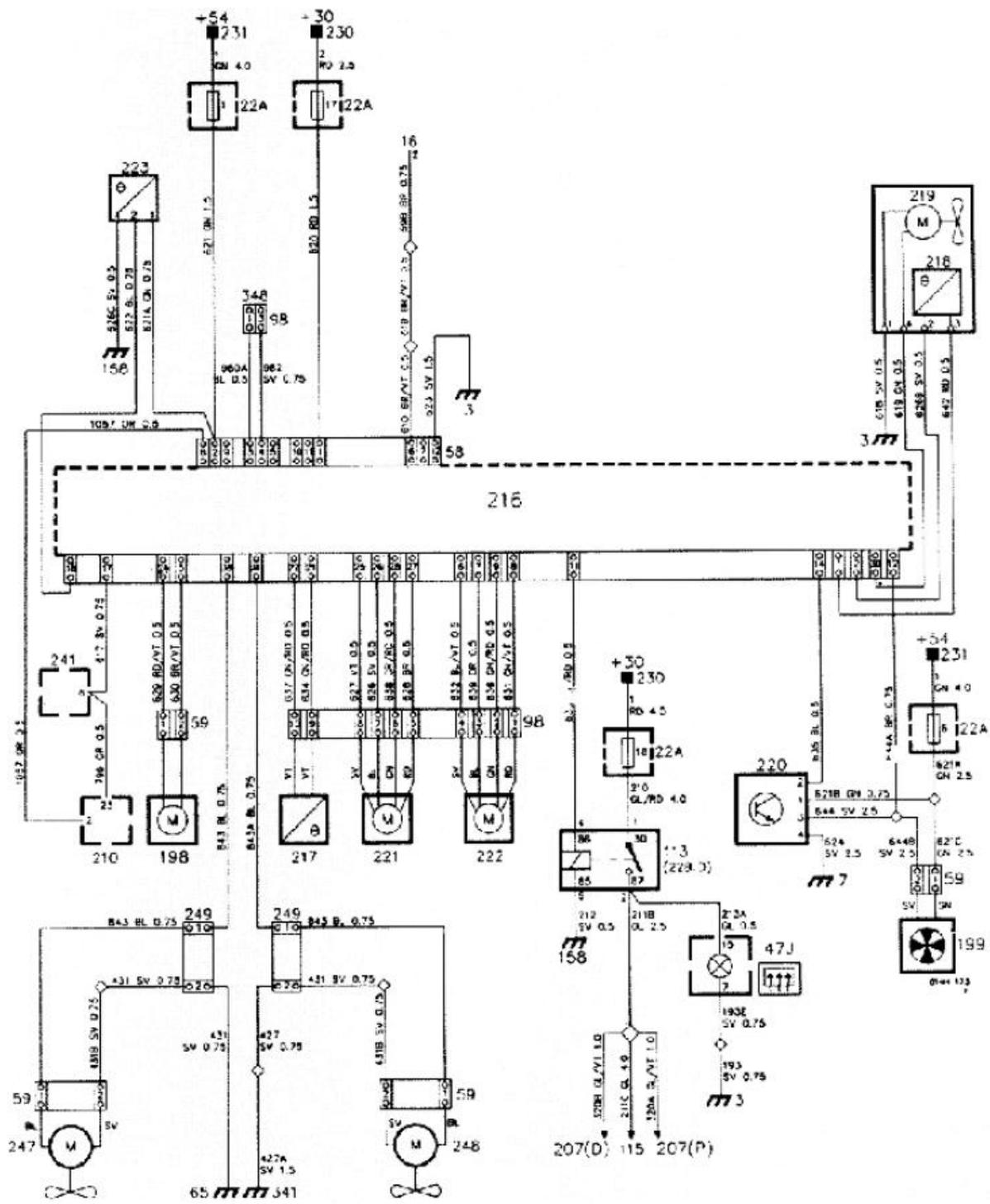
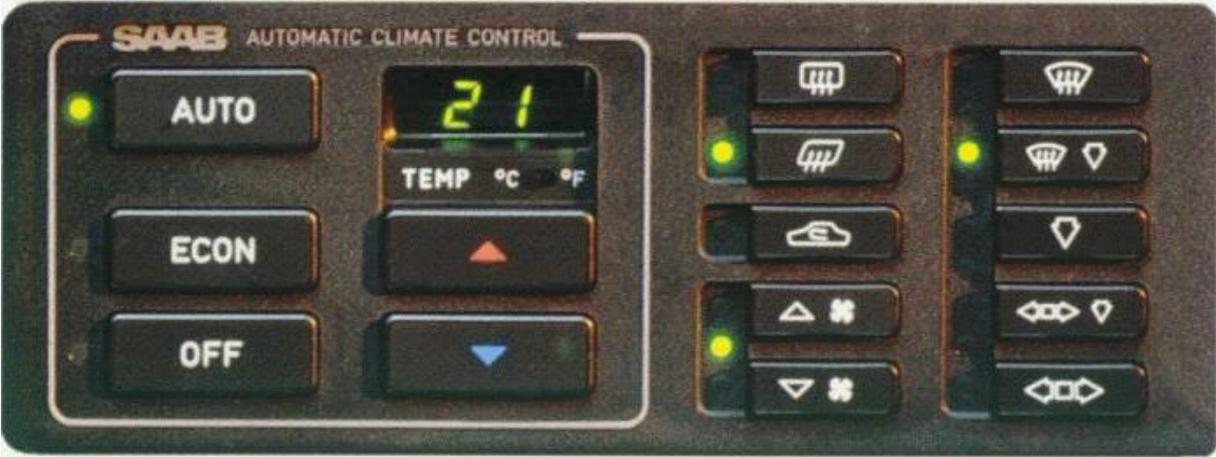


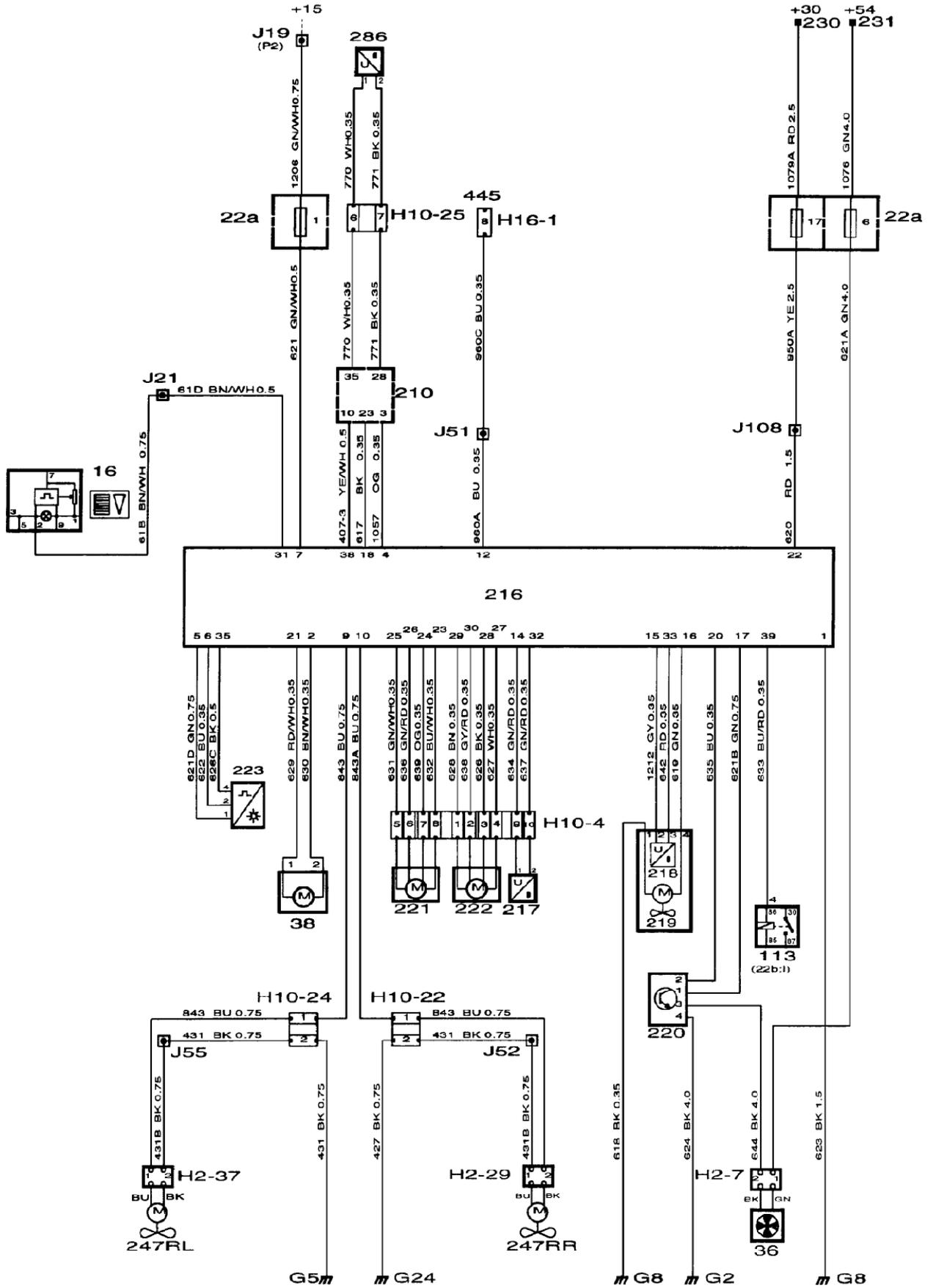
ACC VERSIOON 1





ACC VERSIOON 2





16 Rheostat, lighting for instruments and controls, on the dashboard between the steering wheel and driver's door.
22a Fuse board behind the access panel in the glove box.
36 Motor, ACC ventilation fan, in fan housing between the evaporator casing and heater housing.
38 Motor, air recirculation flap, on the evaporator casing.
113 Relay, electrically heated rear window, in main fuse box behind the glove box.
210 EDU trip computer in the main instrument display panel.
216 ACC control module, in the centre of the dashboard.
217 Blended air temperature sensor, under the servo motor unit.
218 Cabin temperature sensor on the dashboard between the steering wheel and centre console.
219 Suction fan, cabin temperature sensor, on the dashboard between the steering wheel and centre console.
220 Speed control, ventilation fan, in the evaporator casing where it joins the fan housing.
221 Motor, air distribution damper, behind the glove box on the servo motor unit.
222 Motor, temperature flap, behind the glove box on the servo motor unit.
223 Solar sensor, on top of the dashboard in the middle.
230 Distribution terminal (+30 circuit) in main fuse box behind the glove box.
231 Distribution terminal (+54 circuit), in main fuse box behind the glove box.
247RL Motor, door fan, in the left-hand rear door.
247RR Motor, door fan, in the right-hand rear door.
286 Outside temperature sensor, behind the front spoiler on the left.
445 (H16-1) Diagnostics test socket, below the steering wheel.

2-Pin Connectors

H2-7 Adjacent to ventilation fan motor 36.
H2-29 In the right-hand rear door beside the fan motor.
H2-37 In the left-hand rear door beside the fan motor.

10-Pin Connectors

H10-4 Behind the glove box on the ACC servo motor unit.
H10-22 In the right-hand B pillar.
H10-24 In the left-hand B pillar.
H10-25 Behind the left-hand headlamp.

Grounding Points

G2 Grounding point, battery tray, on the left-hand wheel housing.
G5 Grounding point, rear seat, under the left-hand part of the seat.
G8 Grounding point, dashboard, by the left-hand front loudspeaker socket.
G24 Grounding point, right-hand front seat member.

How it works:

GENERAL

Some cars are equipped with an Automatic Climate Control (ACC) system. The heating and ventilation system (including A/C) is then controlled automatically so that the desired temperature in the cabin is maintained at all times, regardless of the outside temperature. Air conditioning (A/C) with a recirculation mode is always included in the ACC system.

The climate control unit has the following functions:

Automatic temperature control, including automatic control of recirculation.

Rear door fans.

Electrically heated rear window.

Electrically heated door mirrors.

The A/C compressor can be deactivated by means of the ECON button while the other functions remain under automatic control.

The system can be switched off with the OFF button. By pressing one of the buttons on the right of the unit, the particular function can be switched on manually. If the button is pressed again, the function returns to the programmed mode.

Light-emitting diodes show which parts of the ventilation system are active, irrespective of whether the system is on automatic or under manual control.

To enable the system to achieve the required temperature in the cabin, data is required from a number of sensors, actuator motors, etc.

DESCRIPTION OF OPERATION

The climate control unit obtains data from both the control panel and the following sensors:

Cabin Temperature Sensor 218

Interior temperature sensor 218 is an NTC resistor which senses the temperature of the cabin air. It is integrated with suction fan 219, which provides an even air flow around the sensor. The sensor is connected via pins 15 and 33 while the suction fan is supplied with 12 V via pin 16.

Blended Air Temperature Sensor 217

The blended air temperature sensor is an NTC resistor which senses the temperature immediately after the air-mixing damper. The sensor is connected via pins 14 and 32.

Solar Sensor 223

The solar sensor consists of five solar cells arranged in a cube under the black cover. Pulses are sent to the solar sensor from ACC pin 5. Digital pulses are sent to pin 6 of the ACC control module via an amplifier stage.

Outside Temperature

The outside temperature is obtained in the form of digital pulses from EDU trip computer 210 applied to pin 18 of the ACC control module.

Power Supply

Climate control unit 216 is supplied with current via fuses 17 and 1.

The unit is always supplied with current directly from the battery via fuse 17. This is the main power supply for the system.

When the ignition switch is in the Drive position, the unit is also supplied with current via fuse 1. Suction fan 219 for interior temperature sensor 218 starts at the same time.

Ventilation fan 199 is supplied with current via fuse 6. Pin 31 of the unit is connected to instrument lighting rheostat 16.

Climate Control Unit 216

The unit controls the following functions/units:

Ventilation fan 36 via speed control 220. Fan speed is controlled steplessly. Pin 17 of the control module supplies the control with 12V. A speed control voltage of 0-5V is supplied via pin 20, where 0V = fan stationary, 5V = maximum speed.

Stepping motor 222 for the air-mixing damper which controls the flow of air, directing it through the heat exchanger or bypassing it. The motor is connected to pins 27, 28, 30 and 29.

Stepping motor 221 for the air-mixing damper which controls the air flowing through the defroster and/or ventilation outlet. The motor is connected to pins 23, 24, 26 and 25.

Servo motor 38 for the air recirculation flap. When the flap is closed, air is admitted from outside and when it is open (recirculation position), air from inside the cabin is used (recirculated). The motor is connected to pins 2 and 21 of the unit.

Electrically heated rear window 115 and heating elements 207 in the door mirrors, which are controlled via relay 113. The relay is connected to pin 39.

Rear door fans 247RL and 247RR are connected to pins 9 and 10 respectively.

IMPORTANT : The cooling fins on the speed control are live (+12V) when the ignition is switched on. If the cooling fins are grounded, the speed control will be rendered unserviceable.

FAULT DIAGNOSIS HINTS

When taking readings and carrying out fault diagnosis, the connector must be unplugged. All readings must be taken on the connector and not on the climate control unit. With the exception of changing bulbs, the unit must not be tampered with in any way.

Self-Diagnostics

There is a special self-test program in the climate control unit's microprocessor.

The program checks certain functions at regular intervals while the car is being driven and an emergency mode will be activated if a fault develops in any of the sensors. Faults detected by the self-diagnostics program are stored as diagnostic trouble codes in the microprocessor's memory. Readouts of diagnostic trouble codes are obtained with an ISAT scan tool.

Calibration

The flap actuator motors must be calibrated at the following times:

After changing the control panel.

After changing the flap motors.

If the battery is disconnected within 30 seconds of the ignition having been switched off.

If the battery has been fully discharged or if battery positive voltage has been higher than 16 V.

Calibration is carried out either by pressing the AUTO and VENT buttons simultaneously or by means of an ISAT scan tool.

A self-test is carried out in conjunction with calibration. The total time for calibration and self-testing is 22-50 seconds . The number of faults (0-5), if any, is shown in the display during the first 35 seconds .

Other Fault Diagnosis

1. Check that the relevant fuses are intact and supplied with current.
2. Check the interior temperature sensor's suction fan by allowing a thin piece of paper to be sucked onto the intake.
3. Check the climate control unit connectors. Clean them by unplugging and plugging them in again.
4. Check the wiring harness, connectors and ground connections. For checking A/C compressors and radiator fans, refer to Air Conditioning, A/C.

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