The 2019 Audi A6 Introduction

eSelf-Study Program 990693

Audi Academy

Audi of America, LLC
Service Training
Created in the U.S.A.
Created 06/2018

Course Number 990693

Always check Technical Bulletins and the latest electronic service repair literature for information that may supersede any information included in this booklet.

The eSelf-Study Program (eSSP) teaches a basic understanding of the design and mode of operation of new models, new automotive components or new technologies.

It is not a repair manual! Figures are given for explanatory purposes only and refer to the data valid at the time of preparation of the SSP.

For further information about maintenance and repair work, always refer to the current technical literature.

Note

Reference

Introduction

The new Audi A6 is an impressive mix of elegance, high quality and advanced technology. The vehicle is even more comfortable, convenient and efficient than its predecessor thanks to the use of Mild Hybrid Electric Vehicle (MHEV) technology. All the connect services used in the 2019 A8 and 2019 A7 are included in 2019 A6 to make it into a fully networked vehicle. The Audi A6 ’s driver assist systems aren’t lagging behind its big sisters either. With its numerous driver assist systems, the Audi A6 is a safe and helpful companion on the road.

In the interior, the Audi A6 has increased legroom and shoulder space.

For the engines, Audi is using a 2.0l TFSI as standard for the Premium and Premium Plus models. The 3.0l V6 will be optional for the Premium and Premium Plus and standard for the Prestige line-up. All in all, a sporty exterior and a progressive interior featuring different equipment versions with something to suit every customer.

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Learning objectives of this eSelf-Study Program:

This eSelf-Study Program describes the design and function of the 2019 Audi A6. When completed, you will be able to answer questions on the following topics:

- Engines available at market launch.
- 12/48 Volt electrical system.
- New running gear features.
- New power transmission features.
- New features of the infotainment systems.

Presentation

The introduction of the 2019 Audi A6 marks the completion of the C8 product line. This eSelf-Study Program examines the similarities and differences of the A6 to the A7 and A8. For further information, please refer to the respective eSelf-Study Programs.

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Audi A6 Sedan

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Audi A7 Sportback

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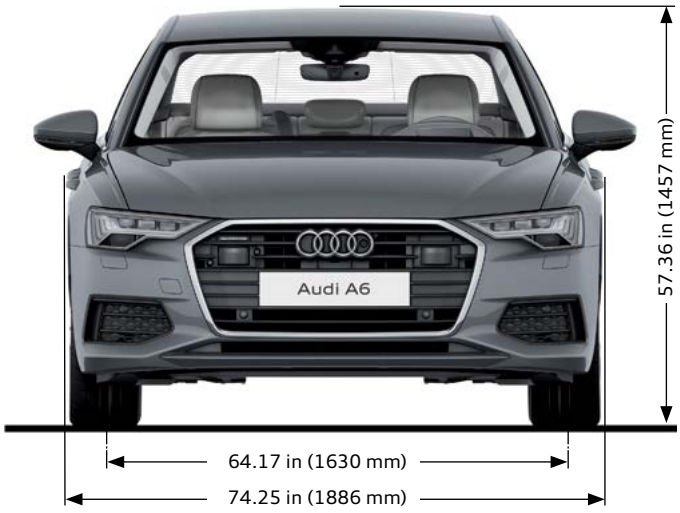
Audi A6 Avant
(not for the North American Market at this time)

Dimensions

Audi A6 Sedan



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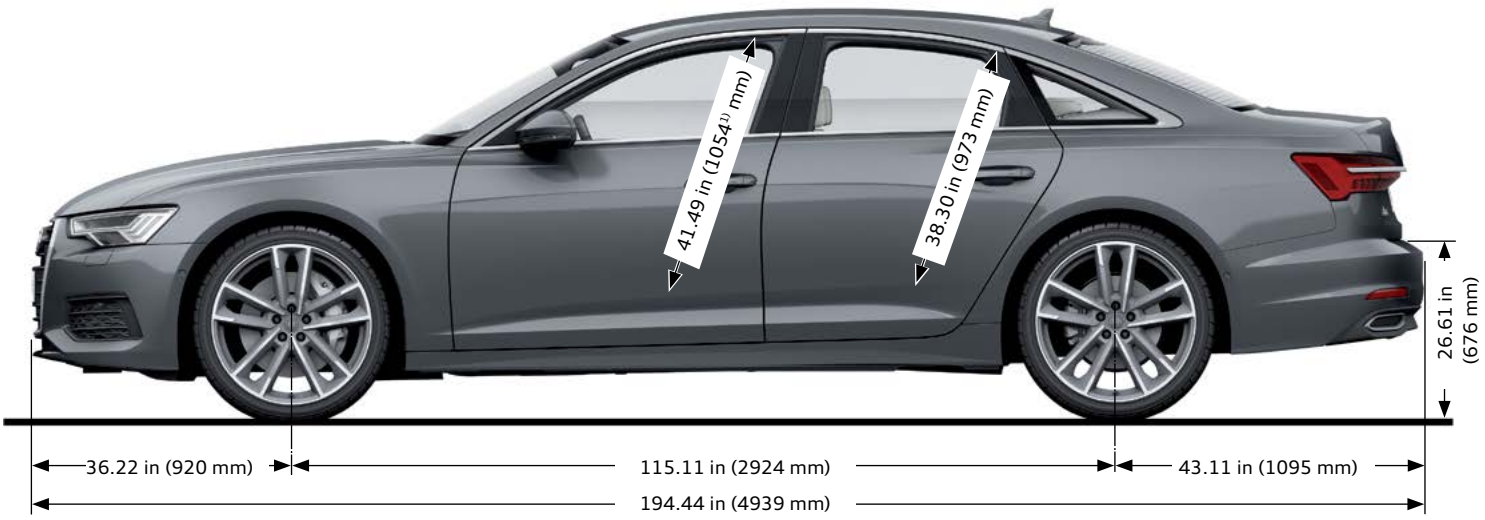

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Exterior dimensions and weights

Length	194.44 in (4939 mm)
Width (not incl. mirrors)	74.25 in (1886 mm)
Width (incl. mirrors)	83.07 in (2110 mm)
Height	57.36 in (1457 mm)
Front track	64.17 in (1630 mm)
Rear track	63.66 in (1617 mm)
Wheelbase	115.11 in (2924 mm)
Unladen weight	1825
Max. gross weight	2475

Interior dimensions and other specifications

Front cabin width	60.11 in (1527 mm)[2)]
Front shoulder width	57.75 in (1467 mm)[3)]
Rear cabin width	59.09 in (1501 mm)[2)]
Rear shoulder width	56.53 in (1436 mm)[3)]
Load sill height	26.61 in (676 mm)
Luggage compartment capacity	18.71 cu ft (530 l)
Drag coefficient cw	0.24
Capacity of fuel tank	19.28 gal (73 l)

[1)] Maximum headroom

[2)] Elbow room width

[3)] Shoulder room width

All dimensions refer to the unladen weight of the vehicle.

Body

Introduction

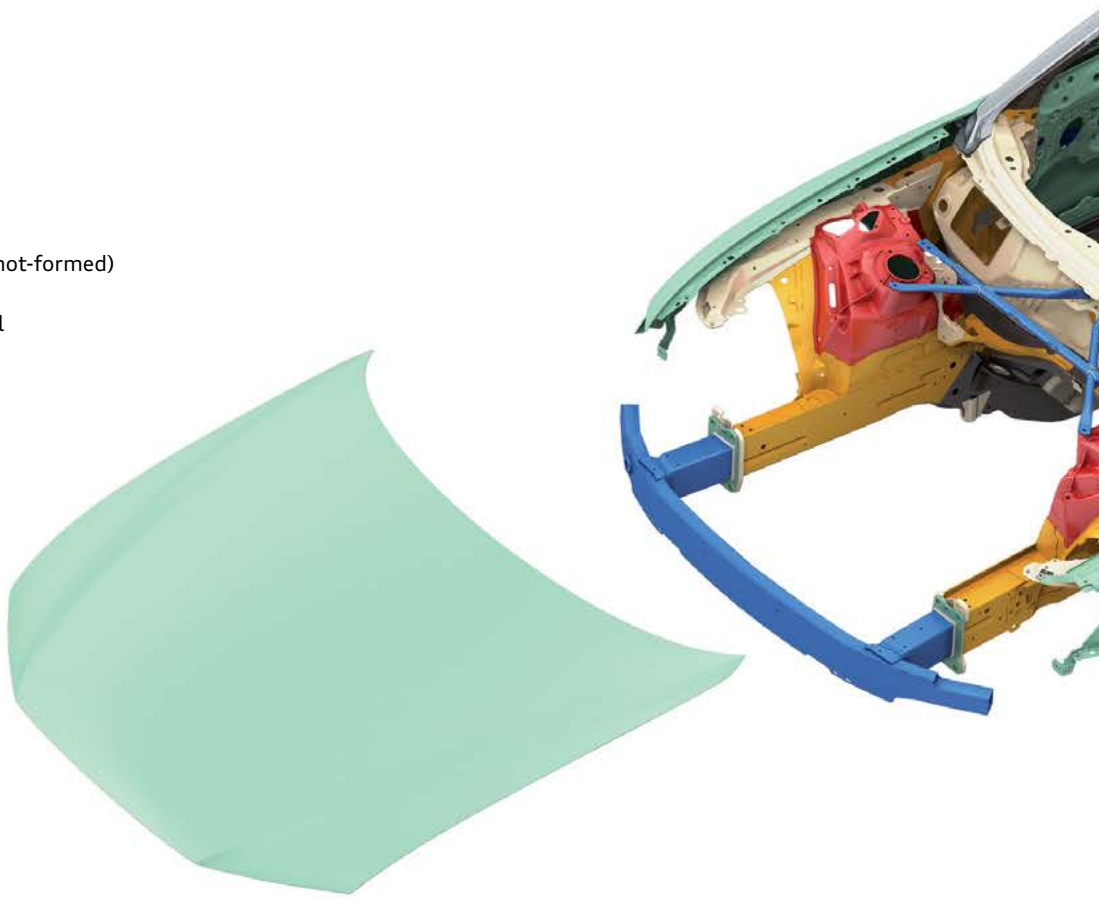
The body of the 2019 A6 is a composite construction using various materials. It is similar to the composition and construction of the 2019 A7.

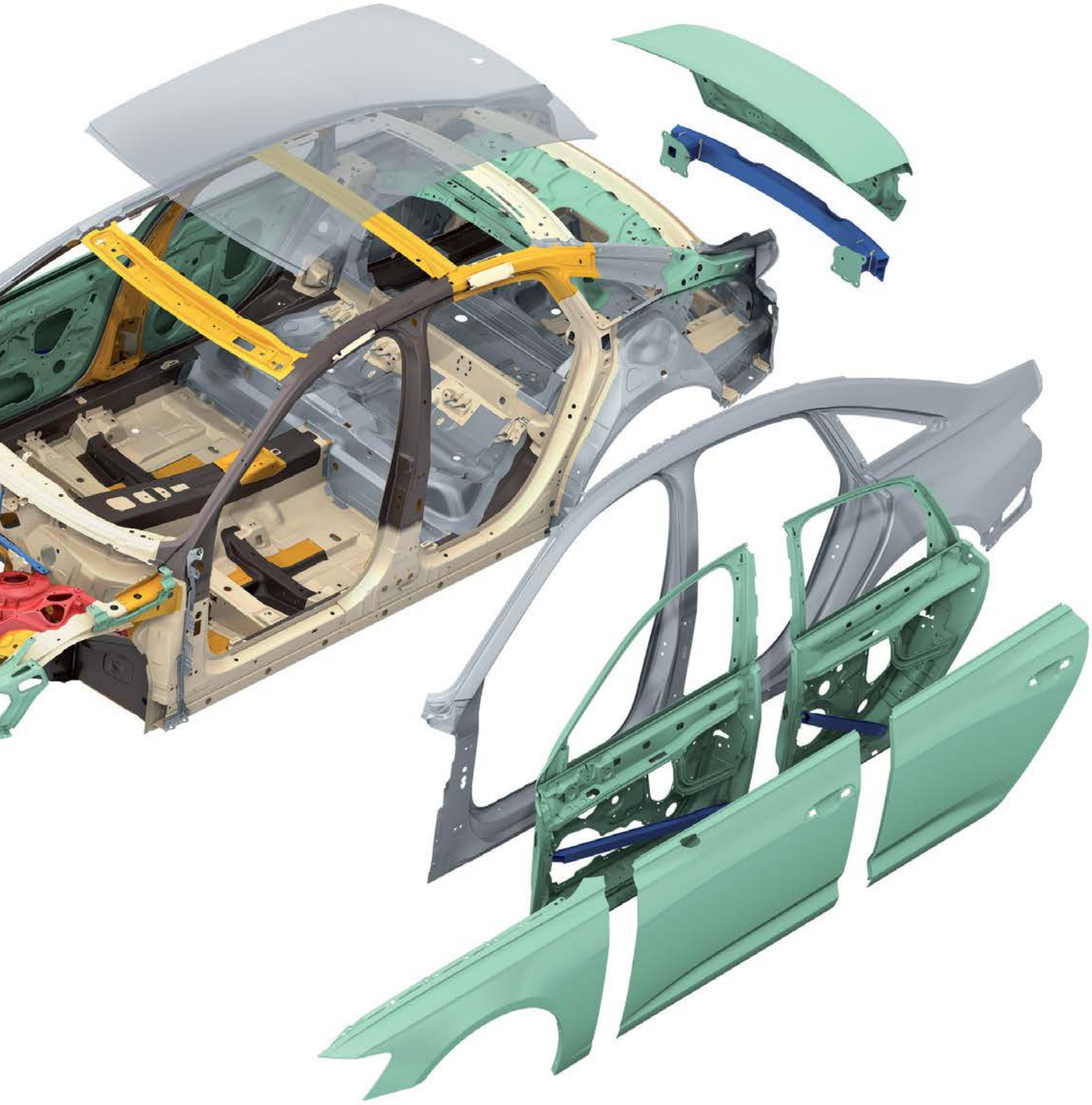
On the Audi A6 sedan, the rear roof cross member, the connection to the side roof frame and the D-pillar are fully manufactured from steel.

The rear shelf is made of sheet aluminum.

Key:

- Sheet aluminum
- Die-cast aluminum
- Aluminum section
- Ultra-high-strength steel (hot-formed)
- Modern high-strength steel
- High-strength steel
- Soft steel
- Composite steel/plastic





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Reference

For further information on the construction and structure of the body, please refer to eSelf-Study Program 990593 The 2019 Audi A7 Introduction.

Body assembly

On the topic of body assembly, it is also very clear that the 2019 A6 is related to the 2019 A7. For example, the Audi A6 also has semi-electric door locks. The construction of its instrument panel is also practically identical to the one in the Audi A7.

Seats

Eight-way power front seats with driver memory are standard equipment on the 2019 A6. They are heated and feature four-way power lumbar adjustment for the drive. Ordering the Warm Weather Package (Pr. no. PWZ (Premium Plus and Prestige only), provides four-way adjustable lumbar support for the front passenger seat and seat ventilation for both seats.

Heated rear seats are available as part of the Cold Weather Package (Pr. no. PAW).

A contour seat package is also available for Premium Plus and Prestige models.

The A6 is equipped with a three-seat 40:20:40 split-folding rear seat. The backrest can only be released directly at the backrest in the interior of the vehicle. It can also be locked with the vehicle key so the luggage compartment cannot be accessed from the vehicle interior.

Folding and lockable rear seat backrest

Rear lid

There are two rear lid versions for the 2019 A6. The manual rear lid is opened via two mechanical extension springs. A hydraulic damper (left-side) has the task of reducing the speed of opening in the last 45° of the opening procedure.

An optional electric rear lid is available for the A6. With this system, Rear Lid Motor 1 V444 moves the left rear lid hinge via a spindle drive. An extension spring on the right hinge supports the opening process on both the manual and electric systems. However, the spring installation position in the rear of the body will change depending on which system is installed.

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Power latching system

The power latching system for the rear lid has also been integrated into the rear lid lock on the 2019 A6. On the previous model, the striker on the lock carrier was moved downwards after the lock was engaged.

However, Rear Lid Closing Aid Motor V382 now pulls the rotary latch of the rear lid lock into its end position after the initial catch has engaged.

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Operation of rear lid lock

The rear lid opens when the rear lid lock is actuated by Comfort Systems Central Control Module J393 via Rear Lid Central Locking System Motor V53.

It is possible to release the rear lid manually in the event of an electrical failure.

› The small cover in the rear lid trim in the luggage compartment must first be removed and the lever on the lock pressed upwards.

Rear lid manual release with folding rear seat backrest

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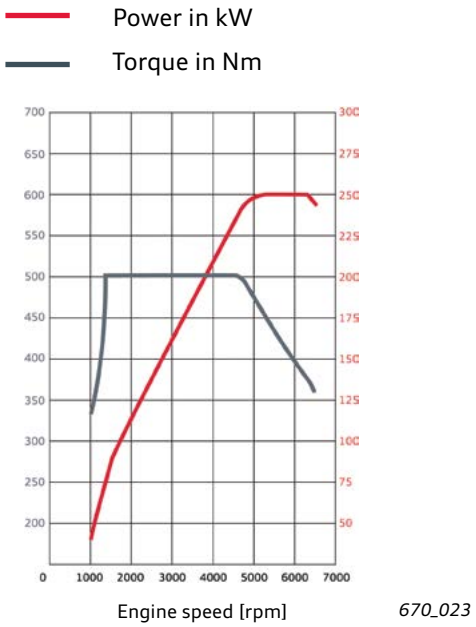
Power units

Gasoline engines

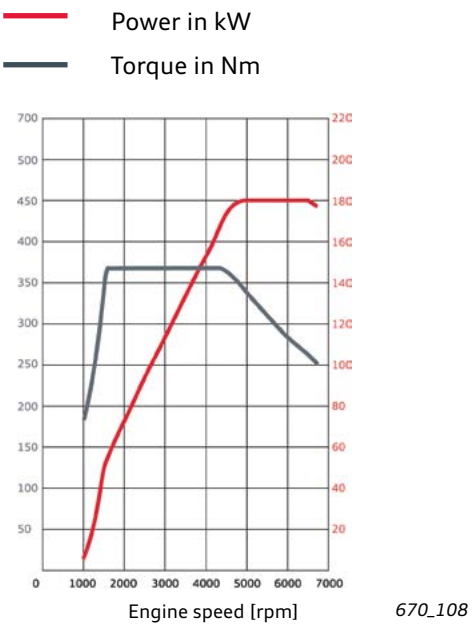
Torque/power curve of 3.0 ltr. TFSI engine EA839

Engine with code DLZA



Torque/power curve of 2.0 ltr. TFSI engine EA888 Gen. 3

Engine with code DLHA



Features	Technical data	
Engine code	DLZA	DLHA
Type	V6 engine with 90° V angle	Four-cylinder in-line engine
Capacity in cm^3	2995	1984
Stroke in mm	89.0	92.8
Bore in mm	84.0	82.5
Number of valves per cylinder	4	4
Firing order	1-4-3-6-2-5	1–3–4–2
Compression ratio	11.2 : 1	9.6 : 1
Power output	340 hp (250 kW) at 5200 - 6400 rpm	252 hp (185 kW) at 5000 - 6500 rpm
Torque	369 lb ft (500 Nm) at 1370 - 4500	273 lb ft (370 Nm) at 1600 - 4300 rpm
Fuel	Premium unleaded	Premium unleaded
Turbocharging	Turbocharger with wastegate	Turbocharger with wastegate
Engine management	Bosch MD1 with OBD	Bosch MD1 with OBD
Maximum injection pressure in bar	250	250
Emission control	One close-coupled catalytic converter, split into main and secondary catalytic converters, Lambda pr. before & after main cat. conv.	Close-coupled ceramic catalytic converter, Lambda probe before and after catalytic converter
Emission standard	LEV 3/Tier3	LEV 3/Tier3
Concept	Mild hybrid (48V)	Mild hybrid (12V)

Reference

For further information about the engines used, please refer to eSelf-Study Program 920173, The Audi 3.0l V6 TFSI EA839 Engine and eSelf-Study Program 920163, Audi Third Generation 2.0l Engines. The construction of the fuel tank corresponds to the components of the 2019 Audi A7. For information, refer to eSelf-Study Program 990593, The 2019 Audi A7 Introduction..

Engine/transmission combinations

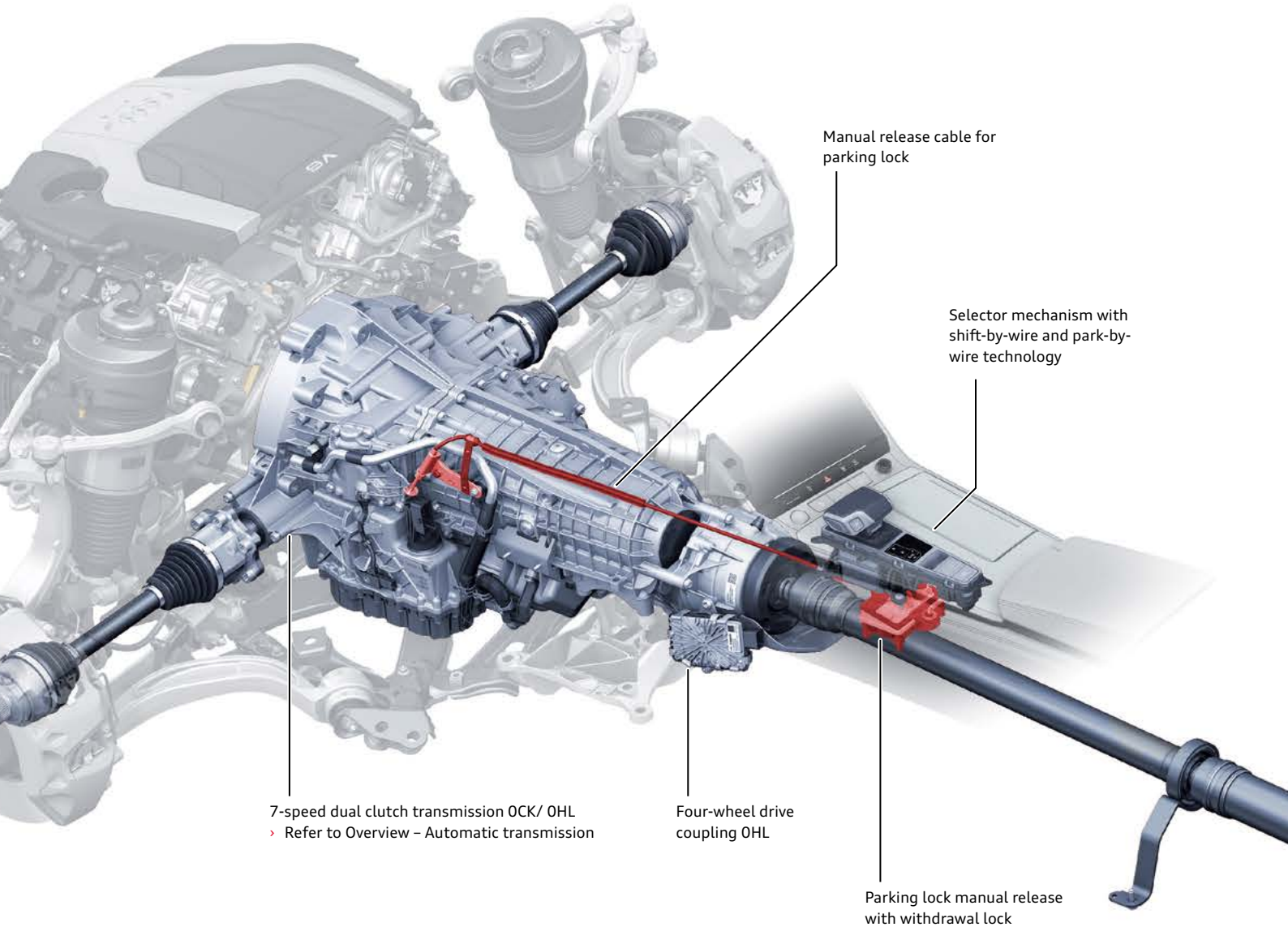
Gasoline engines	2.0 ltr. TFSI series 888 Gen. 3	3.0 ltr. TFSI series 839
		
7-speed dual clutch gearbox 0CK DL382-7F		
7-speed dual clutch gearbox 0HL DL382+ -7A		
Rear final drive 09R HL195.U1 M3) (quattro ultra)		

Power transmission

Overview

Two power transmission options are available for the 2019 A6 in the North American Region at market launch. All 2.0l Premium and Premium Plus models will have S-tronic automatic transmissions and front wheel drive. All 3.0l models (Premium, Premium Plus and Prestige) will have S-tronic transmissions with All-wheel-drive.

At market launch, all-wheel-drive models in the North American Region will be equipped with quattro with ultra technology.



quattro with ultra technology

The quattro with ultra technology four-wheel drive system can be used for engine torques of up to 500 Nm.

› 7-speed dual clutch transmission 0HL with four-wheel drive coupling 0CX and rear final drive 09R.

This combination was first used in the 2019 Audi A7.

Overview – Automatic transmission only for NAR

Depending on engine type, the following transmissions are available:

PR no. [1]	Manufact. designation	Service designation	Marketing designation	Drive version
G1C	DL382-7F	7-speed dual clutch transmission 0CK	S tronic	Front-wheel drive
G1D	DL382+ -7A	7-speed dual clutch transmission 0HL	S tronic	quattro with ultra technology

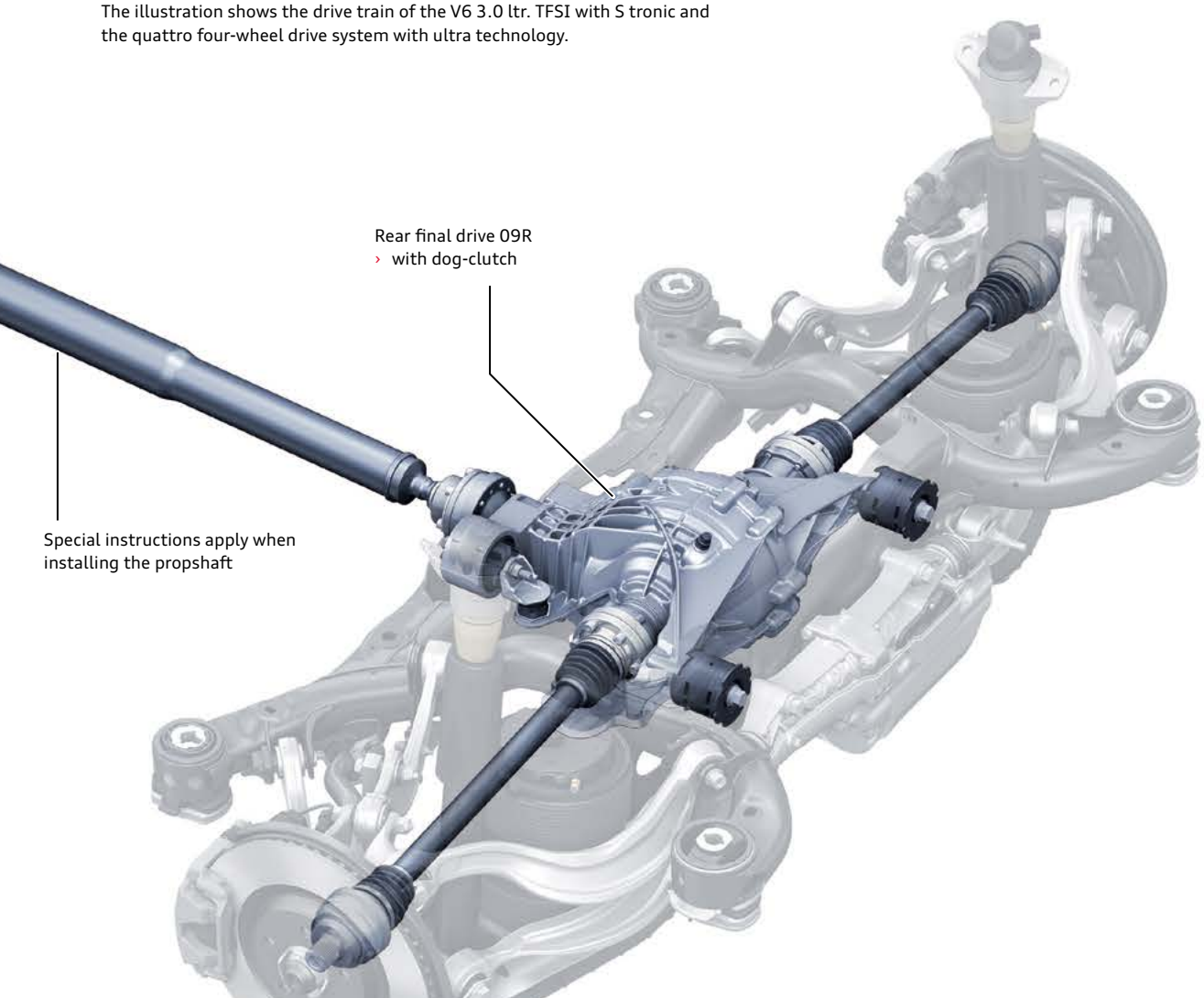
Overview – Rear final drive

The following rear final drive version is available at market launch:

PR no.	Manufact. designation	Service designation	Combination with transmission	quattro concept
GH4	HL195.U1 M	Rear final drive 09R	0HL	quattro with ultra technology

[1] Production no./equipment

The illustration shows the drive train of the V6 3.0 ltr. TFSI with S tronic and the quattro four-wheel drive system with ultra technology.



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Running gear

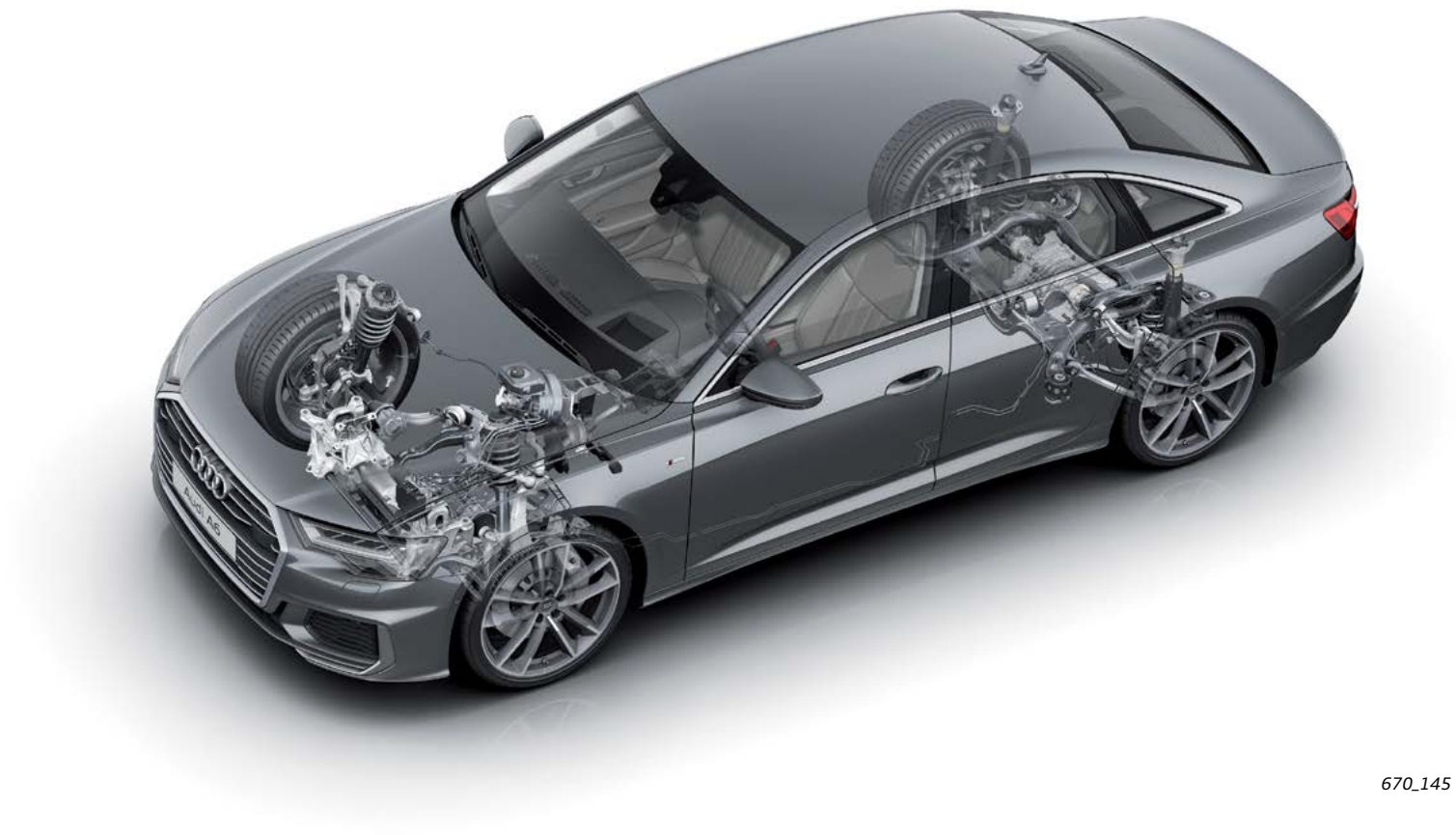
Overview

The running gear for the 2019 A6 has been completely redesigned when compared to the previous model. New technology and control systems adapted from the 2019 A8 and 2017 Q7 make it even more comfortable and dynamic.

The front and rear axles are based on a high precision lightweight five-link design. Two suspension versions are available depending on model.

Progressive steering, included as standard equipment, reduces the amount of steering effort required.

The generously proportioned brake system offers substantial performance reserves for any corresponding driving situation. The 9th generation ESC system provides high-performance stability control for the vehicle.



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The following suspension variants are available for the 2019 A6 at market introduction:

Running gear with steel suspension and non-variable damping (1BA)
This is the standard running gear.

Sport running gear with steel suspension and non-variable damping (1BE)
This suspension system is optional. The springs, dampers and anti-roll bars are set up for dynamic handling. The ride height is approximately 20 mm lower than version 1BA.

Axles and wheel alignment

Front axle

The front axle is based on the proven design principle of the five-link suspension. A particular emphasis was placed on the lightweight construction. The MLBevo platform is used as the basis. Because the axle loads are similar, the front axle from the 2019 A7 has been used. Springs, dampers and anti-roll bars have been specially adjusted for use in the Audi A6.

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Rear axle

The trapezium link rear axle used in the previous model has been replaced by a five-link axle which is largely a new development. The MLBevo platform is used as the basis. The axle for quattro is from the 2019 A7 . The springs and dampers have been adapted.

Rear axle for quattro

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The subframe and hub carrier have been newly developed for the front-wheel drive axle in addition to the concept for connecting the wheel bearing unit to the hub carrier. The wishbones, anti-roll bars and anti-roll bar couplings are from the quattro rear axle. The springs and dampers have been adapted.

Rear axle for front wheel drive

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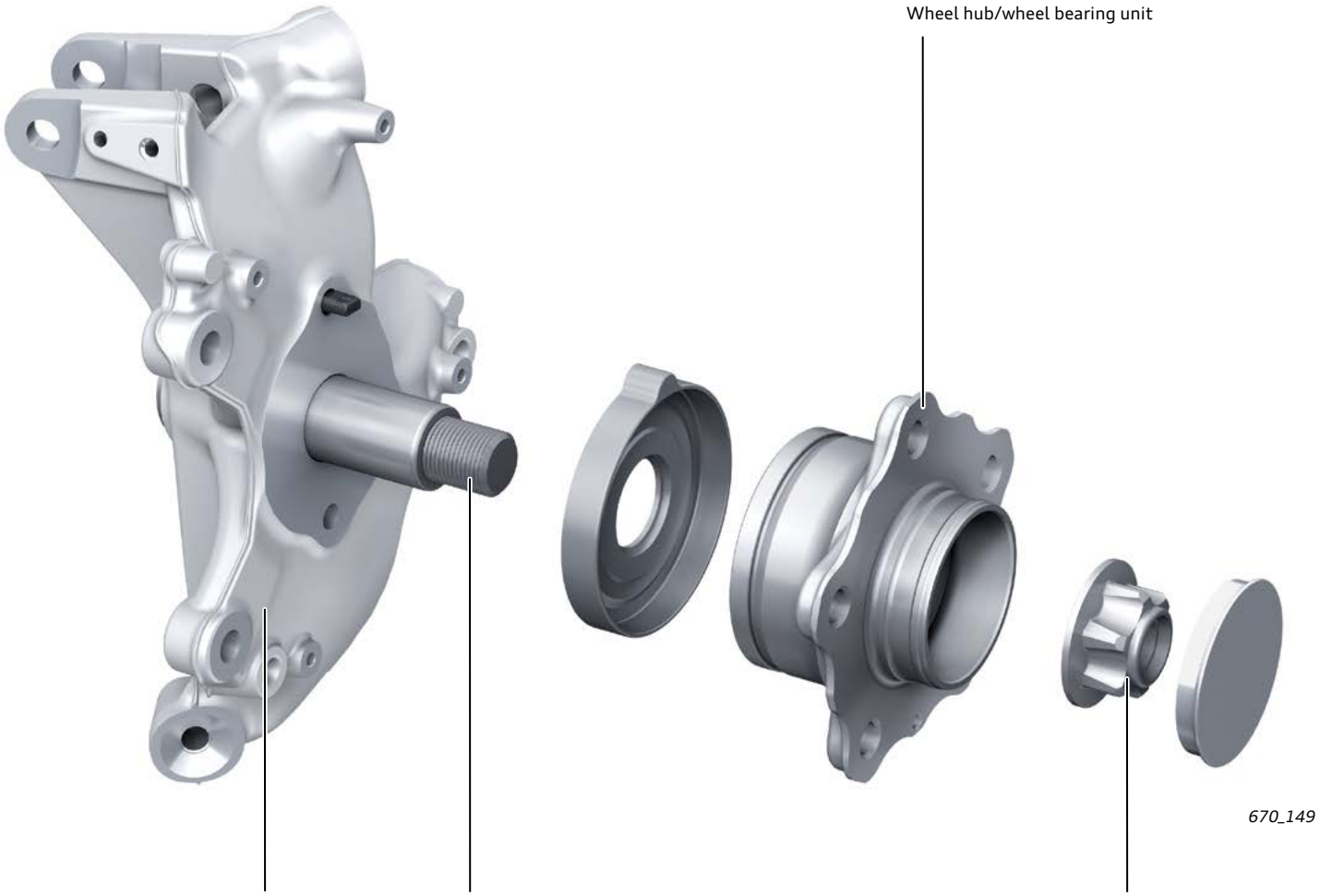
Rear axle

On the rear axle for front-wheel drive, the method for securing the wheel bearing unit to the hub carrier has been changed from a bolt to a nut. The stub axle of the subframe now has an external thread.

The hub carrier is geometrically identical to that of the 2018 Q5. The new method of securing the wheel bearing unit will be implemented in the Audi Q5 in the future and the hub carriers of both models will become standard.



Reference

For further information on the construction of the axles and the wheel alignment adjustment options, please refer to eSelf-Study Program 990593, The 2019 Audi A7 Introduction.

Steering system

The steering system has been completely redeveloped compared to the previous model. The electromechanical power steering (EPS), the steering columns, the dynamic steering and the steering wheels are adapted from the 2019 A7.

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Reference
For further information about the steering components, refer to eSelf-Study Program 990593, The 2019 Audi A7 Introduction.

Brake system

As with the current MLBevo models, the brakes on the front and rear axles of the 2019 A6 have separate brake circuits and are not diagonally split.

The brakes, brake servo, electromechanical parking brake and ESC are based on those of the 2019 A7.

Brake system, front axle

Engine	2.0 ltr. TFSI	3.0 ltr. TFSI
Minimum wheel size	17"	18"
Type of brakes	Continental fixed caliper brakes	ATE fixed caliper brakes
Number of pistons	4	6
Brake disc diameter	13.3 in (338 mm)	14.7 in (375 mm)
Brake disc thickness	1.2 in (30 mm)	1.4 in (36 mm)

Continental 4-piston fixed caliper brakes on front axle

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ATE 6-piston fixed caliper brakes on front axle

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Brake system, rear axle

Engine	2.0 ltr. TFSI 3.0 ltr. TFSI
Minimum wheel size	17"
Type of brakes	TRW PC43HE EPBi Floating caliper brakes
Number of pistons	1
Brake disc diameter	12.9 in (330 mm)
Brake disc thickness	0.86 in (22 mm)

TRW PC43HE EPBi brakes for rear axle with electromechanical parking brake

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Reference

For further information, refer to eSelf-Study Program 990593, The 2019 Audi A7 Introduction.

Electrics and electronics

Introduction

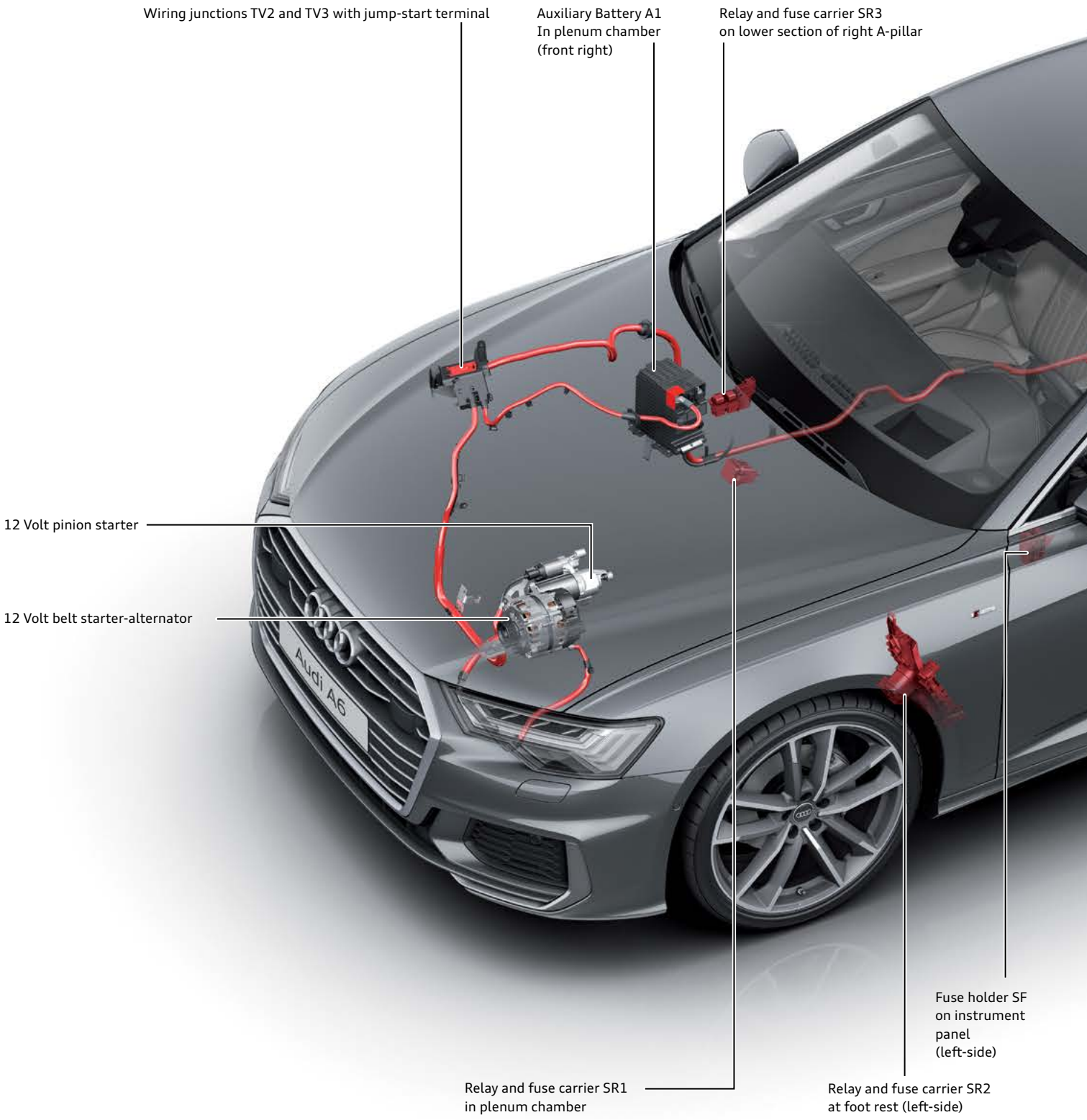
The 2019 A6 is a Mild Hybrid Electric Vehicle (MHEV). In addition to the traditional battery, it is equipped with a lithium battery and starter-alternator. There are two system variations:

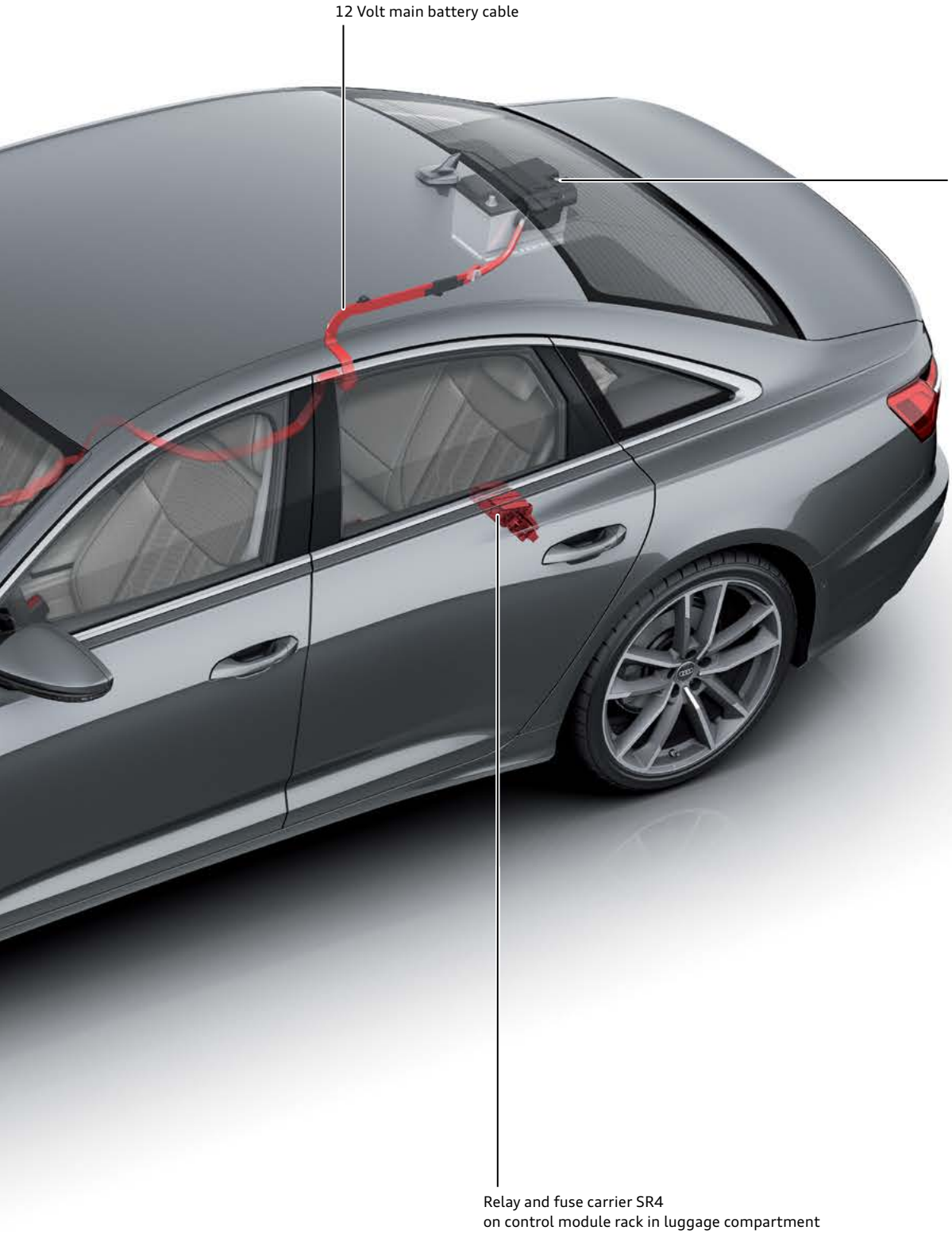
- 12 Volt MHEV electrical system
- 48 Volt MHEV electrical system

The power for the drive train and the electrical energy are generated by the combustion engine. Fully electric driving is not possible with the Audi A6 MHEV.

Vehicles with 4-cylinder engine are 12 Volt MHEVs. Vehicles with 6-cylinder engine are 48 Volt MHEVs and have a 48 Volt main electrical system.

12 Volt MHEV electrical system





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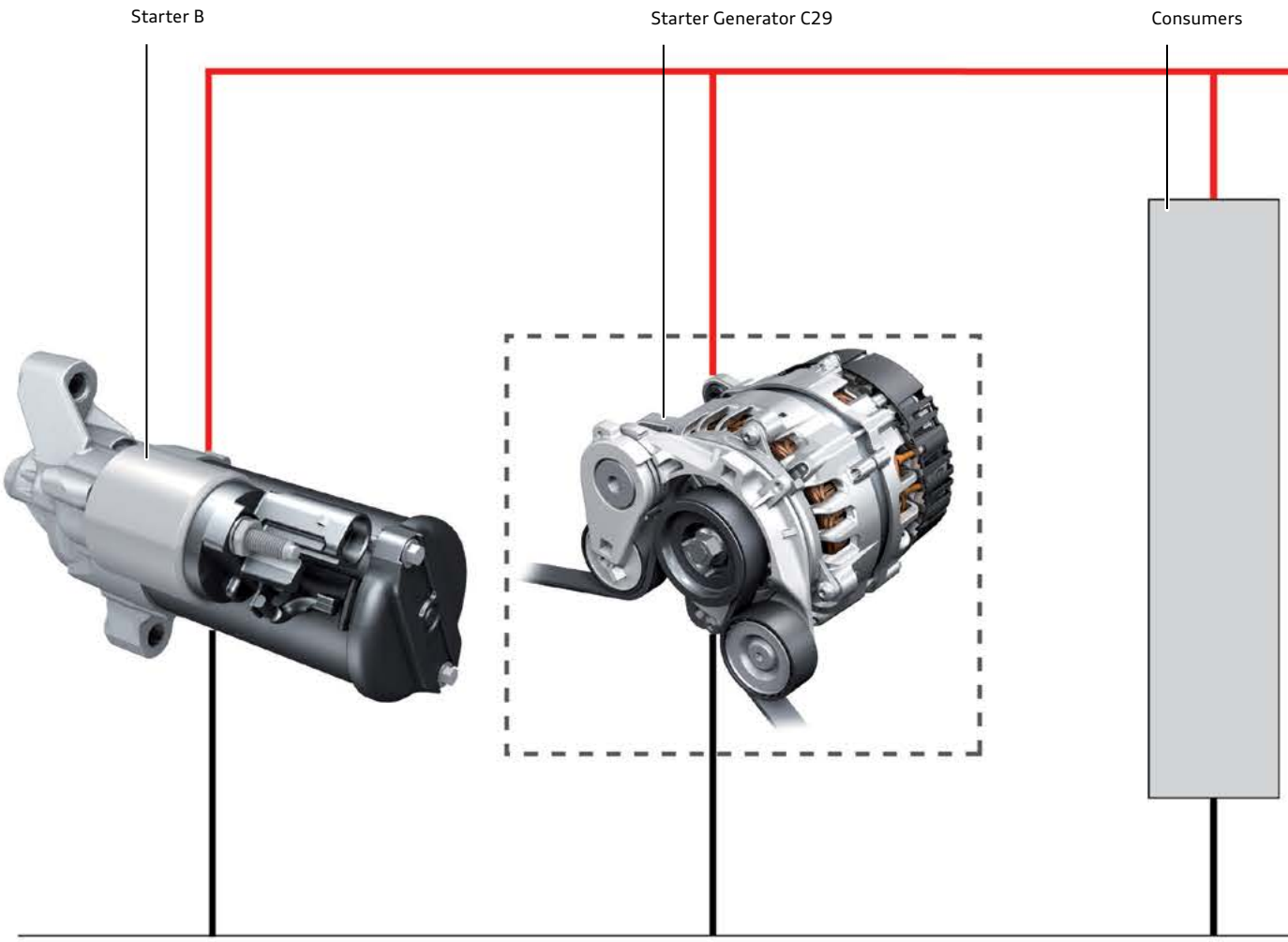
Reference

For further information about mild hybrid functions, refer to eSelf-Study Program 970293, The 2019 Audi A8 Electrics and Electronics.

Layout of 12 Volt MHEV

A6 models with the 4-cylinder engine are 12 Volt MHEVs. In addition to the usual components, they have a 12 Volt lithium-ion battery and a 12 Volt starter-alternator.

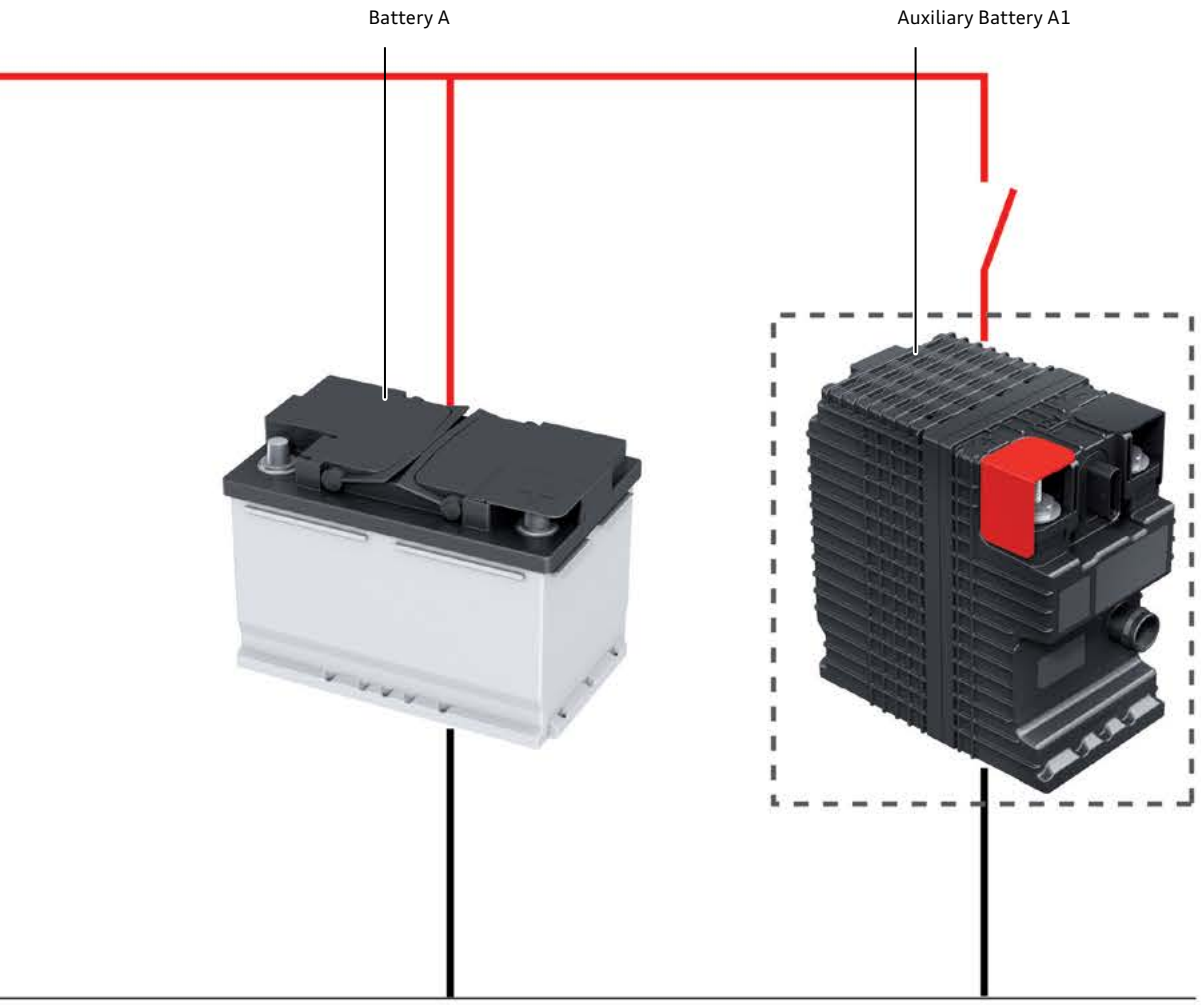


Starter B
The starter is a 12 Volt pinion starter. It is used to start the engine at engine oil temperatures of less than 113 °F (45 °C). The pinion starter meshes its pinion with the starter ring gear on the engine flywheel.

Starter Generator C29
As the name implies, this component has two functions. When operated as an alternator, it provides the electrical system with electrical energy and charges both batteries.

Its electric motor function is used to start the combustion engine when the engine oil temperature is above 113 °F (45 °C) and in start/stop mode. It is also able to support the combustion engine in certain driving situations.

Because of the connection via the poly V-belt, an engine start using the starter-alternator is very quiet and almost completely free of vibrations.



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Battery A
This battery is a 68Ah/380A AGM battery. It is installed behind the rear right side trim panel of the luggage compartment. Battery Monitoring Control Module J367 is installed on the negative terminal.

Battery Interupt Igniter N253 is installed on the positive battery cable.

Auxiliary Battery A1
The second battery uses lithium-ion technology and is connected in parallel to the AGM battery. It is activated via an internal relay of the AGM battery. It is installed in the plenum chamber (right-side) and can be accessed via a service flap in the plenum chamber cover. The auxiliary battery is installed in an aluminum housing to protect it from mechanical damage.

Reference
For further information about the dangers of lithium-ion technology, refer to eSelf-Study Program 970293, The 2019 Audi A8 Electrics and Electronics.

Starter Generator C29

General description

For the 12 Volt MHEV, Starter-Generator C29 is a an air-cooled 12 Volt belt starter-alternator. In its alternator function, it charges both batteries. The electric motor can be used both as a starter and to assist the engine.

It is connected to the Engine Control Module J623 via a LIN data wire. As on any starter-alternator drive system, a special tensioner is used to ensure that the poly V-belt has a large wrap angle around the drive pulley.

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Technical data

Designation	Starter-Alternator C29
Address Word	None/engine control module is master
Communication	LIN data wire to engine control module
Terminal designations 12 Volt positive/negative	30 / 31
Motor speed range	1,500 rpm - 22,000 rpm
Ratio (starter-alternator - engine)	Approximately 3:1
Nominal voltage in motor mode	12 Volt
Nominal voltage in alternator mode	14.3 Volt
Nominal power in motor mode (supporting engine for maximum 5 seconds)	Approximately 2 kW
Maximum power in alternator mode (recuperation[1)] for maximum 30 seconds)	Approximately 6 kW
Maximum continuous nominal power in alternator mode	Approximately 3 kW
Maximum torque in motor mode	60 Nm
Weight	Approximately 21 lb (9.5 kg)

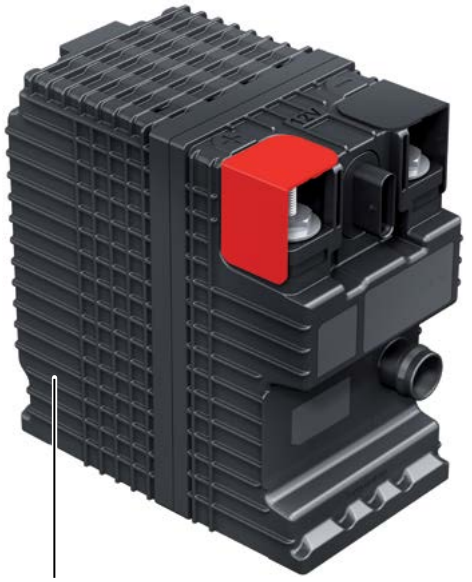
[1)] Recuperation: Energy recovery. This means that the kinetic energy of the vehicle is converted into electric energy in overrun mode or under braking.

Auxiliary Battery A1

General description

Lithium ion Auxiliary Battery A1 houses additional components such as an internal battery control module and a relay. With the assistance of this relay, the positive terminal can be “switched off”.

When the relay is open, there is then no voltage at the terminal. The lithium-ion battery is installed in an aluminum housing to protect it from mechanical damage. The 12 Volt lithium-ion battery is not actively cooled.



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Auxiliary Battery A1

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Protective metal housing

Breather line

Operation of Auxiliary Battery A1

Auxiliary Battery A1 is connected in parallel to the AGM battery. Its relay is closed during the start procedure or shortly after. If the ignition is switched off, the relay is opened and A1 is once again disconnected from the electrical system. In certain operating conditions, such as for the duration of the continued operation of the radiator fans or the auxiliary pump, the relay may remain active after Terminal 15 has been deactivated.

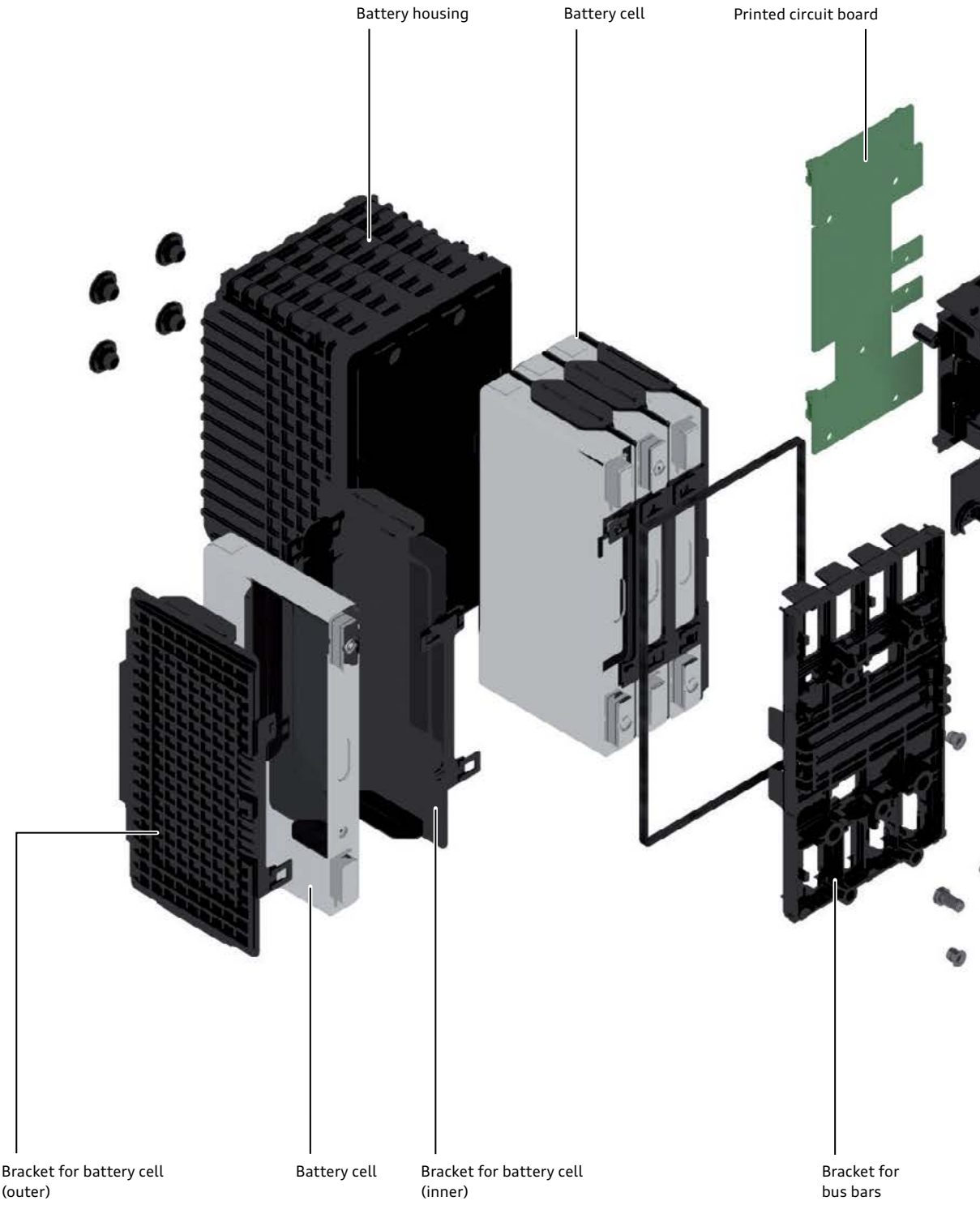
If an external battery charger is connected to the vehicle’s electrical system, the relay is closed after approximately 30 seconds (despite Terminal 15 being inactive) so Auxiliary Battery A1 can also be charged. In the event of an accident in which the airbag is triggered, Airbag Control Module J234 sends a signal to the control module in A1 and the relay is opened. A visual check and a classification of Auxiliary Battery A1 must be undertaken before it is removed.

Technical data

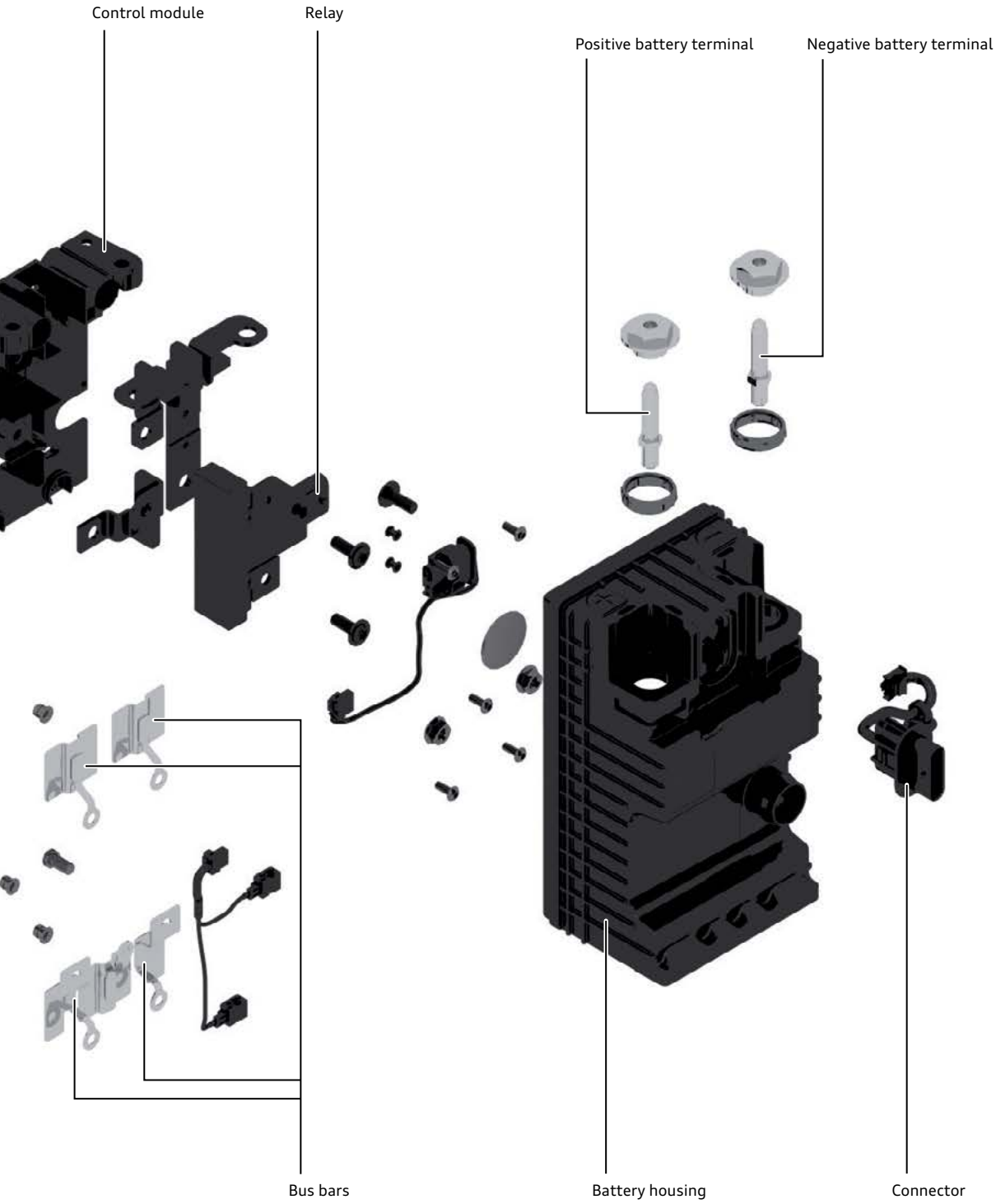
Designation	Auxiliary Battery A1
Address Word	0080
Communication	Hybrid CAN node
Terminal designations 12 Volt positive/negative	30 / 31
Nominal voltage	12 Volt
Number of cells	4
Capacitance	11 Ah
Usable energy	0.15 kWh
Operating temperature	-22 °F to 149 °F (-30 °C to 65 °C)
Weight	Approximately 11.0 lb (5 kg), without protective housing
Cooling	Air (passive)
Installation location	Plenum chamber (right-side), in protective housing

Construction of battery

The two halves of the housing are laser welded together. They are also sealed with liquid sealant. There is no provision for replacing battery cells or other individual components inside the battery.



Note
When handling lithium-ion batteries, please observe all the legal requirements as well as all the safety notes and work instructions in the service literature and in the Guided Fault Finding programs in ODIS Service.


Control module
Relay
Positive battery terminal
Negative battery terminal
Bus bars
Battery housing
Connector

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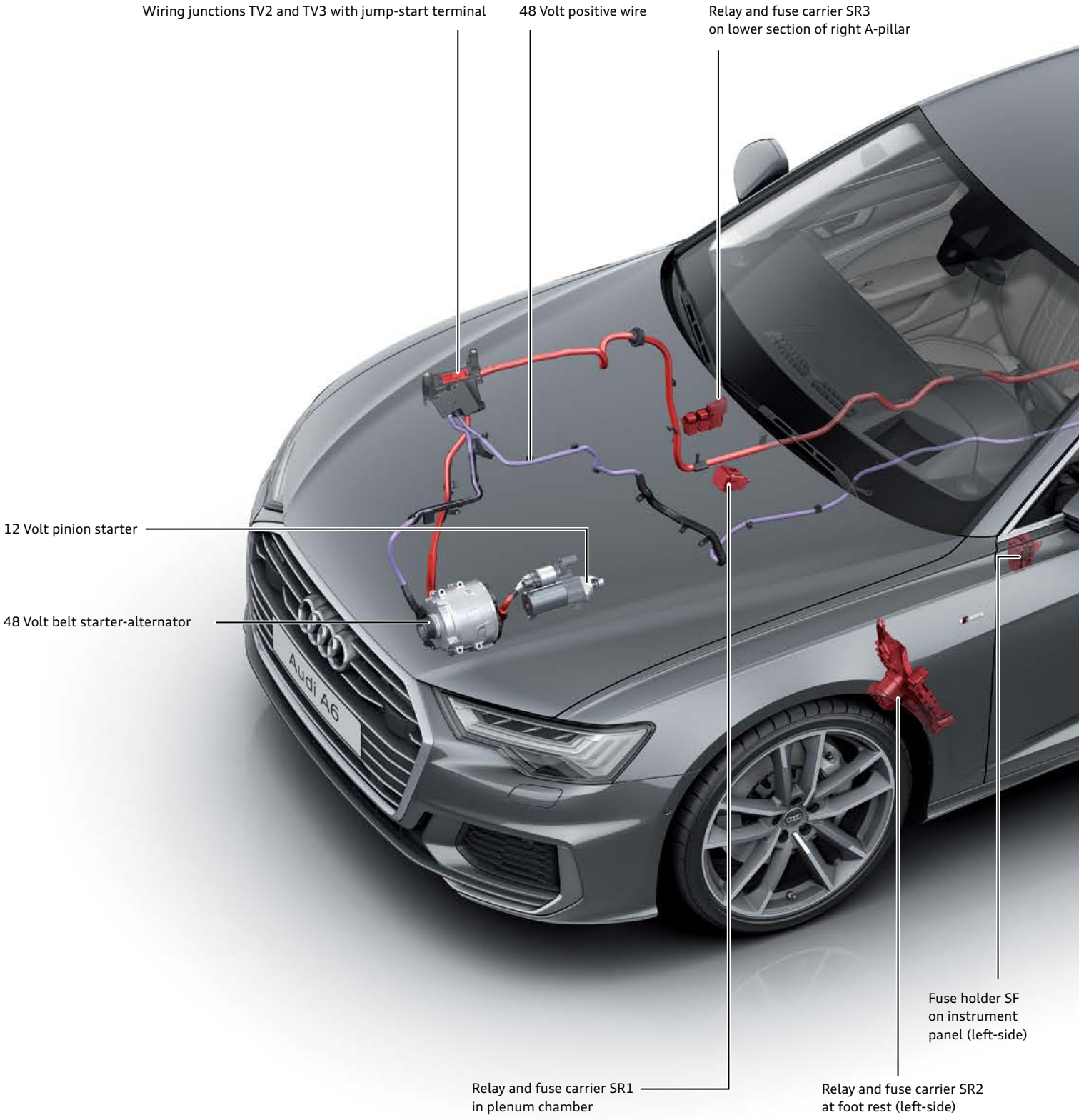
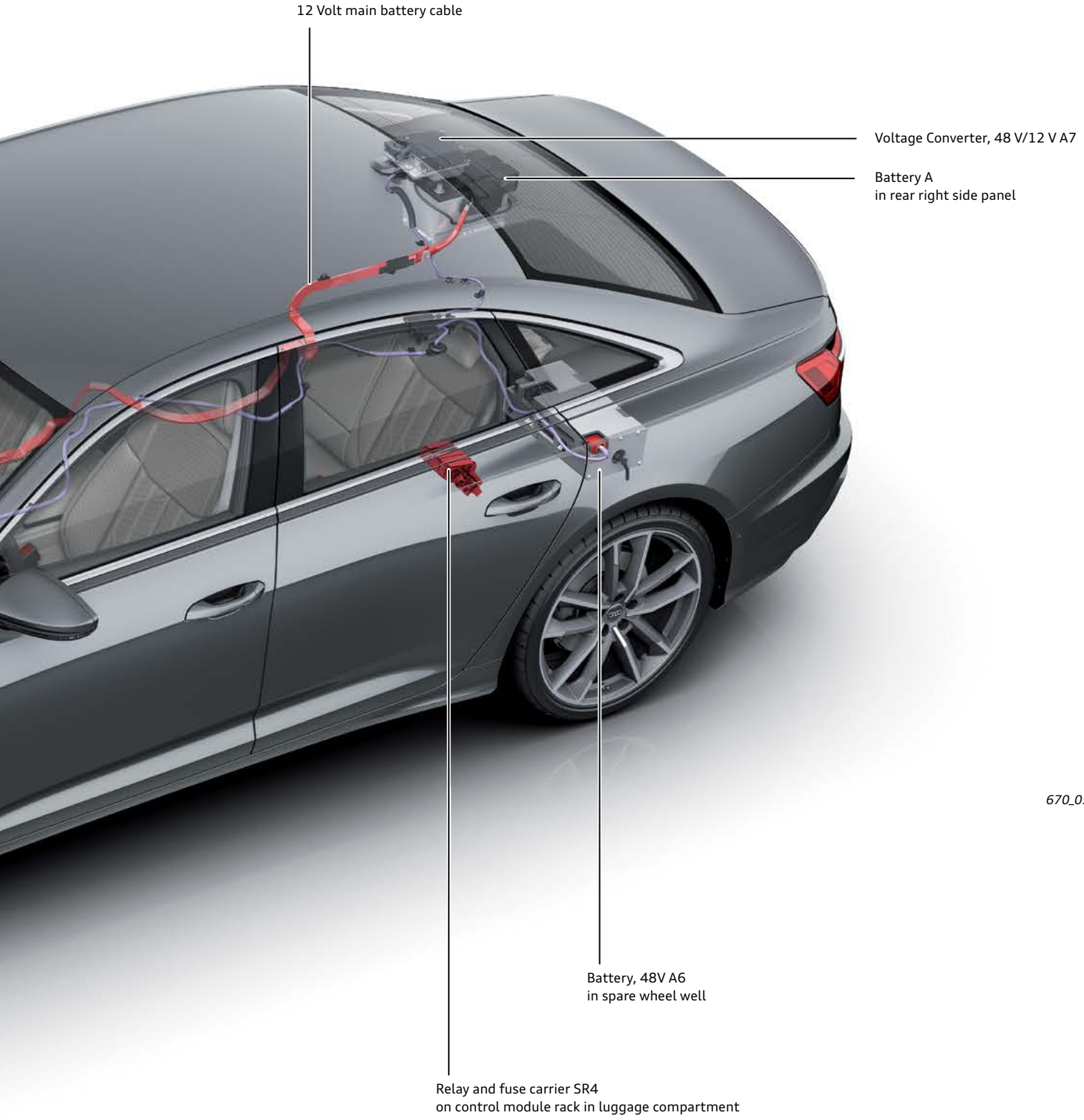
48 Volt MHEV electrical system

The 2019 A6 models with 6-cylinder engines are 48 Volt MHEVs. They require a voltage converter in addition to the 48 Volt lithium-ion battery and a 48 Volt starter-alternator. This converts the voltage from 48 Volts to 12 Volts to charge the 12 Volt battery.

The installation locations of the batteries, the voltage converter, the 12 Volt pinion starter and the 48 Volt starter-alternator are, along with their functions and layout, identical to the components in the 2019 Audi A8.





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Reference

For further information about mild hybrid functions, refer to eSelf-Study Program 970293, The 2019 Audi A8 Electrics and Electronics.

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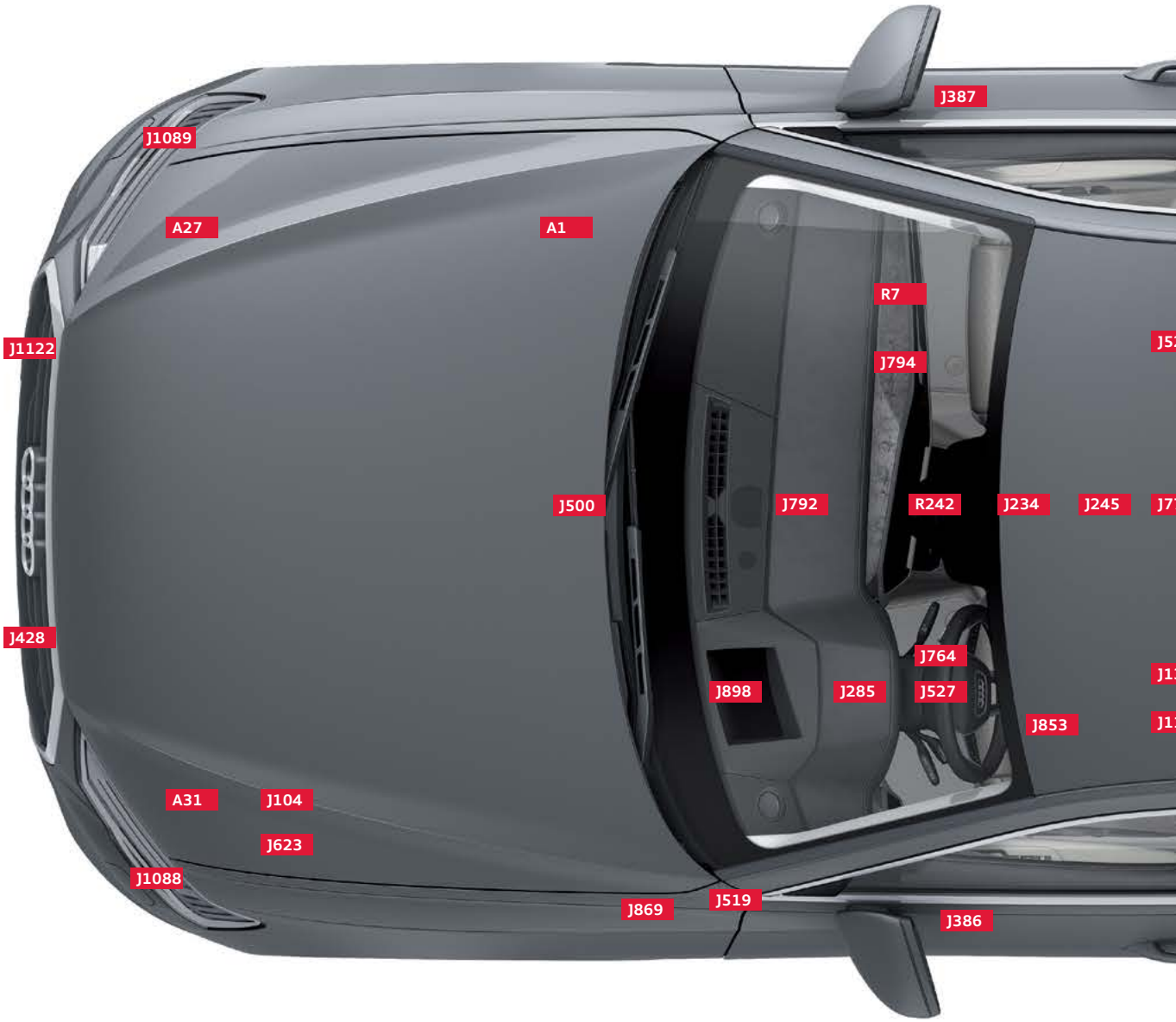
Networking

Installation locations of control modules

Always refer to the current service literature for information about the installation location and service procedures for control modules as well as instructions for installation and removal.



Key:

A1	Auxiliary Battery
A6	Battery, 48 V
A7	Voltage converter (48 V/12V)
A27	Output module 1 for right LED headlight
A31	Output module 1 for left LED headlight
J104	ABS Control Module
J136	Memory Seat/Steering Column Adjustment Control Module
J187	Differential Lock Control Module
J234	Airbag Control Module
J245	Sunroof Control Module
J285	Instrument Cluster Control Module
J386	Driver Door Control Module
J387	Front Passenger Door Control Module
J393	Comfort System Central Control Module
J428	Adaptive Cruise Control Module
J500	Power Steering Control Module
J502	Tire Pressure Monitoring Control Module
J519	Vehicle Electrical System Control Module 1
J521	Front Passenger Memory Seat Control Module
J525	Digital Sound System Control Module
J527	Steering Column Electronics Control Module
J533	Data Bus On Board Diagnostic Interface
J605	Rear Lid Control Module
J623	Engine Control Module
J764	Electronic Steering Column Lock Control Module
J769	Lane Change Assistance Control Module

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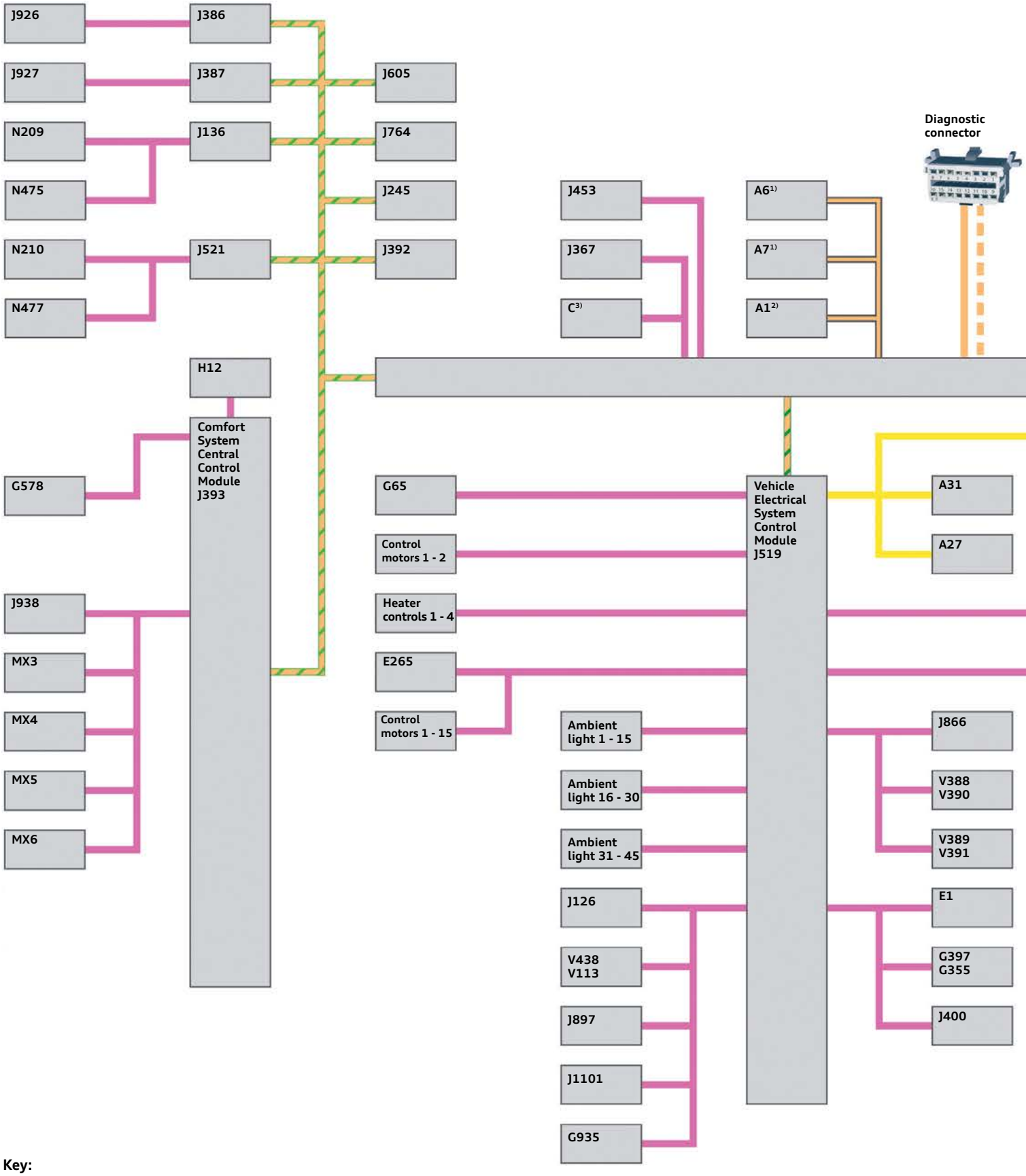
J770 Lane Change Assistance Control Module 2
J772 Rearview Camera System Control Module
J775 Drivetrain Control Module
J792 Active Steering Control Module
J794 Information Electronics Control Module 1
J853 Night Vision System Control Module
J869 Structure-Borne Sound Control Module
J898 Windshield Projection Head Up Display Control Module
J926 Driver Side Rear Door Control Module
J927 Passenger Side Rear Door Control Module
J949 Control Module for Emergency Call Module and Communication Unit
J1088 Control Module for Left Front Object Detection Radar Sensor
J1089 Control Module for Right Front Object Detection Radar Sensor
J1121 Driver Assistance Systems Control Module
J1122 Laser Distance Regulation Control Module

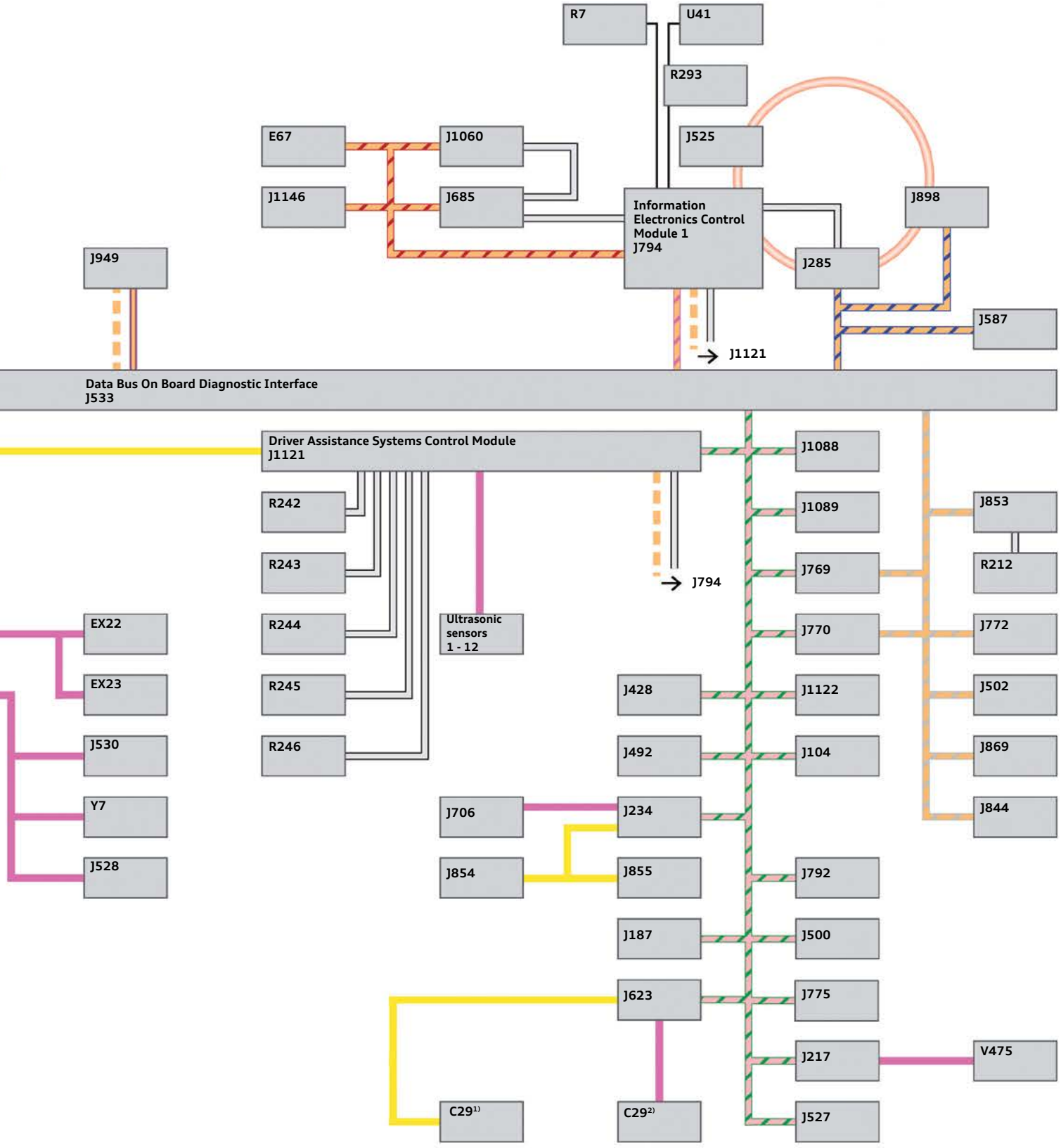
R7 DVD Player
R86 Cellular Telephone Amplifier
R242 Driver Assistance Systems Front Camera

Topology



Key:

- Convenience CAN
- Hybrid CAN
- Extended CAN
- Infotainment CAN
- Sub-bus systems/private CAN
- MOST bus
- LVDS
- Instrument panel insert CAN
- Diagnostics CAN
- FlexRay
- Modular infotainment matrix CAN (MIB)
- LIN bus
- USB wires
- Ethernet connection
- Convenience CAN 2
- Connect CAN



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1) 48 Volt MHEV only
2) 12 Volt MHEV only
3) Vehicles without an additional lithium-ion battery only

For presentation reasons, the FlexRay topology does not mirror the actual configuration of the control units. The order of the control units in the MOST ring in this illustration is also not identical to the actual sequence.

Key:

A1 Auxiliary Battery
A6[1)] Battery, 48 V
A7[1)] Voltage Converter (48 V/12V)
A27 Right LED Headlamp Power Output Module 1
A31 Left LED Headlamp Power Output Module 1
C Alternator
C29 Starter Generator
E1 Light Switch
E67 Driver Volume Control
E265 Rear A/C Display Control Head
EX22 Switch Module in Instrument Panel, Center
EX23 Center Console Switch Module 1
G65 High Pressure Sensor
G355 Humidity Sensor
G397 Humidity Sensor
G578 Anti-Theft Alarm System Sensor
G935 Exterior Air Quality and Humidity Sensor
H12 Alarm Horn
J104 ABS Control Module
J126 Fresh Air Blower Control Module
J136 Memory Seat/Steering Column Adjustment Control Module
J187 Differential Lock Control Module
J217 Automatic Transmission Control Module
J234 Airbag Control Module
J245 Sunroof Control Module
J285 Instrument Cluster Control Module
J367 Battery Monitoring Control Module
J386 Driver Door Control Module
J387 Front Passenger Door Control Module
J392 Rear Sunroof Control Module
J400 Wiper Motor Control Module
J428 Adaptive Cruise Control Module
J453 Multifunction Steering Wheel Control Module
J492 All Wheel Drive Control Module
J500 Power Steering Control Module
J502 Tire Pressure Monitoring Control Module
J521 Front Passenger Memory Seat Control Module
J525 Digital Sound System Control Module
J527 Steering Column Electronics Control Module
J528 Roof Electronics Control Module
J530 Garage Door Opener Control Module
J587 Selector Lever Sensor System Control Module
J605 Rear Lid Control Module
J623 Engine Control Module
J685 Front Information Display Control Head
J706 Passenger Occupant Detection System Control Module
J764 Electronic Steering Column Lock Control Module
J769 Lane Change Assistance Control Module
J770 Lane Change Assistance Control Module 2
J772 Rearview Camera System Control Module
J775 Drivetrain Control Module
J792 Active Steering Control Module
J844 Automatic High Beam Assist Control Module
J853 Night Vision System Control Module
J854 Left Front Seat Belt Tensioner Control Module
J855 Right Front Seat Belt Tensioner Control Module
J866 Power Adjustable Steering Column Control Module
J869 Structure-Borne Sound Control Module
J897 Ionizer Control Module
J898 Windshield Projection Head Up Display Control Module
J926 Driver Side Rear Door Control Module
J927 Passenger Side Rear Door Control Module
J938 Power Rear Lid Opening Control Module
J949 Control Module for Emergency Call Module and Communication Unit
J1060 Front Information Display Control Head 2
J1088 Control Module for Left Front Object Detection Radar Sensor
J1089 Control Module for Right Front Object Detection Radar Sensor
J1101 Fragrance Diffuser System Control Module
J1122 Laser Distance Regulation Control Module
J1146 Mobile Device Charger 1

MX3 Left Tail Lamp
MX4 Right Tail Lamp
MX5 Left Tail Lamp 2
MX6 Right Tail Lamp 2

Key:

N209 Driver Lumbar Support Adjustment Valve Block
N210 Front Passenger Lumbar Support Adjustment Valve Block
N475 Valve Block 1 in Driver Seat
N477 Valve Block 1 in Front Passenger Seat
R212 Night Vision System Camera
R242 Driver Assistance Systems Front Camera
R243 Front Peripheral Camera
R244 Left Peripheral Camera
R245 Right Peripheral Camera
R246 Rear Peripheral Camera
R293 USB Distributor
U41 USB Connection 1
V113 Recirculation Door Motor
V388 Driver Seat Backrest Blower Fan
V389 Front Passenger Seat Backrest Blower Fan
V390 Driver Seat Cushion Blower Fan
V391 Front Passenger Seat Cushion Blower Fan
V438 Fresh Air Door Motor
V475 Transmission Fluid Auxiliary Hydraulic Pump 1
Y7 Automatic Dimming Interior Rearview Mirror

Bus systems used in the Audi A6

The bus systems used in the 2019 A6 are the same as the 2019 A8 with the exception of the new Connect CAN.

It connects Control Module for Emergency Call Module and Communication Unit J949 to the Gateway.

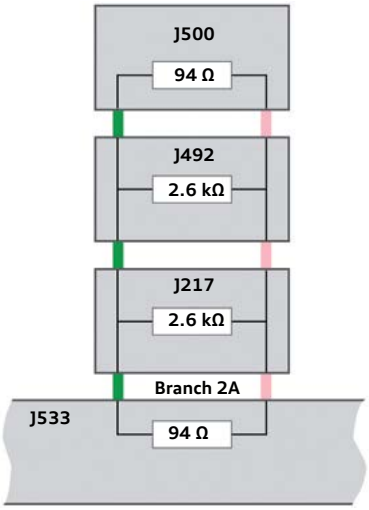
Bus system	Wire color	Configuration	Data transfer rate
Connect CAN		Electrical bus system	500 kbit/s

FlexRay

The FlexRay topology of the Audi A6 is identical to that of the 2019 A8. However, All Wheel Drive Control Module J492 may also be connected at branch 2A.

Key:

J217 Automatic Transmission Control Module
J492 All Wheel Drive Control Module
J500 Power Steering Control Module
J533 On Board Data Bus Diagnostic Interface (Gateway)



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Reference
For further information about FlexRay, refer to eSelf-Study Program 970293, The 2019 Audi A8 Electrics and Electronics.

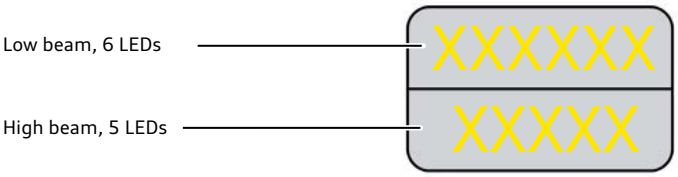
Exterior lighting
Headlights

LED headlights (PR No.: 8IT + 8G1/8G0)

Available as ECE[1)] and SAE[2)] version.

The illustration shows the left headlight in the ECE[1)] version.

670_055



Lighting functions

- Daytime running light
- Side light
- Low beam
- High beam
- All-weather light
- Turn signal
- Side marker light (SAE only[2)], not illustrated)

Special features of the lighting functions

The daytime running lights (“turn signals during the day”) and the marker light (“turn signals at night) remain active while the turn signals are active. This applies to both the ECE[1)] and the SAE[2)] versions.

Adjusting headlights for driving on other side of road

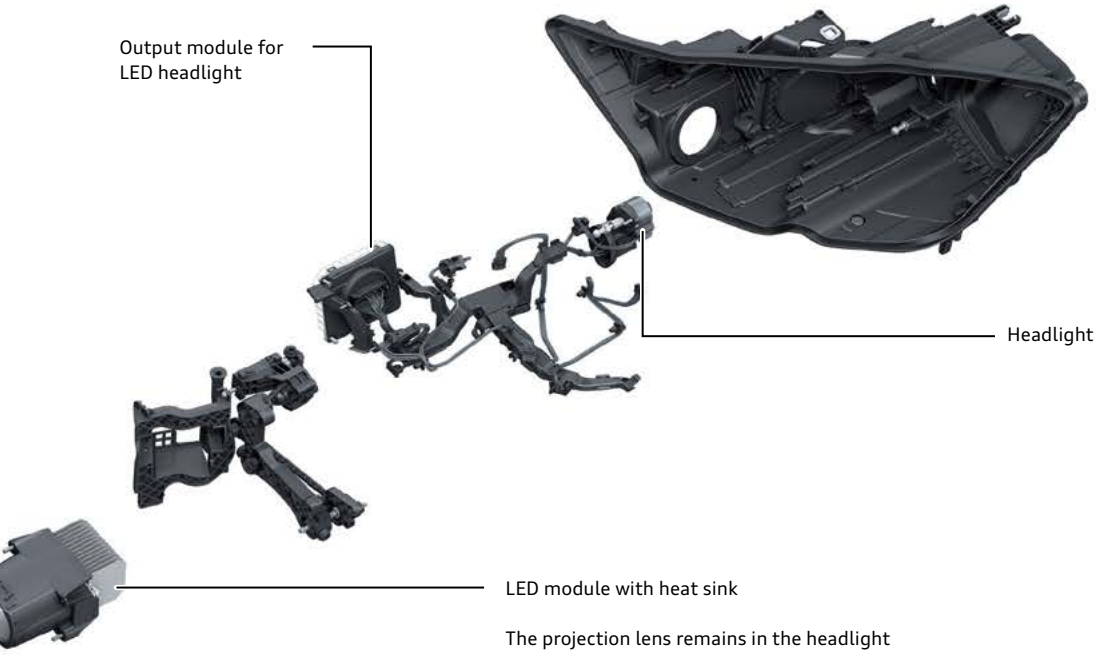
It is not necessary to adjust the headlights. The legal requirements are met without additional measures.

[1)]ECE = for the European market
[2)]SAE = for the North American market

An LED headlight is available as standard for the Audi A6. With one exception, all lighting functions are performed by LEDs. The turn signal is produced by a 24 W bulb. The LEDs for the low beam and the high beam are installed in a projection module. In the top row, the low beam is generated by 6 LEDs.

In the bottom row, 5 LEDs are used for the high beam function.

Thanks to its comparatively simple construction, the LED headlight is the lightest of the three headlights available for the Audi A6 with a weight of approximately 10 lb (4.5 kg).



670_056

The projection lens remains in the headlight if the LED module is replaced.

Equipment

The LED headlights can be combined with the high beam assist as an option. A headlight washer system is also available optionally.

Service

The control module installed on the outside of the headlight housing, the bulb module for the turn signal, the LED module, and the headlight range control motor (ECE[1)] only) can be replaced in the event of a defect. The LED module and the control motor can only be replaced on the ECE[1)] version. In the event of damage to the upper and inner headlight attachments, repair tabs can be attached to the headlight housing.

Headlight range adjustment

The LED headlights are equipped with automatic dynamic headlight range adjustment.

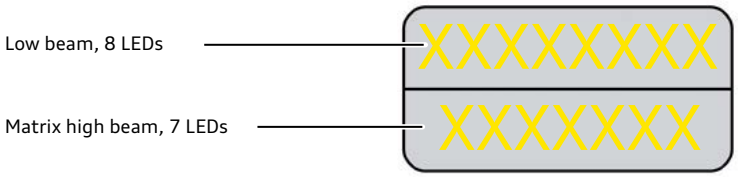
It is very important to keep the inside of the headlight as clean as possible when replacing components inside of the headlight. It is also recommended to use the ESD antistatic mat VAS 6613 to prevent electrostatic discharge. Wear gloves and avoid touching components to protect the parts of the optical system relevant to lighting. Replacing the LED module is a very delicate procedure and requires precise skill from the Technician.

Smart matrix LED headlights (PR No.: 8IT + 8G4)

Available as ECE[1] and SAE[2] version.

The illustration shows the left headlight in the ECE[1] version.

670_057



Lighting functions

- Daytime running light
- Marker light
- Low beam
- Matrix beam high beam
- Turn signal
- All-weather light
- Turning light
- Intersection light (in combination with navigation system)
- Highway light
- Cornering light
- Side marker light (SAE only[2], not illustrated)

Special features of the lighting functions

Turn signals during the day:

On the ECE[1] version, the daytime running light is dimmed to marker light level when the turn signal is activated.

On the SAE[2] version, the daytime running lights are switched off during the turn signal procedure.

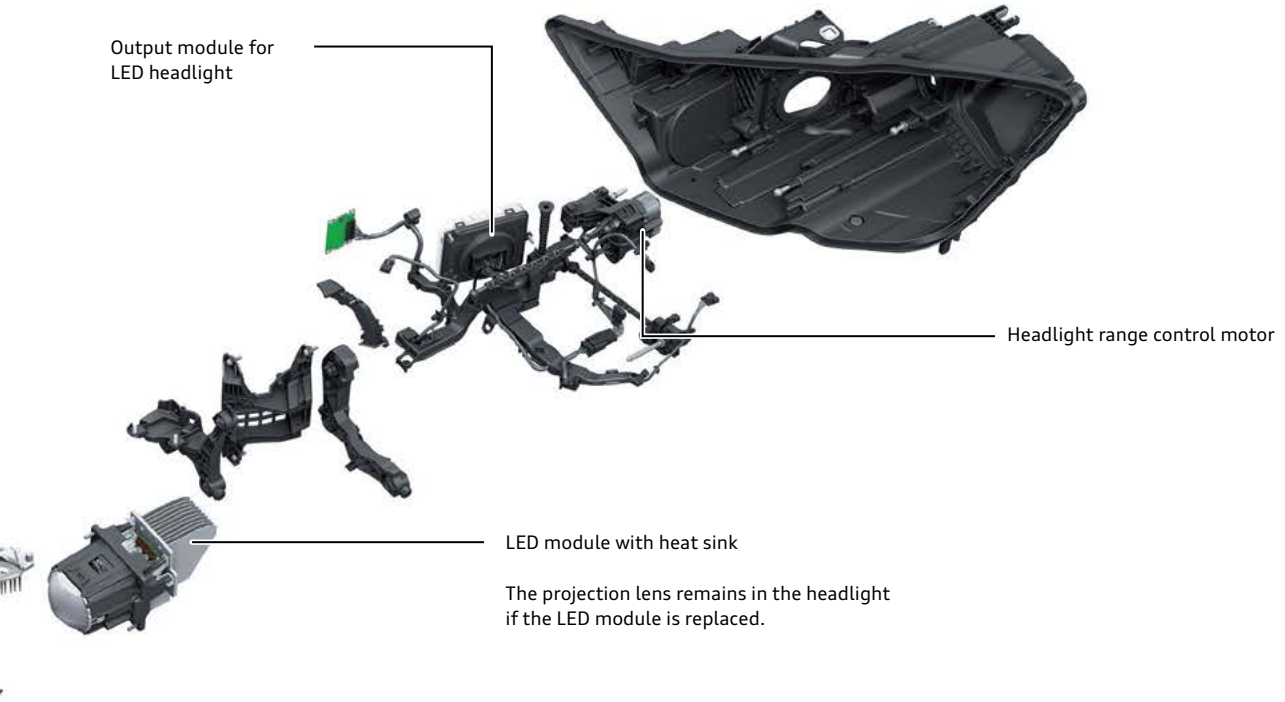
Turn signals at night:

On both the ECE[1] and SAE[2] versions, the marker light remains active according to the legal requirements for the North American market.

[1] ECE = for the European market
[2] SAE = for the North American market

The smart matrix LED headlight has a one-row matrix high beam. According to the traffic situation detected, 7 LEDs can be switched off individually to avoid blinding vehicles ahead or oncoming vehicles.

The low beam is generated by 8 LEDs. On this headlight version, all lighting functions are performed by LEDs.



670_058

Headlight range adjustment

The smart matrix LED headlights are equipped with automatic dynamic headlight range adjustment.

Equipment

The Audi A6 with smart matrix LED headlights is installed with a headlight washer system as standard.

Service

The control module is installed to the outside of the headlight housing, the LED module (one assembly group for the low beam and one assembly group for the high beam) and the headlight range control motor can be replaced in the event of a defect. The LED module and the control motor can only be replaced on the ECE[1)] version.

In the event of damage to the upper and inner headlight attachments, repair tabs can be attached to the headlight housing.

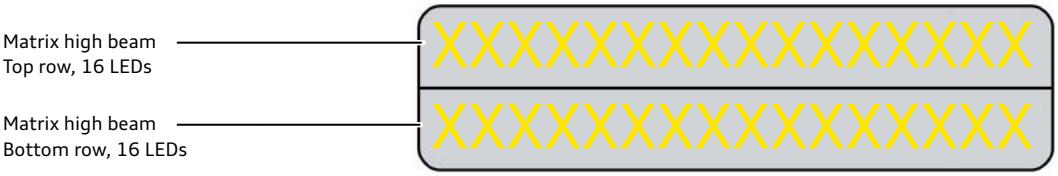
It is very important to keep the inside of the headlight as clean as possible when replacing components in the inside of the headlight. It is also recommended to use the ESD anti-static mat VAS 6613 to prevent electrostatic discharge.

Wear gloves and avoid touching components to protect the parts of the optical system relevant to lighting. Replacing the LED modules is a very delicate procedure and requires precise skill from the Technician.

HD matrix LED headlights (PR No.: 8IT + 8G5)
Available as ECE[1] and SAE[2] version.

The illustration shows the left headlight in the ECE[1] version.

670_059



Lighting functions

- Dynamic daytime running light
- Dynamic marker light
- Low beam
- Matrix beam high beam
- Dynamic turn signal
- All-weather light
- Turning light
- Highway light
- Cornering light
- Intersection light (in combination with navigation system)
- Side marker light (SAE only[2], not illustrated)

Special features of the lighting functions

Turn signals during the day:

On the ECE[1] version, the daytime running light is dimmed to marker light level when the turn signal is activated.

On the SAE[2] version, the daytime running lights are switched off during the turn signal procedure.

Turn signals at night:

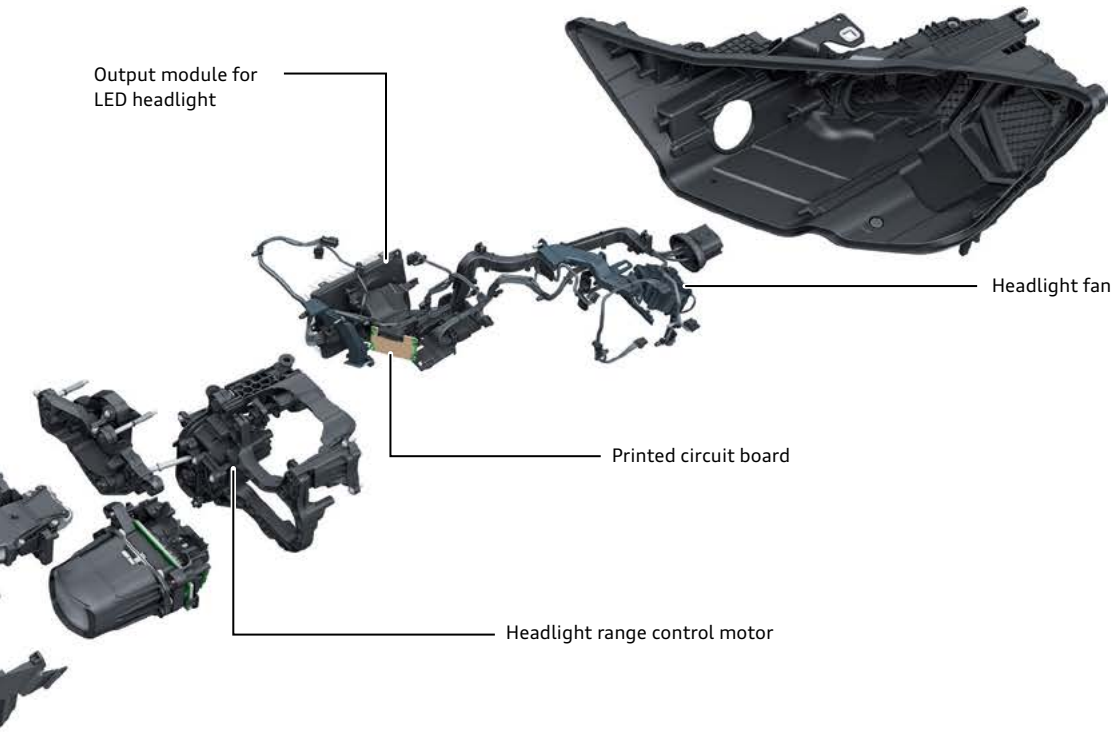
The marker light remains active on both the ECE[1] and SAE[2] versions.

The turn signal is dynamic. The marker light and daytime running light are also dynamic and are activated at different moments as part of the “coming/leaving home” function.

[1] ECE = for the European market
[2] SAE = for the North American market

The Audi designation for the two-row matrix headlights first introduced in the Audi A8 is HD (high definition) matrix LED headlights, or matrix 2.0. In this system, the matrix high beam is generated by two rows of LEDs containing 16 LEDs each. With 64 LEDs in the two headlights, it is therefore possible to achieve a very finely graded reduction in the light to avoid blinding other road users.

Because of its complex construction, the HD matrix LED headlight is the heaviest of the three headlight versions available for the Audi A6.



670_060

Headlight range adjustment

The HD matrix LED headlights are equipped with automatic dynamic headlight range adjustment.

Equipment

The Audi A6 with HD matrix LED headlights are installed with a headlight washer system as standard.

Service

The control module installed on the outside of the headlight housing, the printed circuit board, the fan, and the headlight range control motor can be replaced in the event of a defect.

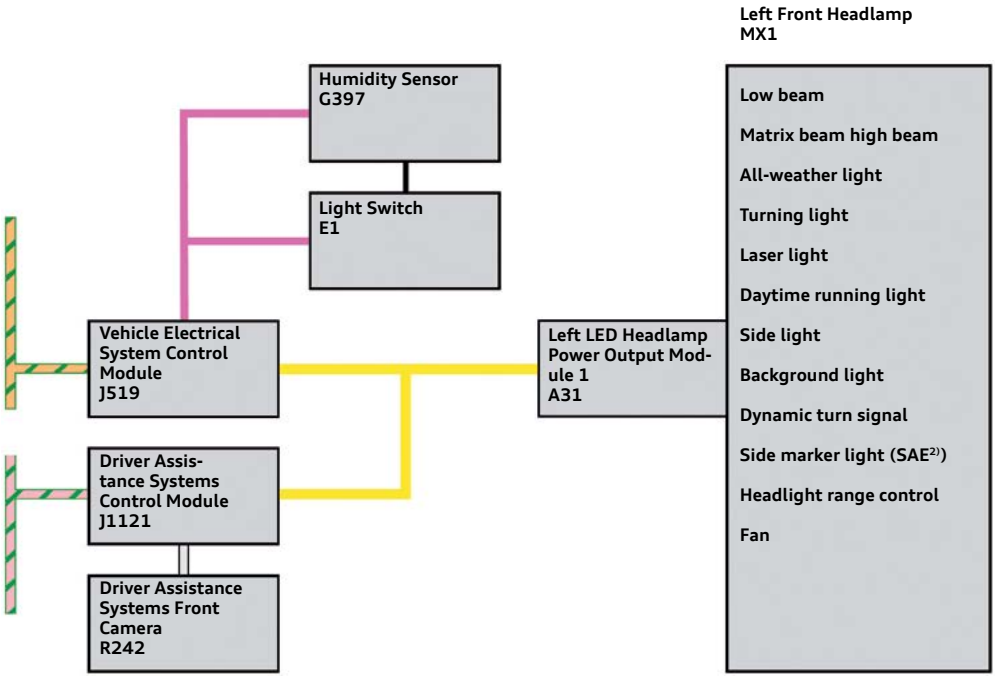
In the event of damage to the upper and inner headlight attachments, repair tabs can be attached to the headlight housing.

It is very important to keep the inside of the headlight as clean as possible when replacing components in the inside of the headlight. It is also recommended to use the ESD anti-static mat VAS 6613 to prevent electrostatic discharge.

Wear gloves and avoid touching components to protect the parts of the optical system relevant to lighting. Replacing the printed circuit board and the fan is a very delicate procedure and requires precise skill from the Technician.

Activation of matrix LED headlights

Illustration for left headlight



Key:

- Convenience CAN 2
- FlexRay
- Sub-bus systems
- LVDS
- LIN bus

Activation

Vehicle Electrical System Control Module J519 communicates with Left/Right LED Headlamp Power Output Module 1 A31/A37 via a sub-bus system.

These output modules activate all lighting functions, the headlight range control motors and, on the matrix headlights, the fan(s).

The control modules are capable of self-diagnosis and can be accessed via Address Word 00D6/00D7.

The illustration shows an example of the communication paths and the components involved. The activation process inside the headlight is not relevant for repairs and therefore not shown specifically.

High beam assist

Together with Driver Assistance Systems Front Camera R242, Driver Assistance Systems Control Module J1121 is responsible for the high beam assist function. If the camera detects oncoming vehicles or vehicles ahead, it passes this information on to Driver Assistance Systems Control Module J1121.

J1121 calculates which LEDs in the matrix headlights need to be switched off to avoid blinding other road users. This information is sent to the output modules via the sub-bus system.

On the LED headlights, only two conditions are possible: “high beams on” or “high beams off”.

2)SAE = for the North American market

Calibrating matrix LED headlights

Calibration of the matrix headlights is always required after the following work:

- Headlight position was changed (removed/installed, securing bolts loosened).
- Headlights were adjusted.
- Drivetrain Control Module J775 was recalibrated or renewed.
- Driver Assistance Systems Control ModuleJ1121 was replaced.
- Left Rear Level Control System Sensor G76, Right Rear Level Control System Sensor G77, Left Front Level Control System Sensor G78 or Right Front Level Control System Sensor G289 has been renewed.
- The event memory contains the entry "No or incorrect basic setting / adaption".

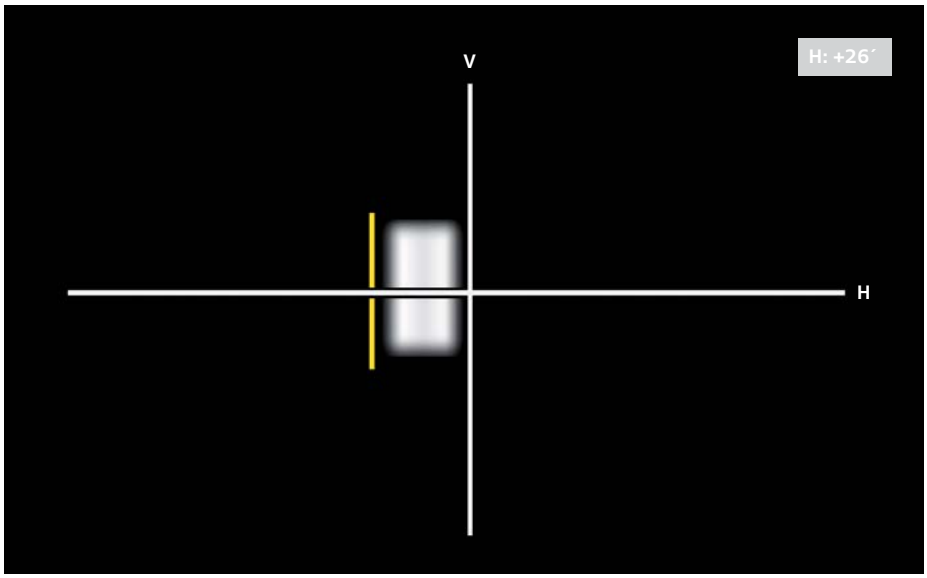
Aligning reference segment

As with the first generation of the matrix LED headlight used in Europe, reference segment is measured using the headlight adjustment unit VAS 621 001 as the first step of the calibration process.

The deviation value is then sent to Driver Assistance Systems Control Module J1121 with the help of the Scan Tool. The yellow line on the image shows which edge the reference segment is being aligned to. In this example, a horizontal deviation of +26 minutes has been determined.

When the low beams are adjusted, the height of the matrix beam high beam module is also corrected due to the inner layout of the HD matrix LED headlight. When the matrix beam high beams are then calibrated, it is sufficient to determine the horizontal deviation of the reference segment. This means that the calibration procedure for the one-row smart matrix and the two-row HD matrix LED headlight is the same.

The illustration shows the reference segment of the left matrix LED headlight



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Note
Up-to-date service literature must be used for all checking, repair and adjustment work.

Tail lights

General description

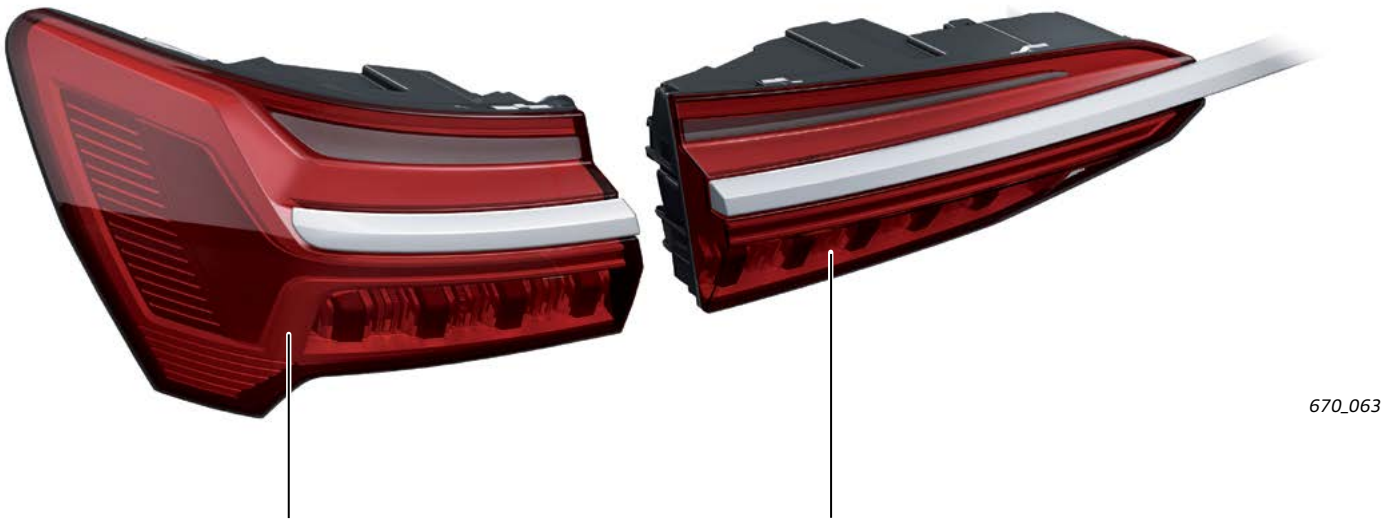
The 2019 A6 uses 2 taillights on each side of the vehicle. One is located in the quarter panel and one in the outer edge of the trunk lid..

Versions

There are 3 possible versions of the tail lights used in the A6. In the SAE market only two are used.

- LED tail lights (low) PR No. 8SK (ECE[1)] only)
- LED tail lights (mid) with dynamic turn signals PR No: 8SP (ECE[1)] and SAE[2)])
- LED tail lights (high) with dynamic turn signals and dynamic tail lights PR No: 8SQ (ECE[1)] and SAE[2)])

The illustration shows the 8SQ tail lights in the ECE[1)] version.



The tail light versions are geometrically identical. The design varies between the ECE[1)] and SAE[2)] versions. There are differences in the functions and the activation of the tail lights.

The highest equipment version (PR no. 8SQ) is equipped with dynamic turn signals and dynamic tail lights.

Dynamic tail light means that:

The tail lights are lit gradually when Terminal 15 is activated.

The tail light LEDs are activated as part of the “coming/leaving home” function.

Activation

The tail lights are activated by Comfort System Central Control Module J393.

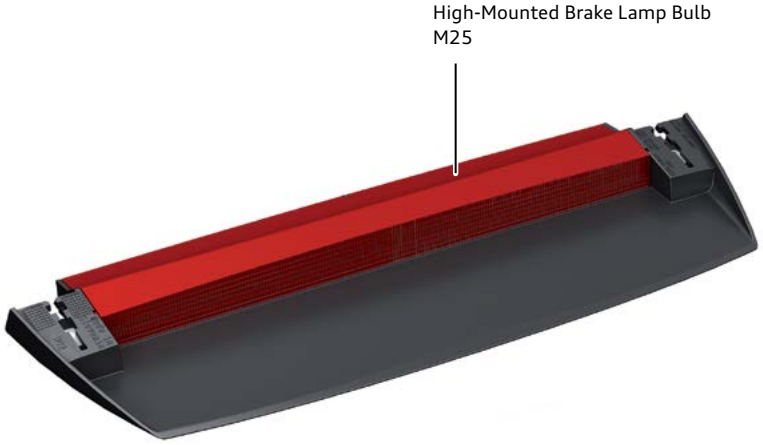
On the 8SQ version, the tail lights are connected to J393 via a LIN data wire in addition to the discrete wires.

On this tail light version, the dynamic turn signal and dynamic tail light commands are sent via the LIN data wire.

[1)]ECE = for the European market
[2)]SAE = for the North American market

High-mounted brake lights

The high-mounted brake light is located inside the vehicle behind the rear window. 18 LEDs with a power output of 3.2 W support the brake light function. In the event of a fault, the high-level brake light must be replaced as a complete unit.



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Convenience electronics on Audi A6

The 2019 A6 offers various convenience functions. Most were adapted from the 2019 Audi A8.Some of the equipment and features listed are optionally available separately or in a package. Please consult the 2019 A6 ordering guide for the latest and most complete information.

- Interior mirror:
  auto-dimming interior rear view mirror (frame-less) with compass.
- Rear trunk lid with electric open/close function.
- Locking systems:
  All vehicles are equipped with radio remote keys..
- Garage door opener with GPS support (when the vehicle nears the stored location, a corresponding message appears to trigger the procedure for sending a signal).
- Seating comfort:
  Front seats with memory function;
  Front seat and outer rear seat heating;
  Seat ventilation and seat massage for front seats only.
- Electric steering column adjustment.
- Analog instrument cluster or optional Audi virtual cockpit.
- Head-up display (as optional equipment).

670_032

670_033

Instrument cluster

Two different instrument clusters are used for the Audi A6 :

- The standard instrument cluster.
- The optional Audi virtual cockpit.

The driver information system in the analog instrument cluster is a high-resolution 7” color display. The following can be displayed:

- Speed (digital speedometer).
- Time.
- Mileage.
- Outside temperature.
- Fuel level warning with remaining range.
- Gear-change indicator in TIP mode.
- Current radio station or music track.
- Radio and media lists.
- Telephone menu.
- Information from the navigation system and messages from the driver assist systems (if installed).

The information provided by the on-board computer’s short-term and long-term memory includes average and current fuel consumption, remaining range, average speed, driving time and distance covered.

The integrated efficiency program helps the driver to drive economically with overviews of consumption data and economy tips, including the rest recommendation.

The Audi virtual cockpit is an innovative, fully digital instrument cluster with the flexibility to display the relevant information according to the driver’s requirements and as needed. The Audi connect services, for example, can also be displayed.

The VIEW button on the multi-function steering wheel allows the driver to switch between two different-sized versions of the round instruments. The display with small instruments allows large, clear graphics to be displayed by the on-board computer and the MMI.

It is possible to display the navigation map as a 3D terrain model on the high-resolution 12.3” Full HD color display.

Analog instrument cluster

670_020

Audi virtual cockpit

670_021

Central locking

Audi advanced key

The central locking system in the 2019 A6 is similar to the system in the 2019 A7.

Unlocking the vehicle:

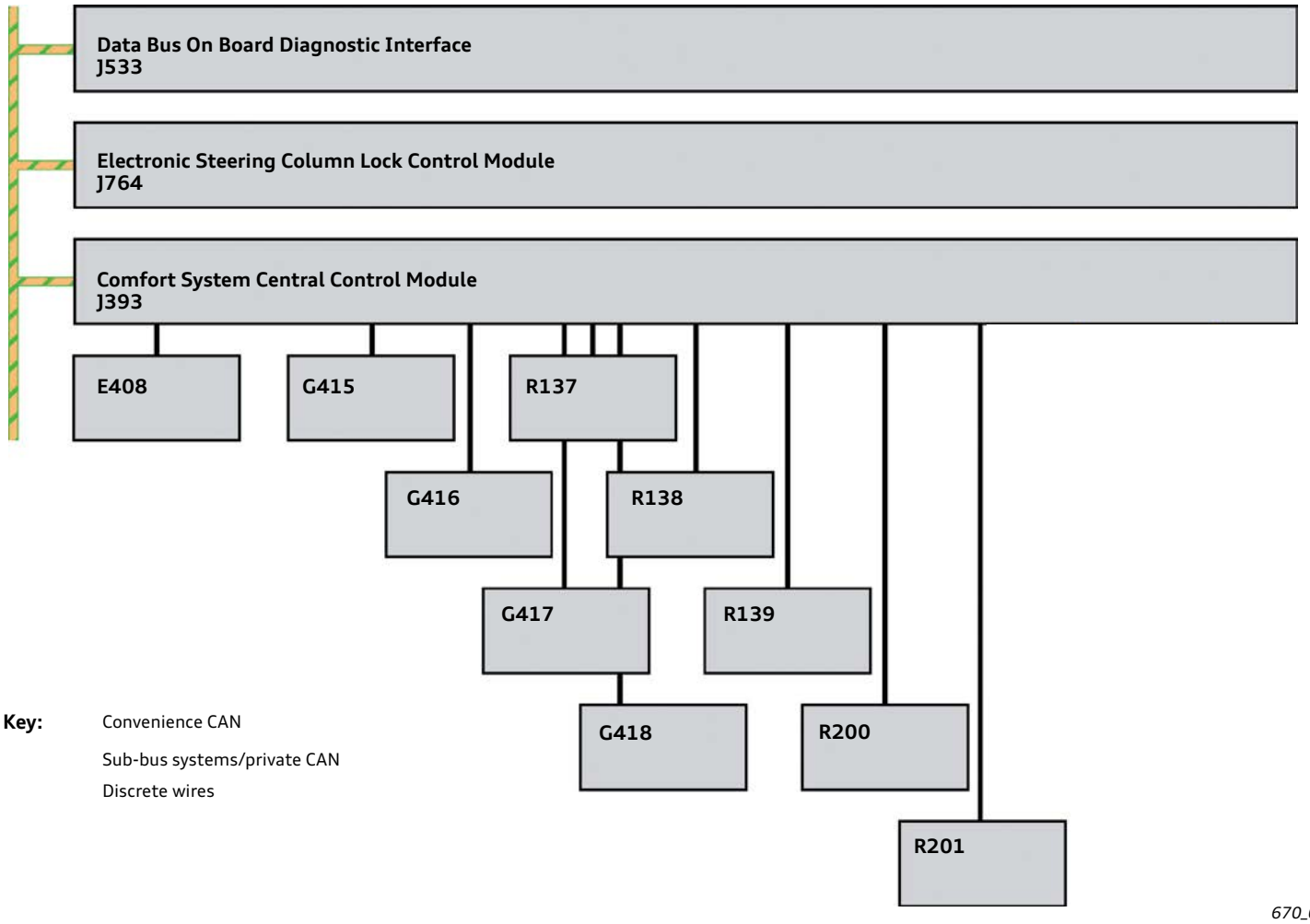
A vehicle key must be within the detection area of the vehicle door. If someone reaches into the door handle, the corresponding exterior door handle contact sensor (for example, Driver Exterior Door Handle Touch Sensor G415) reports this to Comfort System Central Control Module J393.

J393 interrogates the vehicle key. This transmits its data back to the central locking system antenna, which is on the printed circuit board of J393. If the key is detected as an authorized vehicle key, J393 transmits a command to the door control modules to unlock the doors via the convenience CAN bus.

Locking the vehicle:

A coded vehicle key must also be in the detection area when the vehicle is being locked. If the driver presses the locking sensor on the exterior door handle (for example, Driver Exterior Door Handle Touch Sensor G415), this signal is transmitted to J393 via the CAN bus. This queries whether there is actually an authorized key in the detection area. After the key has successfully transmitted its data to J393 via a radio signal, J393 sends the locking command to the corresponding door control modules.

Central locking system diagram



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E408 Access/Start Authorization Button
G415 Driver Exterior Door Handle Touch Sensor
G416 Front Passenger Exterior Door Handle Touch Sensor
G417 Left Rear Exterior Door Handle Touch Sensor
G418 Right Rear Exterior Door Handle Touch Sensor

R137 Access/Start System Antenna in Luggage Compartment
R138 Access/Start System Antenna 1 in Vehicle Interior
R139 Access/Start System Antenna 2 in Vehicle Interior
R200 Left Access/Start Authorization Antenna
R201 Right Access/Start Authorization Antenna

As soon as the central locking system is woken by a capacitive proximity sensor, a query signal is transmitted to the remote control key in the low frequency (LF) range.

The remote control key decodes the low frequency signal and transmits its coding of the high frequency (HF) signal to the central locking system antenna and on to Comfort System Central Control Module J393.

If the data received are correct/if an authorized vehicle key is detected, J393 gives the unlocking command to the corresponding door control unit.

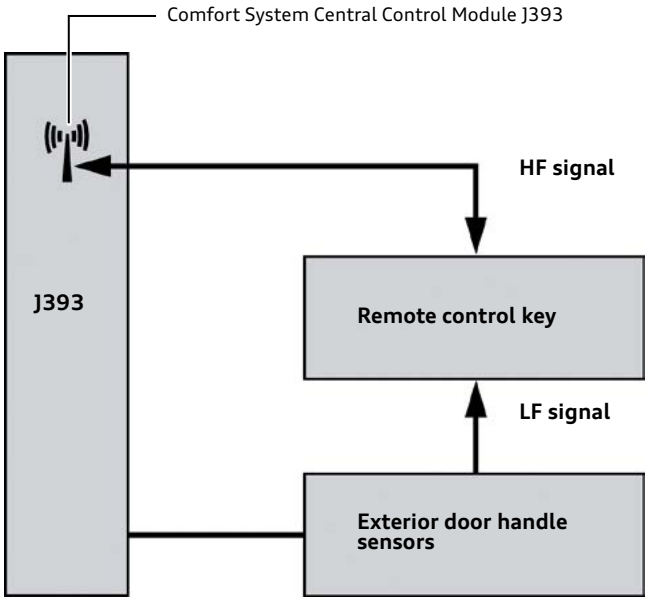
Front Access/Start Authorization Antenna R376

Front Access/Start Authorization Antenna R376 is installed at the front of the front bumper.

R376 is needed to ensure that communication in the front area of the vehicle is possible — the key needs to be able to determine its position in relation to the vehicle.

MVs are available for R376 and can be viewed using the VAS Scan Tool.

Block and schematic diagram of transmission frequencies for central locking system



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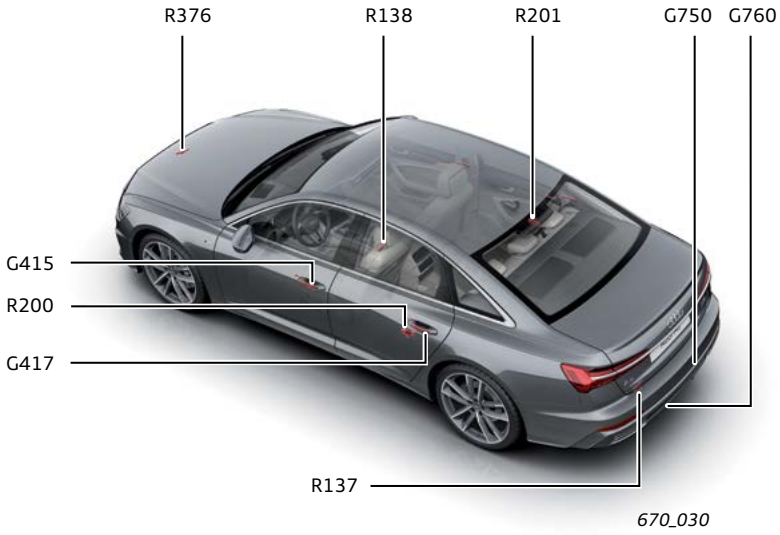

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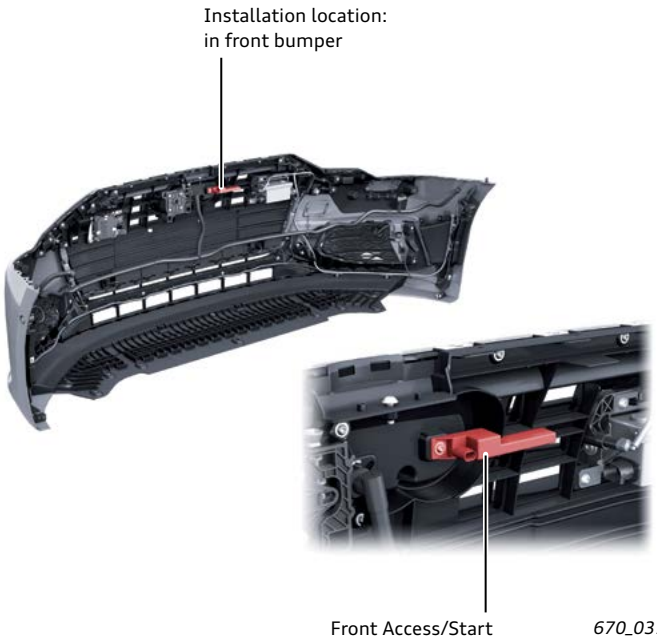


670_031

Key:

G415	Driver Exterior Door Handle Touch Sensor
G417	Left Rear Exterior Door Handle Touch Sensor
G750	Power Rear Lid Opening Sensor
G760	Power Rear Lid Opening Sensor 2
R137	Access/Start System Antenna in Luggage Compartment
R138	Access/Start System Antenna 1 in Vehicle Interior
R200	Left Access/Start Authorization Antenna
R201	Right Access/Start Authorization Antenna
R376	Front Access/Start Authorization Antenna

Comfort System Central Control Module J393

On the Audi A6, J393 is installed in the underbody of the luggage compartment, immediately behind the rear seat backrests.

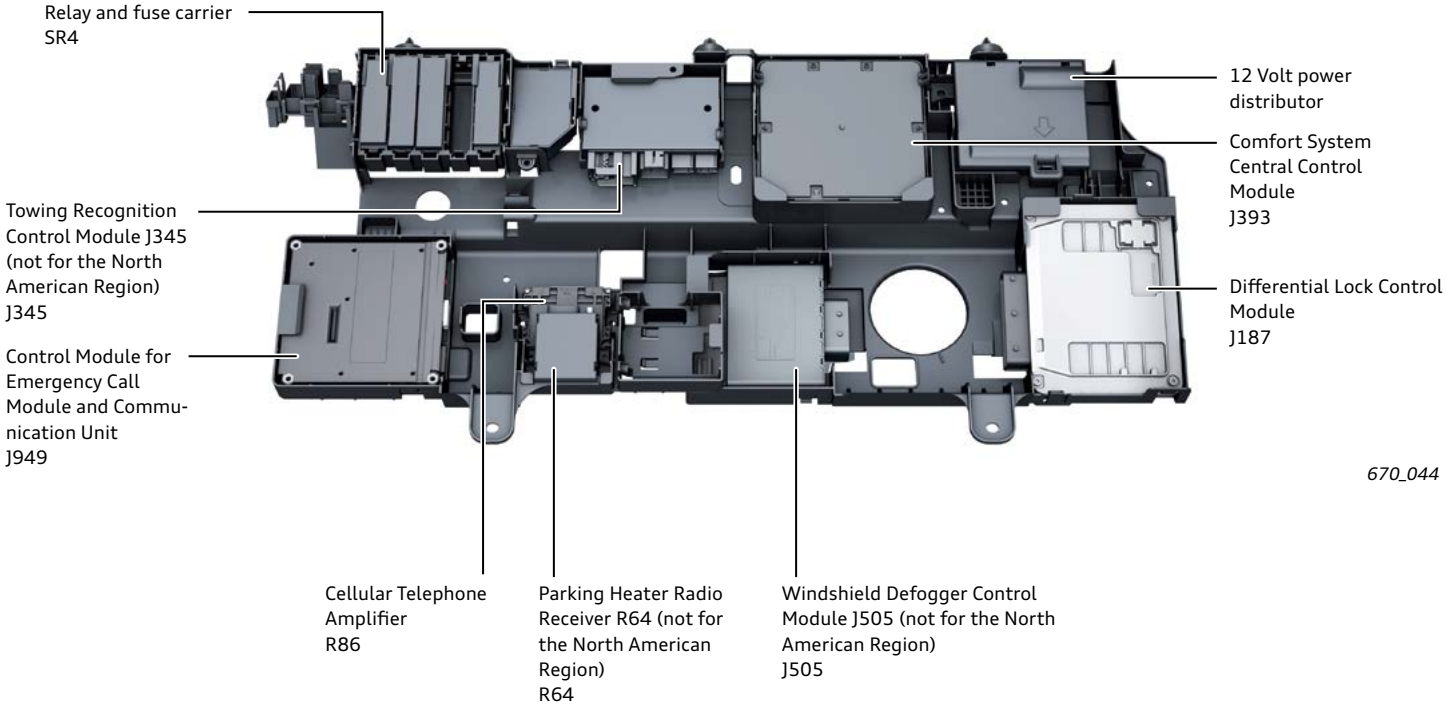
J393 is installed on control module rack.

As the base carrier, the control module rack comes in two different versions. Depending on the vehicle's equipment, a small base carrier or the larger one shown in the illustration is used.

The components attached include:

- Relay and fuse carrier SR4.
- Comfort System Central Control Module J393.
- A 12 Volt power distributor.
- Control Module for Emergency Call Module and Communication Unit J949.
- Cellular Telephone Amplifier R86.
- Differential Lock Control Module J187.

Installation location



Interior lighting

There are two interior lighting packages available for the 2019 A6 depending on model:

- Ambient lighting package QQ1.
- Contour ambient lighting package QQ2.

Ambient lighting package QQ1 includes all the important lighting functions:

- Both LED roof modules (front and rear, capacitive lights).
- Make-up lights.
- Entry lights (front and rear).
- Illuminated interior door handles (front and rear).
- Illuminated center console storage compartment.
- Glove box light.
- Footwell lights (front and rear).
- Two luggage compartment lights .
- Ambient door panel lighting for doors (front/rear).
- Surround lighting from exterior door handles (front/rear).
- Ambient lighting in instrument panel.

Vehicles equipped with the QQ2 contour ambient lighting package (which includes most of the QQ1 package) have the following items lit with LEDs featuring six pre-defined color profiles:

- Door pockets (front/rear).
- Door contour lighting (front/rear).
- Ambient door panel lighting for doors (front/rear).
- Ambient lighting for front center console.
- Contour lighting for front center console.
- Contour lighting with illuminated quattro badge or illuminated Audi rings (on front-wheel drive vehicles) in the instrument panel on the passenger side.
- Ambient lighting for instrument panel.

An additional interactive and individual color profile is controlled by the Audi drive select modes. A large number of colors are available with the individual color profile. The color adjustments are made separately for contour and ambient lighting.

670_022

Light strips from the ambient/contour ambient lighting packages are used in the inner doors, the instrument panel and the center console.

Climate control

The new technical features which were introduced with the 2019 Audi A8 are continued in the 2019 Audi A6. Many of the new technical features introduced with the 2019 A8 climate control system are continued with the 2019 A6.

For the North American market, the 2019 A8 will use refrigerant R-1234yf at vehicle introduction.

Overview

Fragrance diffuser system

A fragrance diffuser system with two different fragrances is offered for the 2019 A6. The fragrances are kept in cylindrical vials in Fragrance Diffuser System Functional Unit GX43. A small blower guides the fragrance from the vial into the outer front air outlets. In addition to the fragrance type, four levels of intensity can be selected.

Air ionization system

An air ionization system is used in the Audi A6 to improve the air quality. The air ionization system works by negatively charging a limited number of air particles. They are distributed in the vehicle interior via the side and front air outlets. These anions neutralize the dust and similar very small particles that they attract.

Back massage

A back massage function is offered for the front seats of the 2019 A6 depending on model.

The following seven massage programs can be selected.

- Wave
- Pulse
- Stretch
- Rest
- Shoulder
- Activation
- Revitalization

Climate control operation in front of vehicle

Climate control operation is now implemented via two touch displays communicating with Vehicle Electrical System Control Module 1 J519. A separate Climate Control Module J255 is no longer needed. Communication between the touch screens and J519 is via the LIN bus system.

The main new feature regarding the look and feel of the operation are the two displays. The upper MMI display and the lower touch display are both installed centrally in the instrument panel and the center console. The air conditioner functions in the top MMI display can be accessed via the Car menu.

The MMI display can be used, depending on the optional equipment.

To select the following functions and their settings:

- Ionization
- Perfume
- Steering wheel heating
- Synchronization for driver/passenger side
- Climate control for rear passengers/for rear
- Climate control (A/C MAX, A/C OFF, A/C eco)

Overview of MMI display (Climate control operation)

670_041

Climate control in rear of vehicle

Depending on the equipment version, two different operating units may be available in the rear.

- 3-zone climate control
  Rear operating unit with digital temperature display and buttons for seat heating.
- 4-zone air conditioning
  Rear touch operating unit including air conditioner regulation and seat heating, permanently installed in the center console.

3-zone climate control

Rear A/C Display Control Head E265 is used for controlling the system in the rear of the vehicle.

The seat heating can be set on this operating unit in addition to the temperature and the blower speed.

670_042

4-zone climate control

The optional Rear A/C Display Control Head E265 is equipped with a sensory surface. It is operated by touch.

The following settings can be made:

- Temperature
- Blower speed
- Air distribution
- Automatic climate control
- Climate control on/off
- Seat heating

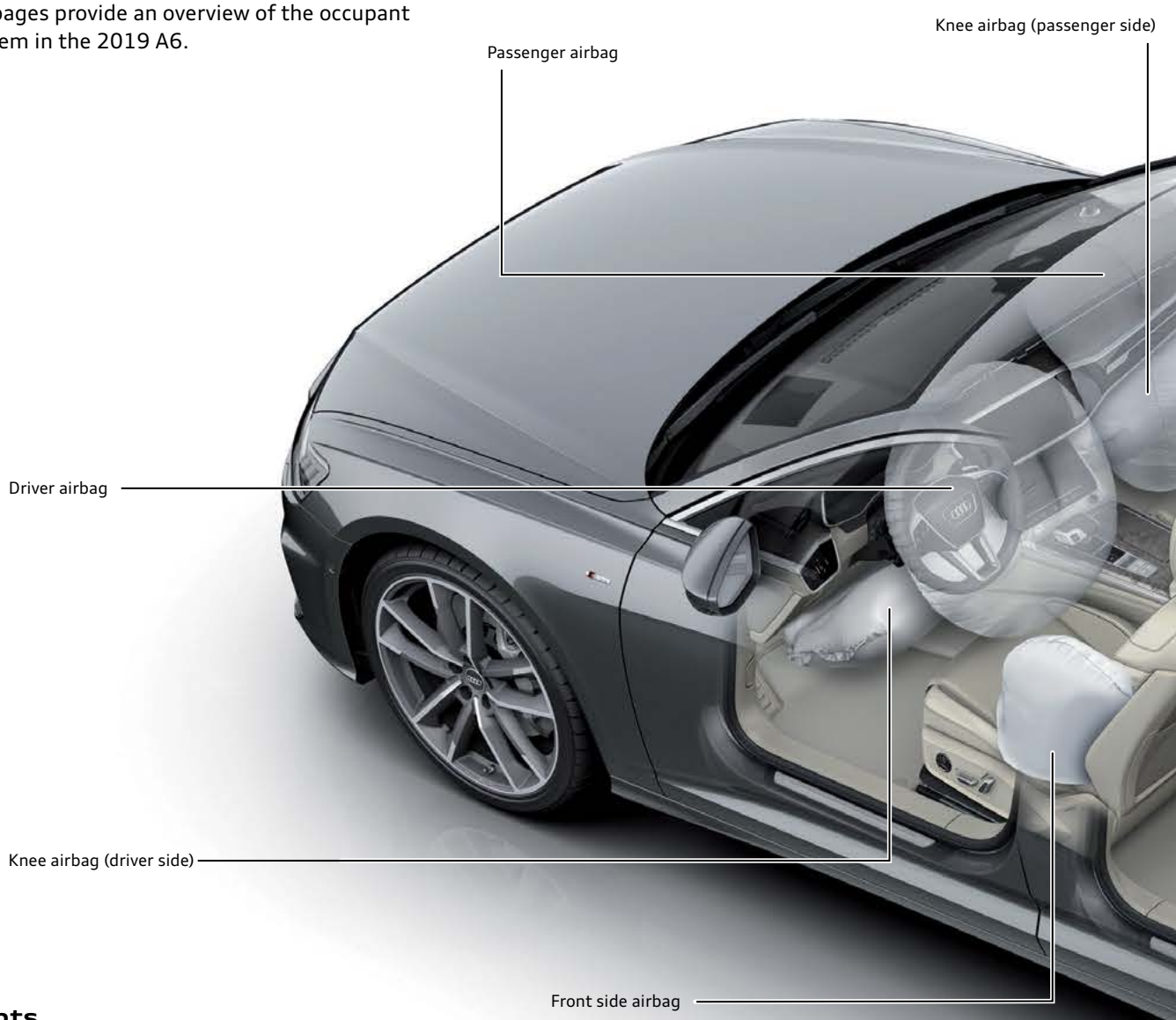
670_043

Safety and driver assist systems

Passive safety

The following pages provide an overview of the occupant protection system in the 2019 A6.

Airbags in vehicle



Components

- Airbag control module
- Adaptive driver airbag
- Adaptive passenger airbag (two-stage passenger airbag)
- Front side airbags
- Side airbags for seat row 2
- Curtain airbags
- Knee airbags
- Crash sensors for front airbags
- Front belt retractors with pyrotechnic belt tensioners
- Front belt retractors with electric belt tensioners
- Front belt retractors with switchable belt force limiters
- Belt retractors for seat row 2 with pyrotechnic belt tensioners for driver and passenger side
- Belt retractors for seat row 2 with electric belt tensioners for driver and passenger side
- Front lap belt tensioners for driver and passenger sides
- Seat belt warning for all seats
- Seat-occupied recognition system in passenger seat
- Seat-occupied recognition system for seat row 2
- Front passenger airbag warning lamp (OFF and ON)
- Seat position detection for driver and passenger
- Battery isolator, 12 Volt electrical system
- Battery isolator, 48 Volt sub-system

Reference

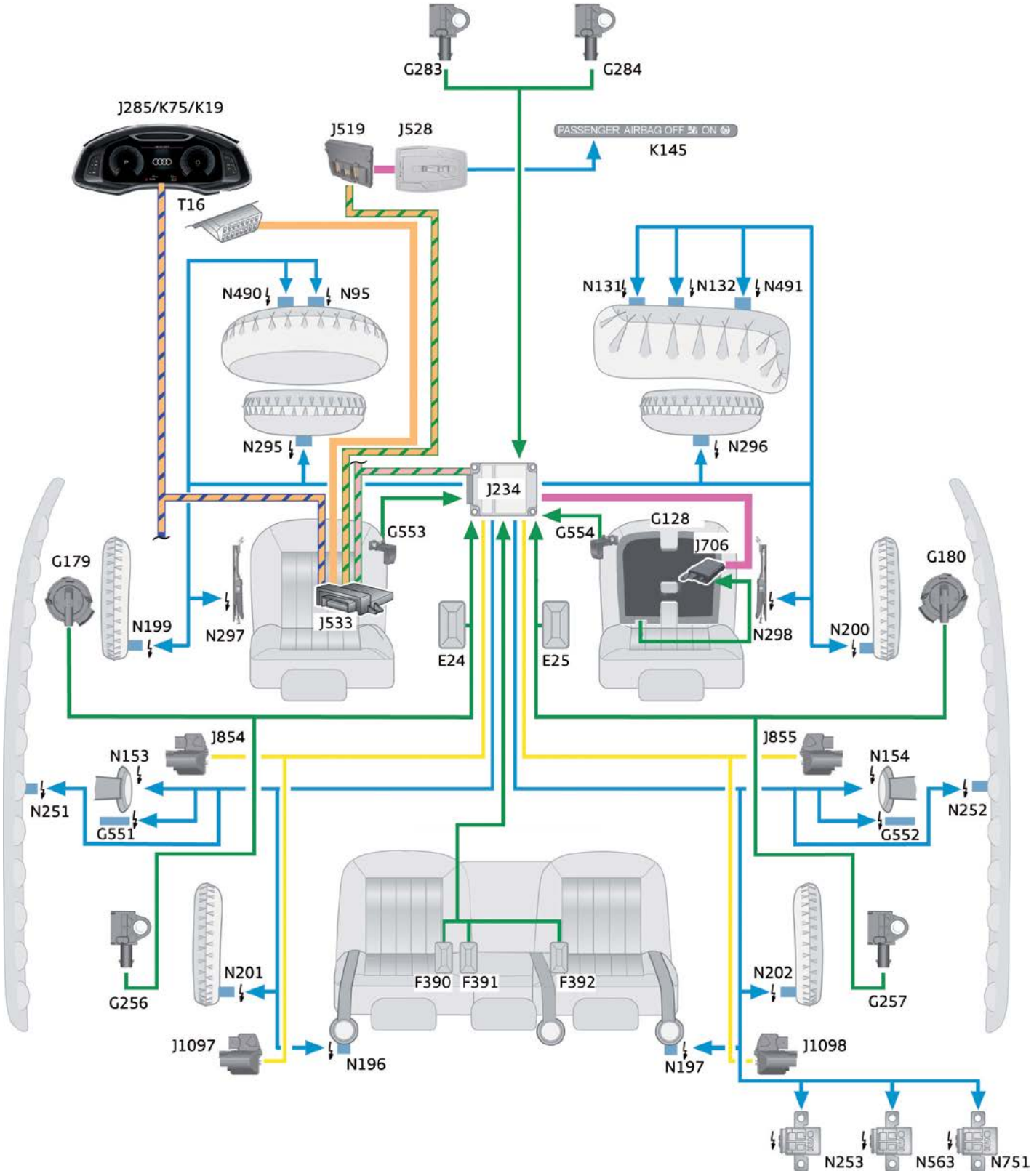
For further information on the airbag control unit J234 and Audi pre sense, please refer to eSelf-Study Program 990493, The 2019 Audi A8 Introduction.

670_037

Note
The images in the “Passive safety” chapter are schematic diagrams and are provided to aid understanding.

System overview

The system overview shows components which depend on the market and the vehicle equipment.



670_026

Additional equipment

Equipment may vary due to the different demands and legal requirements that are made of vehicle manufacturers in the markets.

Key to diagram on Page 46:

E24 Driver Seat Belt Switch
E25 Front Passenger Seat Belt Switch

F390 Driver Side Second Row Seat Belt Switch
F391 Center Second Row Seat Belt Switch
F392 Passenger Side Second Row Seat Belt Switch

G128 Passenger Seat Occupant Detection Sensor
G177 Rear seat occupied sensor on driver side
G178 Rear seat occupied sensor on passenger side
G179 Driver Thorax Airbag Crash Sensor
G180 Front Passenger Thorax Airbag Crash Sensor
G256 Driver Side Rear Thorax Airbag Crash Sensor
G257 Passenger Side Rear Thorax Airbag Crash Sensor
G283 Driver Front Airbag Crash Sensor
G284 Passenger Side Front Airbag Crash Sensor
G551 Driver Belt Force Limiter
G552 Front Passenger Belt Force Limiter
G553 Driver Seat Position Sensor
G554 Front Passenger Seat Position Sensor

J234 Airbag Control Module
J285 Instrument Cluster Control Module
J519 Vehicle Electrical System Control Module
J528 Roof Electronics Control Module
J533 Data Bus on Board Diagnostic Interface
J706 Passenger Occupant Detection System Control Module
J854 Left Front Seat Belt Tensioner Control Module
J855 Right Front Seat Belt Tensioner Control Module

J1097 Left Rear Seat Belt Tensioner Control Module
J1098 Right Rear Seat Belt Tensioner Control Module

K19 Seat Belt Indicator Lamp
K75 Airbag Indicator Lamp
K145 Front Passenger Airbag -Disabled- Indicator Lamp

N95 Driver Airbag Igniter
N131 Front Passenger Airbag Igniter 1
N132 Front Passenger Airbag Igniter 2
N153 Driver Seat Belt Tensioner Igniter 1
N154 Front Passenger Seat Belt Tensioner Igniter 1
N196 Driver Side Rear Seat Belt Tensioner Igniter
N197 Passenger Side Rear Seat Belt Tensioner Igniter
N199 Driver Thorax Airbag Igniter
N200 Front Passenger Thorax Airbag Igniter
N201 Driver Side Rear Thorax Airbag Igniter
N202 Passenger Side Rear Thorax Airbag Igniter
N251 Driver Head Curtain Airbag Igniter
N252 Front Passenger Head Curtain Airbag Igniter
N253 Battery Interrupt Igniter
N295 Driver Knee Airbag Igniter
N296 Front Passenger Knee Airbag Igniter
N297 Driver Seat Belt Tensioner Igniter 2
N298 Front Passenger Seat Belt Tensioner Igniter 2
N490 Driver Airbag Release Valve Igniter
N491 Front Passenger Airbag Release Valve Igniter
N563 High-Voltage Battery Interrupt Igniter
N751 Battery Interrupt Igniter, 48 Volt

T16 Data Link Connector

Wiring colors:

Diagnostics CAN
FlexRay
Input signal
Instrument panel insert CAN
LIN bus
Output signal
Sub-bus system
Convenience CAN 2

Driver assist systems

Introduction

This topic begins with short descriptions of the five most important innovations in the 2019 A6. All of these innovations made their début in the 2019 Audi A8.

The innovations concern new hardware which continues to pave the way for autonomous driving, a new and innovative operating concept, and new driver assist systems.

Further information on all the new features can be found on the following pages and more detailed information is available in eSelf-Study Program 990393, The 2019 A8 Driver Assistance System.

Top driver assist system innovations in the Audi A6

Driver Assistance Systems Control Module J1121

J1121 is the first step towards reducing the number of control modules for driver assist systems. With an eye on the major vision of autonomous driving, Audi is gradually moving away from the decentralized approach of individual control modules to one with a powerful central computer. There are four versions of control module J1121. The version installed depends on the assist systems in the vehicle.

Laser Distance Regulation Control Module J1122

The 2019 A6 does not require two long range radar sensors to implement the longitudinal regulation functions of the adaptive cruise assist system. They are replaced with a combination of a radar sensor and a laser scanner. The laser scanner is installed at the front of the vehicle. It has a scanning angle of approximately 145 degrees and can detect objects up to 87 yd (80 m) away. A significant strength of the laser scanner is that its measurement precision in not dependent on how far away an object is.

Profile master for driver assist systems

The profile master is a new operating concept that specifies the activation conditions for the different driver assist systems. A total of eight driver assist systems participate in the profile master system. The customer can choose between three profiles: maximum, individual and basic. The maximum setting switches all participating systems on. With the individual setting, the customer decides which systems to activate and with basic, a maximum of two permanently specified systems are switched on.

Intersection assist

The intersection assist helps the driver to avoid collisions with road users crossing the vehicle's path. The intersection assist works between speeds of 0 - 19 mph (30 km/h). However, a brake application is only made at speeds of up to 6 mph (10 km/h). The intersection assist is very similar to the rear cross-traffic assist. The main difference is that the intersection assist performs its task in front of and not behind the vehicle.

Lane departure warning and adaptive cruise assist

The two "new" assist systems in the Audi A6 ("lane departure warning" and "adaptive cruise assist") have been made from the existing Audi adaptive cruise control, Audi active lane assist and traffic jam assist systems. The lane departure warning warns the driver if there is a risk of inadvertently leaving the current lane. However, the adaptive cruise assist offers the customer combined longitudinal and lateral guidance for the vehicle at speeds between 0 - 155 mph (250 km/h).

Driver Assistance Systems Control Module J1121

Introduction

Driver Assistance Systems Control Module J1121 will be standard equipment for 2019 Audi A6 models in the North American Region. This is because Audi pre sense front, which requires J1121 for its functions, has been specified as standard equipment in these markets.

With the introduction of J1121, Driver Assistance Systems Front Camera R242 is no longer the master module for various driver assist systems. In the 2019 A6, the front camera still captures the area in front of the vehicle. However, images from the camera are processed in J1121. J1121 is now the master module for all driver assist systems for which calculations were previously performed by R242.

These include the following driver assist systems:

- High beam assist.
- Camera-based traffic sign recognition.
- Lateral vehicle guidance (lane departure warning and lane guidance by the adaptive cruise assist).
- Emergency assist.

J1121 remains the master control unit for the following driver assist systems:

- Surround view cameras (there is no longer a separate control module for Peripheral Camera Control Module J928.).
- Intersection assist (introduced in the Audi A8).

Versions of J1121

There are four versions of control module J1121: A0, A, B and C. The version installed in the vehicle depends on the vehicle configuration.

Control module version A0/A/B *670_118*

Control module version C *670_119*

J1121 in the 2019 A6 has the same part numbers as J1121 in the 2019 A8.

4N0.907.107. The control module versions can only be differentiated by the index letters following the part number.

Profile master for driver assist systems

A new operating concept for switching the different driver assist systems on and off was introduced for the first time in the Audi A8 : the profile master for driver assist systems.

The aim when the concept was under development was not to increase the number of controls, but to reduce it. This is intended to keep the operation of the various driver assist systems simple for the customer, despite the increasing number of systems. The profile master is now being introduced in the Audi A6 .

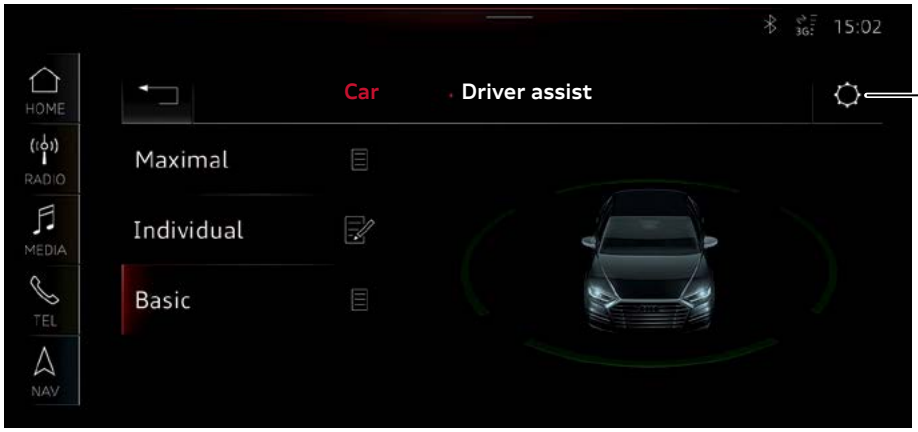
Some of the driver assist systems offered in the Audi A6 can be switched on and off in the profile master for driver assist systems. Other driver assist systems which the driver switches on and off specifically while the vehicle is moving continue to use the classic controls. These include, for example, the parking aid, the park assist and the adaptive cruise assist.

Overview of all driver assist systems participating in the profile master system

- Lane change warning
- Emergency assist
- Rest recommendation
- Exit warning system
- Night vision assist
- Distance warning
- Intersection assist
- Audi pre sense

The three profiles for the profile master for driver assist systems

- Maximum:
  All systems in the vehicle participating in the profile master system are switched on.
- Individual:
  The customer can specify which individual driver assist systems are switched on.
- Basic:
  Only two systems are switched on: Audi pre sense and the emergency assist. If neither system is installed, the “Basic” profile is replaced with the “All off” profile.



This sprocket symbol allows all the driver assist systems installed in the vehicle to be configured. This does not only apply to the systems participating in the profile master system.

670_120

Viewing the profile master for driver assist systems

The customer can view the profile master for driver assist systems in two different ways:

- By selecting the basic function “Car” and then “Driver assist systems” after pressing the home button.
- By pressing the profile master button, which is located in a row of buttons in the center console.

The profile master disappears from the display again after five seconds if the second method is used and if no touch input was detected on the upper touch display in that time.

670_121

Profile master button

Lane departure warning

Description of function

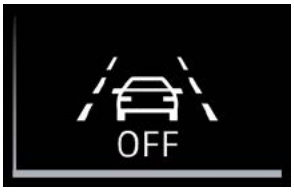
The lane departure warning on the Audi A6 is an independent system. This function was previously known as Audi active lane assist with the steering input set to “late”.

The lane departure warning warns the driver if the vehicle is at risk of leaving its current lane without switching on the corresponding turn signal. If the turn signal is not activated, the system assumes that the driver does not intend to leave the lane.

The lane departure warning can be given in three different ways:

- By steering input from the system towards the middle of the lane.
- By a steering wheel vibration (this warning can be switched off on the MMI).
- By coloring the lane demarcation line red in the function displays.

The lane departure warning is switched on and off via a virtual button on the lower touch display. If the lane departure warning is switched off, this can be seen via a red bar above the function’s symbol. If the lane departure warning is switched off, this only applies for one Terminal 15 cycle. It is active again the next time the ignition is switched on, regardless of whether it was on or off when the ignition was switched off.



Lane departure warning switched on

670_122

Lane departure warning switched off

670_123

Lane departure warning - optical warning

In the two images below, the optical warning “vehicle is at risk of leaving the lane towards the right” is shown.

The image below on the left shows the warning as it can be seen in the driver assist view of the on-board computer; the image on the right shows how it appears in the speedometer.

670_124

670_125

Master control module

The master control module for the lane departure warning is Driver Assistance Systems Control Module J1121. Version A0 is sufficient for this function.

Note

The steering assist button on the end of the turn signal lever is not relevant to the lane departure warning. It is only used to activate and deactivate the lane guidance system of the Adaptive cruise assist.

Adaptive cruise assist

Description of function

The adaptive cruise assist offers combined longitudinal and lateral guidance at speeds between 0 - 156 mph (0 - 250 km/h). Longitudinal guidance refers to accelerating and braking and lateral guidance refers to steering the vehicle. Because the longitudinal and lateral guidance has been merged with the adaptive cruise assist, the driver assist systems “Audi adaptive cruise control (ACC)” and “Audi active lane assist (AALA)” can no longer be ordered for the Audi A6.

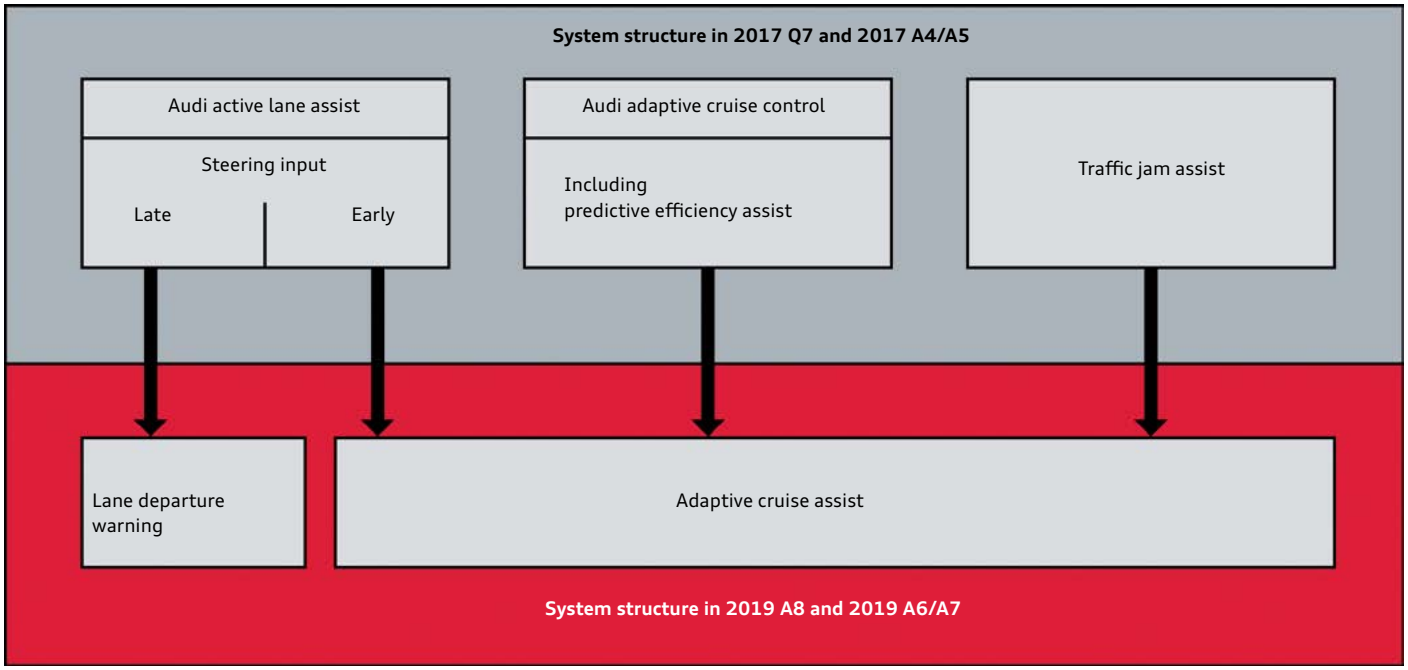
The section of the Audi active lane assist with “early” steering input, the “lane guidance”, has been integrated into the adaptive cruise assist. The section with “late” steering input has become an independent system with the new designation “lane departure warning”.

The lane guidance can be switched off on the adaptive cruise assist so that only longitudinal guidance remains active. If lane guidance is switched off, the vehicle behaves as it would previously have done when driving with adaptive cruise control. However, it is not possible to deactivate longitudinal guidance on the adaptive cruise assist when lane guidance is active at the same time.

Restructuring of the longitudinal and side regulating systems

Audi has fundamentally restructured the functions of the Audi adaptive cruise control and the Audi active lane assist for the introduction of the new Audi C and D segment models. This has created the lane departure warning and the adaptive cruise assist.

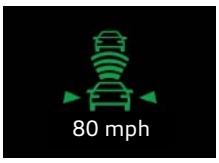
The restructuring is shown by the diagram below. It is a comparison of the systems in the 2017 Q7 and 2017 A4/A5 with those in the 2019 A8 and A6.



670_126

Displays and operation

There have been changes to the function symbols and displays for the vehicle side guidance systems. If lane guidance is active in the adaptive cruise assist, this is shown by green triangles on the left and right of the vehicle.



670_127

If two white triangles appear, lane guidance is switched on but not active. If no triangles are visible, lane guidance is switched off.

670_128

The adaptive cruise assist is activated via the operating lever previously used for ACC. This operating lever can be used to set the desired speed and distance, as with ACC.

670_129

ACC operating lever

The steering assist button on the end of the turn signal lever is only used to switch lane guidance on and off. The lane departure warning has received its own on/off button. This is located in the virtual row of buttons on the lower touch display.

670_130

Turn signal lever with steering assist button.

Hardware and sensors

Both a long range radar sensor and a laser scanner are installed on the Audi A6 to implement the longitudinal regulation functions of the adaptive cruise assist.

Combining the strengths of two types of sensor means that the longitudinal regulation functions perform better than they would if two sensors of the same type were used.

670_131

Long range radar sensor

670_132

Laser scanner

Master control module

The master control module assigned to the entire adaptive cruise assist function is Control Module for Adaptive Cruise Control J428. However, the adaptive cruise assists basic functions (longitudinal and side regulating function) are implemented in different control modules.

The master for longitudinal regulation functions is J428 and the master for side regulation functions is Driver Assistance Systems Control Module J1121.

Laser Distance Regulation Control Module J1122

Laser Distance Regulation Control Module J1122 is located behind the grille on the right side of the Audi rings. It has two washer jets on each side for cleaning.

Its servicing (including adjustment) is identical to the A8/ A7 models.

670_134

Laser Distance Regulation Control ModuleJ1122

Control Module for Adaptive Cruise Control J428

Only one radar unit (J428) is installed on the 2019 A6. The laser scanner takes over the functions previously provided by the second radar unit. The fourth-generation system used in the Audi A6 has the same layout and works in the same way as the system in the Audi A8 and A7; it is also serviced in the same manner.

The radar unit is installed on the left-side of the vehicle in the front bumper next to the Audi rings. For design reasons, the sensor unit has been installed with a trim cover which is optically similar to the radome of the laser scanner.

J428 also communicates via FlexRay channel B in the Audi A6.

670_133

Control Module for Adaptive Cruise Control J428

Reference

For further information on the radar sensor and the laser scanner, please refer to eSelf-Study Program 990393, The 2019 Audi A8 Driver Assistance Systems.

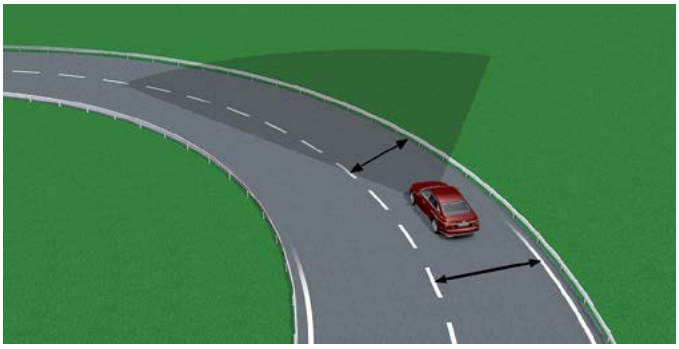
New lane guidance features

With the introduction of the adaptive cruise assist, the lane guidance is, for the first time, available to customers right up until the vehicle is stationary. This of course only applies if all the requirements for the lane guidance have been met.

Because of the lowering of the activation speed to 0 mph (0 km/h), Audi found further objects/structures which could also be used to facilitate a lane guidance system. The Audi active lane assist only allowed lane guidance on the basis of road markings.

The following objects/structures can be used for lane guidance at low speeds:

- An Armco barrier following the course of the road.
- A transition from the road to the area surrounding the road which offers sufficient contrast.
- A curb following the course of the road.
- Vehicle(s) ahead.



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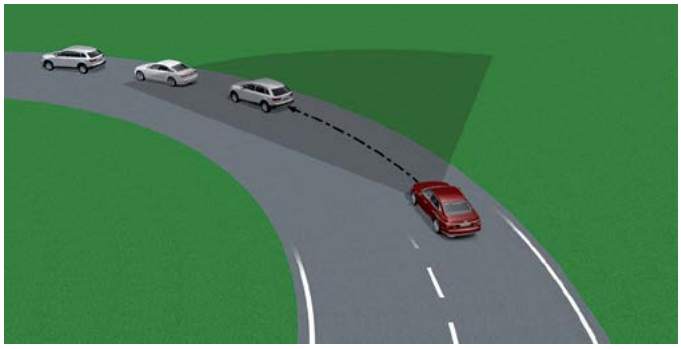


670_137

The system still assumes that the road has two lanes if its width exceeds a defined minimum. If this is assumed, lane guidance can be implemented on the basis of the detected right lane marking and a virtual center line.

Calculating the progression of the virtual center line is the job of Driver Assistance Systems Control Module J1121. As an alternative to the right lane marking, lane guidance can also, at lower speeds, be performed using one of the structures specified above.

670_138

New predictive efficiency assist features

The predictive efficiency assist was offered for the first time in 2017 in the Audi Q7. In the Audi Q7, it is a subordinate function to the Audi adaptive cruise control (ACC). It gives the option for the vehicle's longitudinal guidance not only to regulate to a speed set by the driver, but also to adapt that speed automatically to the speed limits detected by the camera-based traffic sign recognition system. In addition, it is possible to adjust the vehicle's speed for an upcoming corner as well as to reduce the vehicle's speed before a roundabout which will then be driven through. The focus of the function is a predictive driving style focused on fuel saving via longitudinal regulation.

On the Audi A6 , the predictive efficiency assist can also adjust the speed when the vehicle is approaching an intersection with stop signs and all other requirements for this have been met. In this case, the system automatically reduces the vehicle's speed to 15 km/h. Continuing to brake the vehicle remains the responsibility of the driver. As with the adaptive cruise assist, the entire predictive efficiency assist function is a driver assist system. The driver alone remains responsible for controlling the vehicle at all times.

Camera-based traffic sign recognition

Description of function

The third generation of the camera based traffic sign recognition is available for the 2019 A6. It now recognizes the signs on the right.

For further information, please refer to eSelf-study Program 990393, The 2019 Audi A8 Driver Assistance Systems.

Master control module

The master control module for the camera-based traffic sign recognition is Driver Assistance Systems Control Module J1121. At least control module version A is required for this system.

USA	
	Speed limit within the confines of road construction.
	Recommended speed limit on freeway entry and exit ramps.
	It is generally permissible to turn right at a red traffic light. If it is not permitted it is indicated to driver by a corresponding sign.

Emergency assist

Function

Emergency assist has been designed for situations in which the driver has incurred an medical emergency and, for this reason, is no longer able to operate the vehicle.

The task of emergency assist in this situation is to take over longitudinal and lateral control of the vehicle and bring it to a controlled stop in its own lane.

If the vehicle is traveling at too high a speed as it approaches traffic ahead, braking power is increased to slow the vehicle down. In this way, the system attempts to avoid an impending rear-end collision or to reduce the severity of such a collision.

When emergency assist is active, a series of in-car measures are taken in order to protect the driver and minimize the risk of a collision.

During the braking operation the following measures are taken:

- The hazard warning flashers are activated to warn other road users.
- The seat belt is fully tensioned during the final standstill braking operation.
- The windows and the panoramic sunroof close automatically

After the vehicle has come to a standstill, the following measures are taken:

- Selector position "P" is engaged.
- The vehicle doors are unlocked.
- The interior light is switched on.
- An emergency call is sent.

If emergency assist fails to detect the driver's hands on the steering wheel for a defined period of time, it assumes than an acute emergency has occurred. A special software algorithm, the "hands-off detector", has been developed in order to detect this. This is a known feature of Audi active lane assist.

To facilitate hand-off detection, the signal from the steering torque sensor is analyzed in an ongoing basis. This characteristic tells the software whether or not the driver's hands are on the steering wheel. Use of the accelerator and brake pedal is a further criterion for driver inactivity.

Inducing the driver to take control of the vehicle

A second, key function of emergency assist is to alert an inactive driver to take control of the vehicle by taking various measures.

For this purpose, the system takes the following action before and during the braking maneuver:

- Display of text messages in the instrument cluster.
- Acoustic signal output.
- Initiation of brake warnings.
- Initiation of a strong emergency brake warning.
- Brief tightening of the driver's seat belt.
- Muting of infotainment system.

After all, it is also possible that the driver is distracted and, for this reason, is not concentrating on driving although able to drive.

If the driver is ready to again take control of driving the vehicle, the driver can indicate this through any of the following measures:

- The driver again actively takes over steering the vehicle.
  -or-
- The driver applies the footbrake.
  -or-
- The driver presses down on the accelerator.

Emergency assist master control module

The master control module for emergency assist is Driver Assistance Systems Control Module J1121. The basic version A0 is sufficient for emergency assist.

Connectivity to other driver assistance systems is not a mandatory requirement for emergency assist in the Audi A6.

If adaptive cruise assist is not installed on the vehicle, longitudinal control of the vehicle is implemented using Driver Assistance Systems Front Camera R242.

The longitudinal control function is required by emergency assist in order to increase braking power. The idea is, when possible, to avoid a collision with slower vehicles when traveling at a high rate of speed. In this case, R242 normally replaces the front radar sensor required for longitudinal control (J428 Control Module for Adaptive Cruise Control)and Laser Distance Regulation Control Module J1122.

Intersection assist

Description of function

Intersection assist helps the driver to avoid collisions with road users crossing the vehicle's path. These road users can be normal vehicles, buses or lorries, but also cyclists or motorbike riders.

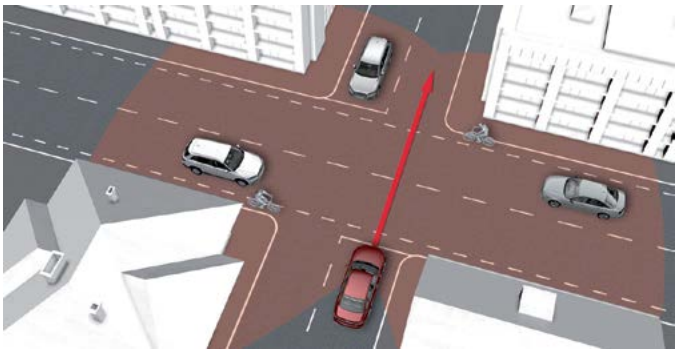
If a cyclist or motorbike rider is detected by the system, the same warnings are given as with a vehicle.

The intersection assist, for example, provides assistance in the following traffic situation:

The red vehicle (equipped with the intersection assist) is standing at an intersection and wishes to drive straight across it. To do so, the driver needs to pay attention to the traffic coming from both the left and right on the main road. On both sides, the crossing traffic consists of a car and a bicycle. If the driver of the red vehicle were now to move off, the intersection assist would activate and would, depending on the current estimation of the danger level, warn the driver or apply the brakes.

Intersection assist operates between speeds of 0 - 19 mph (0 - 30 km/h). However, a brake application is only made at speeds of maximum 6 mph (10 km/h).

The intersection assist is very similar to the rear cross-traffic assist, which was offered for the first time in the 2017 Q7. It corresponds to a front cross-traffic assist, but Audi has decided to call it the intersection assist.



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Sensors

Intersection assist operates between speeds of 0 - 19 mph (0 - 30 km/h). However, a brake application is only made at speeds of maximum 6 mph (10 km/h).

In service, they are referred to as:

- Control Module for Left Front Object Detection Radar Sensor J1088.

  -and-

- Control Module for Right Front Object Detection Radar Sensor J1089.

Master control module

The master control module for the intersection assist is Driver Assistance Systems Control Module J1121. At least control module version B is required if the intersection assist is installed in the vehicle.

Surround view cameras

The surround view cameras are now in their third generation; this generation.

The software for the 3rd generation surround view camera function is now integrated in the Driver Assistance Systems Control Module J1121 along with the software for other driver assist systems. The surround view cameras require version C of J1121.

All four surround view cameras transmit their images to J1121 via screened LVDS wires. J1121 then generates the vehicle view desired by the customer from the camera images. The vehicle view is transmitted to Information Electronics Control Module 1 J794 via two screened LVDS wiring pairs as a Full HD image. The image is shown on the upper touch display.

If the vehicle has both the parking system plus and the surround view cameras as optional equipment, 6th generation ultrasonic sensors are used to meet the requirements of the surround view camera system. The data from these ultrasonic sensors can only be read by J1121 (version C). In this case, J1121 is the master control module for the surround view cameras and also the parking system plus.

If the vehicle has the parking system plus but not the surround view cameras as optional equipment, 5th generation ultrasonic sensors are used. The data from these can only be read by Vehicle Electrical System Control Module J519. In this case, Vehicle Electrical System Control Module J519 is the master control unit for the parking system plus. The customer can also order the park assist in this configuration. On the Audi A6, the master control unit for the park assist is always the Vehicle Electrical System Control Module J519.

Assist systems for parking			**Ultrasonic sensors**		**Master control module**
Park assist	Back-up camera	Surround view cameras	5th generation	6th generation	Master control module for systems
-	-	-	X	-	J519
X	-	-	X	-	J519
-	X	-	X	-	J519
X	X	-	X	-	J519
-	-	X	-	X	J1121

Possible combinations of different assist systems for parking at the launch of the Audi A6.

The installation positions of the surround view camera in the exterior mirrors have been changed to extend their range. They are located further outwards in the exterior mirrors and no longer “look” vertically downwards, but are tilted outwards. This allows the side detection area to be enlarged, which allows the area around the vehicle to be detected better.

With the third generation of the surround view cameras, two more two dimensional vehicle views are available:

› Simultaneous view of the front left and front right wheels.

-and-

› Simultaneous view of the rear left and rear right wheels.

A three dimensional view of the vehicle is available to customers for the first time with the third generation surround view cameras.

The viewing angle of the vehicle is not specified by the system, but can be freely chosen by the customer via the touchscreen. It is still possible to choose between three different preset viewing angles via three virtual buttons in the row of buttons.

Infotainment and Audi connect

Introduction and overview of versions

The Audi A6 features the MIB2+ version of the modular infotainment matrix infotainment system. Customers can choose between three MMI versions:

MMI radio plus, MMI navigation and MMI navigation plus.

All three versions are based on the 2+ High version of the modular infotainment matrix; MIB2+ High for short.

The MMI navigation and MMI navigation plus versions may be equipped with Audi connect, depending on the country. However, they differ regarding the services available.

The license period is three years after the vehicle's first registration. It can be renewed after this time has elapsed.

Depending on the country, the following Audi connect infotainment services may be available with MMI navigation:

- Navigation data update (4 times per year online or via SD card via myAudi portal).
- Online routing.
- Individual news.
- Online traffic information.
- Twitter.
- Weather.
- Fuel prices.
- Parking information.
- Travel information.
- Destination entry via myAudi app.

MMI navigation plus may, depending on the country, have the following additional Audi connect infotainment services:

- Connected radio (no license period limits, but separate data package required).
- Google Earth.
- Google POI search via speech control.
- 3D city models.
- Messages (text message dictation) and e-mail.
- Traffic sign information.
- Hazard alerts.

If the vehicle is equipped with Audi connect vehicle-related services (IW3), the following services may be available, depending on the country:

- Audi emergency call (license period: 10 years)
- Online roadside assistance (license period: 10 years)
- Audi service request (license period: 10 years)
- Vehicle status report (for example, Mileage, fuel tank level, etc.) (license period: 3 years)
- Remote locking/unlocking (license period: 3 years)
- Parking position (license period: 3 years)

Reference

For further information on MIB2+, please refer to eSelf-Study Program 990293 The 2019 A8 Infotainment and Audi Connect Systems.

MMI navigation (I8V + 7UG)	MMI navigation plus (I8T + 7UG)
	
8.8" touch display with 1280 x 720 pixels	10.1" touch display with 1540 x 720 pixels
8.6" touch display with 1280 x 660 pixels	8.6" touch display with 1280 x 660 pixels
3D navigation system on SSD (7UG)	3D navigation system on SSD (7UG)
7" display in instrument cluster with driver information system (9S7)	Audi virtual cockpit (9S8)
AM/FM radio	AM/FM radio Connected radio (Internet radio)
Satellite radio (Sirius) (QV3)	Satellite radio (Sirius) (QV3)
Audi music interface with 2 USB sockets, 1 SDXC card reader and, depending on country, 1 SIM card reader (UF7)	Audi music interface with 2 USB sockets, 1 SDXC card reader and, depending on country, 1 SIM card reader (UF7)
Audi Sound System 9VD	Bang and Oulfsen 9VS
Bluetooth interface (9ZX)	Bluetooth interface (9ZX)
UMTS/LTE data module (EL3) including Audi connect (IT1/IT3)	UMTS/LTE data module (EL3) including Audi connect (*IT1/*IT3)
Emergency call & Audi connect vehicle-related services (IW3)	Emergency call & Audi connect vehicle-related services (IW3)
Optional equipment	
Single DVD drive (7D5) (Optional)	Single DVD drive (7D5) (Optional)
Audi music interface in rear with 2 USB sockets (UF8)	Audi music interface in rear with 2 USB sockets (UF8)
Audi smartphone interface (IU1)	Audi smartphone interface (IU1)
Audi phone box including wireless charging (9ZE)	Audi phone box including wireless charging (9ZE)
	Audi phone box, light (for wireless charging only) (9ZV)
Audi sound system (9VD)	
	Bang & Olufsen Premium Sound System with 3D sound (9VS) (Standard)
	Bang & Olufsen Advanced Sound System with 3D sound (8RF) (Optional)

Sound

The following sound systems are available for the 2019 A6 depending on the model version:

- Audi sound system (9VD).
- Bang & Olufsen Premium Sound System with 3D sound (9VS).
- Bang & Olufsen Advanced Sound System with 3D sound (8RF).The Bang & Olufsen Premium Sound System (9VS) provides the customer with a 15-channel sound system. It can reach a total power output of 705 W.

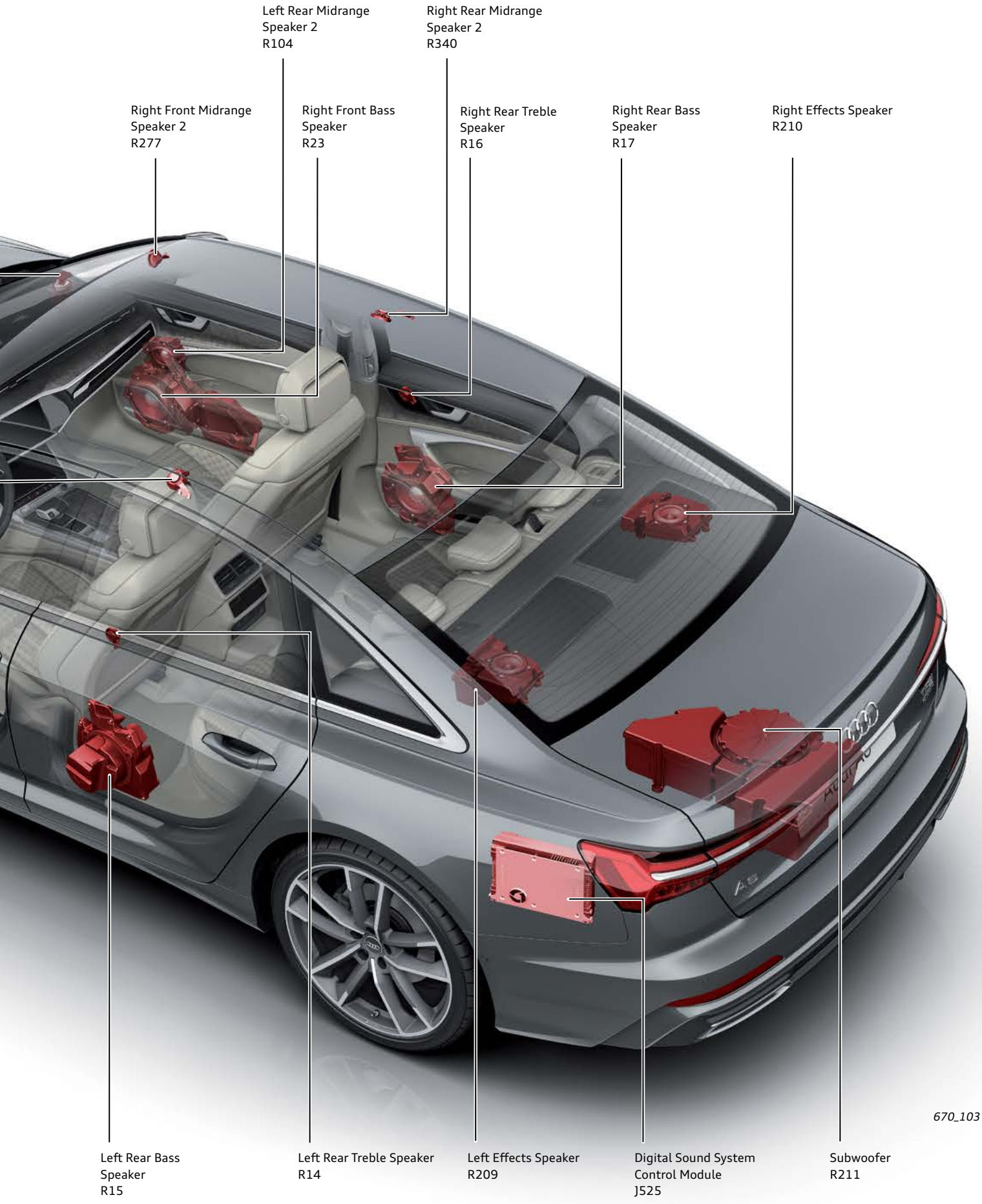
The premium sound system requires two loudspeakers to generate the 3D sound. They are installed in the A-pillars.

Bang & Olufsen Advanced Sound System with 3D sound (8RF)

The best sound quality experience for customers is provided by the Bang & Olufsen Advanced Sound System. This system has 19 channels and reaches a total power output of 1820 W.

The Bang & Olufsen Advanced Sound System requires four loudspeakers to generate the 3D sound. Two of these are in the A-pillars and two are in the headliner in front of the handle.

On the Bang & Olufsen Advanced Sound System, the two treble loudspeakers in the instrument panel are retractable.


Left Rear Midrange Speaker 2 R104
Right Rear Midrange Speaker 2 R340
Right Front Midrange Speaker 2 R277
Right Front Bass Speaker R23
Right Rear Treble Speaker R16
Right Rear Bass Speaker R17
Right Effects Speaker R210
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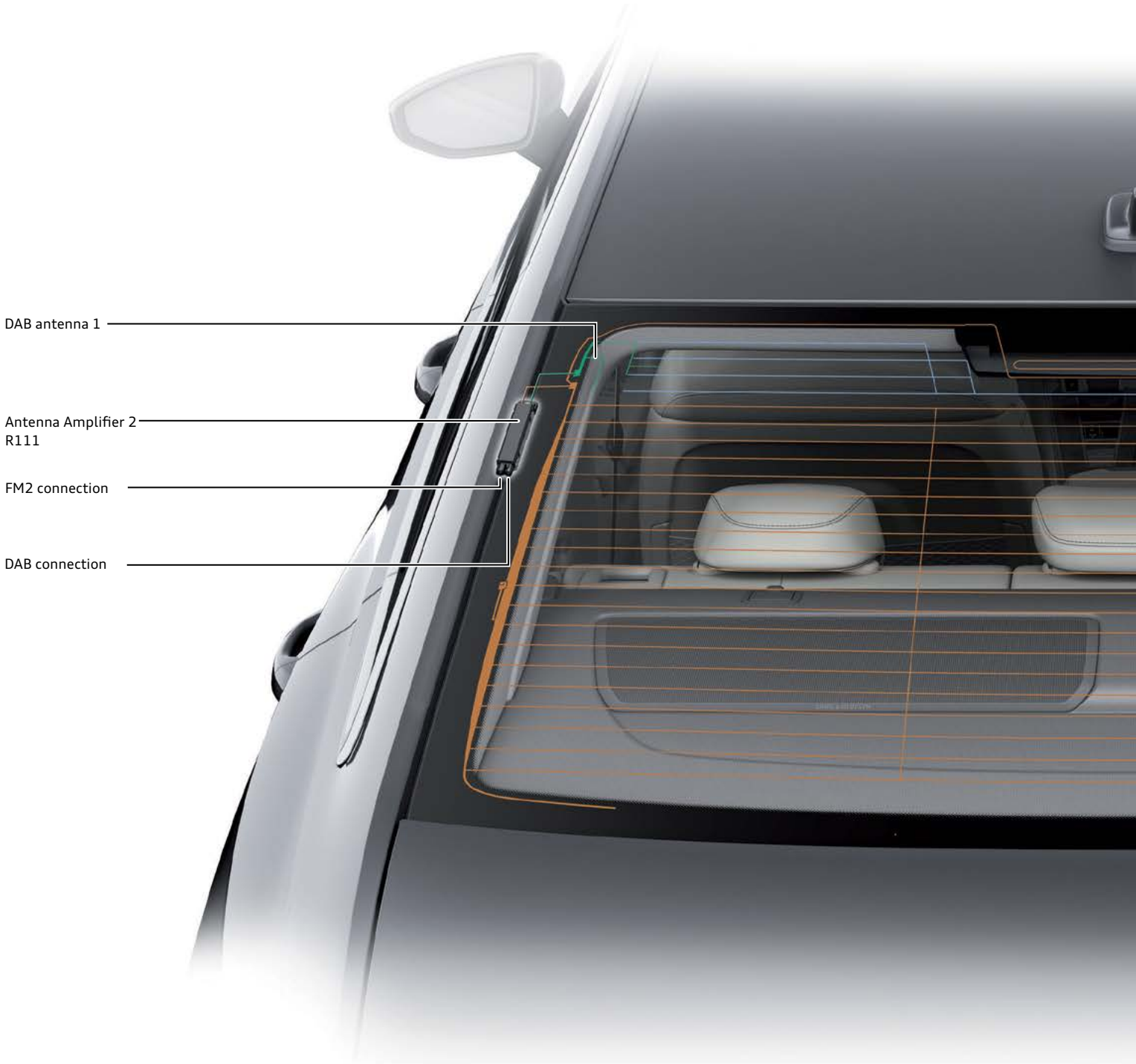
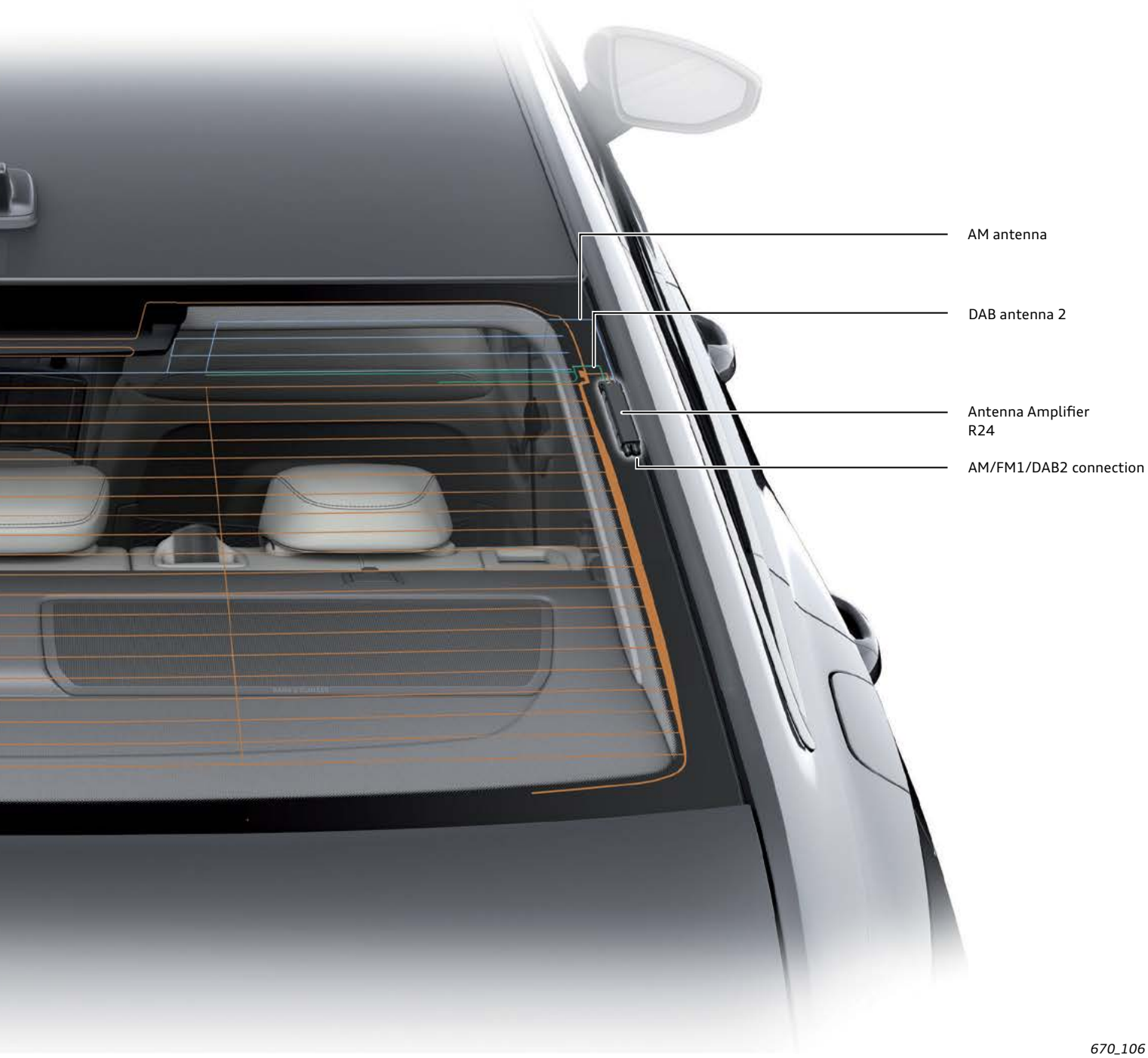
Left Rear Bass Speaker R15
Left Rear Treble Speaker R14
Left Effects Speaker R209
Digital Sound System Control Module J525
Subwoofer R211

Antennas


DAB antenna 1
Antenna Amplifier 2 R111
FM2 connection
DAB connection



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Reference
For further information on the mobile phone antenna in the Audi A6, please refer to eSelf-Study Program 990593 The 2019 Audi A7 Introduction.

Inspection and maintenance

	3.0 ltr. TFSI engine
Engine oil change	TBD
Inspection	TBD
Pollen filter change interval	TBD
Air filter change interval	TBD
Brake fluid change interval	TBD
Spark plug change interval	TBD
Fuel filter change interval	–
Valve gear	Chain (maintenance-free)
ATF change interval	TBD
Read out ash deposit mass in diesel particulate filter (in km)	–
Air ionization system Vials in function unit for Fragrance Diffuser System Functional Unit GX43	TBD

Knowledge assessment

An On-Line Knowledge Assessment (exam) is Available for this eSelf-Study Program.

The Knowledge Assessment is required for Certification credit.

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› Click on the "App Links"

› Click on the "Academy site CRC"

Click on the Course Catalog Search and select "990693 - The 2019 Audi A6 Introduction"

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Thank you for reading this eSelf-Study Program and taking the assessment.

990693

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