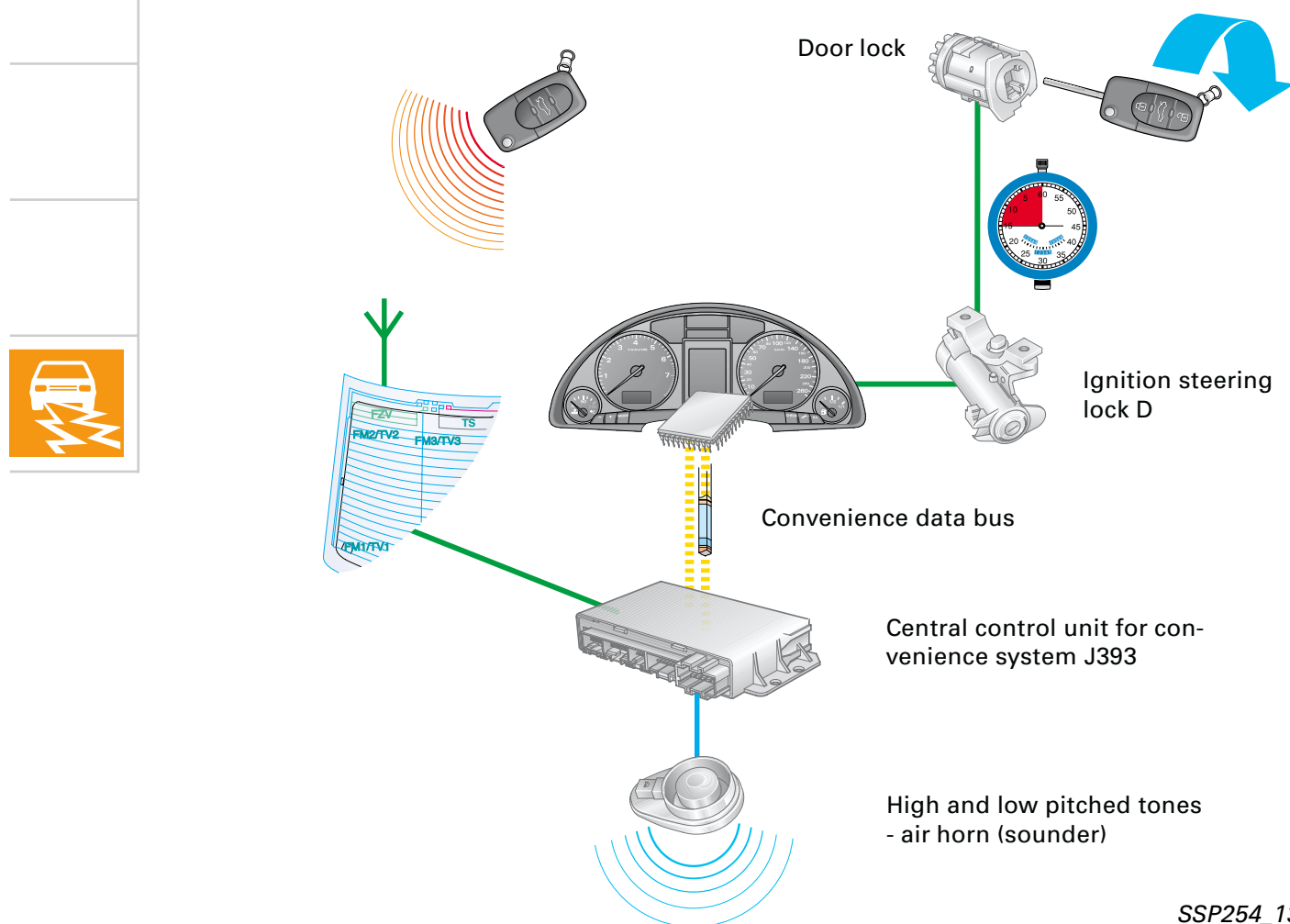


Electrical system

Anti-theft alarm with interior monitor



SSP254_133

The Audi A4 convenience system is available with

- Anti-theft alarm
- Ultrasonic interior monitor
- Shattered glass sensor (Avant)
- Towing protection

as optional extras.

The anti-theft alarm is only activated when the vehicle is locked via the radio remote control and by closing the driver's door.

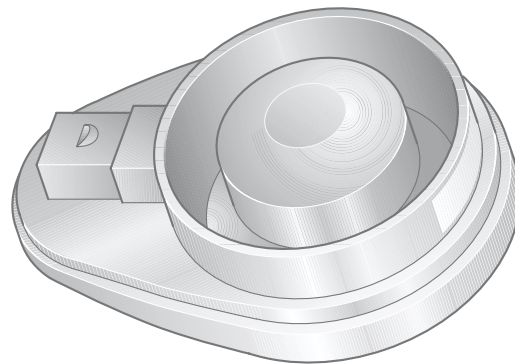
Deactivation is performed by

- opening the vehicle via the radio remote control or
- opening the vehicle via the driver's door lock cylinder and switching on the ignition within 15 seconds. If this time period is not observed or if the key used is not stored in the immobiliser, the alarm is triggered.

Data exchange between the immobiliser in the dash panel insert and the central convenience electronics takes place via the convenience data bus.

An innovation in the anti-theft alarm is that a sounder with an integrated battery is fitted in place of the horn.

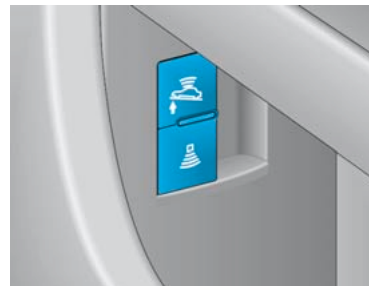
This enables the alarm to sound even when the power supply has been interrupted.



SSP254_134



The ultrasonic interior monitor and the towing protection can be switched off from inside the passenger compartment by means of a switch.



SSP254_135

Diagnostics

The angles of the both the longitudinal and transversal inclination of the inclination sensor are displayed in the measured value block.

Electrical system

Functional mechanism of inclination sender

Towing protection is achieved by means of the inclination sender installed in the central convenience electronics.

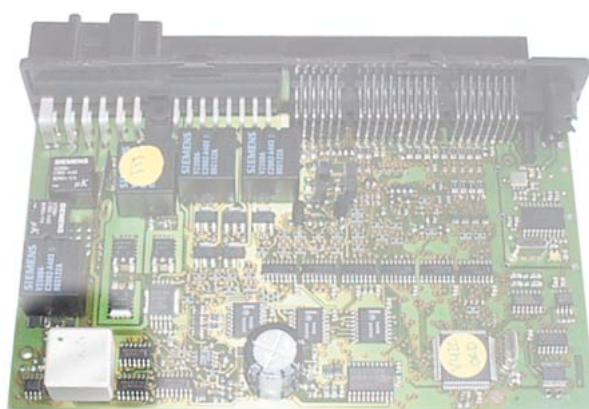
The functional mechanism of the inclination sender is based on the determination of resistance changes relating to the volumetric fluctuation of a viscous electrically conductive fluid.

Various arranged electrodes project into this fluid.

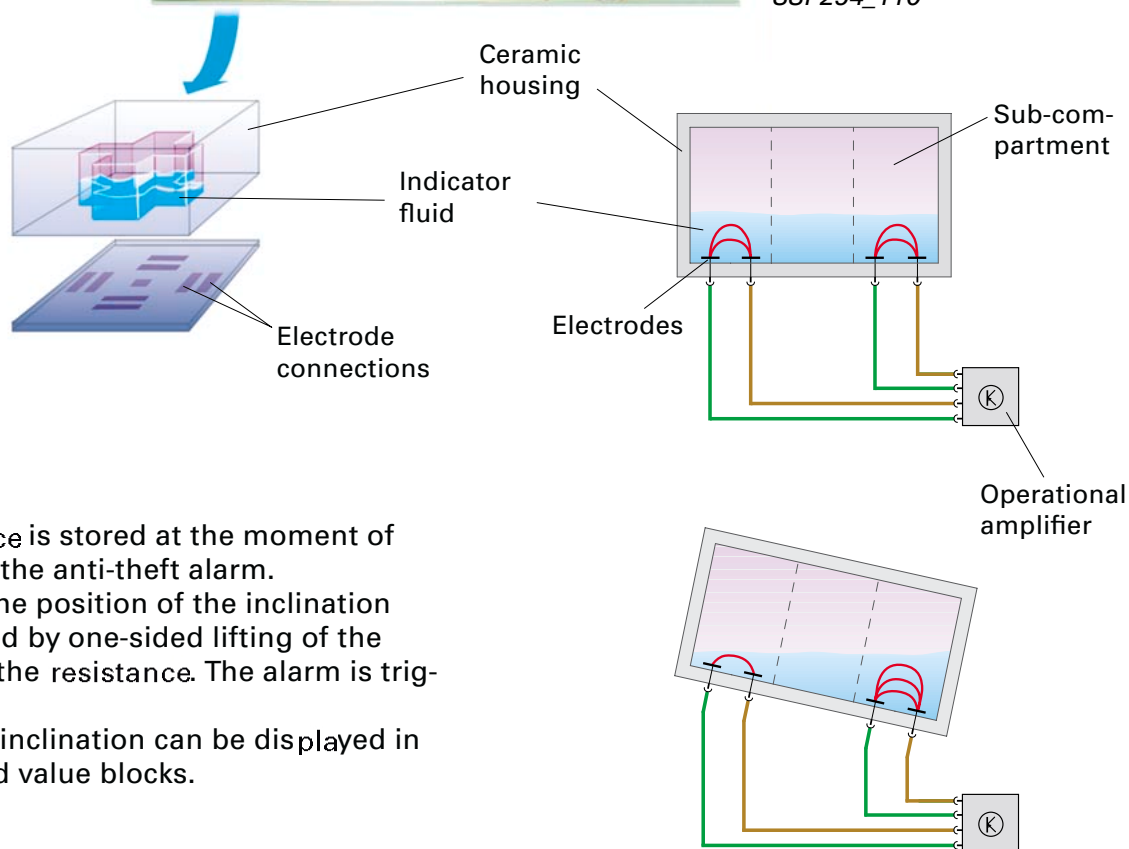
Alternating fields are applied to the electrodes of the sender, which is divided into sub-compartments.

When a change in position occurs, the distribution of the fluid in the chambers also changes.

As the level of the liquid in the sub-compartments changes, the resistance determined for the sub-compartments via the electrodes also changes.



SSP254_110



The resistance is stored at the moment of activation of the anti-theft alarm. Changes in the position of the inclination sensor caused by one-sided lifting of the vehicle alter the resistance. The alarm is triggered. The angle of inclination can be displayed in the measured value blocks.

Radio chorus II, concert II and symphony II

In the new Audi A4, the new generation of radios, chorus II, concert II and symphony II are available as options.

The following functions have been optimised:

- AM has been extended to include long wave.
- There are now 12 programmable stations for AM and FM.

All three radio versions are compatible with the external CD changer (optional).

The optional CD changer is now built into the glove compartment.



SSP254_106

The BOSE sound system can be ordered as an optional extra for all radio systems of the new generation.

The connection of the new generation of radios to the data bus information system enables the exchange of large volumes of data with other systems.

This makes new functions such as e.g. convenience radio coding possible.

Thanks to the convenience radio coding, manual deactivation of the radio anti-theft lock following a loss of the power supply is no longer necessary.

A prerequisite is that the radio is built into the same vehicle.

Sound quality is enhanced by the installation of a central loudspeaker in the centre of the dash panel as well as a sub-bass speaker under the rear shelf.

Electrical system

Radio chorus II

New functions with respect to the predecessor model include:

- Skip title function
- Scan function
- Dolby noise suppression

in the cassette player as well as

- a sorting function within a radio station family

in the convenience radio tuner search function.



SSP254_009

Radio concert II

A single speed CD player is integrated in the concert II radio.

The cassette player has been discontinued.



SSP254_007

Radio concert II and symphony II

The improved radio traffic news memory in the Radio concert II and symphony II allows the driver to program the time for starting the two-hour recording of traffic news announcements. Two timers are available, which can be programmed individually.

Example:

The driver can set the starting time for the recording of radio traffic news announcements for the drive to work in the morning and for the drive back in the evening separately.

Radio reception is improved in the concert II and symphony II radios by the use of the **Multi Communication Bar (MCB)** with integrated aerial diversity.

For further information on the aerial module, please refer to 72.

In order to improve sound quality, acoustic curves related to vehicle type are stored in the concert II and symphony II radios.

The acoustic curves are set in the control unit coding function of the radio systems.

In addition, the sound settings for the FM, AM and CD modes are stored separately in the concert II and symphony II radios. Consequently, the various level controls do not require resetting each time the driver changes modes.

Radio symphony II

A 6x CD changer as well as a cassette player are integrated in the symphony II radio.

Searching for alternative frequencies is speeded up by the use of a second tuner. The second tuner also allows for Traffic Message Channel (TMC) evaluation in the background.

For further information, please refer to the relevant operating instructions.



SSP254_006



CAN networking in the new generation of radios

All three radio versions are connected to the data bus information system.

Important signals via the data bus information system:

Inputs/source

- Ignition on/steering column-electronics
- Ignition key inserted/steering column electronics
- Switch illumination/dash panel insert
- Display illumination/dash panel insert
- Speed/dash panel insert
- Convenience coding/dash panel insert
- Vehicle identification/dash panel insert
- Prompt signal/data bus information
- Data bus system information/dash panel insert
- Time/dash panel insert
- Control signals from multi-function steering wheel/steering column electronics

Outputs/receiver

- Display functions/dash panel insert
- Sleep signal/data bus information
- TMC data for symphony II/navigation system
- Convenience coding request/dash panel insert

Electrical system

Example:

If the radio is switched on with the ignition key (S-contact) this requires the exchange of data between three control units:

- Steering column electronics,
- dash panel insert (gateway) and
- radio.

If the radio does not switch on,

- the signal input in the steering column electronics (terminal 86S),
- communication between the steering column electronics and the dash panel (convenience data bus) and
- communication between the dash panel and the radio (data bus information system)

must be checked.

Diagnostics

For diagnosis of radio systems concert II and symphony II, current consumption of aerial diversity is monitored via the intermittent frequency (IF) wiring.



For further information on IF wiring, please refer to SSP 213, Page 54.

Test mode

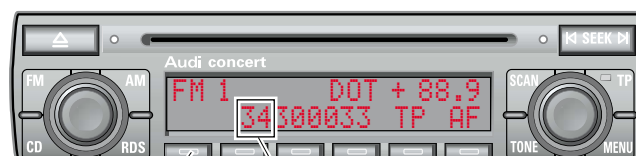
The new radio versions are equipped with a test mode.

Activating field intensity measurement:

- Radio switched off
- Hold down key 1
- Switch on radio

Activating GALA display volume increase:

- Radio switched off
- Hold down key 2
- Switch on radio



Button 1

Field intensity - mean value

SSP254_119



Button 2

Increase in dB

SSP254_120

Navigation IV and Navigation Plus-D

The new Navigation System IV and Navigation System Plus-D are equipped with the dynamic routing system.

The following traffic hold-ups are taken into account during route planning:

- closed roads
- tailbacks and
- slow-moving traffic.

The system's sources of information are the traffic information from the radio stations via the Travel Message Channel and from the telematics® (optional) via the telephone connection.



SSP254_129



Once it is switched on, the navigation system takes account of the traffic messages within a radius of approx. 50 km around the vehicle.

If the route planning is activated, any hold-ups are taken into consideration.

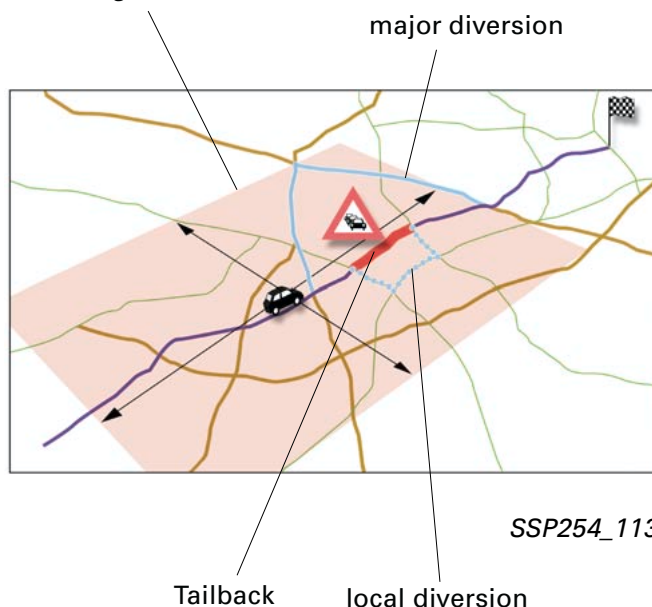
New hold-ups which arise are immediately accounted for in the routing and the driver is re-routed.

Data transfer of the traffic data is by

- Travel Message Channel data from the radio
- Telephone data from the telematics control unit J526

to the navigation system via the data bus information system.

Selectivity area for traffic messages, 50 km



SSP254_113

Tailback

local diversion

Electrical system

Within the menu structure of the navigation system, the driver is able to

- switch the dynamic routing on and off,
- select the source of traffic information,
- manually exclude route sections from the route planning.

For further information, please refer to the operating instructions.

Travel Message Channel (TMC)

The TMC is a component of the Radio Data System (RDS), which is transmitted by the radio stations.

The information in the TMC includes the location, type and duration of traffic hold-ups reported by the police, automobile associations and government authorities in a coded form standard throughout Europe.

The TMC data is not currently transmitted by all radio stations.

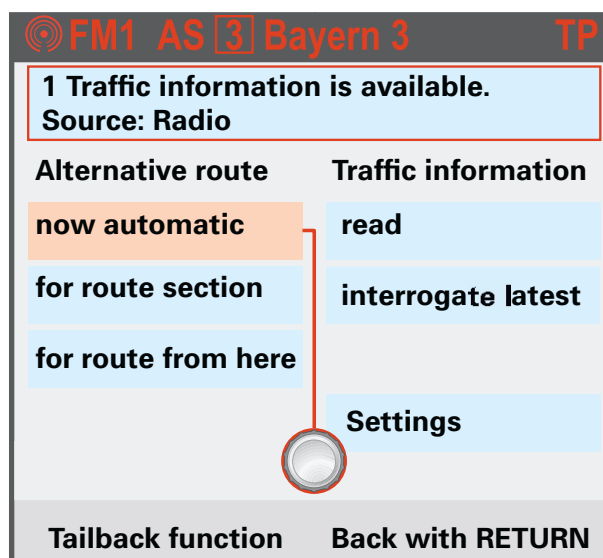
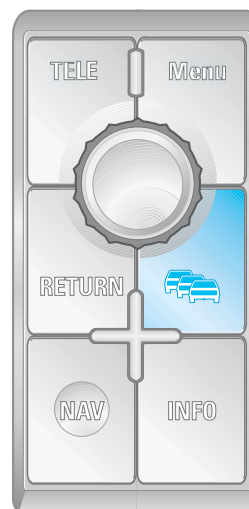
This requires the use of a second tuner in the radio or in the interface of the Navigation System Plus.

As only the symphony II radio is equipped with a second tuner, the use of TMC data for dynamic routing is only possible with this version.

Dynamic routing in conjunction with the chorus II and concert II radios is only possible by means of the traffic messages via telephone with telematics®.

Diagnostics

The navigation system diagnostics is interrogated via the L-wire.



SSP254_130

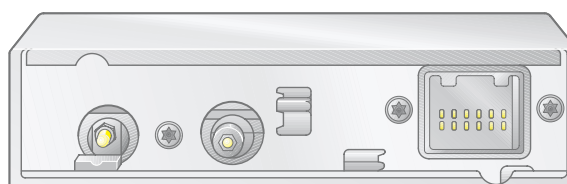


Interface for Navigation Plus (R94)

The interface of the Navigation System Plus performs the following tasks:

- Exchange of data bus information - Navigation System Plus internal data bus
- Transfer of TMC data to the Navigation System Plus for dynamic route planning

In order to receive the TMC data, an interface connects the aerial and radio.



SSP254_122



The following data is exchanged via the interface:

Input from data bus information/sender

Display request/instrument cluster

Traffic news/Telematics

Fault messages/card reader

Control signals/multi-function steering wheel

Terminal 15/steering column electronics

Output to data bus information/receiver

Display/instrument cluster

Control signals data bus/data bus information system

Vehicle data/card reader

Electrical system

Multi-communication bar (MCB)

The Audi A4 Saloon features the multi-communication bar in the top part of the rear window for the first time.

The

- aerial module,
- aerial for navigation system (GPS),+
- and aerial for telephone (GSM)

are fitted in the MCB.

The

- aerial diversity,
- aerial amplifier for the four radio aerals (FM1-4, AM),
- 4 aerial amplifiers for the TV aerals 1-4,
- aerial for radio remote control, central locking (RCL),
- and the aerial for the telestart function (TS) of the auxiliary heating

are integrated in the aerial module.

The aerial conductor is located in the rear window. The electrical connection between the aerial amplifier and the conductor on the rear window is made by means of spring contacts.

Both the GPS and the GSM aerals are also fitted in the top edge of the rear window, but these are not connected by means of conductors in the rear window.

Thanks to this compact arrangement, no aerals are visible from outside.

The emergency aerial for the telematics is located at the rear bumper.

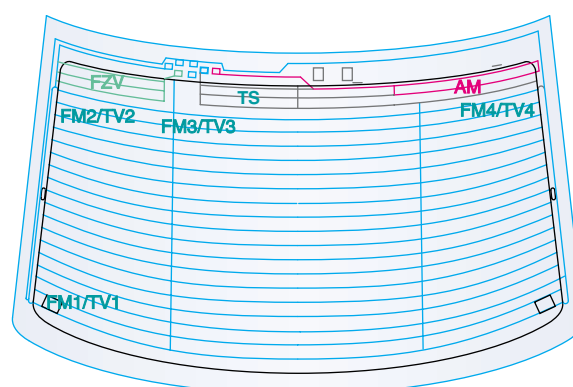


GSM

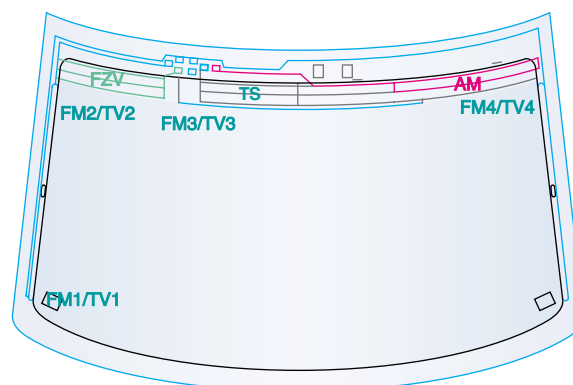
GPS

Aerial module

SSP254_109



Normal glazing



Insulating glazing

SSP254_013



SSP254_137

Thanks to the high speed, switching can be performed within a single scanning line.

SSP254_137

The TV tuner is not connected to the data bus information system.



Address word 57

The TV aerials can be activated for reception consecutively in the final control diagnosis, enabling the detection of a faulty aerial.

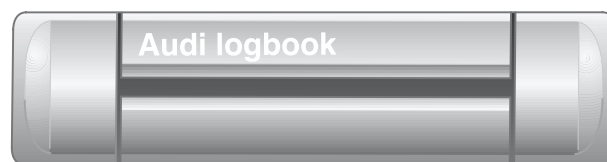
The condition of the connections to the aeralis, navigation system and external video inputs can be displayed via the measured value blocks.

Electrical system

The electronic logbook, Audi Logbook

The Audi Logbook is a fully automatic logbook which allows the customer to calculate business and private journeys in order to determine costs, e.g. for tax purposes.

The Audi Logbook is only available in conjunction with Navigation Plus or Navigation IV.



SSP254_065

CAN bus information



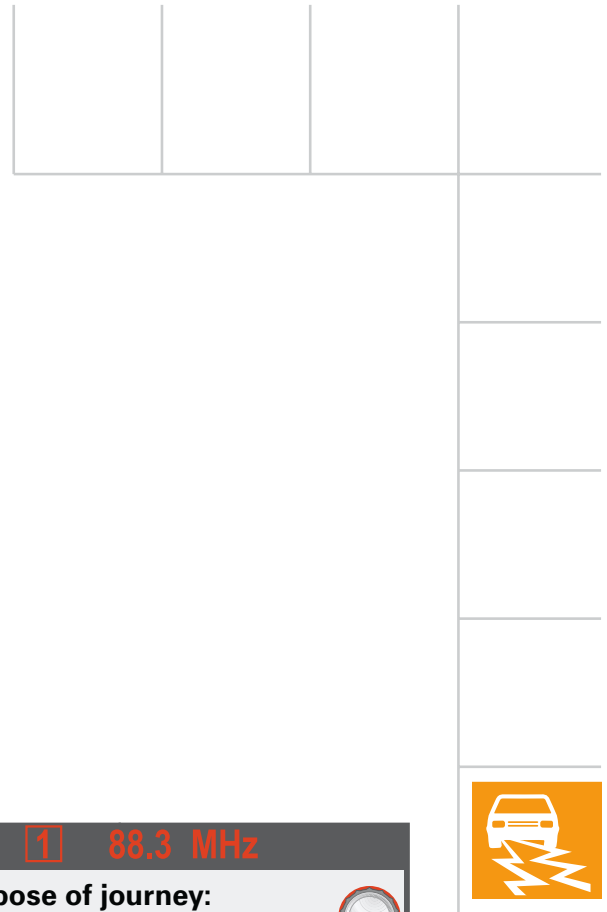
The Audi Logbook System includes:

- Chip card reader R99,
- PC card reader,
- Software CD for installing the Audi Logbook program on the PC,
- Chip card.

For initial operation of the Audi Logbook, the chip card must be activated using a PC and PC card reader (see Owner's manual).



SSP254_040



In the "business journey" mode, data relating to

- date
- time at start of journey
- position at start of journey
- position at end of journey
- time at end of journey
- kilometres driven

are stored in the Chip card reader R99.

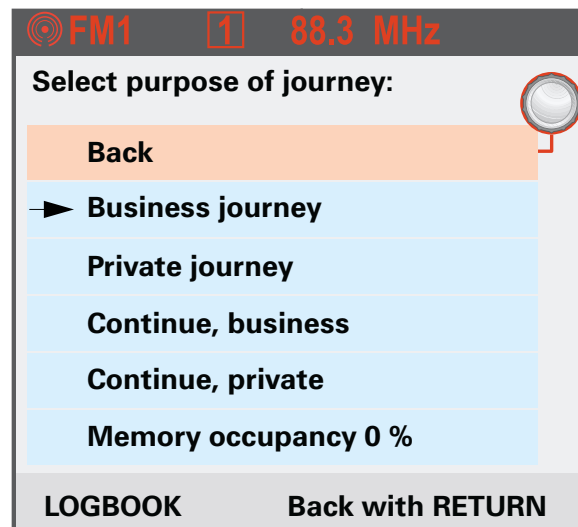
The date and route driven are stored in the "private journey" mode.

The "continue journey" mode is used to prevent short breaks from being stored (e.g. refuelling stops).

Operation and setting of the Audi Logbook is via the navigation system menu.

The following options can be selected:

- Business journey
- Private journey
- Continue journey



SSP254_131

Around 250 individual journeys can be stored on the chip card.

Once 200 individual journeys have been stored in the card reader, the driver is requested by a message on the navigation system display to store the data on the chip card.

The card reader has the capability to store around 2700 individual journeys.

The Audi Logbook has no diagnostic capability.

Fault messages are indicated via the navigation system display.

The messages displayed are generated in the chip card reader and communicated to the navigation system as information via the data bus.

In order to activate the Audi Logbook, adaption of the navigation unit must be performed. (see workshop manual).

Heater/AC

Design and function

The air conditioner represents a further development of the two-zone air conditioning concept previously used in the A6.

The redesigned system is based on the performance data for top of the medium range vehicles, taking account of low system weight and energy consumption as well as, to an increasing extent, recycling capability.

Operating and display unit E87.



SSP254_032

Innovations include:

- Individual temperature control for both driver and front passenger
- Option of synchronising the temperature zones for driver and front passenger by pressing the "Auto" button for approx. three seconds.

Example:

If the same temperature is desired for the passenger's side as for the driver's side, the "Auto" button should be pressed for at least three seconds.

The same applies the other way round, for making the driver's side temperature the same as that of the passenger's side.

- The fault diagnosis and measured value blocks for the seat heating system are read out via address word 08 for the air conditioner.
- The system is encoded automatically via the dash panel insert.

- Integrated rotary control knob with potentiometer for seat heating. (this means the potentiometers cannot be replaced individually)
- Intake blower V42 for passenger compartment temperature sensor G56 is integrated and cannot be replaced individually.

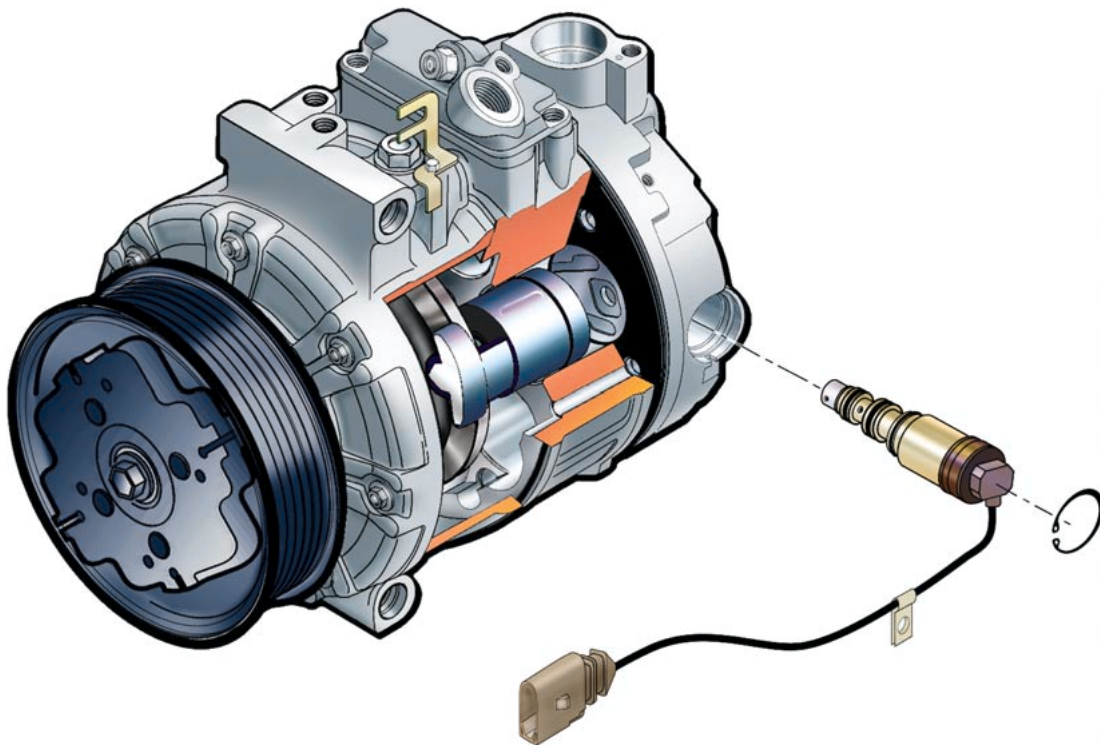
A distinction is made between eight different versions, identified by means of the part number index:

- with or without seat heating
- with or without navigation system,
- at a later date, with or without air quality sensor.



The operating and display unit E87 is connected to the convenience CAN bus. Diagnosis takes place via the K-wire.

7-piston compressor



SSP254_033



Two versions of externally controlled compressors are used in the Audi A4:

- the 6-piston compressor, which you have already studied in detail in SSP 240,
- the 7-piston compressor, which differs in the number of pistons and the resulting increased displacement.

Depending on the country-specific vehicle version, the 7-piston compressor with its higher total output is used (e.g. in hot countries).

Based on the engine version installed, a distinction is made between the following compressor types:

- 6 and 7 pistons for compressor fitted on right side of engine,
- 6 and 7 pistons for compressor fitted on left side of engine,
- 6 pistons for 6-cylinder TDI Diesel mechanical units.

Distinguishing features to identify the compressor fitted are:

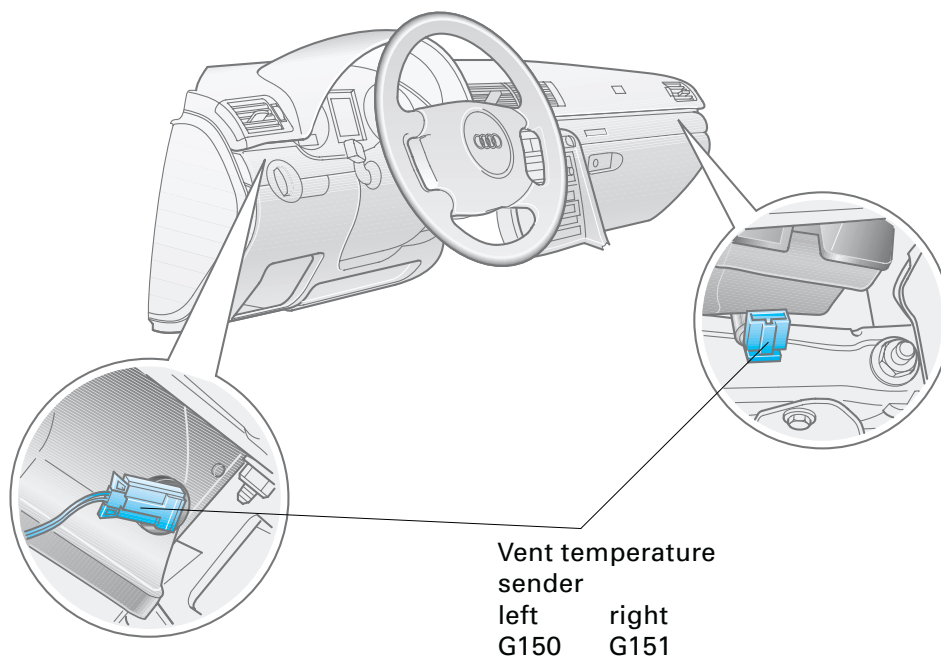
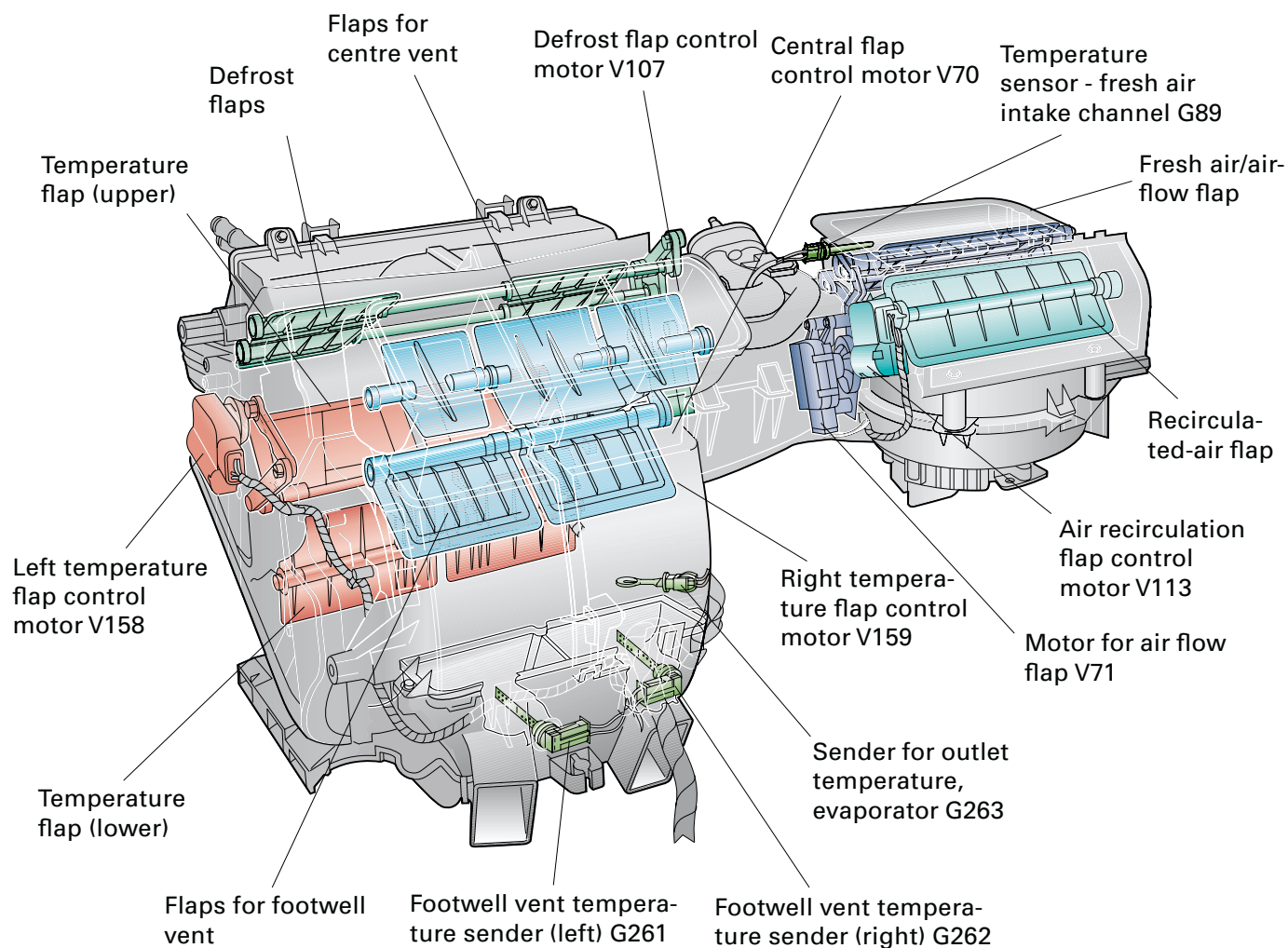
- Lettering on the compressor identification plate is 6SEU for the 6-cylinder or 7SEU for the 7-cylinder compressor.
- the greater outer diameter of the 7-cylinder compressor (approx. 122 mm) compared to the smaller outer diameter of the 6-cylinder compressor (approx. 113 mm)



Vehicles equipped with a 7-piston compressor, are fitted with a radiator fan which has a higher output.

Heater/AC

Air conditioner



SSP254_019

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