

eBTM

Universal plug&play electrical Battery Thermal Management unit

8 kW
Cooling

Up to 10 kW
Heating



Cooling

Under stress or in warm weather conditions

Heating

In cold ambient conditions

Pre-Conditioning

During battery charging phases

Balancing

Dynamic temperature adjustment during driving phases

The Webasto eBTM is a 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. The unit has been designed in accordance with numerous customers' requirements and has been perfectly tuned for applications in busses, trucks, construction machines and light commercial vehicles. Although the dimensions of the unit are extremely compact (1,000 x 700 x 300mm), all components needed for heating and cooling are already included. This means that pumps, heater, compressor and DC/DC-converter are already integrated, which underlines the simple plug&play principle.

Compact design allows installation on roof-top and in chassis position. Same temperature levels in every battery pack can be achieved by smart coolant distribution. A stable temperature of battery packs positively effects battery charge consumption, as well as uniform and predictable wear of components.

Key advantages at a glance:

- Cooling Capacity: 8 kW
- Heating Capacity: 7kW/10 kW
- Plug & Play installation
- Maximum 3,600 l/h coolant flow
- 400 / 800 V DC
- R1234yf with low GWP
- Roof-top and chassis installation
- Low voltage power supply included on board



Truck



Light vehicles



Bus



Construction machines



Agricultural

Technical specifications**eBTM 400 VDC****eBTM 800 VDC****Functional information**

Maximum cooling power	8 kW ¹⁾	8 kW ¹⁾
Maximum heating power	7 kW	10 kW
Maximum coolant flow	60 l/min	60 l/min
Nominal coolant flow	52 l/min	54 l/min
Pressure level outlet eBTM	0.5 barA	0.5 barA
Ambient temperature range	- 35 ... 50°C	- 35 ... 50°C
Maximum altitude (ASL)	3500m	3500m

Electronical information**High voltage**

Nominal high voltage supply	365 VDC	675 VDC
High voltage operating range	300 VDC - 432 VDC	500 VDC - 850 VDC
High voltage undervoltage limit	200 VDC	500 VDC
High voltage overvoltage limit	450 VDC	865 VDC
Maximum heating power consumption	7.5 kW	10.5 kW
Maximum cooling power consumption	6 kW	6 kW
Min Isolation Resistance (@ 1000 VDC)	500 kΩ	500 kΩ
Max discharge time (HV < 60 VDC)	3s (@ 432 VDC)	45s (@ 850 VDC)
Max Voltage withstand	1900 VAC for 1min	2500 VAC for 1s
Maximum voltage rise	40 V/ms	100 V/ms
Cx - Capacity	55 µF	67 µF
Cy - Capacity	70 nF	70 nF
High voltage connector (eBTM side)	Amphenol ELR2A03	Amphenol ELR2Y03
Electric pre-charging internal HV components	NOT included	NOT included

Communication / Low Voltage

Communication with VIB	CAN BUS 2.0B / CAN J1939	CAN BUS 2.0B / CAN J1939
Baud rate	250 kbps / 500 kbps	250 kbps / 500 kbps
Low Voltage power in operating modes	50 W	50 W
Nominal low voltage range	12 VDC : 9 VDC - 16 VDC	12 VDC : 9 VDC - 16 VDC
	24 VDC : 18 VDC - 32 VDC	24 VDC : 18 VDC - 32 VDC
Max. low voltage power in sleep mode	0.6 W (50 mA @ 12 VDC)	0.6 W (50 mA @ 12 VDC)
	0.24W (10 mA @ 24 VDC)	0.24W (10 mA @ 24 VDC)
Communication connector (eBTM side)	FCI HCCMHPE24BKAFSV	FCI HCCMHPE24BKAFSV
Communication connector (counterpart)	FCI 211PC249S0053 ²⁾	FCI 211PC249S0053 ²⁾

General Information

Dimensions L x W x H	1000 mm ³⁾ x 700mm x 300mm
Compressor	Scroll
Protection IP degree	IP66
Weight	91 kg
Installation position	Roof / Chassis
Refrigerant	R-1234yf
Refrigerant charge	500 g
Battery fluid	Water/Glycol G48 mix at 50-50%
Storage temperature range [°C]	- 40 ... 70°C
Internal coolant circuit	3 l
External coolant circuit (eBTM share of liquid)	3.4 l + 0.75 l ⁴⁾
Hydraulic connector	NORMAQUICK PS3 NW20 ²⁾
Low voltage power supply needed	Internal DC/DC installed

1) T_{external air} = 35 °C, T_{set Point} = 25 °C, the set point temperature is the coolant temperature requested from the system

2) Not part of delivery

3) This dimension does not include the presence of the fixing brackets. The fixing brackets measure 50 mm each and can be installed on the longitudinal or the lateral sides

4) The eBTM portion of the external circuit is 3.4 l. An extra 0.75 l must be considered for filling the extra reservoir connected to the external circuit

**Contact details****webasto.com**