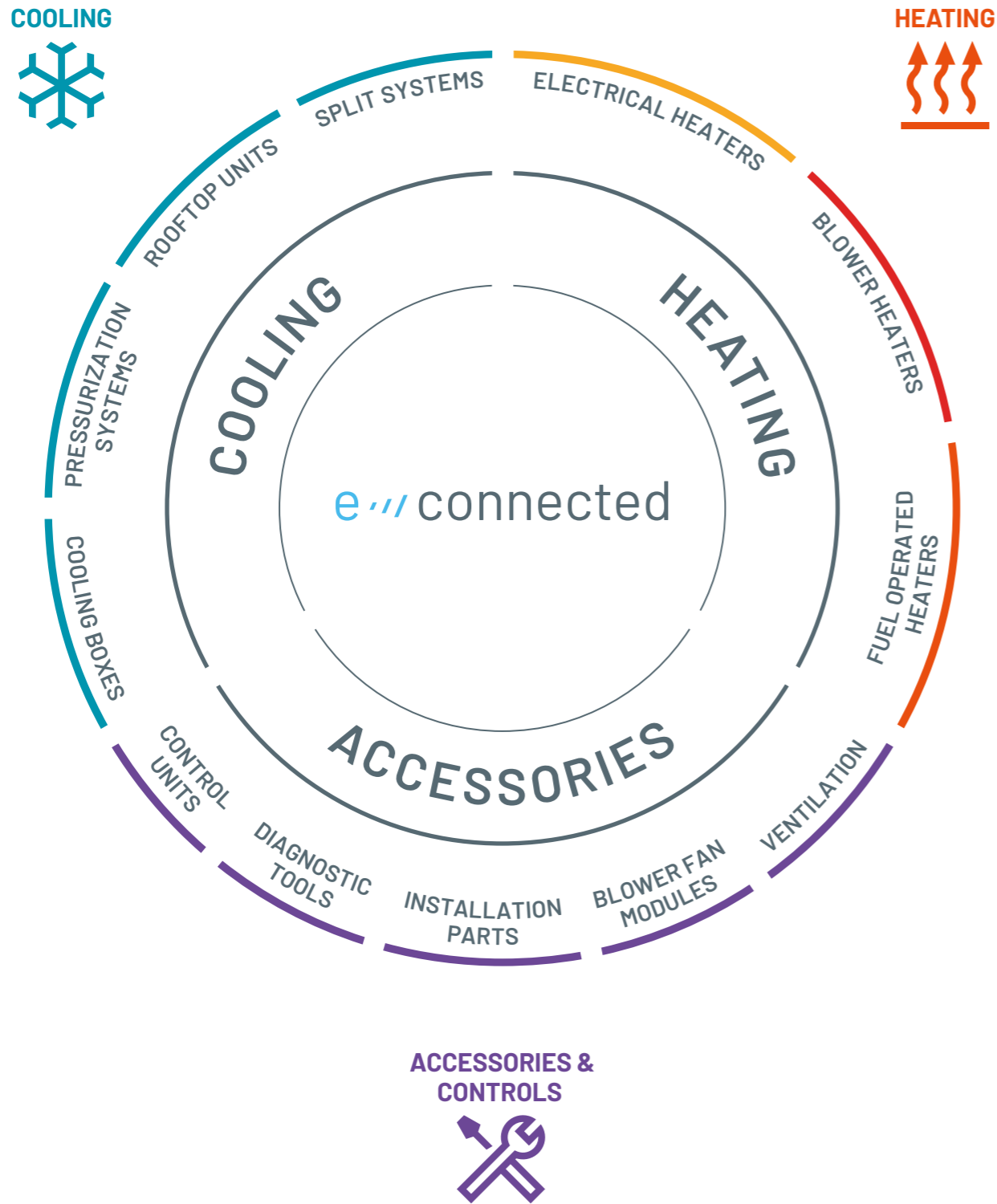
Heating, cooling and digital services – various solutions, one partner – Eberspächer offers a wide range of products for electrical vehicles

Irrespective of what type of bus is used – whether it be minibuses, i.e. small buses with up to nine seats, or the somewhat larger midibuses – they all have one thing in common: passengers and drivers should feel good in every respect. To ensure this, optimum temperatures are needed throughout the vehicle. This can be easily achieved with the heating and cooling solutions from Eberspächer.

[Personal Transport]



OUR PRODUCT PORTFOLIO



PRODUCTS FOR PERSONAL TRANSPORT VEHICLES



FUEL OPERATED HEATING SOLUTIONS

FUEL OPERATED AIR HEATERS

AIRTRONIC S3/M3/L3



- Fast and reliable heating of the patient area
- Brushless motor ensures a long lifetime of 5,000 hrs
- Low energy consumption – ideal for pre-heating or heating when the engine is off
- Suitable for EN1789 approval

| Fuel | Gasoline | | Diesel | | |
|-------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Version [12 V] | S3 Commercial B2L | M3 Commercial B4L | S3 Commercial D2L | M3 Commercial D4L | L3 Commercial D6L |
| Heating performance kW | 1.0 – 2.0 | 1.3 – 4.0 | 0.85 – 2.2 | 1.05 – 4.0 | 1.5 – 6.0 |
| Fuel consumption l/h | 0.14 – 0.26 | 0.17 – 0.55 | 0.1 – 0.27 | 0.1 – 0.49 | 0.16 – 0.74 |
| Weight kg | 2.5 | 4.5 | 2.5 | 4.4 | 6.8 |
| Main dimensions* l x w x h mm | 310 x 115 x 122 | 376 x 140 x 150 | 310 x 115 x 122 | 376 x 140 x 150 | 438 x 160 x 170 |
| Interfaces | CAN/ LIN/ S+ | | | | |

* Air heater connection diameter \varnothing 75 mm

AIRTRONIC 2 ETHANOL



- Fast and reliable heat for electric vehicles
- No impact on the vehicle's electric range
- Low-emission heating of the vehicle interior
- Constant, individually adjustable temperature
- Flexible installation in the interior, trunk or underfloor

| Fuel | Ethanol |
|-------------------------------|-------------------|
| Version [12 V] | S2 Commercial E2L |
| Heating performance kW | 0.9 – 2.2 |
| Fuel consumption l/h | 0.16 – 0.49 |
| Weight kg | 2.7 |
| Main dimensions* l x w x h mm | 310 x 115 x 122 |
| Interfaces | CAN/LIN/ S+ |

* Heating air connection diameter \varnothing 75 mm

FUEL OPERATED WATER HEATER

HYDRONIC S3



- Preheating of the engine coolant and the vehicle interior when connected to an Eberspächer heat exchanger
- Long service life of 5,000 hrs and fewer spare parts due to robust components
- Cost savings and less downtime for end customers thanks to low fuel and energy consumption
- Heater operation integrated in the vehicle's control panel and integration in the vehicle's own diagnostics possible

| Fuel | Gasoline | | Diesel | |
|-------------------------------|-------------------|----------------|----------------|----------------|
| Version [12 V] | S3 Economy B4E | S3 Economy B5E | S3 Economy D4E | S3 Economy D5E |
| Heating performance kW | 1.8 – 4.3 | 1.8 – 5.0 | 1.3 – 4.3 | 1.3 – 5.0 |
| Fuel consumption l/h | 0.57 | 0.67 | 0.53 | 0.59 |
| Weight kg | 2.0 | | | |
| Main dimensions* l x w x h mm | 215 x 91 x 124 | | | |
| Interfaces | CAN/S+ or CAN/LIN | | | |

* With straight connection fittings

BLOWER HEATER SOLUTIONS

WATER BLOWER HEATER



- Ideal auxiliary heater for the patient compartment
- Can be combined with a Hydronic water heater for use when the engine is off
- Large portfolio of different sizes and power levels to fit every kind of personal transport vehicle
- Complete system including hoses, control units and air diffusion available

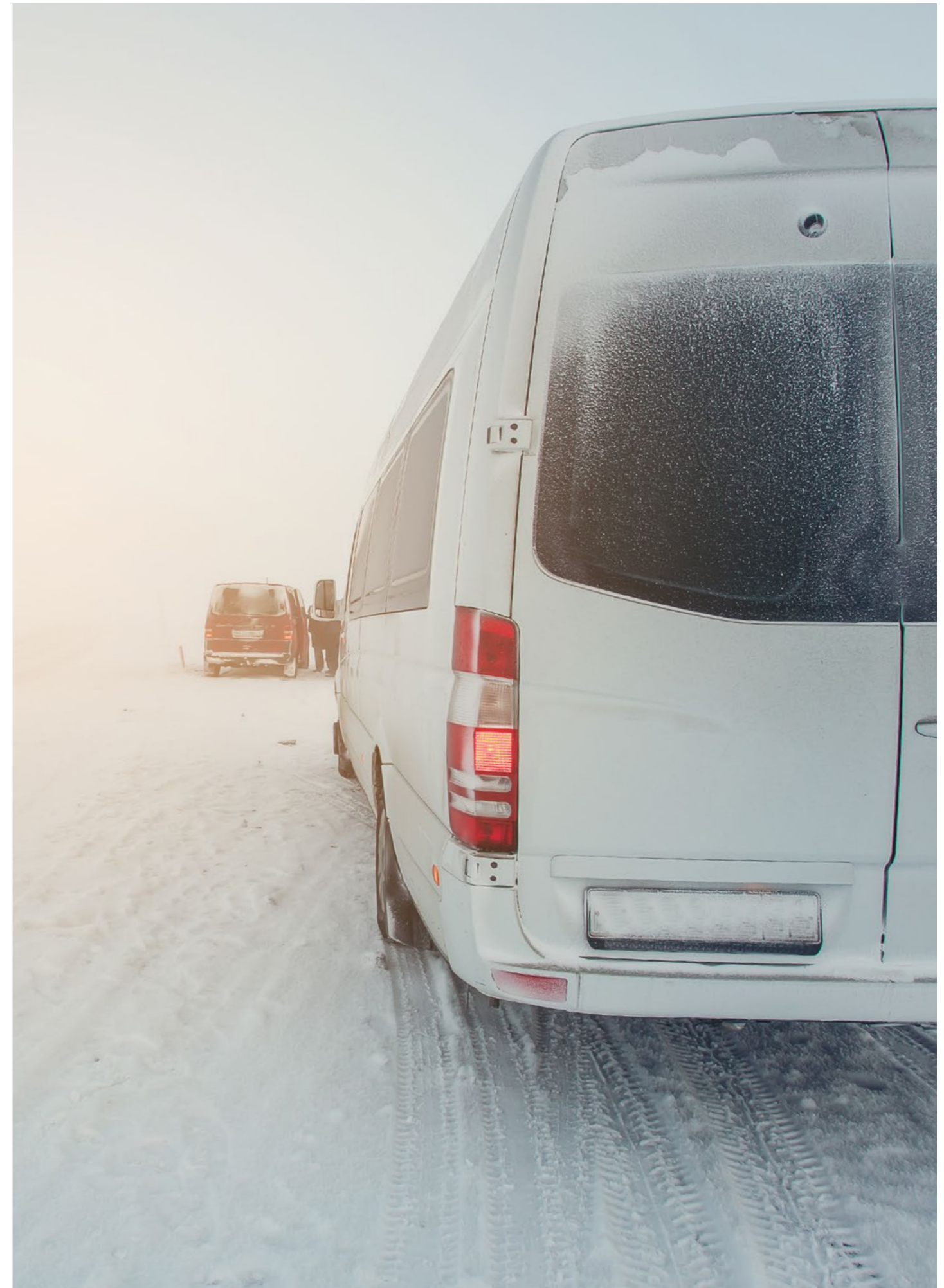
| Version | [12 V] | Alizé 2 HV | Compact EV01 | Compact EV02 | Silencio 2 HV | Super K HV | Kool 2 HV | Falkon HV |
|---------------------------|-------------------|-----------------|-----------------|-----------------|-------------------|-----------------|-----------------|-----------------|
| Heating performance | kW | 3.4 | 4.3 | 5.2 | 5.5 | 7.6 | 10 | 14.8 |
| Airflow | m ³ /h | 220 | 230 | 350 | 250 | 500 | 520 | 725 |
| Electrical consumption | W | 70 | 70 | 100 | 16 | 100 | 180 | 360 |
| Main dimensions l x w x h | mm | 189 x 175 x 132 | 114 x 255 x 189 | 114 x 279 x 106 | 152 x 321 x 125.5 | 216 x 368 x 130 | 261 x 384 x 158 | 296 x 430 x 167 |

ELECTRICAL BLOWER HEATER



- Fast and reliable heating solution for the patient compartment
- Heater is equipped with secured PTC element and safety thermal switch
- Large portfolio of different sizes and power levels to fit every kind of personal transport vehicle
- Complete system including control units and air diffusion systems available

| Version | [12 V] | Alizé 2 EHV | Silencelek EHV | Kelec EV01 | Kelec EVO2 | Kool 2 EHV | Falkon EHV |
|---------------------------|-------------------|-----------------|----------------|-----------------|-----------------|--------------------|--------------------|
| Heating performance | kW | up to 2.2 | up to 0.5 | up to 1.7 | up to 2.2 | up to 4 | up to 6 |
| Airflow | m ³ /h | 210 | 95 | 230 | 350 | 520 | 411 |
| Electrical consumption | W | from 18 to 33 | 510 | from 11 to 74 | from 7 to 74 | depends on version | depends on version |
| Operating voltage range | V DC | 48 - 120 | - | 24 - 80 | 24 - 300 | 48 - 750 | 48 - 800 |
| Operating voltage range | V AC | 230 - 480 | | | | | |
| Main dimensions l x w x h | mm | 189 x 175 x 132 | 210 x 80 x 156 | 114 x 255 x 114 | 196 x 273 x 114 | 261 x 384 x 158 | 297 x 432 x 167 |



ELECTRICAL HEATING SOLUTIONS

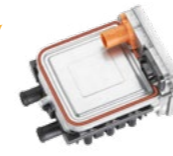
ELECTRICAL WATER HEATER 230 V - PLUGTRONIC



- Quick coolant circuit heating for a pre-heated engine
- Also available with a 230-V air heater
- Ideal temperature in the patient area when the vehicle leaves for an intervention
- Several installation positions possible
- Environmentally friendly heating solution for parked vehicles
- No fossil fuels, zero emissions
- One-handed, easy power cable plug-in

| | | | |
|--|--|----------------|-------|
| Version | | 800 | 1,850 |
| Heating performance kW | | 0.8 | 1.85 |
| Operating voltage range (HV) V AC | | 230 | |
| Weight kg | | 0.8 | |
| Main dimensions l x w x h mm | | 151 x 131 x 81 | |
| Interfaces V DC | | 12 / 24 | |

HIGH VOLTAGE COOLANT HEATER - TITRONIC



- Powerful and reliable PTC technology offers high heating performance
- Precise and convenient heating of the patient area
- Battery conditioning extends battery life, shortens charging times and increases range
- Designed with high-voltage expertise for OEM installations

| | | |
|---------------------------------------|--|-----------------|
| Version | | CHHV 50 G3 |
| Heating performance kW | | 5.0* |
| Operating voltage range (HV) V | | 250 - 450 / 12 |
| Weight kg | | 2.0 |
| Main dimensions l x w x h mm | | 160 x 159 x 105 |
| Interfaces | | LIN 2.1 |

* UN = 350 V, TCO = 60 °C, QCO = 10 L/MIN, COOLANT = 50:50



SPLIT SYSTEMS

HORIZONTAL EVAPORATORS FOR SPLIT SYSTEMS

- Powerful evaporators provide climate control for the passenger area
- Available as A/C only (VAC), HVAC or EHVAC version for electric personal transport vehicles
- Range of adapter sets available to extend original HVAC systems of main LCVs on the market
- Suitable for EN1789 approval
- Large portfolio of different sizes and power levels available to fit every kind of personal transport vehicles
- Complete system including hoses, control units and air diffusion systems available
- Can be combined with the Power K Reverse external condenser unit, which also includes an electric compressor and drier filter



VAC UNITS FOR BOTH FUEL OPERATED AND ELECTRIC PERSONAL TRANSPORT VEHICLES



| Version | [12 V] | Super K VAC | Kool 2 VAC* | Falkon VAC** | HK EVO4 VAC* |
|----------------------------------|--------|-----------------|-----------------|-----------------|-----------------|
| Cooling performance | kW | up to 4 | 5.7 | 9 | 10.7 |
| Airflow | m³/h | 440 | 520 | 660 | 1,300 |
| Electrical consumption | W | 100 | 180 | 360 | 190 |
| Main dimensions l x w x h | mm | 216 x 368 x 137 | 261 x 384 x 158 | 297 x 432 x 167 | 780 x 334 x 120 |

* Available in FAI version with air diffusion and control unit included. ** Available in FA version with air diffusion included.

HVAC UNITS FOR FUEL OPERATED PERSONAL TRANSPORT VEHICLES



| Version | [12 V] | Super K HVAC | Kool 2 HVAC* | Falkon HVAC** | HK EVO4 HVAC* |
|----------------------------------|--------|-----------------|-----------------|-----------------|-----------------|
| Cooling performance | kW | 3.5 | 4.5 | 7.7 | 8.6 |
| Heating performance | kW | 4.3 | 6.6 | 10 | 9.5 |
| Airflow | m³/h | 440 | 520 | 660 | 1,300 |
| Electrical consumption | W | 100 | 180 | 360 | 190 |
| Main dimensions l x w x h | mm | 216 x 368 x 137 | 261 x 384 x 158 | 297 x 432 x 167 | 780 x 334 x 120 |

* Available in FAI version with air diffusion and control unit included. ** Available in FA version with air diffusion included.

EHVAC UNITS FOR ELECTRIC PERSONAL TRANSPORT VEHICLES



| Version | [12 V] | Super K EHVAC | Kool 2 EHVAC | Falkon EHVAC |
|-------------------------------------|--------|-----------------|-----------------|-----------------|
| Cooling performance | kW | 3.5 | 4.5 | 7.7 |
| Heating performance | kW | up to 4 | up to 4 | up to 5 |
| Airflow | m³/h | 440 | 520 | 660 |
| Electrical consumption | W | 100 | 180 | 360 |
| Operating voltage range V DC | | | 24 - 750 | |
| Operating voltage range V AC | | | 230 - 480 | |
| Main dimensions l x w x h | mm | 216 x 368 x 137 | 261 x 384 x 158 | 297 x 432 x 167 |

EHVACs are also available in a hybrid version: evaporator + PTC heater + water heater.

VERTICAL EVAPORATORS FOR SPLIT SYSTEMS

VAC, HVAC AND EHVAC UNITS



| Version | [12 V] | VK9 HVAC | VK9 HVAC FAI* | VK9 EHVAC |
|---------------------------|-------------------|-----------------|---------------|-----------|
| Cooling performance | kW | 8 | 6.5 | 6.5 |
| Heating performance | kW | 10 | 7.5 | 3 |
| Airflow | m ³ /h | 670 | 520 | 670 |
| Electrical consumption | W | 300 | | |
| Main dimensions l x w x h | mm | 174 x 414 x 335 | | |

*FAI version with air diffusion and control unit included.

ROOFTOP EVAPORATORS FOR SPLIT SYSTEMS

- Powerful rooftop evaporator system
- Air diffusion with integrated control unit available
- Saves space in the vehicle
- Suitable for EN1789 approval
- Can be combined with the Power K Reverse external condenser unit, which also includes an electric compressor and drier filter
- Available as A/C only (VAC) or HVAC

VAC AND HVAC UNITS



| Version | [12 V] | Klimatop VAC | Klimatop HVAC |
|---------------------------|-------------------|-----------------|---------------|
| Cooling performance | kW | 5.5 | 5 |
| Heating performance | kW | - | 6 |
| Airflow | m ³ /h | 595 | 560 |
| Electrical consumption | W | 150 | |
| Main dimensions l x w x h | mm | 125 x 445 x 580 | |

VENTILATORS

ADT



| Model | Autogire | |
|---------------------------|--------------|-----------------|
| Weight | kg | 0.9 |
| Main dimensions l x w x h | mm | 245 x 245 x 113 |
| Part number | 830012140420 | |

Non-electric ventilator. Works with the wind or the vehicle speed.

ADT



| Model | ADT 350 | ADT 360 | | |
|---------------------------|-------------------|----------------|--------------|--------------|
| Airflow | m ³ /h | 315 | 660 | |
| Electrical consumption | W | 37 | 72 | 73 |
| Weight | kg | 1.5 | | |
| Main dimensions l x w x h | mm | 303 x 310 x 53 | | |
| Blower voltage | V | 12 | 24 | |
| Part number | | 830012140405 | 830012140406 | 830012140410 |

ADT



| Model | ADT 452 | | | | ADT 750 | | |
|---------------------------|-------------------|----------------|--------------|--------------|--------------|----------------|----------------|
| Airflow | m ³ /h | 629 | | | | | |
| Electrical consumption | W | 72 | 73 | 72 | 73 | 72 | 73 |
| Weight | kg | 1.8 | | 1.7 | 1.8 | 2.1 | |
| Main dimensions l x w x h | mm | 320 x 360 x 65 | | | | 340 x 388 x 80 | 339 x 388 x 80 |
| Blower voltage | V | 12 | 24 | 24 | 12 | 12 | 24 |
| Part number | | 830012140415 | 830012140416 | 830012140456 | 830012140458 | 830012140000 | 830012140100 |

ROOFTOP SYSTEMS

- Compact system, includes evaporator, condenser and drier filter
- Can be connected to a standard compressor
- Especially suitable for air conditioning in the passenger compartment
- Available as A/C only (VAC), HVAC or EHVAC version for electric private transport vehicles



VAC AND HVAC SYSTEMS



| Version | [12 V] | RK12 VAC | RK12 HVAC |
|---------------------|-------------------|-------------------|-----------|
| Cooling performance | kW | 11.5 | 11.5 |
| Heating performance | kW | - | 15 |
| Airflow | m ³ /h | 950 | |
| Weight | kg | 50 | |
| Main dimensions | l x w x h mm | 1,090 x 940 x 179 | |

EHVAC SYSTEM



| Version | [12 V] | RK12 EHVAC CPF |
|---------------------|-------------------|-------------------|
| Cooling performance | kW | up to 11 |
| Heating performance | kW | up to 14 |
| Airflow | m ³ /h | up to 1,380 |
| Weight | kg | 84.5 |
| Main dimensions | l x w x h mm | 1,504 x 890 x 250 |

ROOFTOP A/C UNIT - RK9



- Also available for battery electric vehicles using a PTC heating element
- Can integrate an electric compressor (SH version)
- Also available as air conditioning only version

| Version | | RK9 |
|---------------------|-------------------|-----------------|
| Cooling performance | kW | up to 9 |
| Heating performance | kW | up to 10 |
| Airflow | m ³ /h | 725 |
| Weight | kg* | 23 |
| Main dimensions | l x w x h mm | 932 x 581 x 192 |

* Depending on version.

ACCESSORIES AND CONTROLS

BUILT-IN CONTROL UNIT FOR FUEL OPERATED HEATERS - EASYSTART PRO



- Intuitive timer setup
- Easy to use even while wearing work gloves
- Operation of two heaters with only one control unit possible
- Integrated temperature sensor makes installation very simple and reduces costs
- Quick servicing thanks to rapid troubleshooting

REMOTE CONTROL UNIT FOR FUEL OPERATED HEATERS - EASYSTART WEB



- State-of-the-art technology for operating multiple heaters with one account
- Central operation of heaters by fleet manager
- Responds to most common communication protocols such as CAN, LIN or S+
- Integrated antenna for time-saving installation in all vehicles
- Compatible with other operating devices (EasyStart Pro)
- Intuitive, user friendly app for iOS and Android

BUILT-IN CONTROL UNIT FOR FUEL OPERATED HEATERS AND A/C SYSTEM - PCK3 FOH



- Intuitive control of air conditioning system and Hydronic or Airtronic
- Simple and fast operation
- Robust, reliable and easily integrated
- Stepless heating performance control
- Easy to use even while wearing work gloves

DIAGNOSTIC TOOL - EASYSCAN



- Failure analysis of devices and components
- Comprehensive evaluation of current operating status
- Error code display including additional system parameters
- Easy optimization of control units such as EasyStart Pro or EasyStart Web including firmware updates

ROOF VENTILATOR



- Very flat roof ventilators
- Different designs and air outlets available
- Electric and non-electric versions
- Easy-to-fit roof adapter and air channel option

ADAPTER SET



- Enables an additional evaporator to be connected to the original A/C system
- Simple and low-cost solution
- Designed for every brand of vehicle
- Fast installation

ADAPTER SETS ARE AVAILABLE FOR THE FOLLOWING VEHICLE MODELS, AMONG OTHERS:

| Vehicle models | | | | | |
|---------------------|------------------------|-------------|---------------|----------------|--------------------|
| Citroën Jumpy | Mercedes Benz Sprinter | MAN TGE | Nissan Navara | Renault Master | Volkswagen Crafter |
| Ford Transit Custom | Mercedes Benz Vito | Iveco Daily | Peugeot Boxer | Renault Trafic | Volkswagen T6 |

AIR OUTLETS



- Huge range of outlets with different designs, functionalities and installation options
- Developed in house, designed for modern dashboards
- Durable elements, made of high-quality plastic
- Simple and easy to install

TRIMLINE AIR OUTLETS



trimLINE

AIR AT ITS FINEST

Following the latest dashboard design aesthetic, our designers and engineers developed Trimline to create a contemporary look for the vehicle air outlets in keeping with the “form follows function” principle. With different design, function and installation options tailored to match different vehicle interiors. What’s more, the durable, high-quality plastic elements are easy to install.



E-CONNECTED

DIGITAL SERVICES

Digital solutions for customer needs.



HARDWARE CONNECTIVITY

Networking of hardware and the gateway to make data accessible.

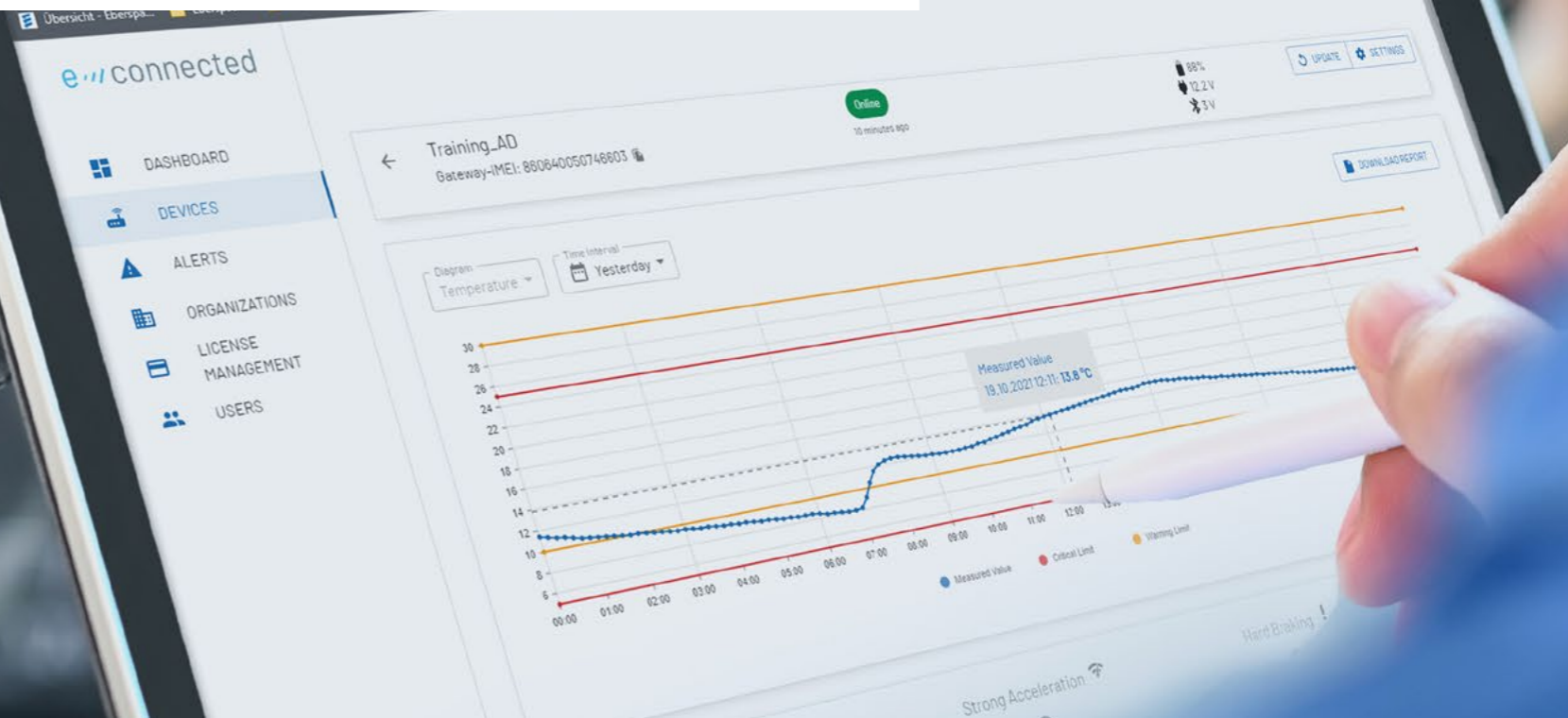
DIGITAL CLOUD PLATFORM

Technical infrastructure on which digital services are built to ensure their availability.

e///connected

PORTFOLIO

The specially developed e-connected platform forms the basis for all digital services from Eberspächer. GPS trackers or sensors collect data for transfer to the cloud via a gateway in each vehicle. Diverse data-based services can be developed for various customer segments using this intelligent network. They offer enhanced efficiency, transparency and safety such as cold chain monitoring.



SAME PRODUCT & SYSTEM DESIGN FOR COMBUSTION ENGINE & ELECTRIC DRIVE SOLUTIONS

With our identical product design for different drive trains you can simply adapt the HVAC & EHVAC system integration:

**SAME, SAME.
BUT DIFFERENT.**

EASY HANDLING FOR EVERY DEVELOPER

- Same design
- Same size
- Same mounting positions

For Electric & Internal Combustion Engine drive.



ALL OUR PRODUCTS ARE AVAILABLE AS HVAC AND EHVAC VERSIONS FOR EVERY REQUIREMENT - EXAMPLES



HVAC
Internal
Combustion Engine



EHVAC
Electric
Drive

Kool 2



Super K



Falcon



MK0



VK9

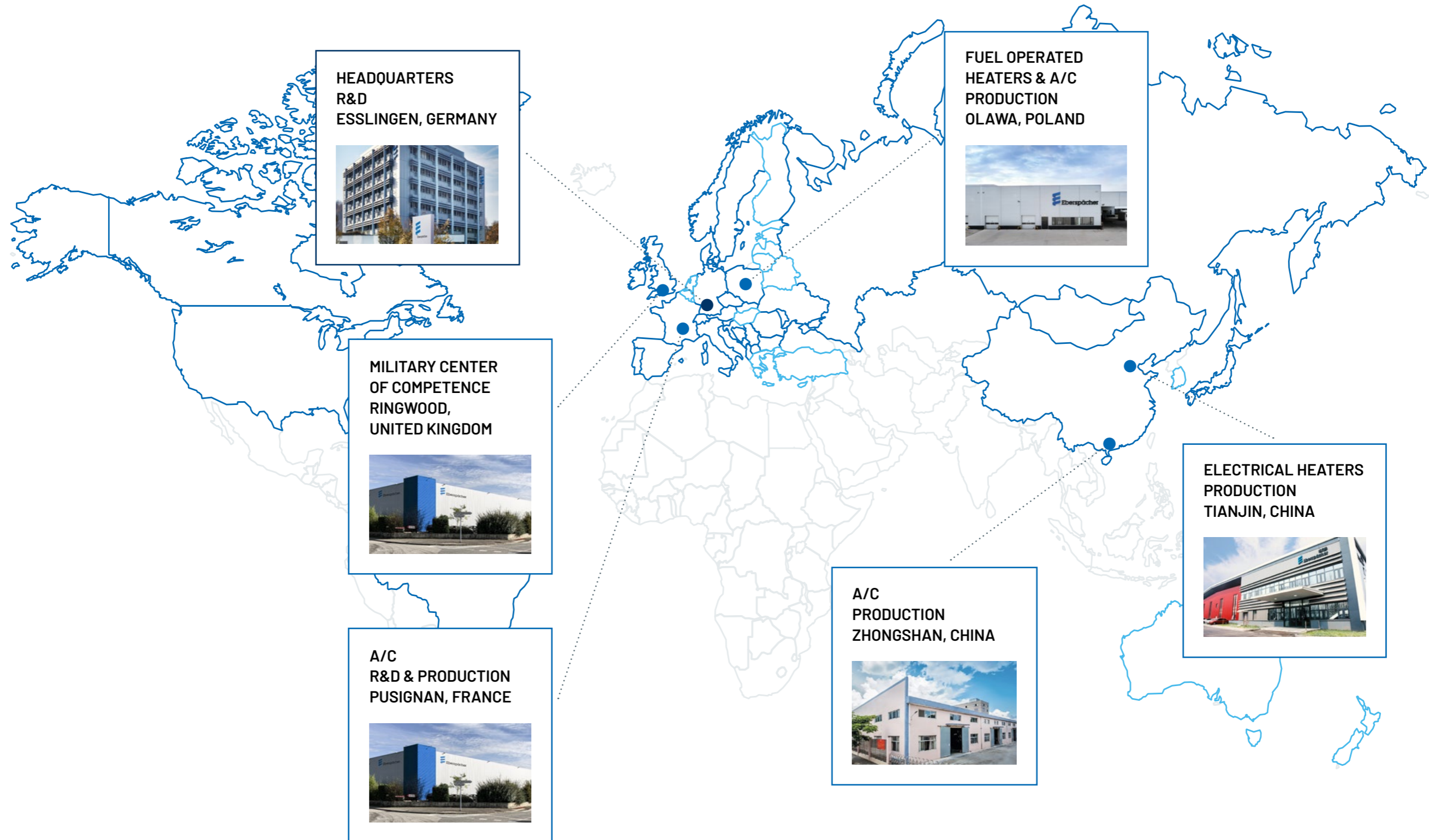


RK9



| Our entire product portfolio is available in our heating and air conditioning catalog.

GLOBAL FOOTPRINT



BRANCHES
ESSLINGEN, GERMANY

SUBSIDIARY

GENERAL AGENTS

EBERSPÄCHER CLIMATE CONTROL SYSTEMS GMBH
EBERSPÄCHERSTRASSE 24
73730 ESSLINGEN / GERMANY

PHONE: +49 711 939-00
FAX: +49 711 939-0634
info@eberspaecher.com
www.eberspaecher-climate.com