Webasto
Feel the Drive

Electric High Voltage Heater

Perfect climate for electric vehicles

The electric High Voltage Heater (HVH) is the ideal heating system for plug-in hybrids and electric vehicles. It converts DC electric power into heat with practically no losses.

The innovative technology from Webasto works with an extremely thin heating layer that is firmly bonded onto the heat exchanger, and a large contact area for heating the coolant. The HVH therefore achieves extremely fast heat-up times, high precision and the highest efficiency.

Customers benefit from greater driving ranges with the same battery capacity and optimum climate comfort. In addition, gentle and optimum conditioning of the battery is possible.

Key benefits at a glance:

- Powerful 5/7/10/12 kW heating performance and wide voltage range up to 880 V independent of coolant temperature
- 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

Furthermore, the system requires only a small installation space and can therefore easily be integrated into vehicles. It offers various control solutions with different functionalities based on the customer's requirements. Webasto offers a wide range of accessories for integrating the HVH into vehicles, together with an international support and service network.

Good to know: The HVH delivers up to 12 kW heating power and works with voltages up to 880 V, needed by many busses and trucks, as well as LCV and construction machines. Unique is the active dicharge support function of the HVH 100 Compact, HVH 100 Compact+ and HVH 120, that reduce the dischage time to milliseconds.

The innovative water heater for hybrid and electric vehicles

Technical specifications

	HVH 50 Gen 1.5 HVH 70 Gen 1.5	HVH 100 Compact	HVH 100 Compact+	HVH 120
Heating performance (kW)	5 / 7	10		12
HV voltage range DC (V)	100 – 490	250 - 880		
LV voltage DC (V)	12		12 / 24	
Efficiency (%)	> 95			
Controllability steps (W)	50	100		
Dimensions (mm)	284 x 200 x 54	284 x 201 x 72		326 x 201 x 72
Weight (kg)	2.0	2.3		2.5
Temperature range for heating (°C)	-40 to 90			
Communication	LIN 2.1	LIN 2.2	LIN 2.2, CAN J1939, Main Switch	
Passive discharge (V) according to ISO 6469-3.3.	< 60 in 4 Sec	< 60 in 40 Sec*		
Dielectric strength (V DC)	2,500			
Coolant connection (mm)	VDA 19	VDA 20		
IP protection class	IP 6K9K IP 6K7			
HV connection	TYCO HVA280 Type A	TYCO HVA280 Typ E		
NV connection	LV FEP connector 8 PIN with integrated de-aerating membrane			
Interlock	Passive			
Electrical safety	ISO 6469 Part 3			
Functional safety	According to ISO 26262 ASIL B for overheat			According to ISO 26262 ASIL D for overheat
Cyber security	UN-ECE WP.29 / ISO 21434			
EMC	ECE R10 Rev. 5			
Insulation resistance (MΩ)	> 50	>30		
Service life	12,000 heating hours	15,000 heating hours		25,000 heating hours

* With the active discharge support function, the discharge time can be reduced to milliseconds.

Advantages:

- **Powerful and reliable heat output:** all-time comfort for the driver
- **Efficient and quick performance:** longer driving experience without energy waste
- **Precise and stepless controllability:** better performance and highest driving range
- **Reliable and certified safety:** three mechanisms to handle faults and guarantee safety

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