ELECTRIC HEATER

THERMO AC/DC

THIS HEATER HAS THE WATTAGE

BEST-BUS-CLIMATE.COM

Valeo

▸ MORE VOLTS – NO FUMES

For optimum thermal management in hybrid, electric, hydrogen and trolleybuses Valeo offers the Thermo AC/DC all-electric heater. The independently operated heater with direct (600 VDC) or alternating current (400 VAC) is our answer to the drives of the future:

It is 100% emission-free, i.e. no unpleasant odours from exhaust fumes and no noise. With a heat output of 7, 13 or 20 kW and efficiency factor of 98% the heater is suitable even for outside temperatures up to -40 degrees Celsius. Reliable operation is ensured by a proven and tested temperature sensor in the device.

▸ HEATING WITH ELECTRICITY MEANS BREATHING FREELY

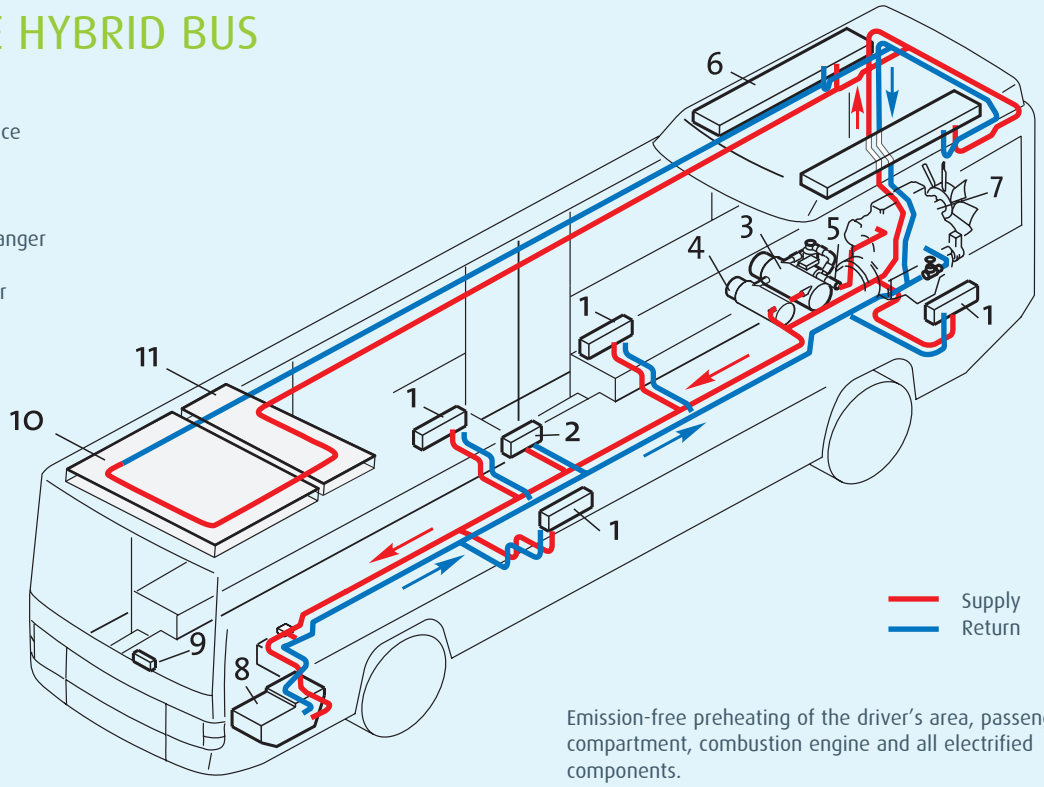
Those who equip their vehicle fleet with electric heating, or supplement existing heating systems, will make many friends not only on the road, but also before starting the journey. It ensures a good climate with local residents, passengers as well as the employees at the depot. They will especially appreciate it, when there is a further significant improvement in the air quality at their workplaces.

▸ CLEAN BUSES – CLEAN HEATING

In addition to the driver's seat, passenger compartment and combustion engine, all electrified components can be precisely temperature controlled without emissions. Excess energy recovered when the batteries are full is effectively utilised by returning it to the water cooling circuit via the electric heater. A further clean aspect: where no fuel is burnt there can be no dirt, and where no dirt accumulates the maintenance and cleaning costs are virtually zero. Moreover, the absence of mechanical components such as a combustion air motor or fuel pump in the Thermo AC/DC means a further significant reduction in life cycle costs.

▸ USE IN THE HYBRID BUS

1 Wall heater with fan
2 Heat exchanger at entrance
3 Diesel heater
4 Thermo AC/DC
5 Circulation pump
6 Roof-mounted heat exchanger
7 Vehicle engine
8 Driver's under-seat heater
9 Control unit
10 Battery
11 Power electronics

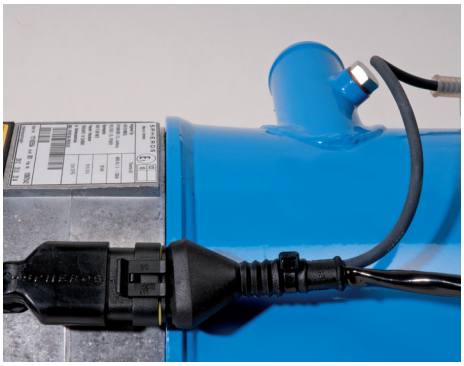


Emission-free preheating of the driver's area, passenger compartment, combustion engine and all electrified components.

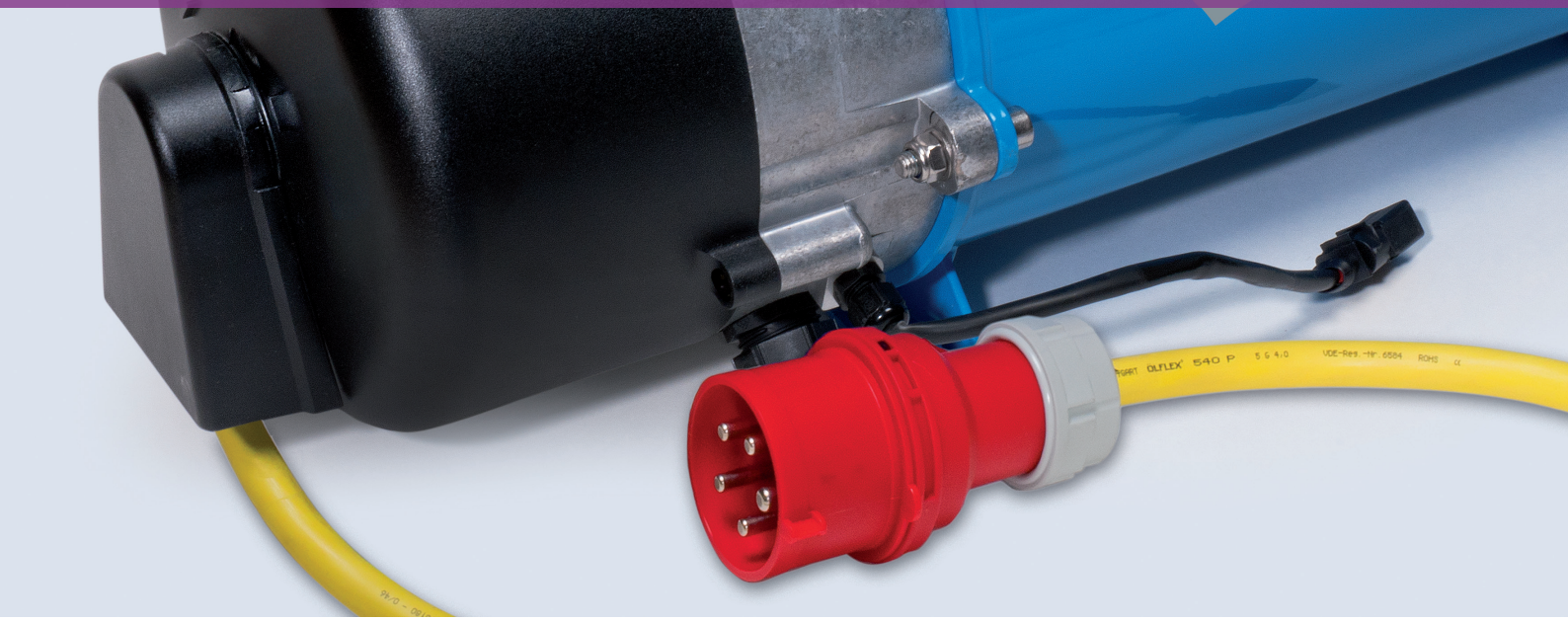
▸ DIESEL COMBINED WITH VOLT

Electricity as an ideal supplement

The Thermo AC/DC can also be used in conjunction with a diesel heater in diesel buses as depot heating: for electric preheating of the bus water system at the depot, in enclosed spaces ("ramp heating") or for heating at termini.
The power is supplied externally from a socket (off-board). This saves expensive fuel costs.



THERMO AC/DC – 100% EMISSION-FREE HEATING



HIGHLIGHTS

Low life-cycle costs

- Minimum maintenance
- High level of efficiency: efficiency factor of > 98%

Environmentally friendly

- 100% emission-free heating
- Almost noiseless
- No annoying exhaust fumes
- Emission-free preheating
- Booster heating in zero-emission zones

Comfort

- High reliability by proven temperature sensors
- Use in enclosed spaces and at the depot
- Use in trolleybuses as a full heating system

TECHNICAL DATA

	Thermo AC 200	Thermo AC 070 [1]	Thermo AC 130 [1]	Thermo DC 200 [1]
Heat output (kW)	20	7	13	20 [2]
Supply voltage (V)	400 VAC / 3~	400 VAC / 3~	400 VAC / 3~	600 - 750 VDC
Current consumption (A)	approx. 30	approx. 10	approx. 20	600V = 26 A / 750V = 32 A
Volume flow (l/h)	> 1500	> 1500	> 1500	> 1500
Operating pressure (bar)	max. 2.0	max. 2.0	max. 2.0	max. 2.0
Weight (kg)	15	12.5	14	16
Dimensions L x W x H (mm)	578 x 247 x 225	578 x 247 x 225	578 x 247 x 225	578 x 247 x 225

[1] On request [2] Nominal heat flow dependent on voltage applied

Valeo Thermal Commercial Vehicles Germany GmbH
PO Box 1371 - D-82198 Gilching - Tel. +49 (0)8105 7721-0 - Fax +49 (0)8105 7721-119
www.valeo-thermalbus.com - Info-ValeoBus@valeo.com