

P R E S S R E L E A S E

Eberspaecher AC138 EVO: Climate-friendly heating and cooling

- **Reduced complexity through patented heat pump technology with airflow reversal**
- **Integrated exhaust air function for heat recovery**
- **With natural refrigerant CO₂ as standard**

Esslingen (Germany), 7 September, 2023 – **Electric drive concepts for public transport play an essential role on the way to Clean Mobility. The correct thermal management design is gaining in importance and ensures a longer range for e-vehicles. With the new platform AC138 EVO, Eberspaecher is expanding its product portfolio with a roof-mounted system, especially for hybrid and battery-electric buses, which convinces with its low complexity and high energy efficiency.**

The **AC138 EVO** achieves low power consumption when heating and cooling thanks to the heat pump technology patented by Eberspaecher. It works by reversing the air circuit instead of the refrigerant circuit and therefore simplifies the latter considerably. This enables the refrigerant system components to be optimized for just one function at a time, thus increasing their efficiency. All the complexity is handled by the software, which regulates the air flaps. This leads to an overall weight reduction of up to 50 kg. In addition, the integrated exhaust air function allows energy recovery from the outflowing air. The independent control of the air flaps ensures optimal temperature regulation in the passenger compartment by mixing the ambient and interior air. Eberspaecher will introduce the system first with the climate-friendly refrigerant CO₂, R744. The natural refrigerant is much more environmentally friendly and safer than chemical alternatives. With a GWP (Global Warming Potential) value of 1, it has the lowest greenhouse potential

used in bus thermal management. In contrast to other natural refrigerants, R744 is neither flammable nor toxic. In the next step, other refrigerants, such as propane in direct evaporation, are planned.

Same DNA, different dimensions

Eberspaecher offers the system in two different sizes for different applications. The variant for coaches is characterized by its low height of 250mm and the aerodynamic design. The more compact version for city buses convinces with a height of 415 mm and a shortened length of only 2.8 m. The formats do not differ in terms of performance. They both have 35 kW cooling and 24 kW heat output and weigh 325 kg. The AC138 EVO will go into series production for the all-electric city bus of a leading international manufacturer from 2025. In addition, the thermal management system is suitable for vehicles with combustion engines without an electric drive module.

Customizable operation

Eberspaecher uses the tried-and-tested **E-Control** system to operate the system. Maximum user-friendliness and a range of customizable functions make E-Control the ideal control system for all air conditioning components in the bus. The in-house hardware and software allow highly efficient customer-specific modification or reprogramming. An integration of the **E-Control Box** in the respective customer system is possible via CAN. In this way, it can be connected to the E-Control Interface or to any user control panel. Furthermore, the AC138 EVO is available in the e-connected web application.

e-connected is Eberspaecher's cloud-based digital service platform that complements the global service network.

Captions:

- *The patented heat pump technology of the AC138 EVO enables efficient and climate-friendly cooling and heating.*
- *The clear arrangement of the buttons and quick access functions create an almost intuitive operation of the optional E-Control Interface.*

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About Eberspaecher:

With approximately 10,700 employees at 80 locations worldwide, the Eberspaecher Group is one of the automotive industry's leading system developers and suppliers. The family business, headquartered in Esslingen am Neckar, stands for innovative solutions in exhaust technology, automotive electronics and thermal management for a broad range of vehicle types. In combustion or hybrid engines and in e-mobility, the components and systems from Eberspaecher ensure greater comfort, higher safety and a clean environment. Eberspaecher is paving the way for future technologies such as mobile and stationary fuel cell applications, synthetic fuels as well as the use of hydrogen as an energy carrier. In 2022, the Group generated revenue of around 6.4 billion euros. Net revenue adjusted for transitory items amounted to 2.7 billion euros.