

# 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. Webasto's innovative technology 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.

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 discharge support function of the HVH 100, 100 C and 120, that reduce the discharge time to milliseconds.

## 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



Car



Truck

Light  
Vehicles

Bus

Recreational  
Vehicle

Marine



Off-Highway

Special  
Vehicles

## The innovative water heater for hybrid and electric vehicles

### Technical Specifications

			New	New	New
	HVH 50 Gen 1.5 HVH 70 Gen 1.5	HVH 100	HVH 100 C	HVH 100 C+	HVH 120
Heating performance (kW)	5 / 7	10			12
HV voltage range DC (V)	100 – 490	250 – 870	250 - 880		
LV voltage DC (V)	12			12 / 24	
Efficiency (%)	> 95				
Controllability steps (W)	50	100			
Dimensions (mm)	284 x 200 x 54	326 x 201 x 72	284 x 200 x 72		326 x 201 x 72
Weight (g)	2.0	2.6	2.3		2.6
Temperature range for heating (°C)	-40 to 90				
Temperature range for ambient (°C)	-40 to 125				
Communication	LIN 2.1		LIN 2.2	LIN 2.2, CAN, 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 Type 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	15 years or 12,000 heating hours		15 years or 15,000 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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