First all electric zero emission HVAC unit

REVO®-E HP R744

Strong cooling and heat pump performance at zero emission

The REVO®-E HP R744 is an all-electric, zero emission HVAC unit specially designed for buses with alternative drives. The use of natural refrigerant R744 makes it an environmentally neutral HVAC system for cooling the bus interior, and it also functions as a heat pump. It operates more efficiently under a wide range of ambient conditions (-20 °C / +50 °C), providing a large heating capacity with less energy consumption.

REVO®-E HP R744

HIGHLIGHTS

Low life-cycle costs

- Optimized piping without collector therefore no yearly pressure tank inspection necessary
- Compact roof-top-unit: integrated compressor and inverter
- Refrigerant R744 is cost-efficient and permanently available
- Practically maintenance-free

Range of Driving

- Range of Driving: -20 °C to +50 °C
- Maximized range due to reduced system weight and high-efficiency heat pump down to -20 °C (R744)
- Dynamic de-icing on demand for energy saving heat pump operation at cold outside temperatures < 5 °C
- Flexible and efficient power output due to infinitely variable compressor and fans
- Electronic expansion valves (EEV) with Spheros control units for efficient operation with optimum high pressure control (optimal COP control)

Refrigerant

- Natural refrigerant CO_2, GWP = 1 ODP = 0
- Non flamable, non toxic and easily produced

Comfort

- Strong cooling and heat pump performance in one unit
- Fast switching from heat-pump to A/C mode (within seconds)

Environmentally friendly

- Reduced amount of refrigerant (approx. 3,8 kg)
- Environmentally friendly: GWP = 1 and ODP = 0
- Fulfills requirements of German “Blauer Engel” eco-seal
- No leakage control needed due to the characteristics of the natural refrigerant CO_2

Additional

- R744 / CO_2 compressor integrated
- Plug & play
- Plate heat exchanger with cold water circuit for frontbox and battery cooling
- Plate heat exchanger with hot water circuit for additional heating performance and higher efficiency in heat pump mode

TECHNICAL DATA

	REVO®-E HP R744
Refrigerant	R744 / CO_2
Cooling capacity (kW)	38* at 35 °C (COP = 2,2) 18* at 50 °C (COP = 1,1)
Heating capacity (Heat pump) (kW)	26* at -10 °C (COP = 2,1) 21* at -20 °C (COP = 2,1)
Chiller (cold water for frontbox or BTM) (kW) **PHE (warm water for frontbox or floor heating) (kW)**	6*at 5°C coolant temp. 10 at 60°C coolant temp.
Current (26 V DC) (A)	< 80*
Current (600 V DC) (A)	< 36
Fresh air	0 - 100 %
Weight (kg)	ca. 375*
Dimensions L x W x H (mm)	2,990 x 2,081 x 411
Communication	CAN-Control

*spec. highly dependent on application

SPHEROS

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