Caldotherm
Temperature Control

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Operation of Wrightbus Heat/Vent/Cool control system WRK/52

1) The system is supplied with one dash control relay/switch assembly, one external air thermostat, one saloon air thermostat, one pipe thermostat and one electrically operated water valve actuator. See drawing SC1010 below for locations.
2) The air thermostats directly replace the original external and saloon thermistors. They are fully adjustable, and use the existing harness wiring.
3) The OE engine thermistor is not used.
4) The electric valve actuator directly replaces the original Danfoss thermostatic actuator, and the pipe thermostat is positioned adjacent to the valve. These require a 4-core cable (supplied) from the dash control.
5) The original valve body and water pump are retained, and no plumbing modifications are required.
6) The dash control assembly directly replaces the original Climate Control and plugs in to the existing harness. Extra connections from the 4-core cable are added.
7) The driver-selectable options are:
   i) Both HEAT and COOL off.
   ii) HEAT on.
   iii) COOL on.

   Note: The driver cannot adjust the saloon temperature. This is set at the thermostat.

8) When **HEAT** is selected, the system automatically provides either heating ***or*** background ventilation as required.

   a) If the external thermostat is cold (e.g. <12°C), and the pipe thermostat is cold (e.g. <60°C), the valve is opened, but the fans and pump remain off, irrespective of the saloon temperature. This prevents blowing cold air into the saloon and running the pump when the engine is cold.
   b) If the external thermostat is cold, and the pipe thermostat is hot, the valve remains open and the pump is switched on. This ensures a constant hot water flow around the saloon heating circuit. The saloon fans switch on to normal speed if the saloon is cold (e.g. <20°C) and off when the saloon is warm. This ensures that no cold air is blown into the saloon when the external air is cold, with temperature control achieved by operation of the fans.
   c) If the external thermostat is warm, the pump is switched off and the saloon fans switch on to normal speed irrespective of the pipe temperature. The valve opens if the saloon is cold, and closes when the saloon is warm. This ensures constant ventilation when the external air is warm, with temperature control achieved by operation of the valve.

Operation of Wrightbus Heat/Cool control system WRK/52 (contd)

9) When **COOL** is selected, the system automatically provides either background ventilation ***or*** forced ventilation (COOLING) as required. The valve is closed, the pump is switched off and the pipe thermostat is ignored.

   a) If the external thermostat is cold (e.g.<12°C), the fans remain off irrespective of the saloon temperature. This prevents inappropriate operation of the COOL function. i.e cold air is not blown into the saloon.
   b) If the external thermostat is warm, and the saloon thermostat is cold (e.g.<20°C), the fans are switched on to normal speed, providing background ventilation.
   c) If the external thermostat is warm, and the saloon thermostat is warm, the fans are switched on to full speed, providing forced ventilation.