

## Temperature control

### Solar sensors

The **solar sensor** is installed in the **indirect ventilation grille** in the vicinity of the LED for the antitheft alarm system to allow for varying **light and heat source conditions** (solar radiation) and to influence **temperature, air distribution and air volume control** .

It consists of **two photoresistors** , one on left and one on right that sense the different **intensity levels of the solar radiation** . The **temperature control** is influenced by the parameters stored in the **EEPROM** for **changing** following functions:

- The **blower curve** is shifted
- The **stratification air temperature** is changed
- The **ventilation flap angles** are changed

The **sensor signal** is output in a voltage range from **0 - 5 V** and updated every **10 seconds** . The signal plausibility is checked by a **limit monitoring facility** so that the sensor influence may be **disabled** in the case of **fault** .

### Setpoint temperature value control

The temperature is selected **separately** for the **driver and front passenger sides** using the **plus/minus button** . The setpoints are indicated in the **LC display** in 0.5 ° C or 1 ° F steps when the appropriate plus/minus button is pressed. The **displayed values** correspond to a temperature which may **deviate from the setpoint values** .

The temperature control function is deactivated when the setpoint temperature value on the driver's side is set to minimum or maximum. Both water valves are closed in the minimum position and opened in the maximum position.

### Defrost

The defrost feature has a priority function in air distribution and in the control calculation for heating. The defrost function is activated by means of the defrost stage (5th stage) in the blower switch.

At an outside temperature below 10 ° C, the water valves are forced open.

If the outside temperature exceeds 10 ° C, the setpoint temperature value for the driver's and passenger's side is increased by 1 ° C. At the same time, the heat exchanger setpoint value is increased by at least 30 ° C.

### Front mixing air control

A mixing air control function is used to control the outlet temperature at the ventilation nozzles in the case of a reduction in the ventilation flap position or when the air conditioning system is switched on or off. The input variables are the setpoint temperature value selected, the position of the mixing air flap control in the centre grille and the temperatures of both ventilation sensors installed in the centre grille. The control then sets the mixing air value to the value calculated from these variables, independently on the left and right.

### Rear mixing air control

By means of a mixing air and shut-off flap installed in the unit, the air for rear air ventilation can be shut off or its temperature infinitely controlled up to the heat exchanger temperature.

The position of the mixing air flap and thus the temperature of the outflowing air can be set electrically by means of a mixing air control on the rear ventilation grille. The flap is also closed electrically by the rear compartment switch on the rear grille.

### Auxiliary water pump

An electrically operated auxiliary water pump is installed to ensure an adequate water flow at low engine

speeds. This water pump ensures virtually constant engine speed-independent water flow through the heat exchanger.

**The auxiliary water pump is switched on at:**

- Engine temperature  $> 0^{\circ}\text{C}$  and heat demand on driver's side  
or
- defrost ON  
or
- maximum heating driver's side  
or
- residual heat function active  
and
- blower control wheel out of zero position  
and
- control unit OK

**The auxiliary water pump is switched off at:**

- Engine temperature  $< 0^{\circ}\text{C}$   
or
- no heating demand on driver's side  
or
- control unit defective