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The new Audi S4 and S4 Avant: dynamic understatement

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The equipment and data specified in this document refer to the model range offered in Germany. Subject to change without notice; errors and omissions excepted.

Summary

At the peak of the competitive field – the new Audi S4 and S4 Avant

From 0 to 100 km/h (*62.1 mph*) in 4.7 seconds with a fuel consumption figure of 7.3 liters of fuel per 100 km (*32.2 US mpg*) – the new Audi S4* and the new Audi S4 Avant* are advancing to the peak of the competitive field with strong performance and exemplary efficiency. Its newly developed turbo V6 engine outputs 260 kW (354 hp). New solutions in networking and assistance systems round out its features. Audi is transferring many technologies from the full-size class into the mid-size class.

Lightweight and strong: the 3.0 TFSI

The strong heart of the two new S models from Audi is a newly conceptualized 3.0 TFSI engine. The direct gasoline injection engine with turbocharging has an output of 260 kW (354 hp) and produces a hefty torque of 500 Nm (*368.8 lb-ft*) from 1,370 to 4,500 rpm. In terms of power and torque, it surpasses the previous model while achieving considerably lower figures in weight and fuel consumption.

The turbo V6 engine accelerates the Audi S4* from 0 to 100 km/h (*62.1 mph*) in 4.7 seconds, and on up to an electronically governed top speed of 250 km/h (*155.3 mph*). The standard sprint takes two tenths of a second longer in the S4 Avant*. In the NEDC cycle, the S4 Sedan only consumes 7.3 liters of fuel per 100 km (*32.2 US mpg*), which equates to less than 166 grams CO₂ per kilometer (*267.2 g/mi*). The Audi S4 Avant has a fuel consumption figure of 7.5 liters per 100 km (*31.4 US mpg*), which equates to 171 grams CO₂ per kilometer (*275.2 g/mi*).

Sporty and stable: handling

In the new S4 models*, a fast and smoothly shifting eight-speed tiptronic handles power transfer. Their lower gears have short, sporty ratios, while the upper gears are long to reduce revs and fuel consumption. When the driver releases the accelerator pedal at a speed between 55 and 160 km/h (*34.2 and 99.4 mph*) the automatic transmission switches over to an efficient freewheeling mode.

The quattro permanent all-wheel drive makes a large contribution to the sporty handling of the S4 and S4 Avant cars. In normal driving, it distributes engine forces with a slight emphasis of the rear wheels – if necessary the majority of forces can be directed to the axle with better traction.

Torque vectoring optimizes handling and stability in fast cornering with minimal brake interventions. The optional sport differential actively distributes torque between the rear wheels.

The five-link front and rear suspensions enable significant comfort gains with emphatically sporty response. An alternative to electromechanical power steering is dynamic steering which varies its steering gear ratio according to the driving speed. 18-inch wheels with size 245/40 tires are standard. Audi Sport also offers 19-inch wheels. The front brakes have internally-vented discs that are 350 mm (*13.8 in*) in diameter. They are gripped by black (or optionally red) painted six-piston fixed calipers with S lettering.

The standard S sport chassis lowers the body's ride height by 23 mm (*0.9 in*) compared to the A4 base model. The same height applies to the optional chassis with damper control. The Audi drive select handling system integrates what is referred to as CDC (continuous damping control) dampers along with the engine, steering, tiptronic and optional sport differential. This lets the driver control the characteristics of the engine and chassis over several modes.

Comfortable and spacious: the interior

The new Audi S4* and S4 Avant* seats five people comfortably. The horizontal lines of the instrument panel with its wide band of air vents convey an impression of generous width. The S4 Sedan offers 480 liters (*17.0 cu ft*) of luggage volume, and the S4 Avant offers from 505 to 1,510 liters (*17.8 - 53.3 cu ft*) depending on the positions of the rear seat backrests.

The optional S sport seats have integrated head restraints, adjustable lateral supports and a pneumatic massage function. The standard seat upholstery is fine Nappa leather in the colors black, rotor gray or magma red with diamond pattern, contrasting stitching and an S badge. The color black dominates in the interior, which is set off by contrasting inlays made of matt brushed aluminum.

A new top highlight is the optional Audi virtual cockpit that displays all key information digitally and in detailed graphics on its 12.3-inch screen. Views available to the driver include a sport mode centered around the tachometer.

In the new MMI operating system, the flat menu structure is based on that of today's smartphones, including intelligent free-text search. It suggests various search results after just a few letters have been entered. In addition, user operation is possible from the multifunction steering wheel or by natural language voice control.

State-of-the-art: infotainment and Audi connect

Infotainment in the new S models of the A4 model line* is state-of-the-art. MMI navigation plus with MMI touch and an 8.3-inch monitor top the infotainment range. MMI touch has a touchpad for zooming and scrolling and for entering characters. The system integrates the Audi connect hardware component, which connects the new S4 models to the internet via LTE. Passengers can use their mobile devices to surf the web, text or mail thanks to the integrated Wi-Fi hotspot. The driver meanwhile has access to the multifaceted online services offered by Audi connect. It is easy to control functions from a smartphone via the MMI connect app. The customer can lock or unlock the car doors, operate the optional auxiliary heater or find the parking location of the car in this way. The new Calendar service transfers the smartphone's calendar into the car.

The Audi phone box, another optional feature, connects smartphones to the on-board antenna by near-field coupling and simultaneously charges them inductively according to the Qi standard. The Audi tablet serves as a flexible Rear Seat Entertainment device. For very discerning hi-fi fans, the Bang & Olufsen sound system with its new 3D sound is available. The Audi smartphone interface brings Apple Car Play and Android Auto into the car. If the customer connects an iOS or Android smartphone to the USB port (iOS from 7.1, Android from 5.0 Lollipop), the smartphone's contents such as navigation, phone, music and select third party apps are offered in a separate MMI menu. They can be accessed conveniently by MMI or voice control.

Audi has designed both applications especially for use in the car. The core content here is online music with access to a large range of music from Google Play Music and iTunes. There are also navigation and notification functions as well as schedule reminders. In the future, the range of functions will be continually extended via third party apps like Pandora, Spotify and WhatsApp.

Leading role: driver assistance systems

The new Audi S4* and S4 Avant* are right at the forefront in their class with a broad array of driver assistance systems. The systems come from the full-size class; their intelligent interplay represents the next step toward piloted driving.

The predictive efficiency assistant helps the driver save fuel. Adaptive cruise control maintains a specified distance to the vehicle ahead. The driver can set this distance and the control dynamics over several stages. Its Stop&Go function brakes the car to a full stop and lets it start off again automatically at the driver's request. Over a speed range from 0 to 65 km/h (*40.4 mph*), traffic jam assist – another function of ACC – can also take over steering on well-built roads, as long as the traffic is moving slowly. The rear cross traffic assist, exit warning, turn assist, obstacle avoidance assist and Audi pre sense systems further enhance safety.

Sporty understatement: exterior design

The appearance of the new S4 models* is sporty but not ostentatious. The bumper, air inlets and side sills feature distinctive contours. Many of the add-on parts are painted in graduated tones of matt gray. Aluminum inlays accentuate its design. The exterior mirror housings shine in aluminum look. The rear bumper integrates a black honeycomb grille, aluminum diffuser trim and four tailpipes.

An intelligent combination of materials makes the bodies very torsionally stiff, safe and lightweight. The new S4 Sedan with standard quattro drive weighs just 1,630 kg (*3,593.5 lb*), while the new S4 Avant weighs 1,675 kg (*3,692.7 lb*) – 75 kg (*165.3 lb*) than the predecessor models.

Extensive: the equipment

The new S4 models* from Audi arrive on the European market in second half of the year 2016. Their extensive standard equipment includes LED headlights, LED tail lights with dynamic turn signal, 18-inch wheels with S-specific design, front sport seats upholstered in an Alcantara/leather combination and a leather-trimmed 3-spoke sport steering wheel with multifunction plus.

The S4 Avant adds an electric drive for the tailgate and a luggage compartment cover. Audi can deliver optional high-tech features such as sensor control for the luggage compartment, a head-up display and Audi Matrix LED headlights. The latter control the headlight beam so precisely that oncoming traffic does not experience any glare. Another new feature is reduced headlight glare on traffic signs. When the light falls on a very reflective traffic sign, it is dimmed by around one-third in that area.

The price for the S4 Sedan is 59,300 euros. The S4 Avant is available starting at 61,150 euros.

At a glance

The new Audi S4 and the new Audi S4 Avant

Engine

- Newly developed 3.0 TFSI with turbocharging and direct injection, 260 kW (354 hp) of power, 500 Nm (*368.8 lb-ft*) of torque at a low 1,370 revolutions per minute
- Power increased compared to previous model: 15 kW (21 hp) and 60 Nm (*44.3 lb-ft*) more torque
- Sports car performance: from 0 to 100 km/h (*62.1 mph*) in 4.7 seconds (Sedan), 4.9 seconds (Avant)
- Top efficiency: Audi S4 consumes just 7.3 liters of fuel per 100 kilometer (*32.2 US mpg*), and emits 166 grams CO₂ per km (*267.2 g/mi*) (Avant: 7.5 l/100 km (*31.4 US mpg*) and 171 g/km (*275.2 g/mi*))

Drivetrain

- Eight-speed tiptronic with fuel-saving freewheeling function is standard
- quattro permanent all-wheel drive with self-locking center differential, torque vectoring, optional sport differential

Chassis

- Newly conceptualized, lightweight five-link suspensions at front and rear axles
- Wheel sizes: 18 to 19 inch
- Aluminum fixed caliper brakes with 350 mm (*13.8 in*) brake disc diameter in front
- New electromechanical power steering, dynamic steering as option
- Audi drive select is standard, optional chassis with damper control
- 23 mm (*0.9 in*) lower ride height than A4 with standard or optional chassis

Interior and controls

- Spacious interior with large areas of aluminum trim and continuous band of air vents, spacious feeling
- S sport seats in fine Nappa leather with integrated head restraints, adjustable lateral supports and lumbar support with pneumatic massage function
- Select colors and materials as well as leather and Alcantara, top-quality craftsmanship
- Audi S4 Avant has 505 to 1,510 liters (*17.8 - 53.3 cu ft*) of luggage space, a power trunk lid and power luggage compartment cover.

- Audi virtual cockpit with 12.3-inch monitor and S-specific mode and head-up display available as options
- Fundamentally redesigned MMI operating concept including free-text search, can also be operated from multifunction steering wheel or by natural language voice control
- Multi-color interior lighting (30 colors), illuminated door sill guard, side contour lights, capacitive switches for reading lights and illuminated cup holder

Infotainment and Audi connect

- Modular infotainment platform, second generation (MIB2)
- Optional top infotainment system MMI navigation plus with MMI touch including 8.3-inch monitor and Audi connect, LTE and Wi-Fi hotspot
- Audi connect services including remote functions and status report using MMI connect app via smartphone
- Audi phone box with inductive charging based on the Qi standard
- Audi tablet as flexible Rear Seat Entertainment device
- Bang & Olufsen sound system with 3D sound
- Audi smartphone interface for iOS and Android

Driver assistance systems and integral safety

- adaptive cruise control with Stop&Go including traffic jam assist for slow-moving traffic
- Predictive efficiency assistant evaluates GPS information from local area and thereby contributes to even better fuel economy
- Park assist, rear cross traffic assist, exit warning system, turn assist and obstacle avoidance assist
- New safety systems: Audi pre sense city, basic and rear

Exterior design and body

- S-specific design characteristic: distinctive bumpers, air inlets, side sills and spoiler, diffuser trim and four tailpipes
- LED headlights and dynamic turn signals rear are standard, optional Audi matrix LED headlights with dynamic turn signals front and rear
- Intelligent material mix with hot-formed parts makes the body extremely torsionally stiff, safe and lightweight
- 75 kg (*165.3 lb*) of weight savings in comparison to the previous model

Full version

The new Audi S4 and S4 Avant: at the peak of the model line and the segment

The new Audi S4* and S4 Avant* assume top positions in the new A4 family. And they will be leaders in their class – with a newly developed engine, intelligent lightweight design and a package of innovative technologies from the full-size class, especially in terms of their connectivity and driver assistance systems.

Audi has experienced great success with its sporty S models over a period of twenty years. The formula here is cultivated understatement – a modest sporty look plus superior performance plus the quattro permanent all-wheel drive. The brand with the four rings is continuing this philosophy in the new S4 and S4 Avant. Both models are based on the second generation modular longitudinal platform, and they use high-tech in all areas.

Engine

The turbocharged 3.0 TFSI in the Audi S4* and S4 Avant* is an engine that has been redeveloped from the ground up. It combines sports car performance with a new levels of efficiency and also impresses with high power, ample torque, spontaneous response and a sonorous sound.

From its 2,995 cc of displacement, the V6 TFSI engine with 260 kW (354 hp) produces 15 kW (21 hp) more than the engine in the previous model. It transfers 500 Nm (*516.3 lb-ft*) of torque (60 Nm (*44.3 lb-ft*) more) to the crankshaft at a low 1,370 revolutions per minute. This torque is constant up to 4,500 rpm. The NEDC fuel consumption of the new 3.0 TFSI in the S4 is just 7.3 liters per 100 km (*32.2 US mpg*) – with a CO₂ equivalent of 166 grams per km (*267.2 g/mi*). The S4 Avant has a fuel consumption of 7.5 liters per 100 km (*31.4 US mpg*) and therefore attains a CO₂ figure of 171 grams per km (*275.2 g/mi*). Fuel economy has been improved five percent compared to the previous model.

New combustion method: higher level of efficiency

The key factor in successfully attaining efficiency is the new combustion method that originated in the V6 3.0 TFSI from Audi. It is based on what is known as the B-cycle, which is similar to the process used in the Audi A4 2.0 TFSI with 140 kW (190 hp)* and utilizes the high-pressure injection valves that are arranged centrally in the combustion chambers.

In the V6 TFSI as well, the shortened compression phase of the further developed combustion method enables an engine process with a significantly elevated geometric compression ratio. Efficiency benefits have been achieved in combination with a normal expansion phase that is longer than the compression phase, improving the engine's efficiency.

Normally, this type of modification would result in significantly reduced chamber filling, and the high compression would increase the tendency to engine knock that would significantly reduce the attainable power. However, the Audi valvelift system resolves the conflict between efficiency and power goals. In the part-load region, it enables very short intake valve opening times of 130 crankshaft degrees while simultaneously closing the intake valves early. At higher loads, the inlet valves can be shifted over to a camshaft contour with a longer opening time and larger valve stroke that maximizes engine power.

Turbocharger: separate exhaust gas streams

The turbocharger, which replaces the mechanical supercharger of the previous engine, operates according to the twin scroll principle. The exhaust branches of the two cylinder banks run separately in both the exhaust manifold and turbocharger housing, and they do not merge until just before the turbine wheel. This technology avoids undesirable interactions between the two gas streams, and it makes a large contribution toward early and strong torque build-up.

The turbocharger is placed inside the 90-degree V of the cylinder banks instead of the usual location outside next to the crankcase. Accordingly, the exhaust side is on the inner side of the cylinder heads and the intake side on the outer side. This layout enables compact construction and short gas flow paths with minimal flow losses – as a result, the 3.0 V6 TFSI responds extremely spontaneously and directly.

Less weight: reduced by 14 kg (30.9 lb)

A fundamental redesign of the V6 TFSI has lowered its weight by 14 kg (30.9 lb) to 172 kg (379.2 lb). The crankcase, which is produced from an aluminum alloy in a complex sand-casting process, integrates thin-walled gray cast iron cylinder liners. This reduces friction in interplay with newly developed rings for the aluminum pistons.

Another key efficiency component is thermal management. The crankcase and cylinder head have separate coolant circulation loops. After a cold start, the switchable water pump controls the flow of coolant through the engine to bring the oil up to its operating temperature quickly. The exhaust manifold is integrated in the cylinder head, and coolant is circulated around it, which helps to warm up the engine quickly. When the engine is warm, the system reduces the exhaust gas temperature, which in turn reduces fuel consumption, especially when driving in a sporty style.

Handling

The drivetrain and chassis of the new Audi S4* and S4 Avant* were thoroughly redeveloped – this also applies to the gentle, fast and spontaneously shifting eight-speed tiptronic. The layout of its gear sets and shifting elements results in low drag torques and thereby to a high efficiency level. Its large number of gears makes it possible to operate the engine close to its ideal load point very frequently. Their lower gears have short, sporty ratios, while the upper gears are long to reduce revs and fuel consumption.

The classic automatic transmission is integrated into the engine's thermal management system and is designed for start-stop operation (from 3 km/h (1.9 mph) residual speed). The driver can select the D, S or E mode and can use shift paddles on the steering wheel for manual gear changes. All commands are transmitted to the transmission electrically – by wire. A new engine speed-adaptive vibration absorber makes engine running even smoother at low speeds.

If the driver releases the accelerator pedal between 55 and 160 km/h (34.2 - 99.4 mph), the transmission switches to freewheeling, provided that this enables fuel savings (not in S mode). If the optional predictive efficiency assistant and adaptive cruise control Stop&Go including traffic jam assist are installed, the coasting function is very predictive.

Traction, dynamics and safety: quattro drive is standard

The quattro permanent all-wheel drive system with its asymmetrically dynamic layout makes a large contribution toward sporty and stable handling of the new Audi S4* and S4 Avant*. During normal driving, its all-mechanical center differential directs 60 percent of the torque to the rear axle and 40 percent to the front. If slip occurs at one axle, most of the forces are rapidly redirected to the other axle – up to 85 percent to the front or up to 85 percent to the rear axle. These high locking figures enable a clearly defined torque distribution and precise interplay with control systems.

Torque vectoring – an intelligent software function – complements the work of the quattro drive system. In dynamic cornering, it applies minimal brake interventions at the wheels on the inside of the curve before they begin to spin.

These interventions are made even if the driver does not press the accelerator pedal. The difference between propulsive forces at the wheels makes the car turn into the curve ever so slightly – making handling even more precise, agile and stable.

Torque vectoring at the rear axle: the sport differential

The optional sport differential provides even more dynamic performance. It uses two superposition gears to variably adjust the distribution of torque between the wheels of the rear axle. In fast curves, it literally pushes the car into the radius. Its management, which runs on the newly conceptualized electronic chassis platform (ECP), is incorporated into the Audi drive select handling system. The sport differential performs even quicker than in the previous model, and it is around one kilogram (2.2 lb) lighter.

The chassis of the two new S models is based on two newly developed five-link suspensions, front and rear. The axle principle enables optimal absorption of longitudinal and transverse forces. Its mounts are sporty-stiff in a lateral direction and supple and soft longitudinally. Together with the further developed, electro-mechanical power steering – with direct steering ratios – the mounts create the right conditions for dynamic handling, good comfort and a high degree of stability. With their low weight, the new parts also reduce fuel consumption. As an option, Audi can install dynamic steering, which adapts its steering gear ratio to the vehicle's driving speed and steering angle.

Up to five modes: Audi drive select

The Audi drive select handling system is standard equipment in the new Audi S4* and S4 Avant*. It intervenes in control of the engine, steering, eight-speed tiptronic, sport differential and optional chassis with damper control that adds the CDC (continuous damping control) damper. The driver can control the characteristics of these units by choosing the comfort, auto, dynamic or efficiency mode or the individual mode (if a navigation system is installed). Both the controlled chassis and the standard S sport chassis lower the body ride height by 23 mm (*0.9 in*) compared to the A4 base model. The brakes are dimensioned to be large. At the front wheels, the internally-vented discs are 350 mm (*13.8 in*) in diameter. They are gripped by black (or optionally red) painted six-piston fixed calipers with S lettering.

Audi delivers the new S4* and S4 Avant* models with standard 18-inch wheels in a five twin-spoke star design, and the tires are size 245/40. Optional 19-inch wheels are available from quattro GmbH. Electronic stabilization control (ESC) operates even more precisely and sensitively than in the previous model. The driver can choose to deactivate it over two stages (partial or full deactivation).

Interior

The new S models* are distinguished by their cultivated sportiness. The clean design with its strong horizontal orientation makes the spaciouly designed interior – which seats five persons – appear even larger. A broadly extended band of air vents, an elegant air conditioning panel and a large decorative surface define the instrument panel layout. The MMI monitor acts like a tablet computer. At night, LED light conductors trace the contours of the doors and the center console – in 30 colors with the optional ambient light package.

Thanks to the vehicle's excellent aeroacoustics, the interior noise level is exceptionally low. The workmanship quality is on the high level that distinguishes an Audi. As a typical S model; black is the dominant color. The decorative inlays provide elegant contrasts. The standard inlays are matt brushed aluminum. Optional inlay designs are natural gray oak, black piano finish and carbon Atlas.

S sport seats

The optional S sport seats in the new Audi S4* and new S4 Avant* are upholstered in fine Nappa leather. Audi can deliver the upholstery in black, rotor gray or magma red (exclusively for the S models) with diamond pattern and contrasting stitching in rock gray, anthracite and granite gray. The S sport seats have standard adjustable side supports, integrated head restraints and a pneumatic massage function. As an alternative to the standard steering wheel with multifunction plus, there are also versions with a heated rim and a flattened bottom.

Sophisticated details round out the range of features; they include stainless steel pedals and foot rest, a differentiated S instrument cluster with gray dials and white pointers, the red ring around the start button, the special start screen for the Audi MMI and the optional Audi virtual cockpit. The S logo with a red diamond appears on the steering wheel, frame of the gear shift gate and illuminated door sill guards, and it is embossed in the leather of the seats.

Display and control

Thanks to the fundamentally new control and display concept, the driver can control all functions of the new S models* effortlessly and intuitively. The optional Audi virtual cockpit, the fully digital instrument cluster, shows all key information on a 12.3-inch TFT display in brilliant resolution, a high level of details and intricately rendered graphic effects. The “View” button on the sport leather steering wheel with multifunction plus is used to switch between the different user interfaces. Three views are available, including an exclusive sport mode with the tachometer as the dominant element.

The main operating unit is the MMI control panel on the center console, which is also new. When MMI navigation plus with MMI touch is installed, the rotary push-button control has a touchpad for zooming on the map and entering characters. Like with a smartphone, the MMI operating logic is designed for the fewest steps possible, including intelligent free-text search known as MMI search. The new voice control can also process expressions and sentences from everyday speech such as: “Where can I refuel?”

Another high-end option for the new S4* and S4 Avant* models is the head-up display. It projects relevant information onto the windshield as symbols and numbers. They appear to hover around two meters (*6.6 ft*) in front of the driver within a window area measuring 200 x 80 mm (*7.9 x 3.1 in*). The human eye, which is accustomed to longer focal distances, acquires this information extremely quickly.

Infotainment and Audi connect

The top infotainment system is MMI navigation plus with MMI touch and an 8.3-inch monitor. It utilizes the computing power of the second generation modular infotainment platform (MIB) that Audi is using to bring the latest consumer electronic innovations into the car without delay. The high-end media center integrates the Audi connect hardware module which introduces the fast LTE standard for online connectivity into the new S4* and new S4 Avant*. Passengers can use the Wi-Fi hotspot to surf the web, text or e-mail with their mobile devices, while the driver can use the customized services of Audi connect, e.g. to access traffic information online, Google Earth and Google Street View, information on parking places, fuel prices and city events.

Audi is also offering other new services. They include emergency call after an accident that automatically alerts the Audi Emergency Call Center, online roadside assistance that is handled by the Audi Service Center and Audi service request which customers can use to arrange for service appointments.

The free Audi MMI connect app brings other services into the car. “Web radio” and “Media library” functions enable users to receive more than 3,000 internet radio broadcasts, save their favorites to a mobile phone and play them back from there via the MMI navigation plus system. The app also provides access to the media library stored on the user’s smartphone. Music data are transmitted by Wi-Fi from the smartphone to MMI navigation plus and from there to the sound system.

Another app feature is online media streaming, which gives access to the products of the subscription music portals Napster and Rhapsody and the Aupeo! radio service. This gives Audi customers access to nearly 20 million music titles and several thousand audio books in MP3 format via MMI navigation plus.

The app also offers vehicle-related remote services. Customers can use a smartphone to lock or unlock the doors, operate the optional auxiliary heater or view the car's current status report. They can also have the car's parking location and parking duration displayed. The new Calendar service transfers a smartphone's calendar into the car – meeting places can be copied directly from the calendar to the navigation system as destinations, and the user can select a person's phone number directly to call them and save them as a contact in the car. In addition, users can have the system speak the place, time and contents of the meeting.

New infotainment modules round out the options. The Audi smartphone interface integrates iOS and Android mobile phones in an environment specially developed for them in the Audi MMI. The Audi phone box connects smartphones to the on-board antenna and charges them inductively based on the Qi standard. The Bang & Olufsen sound system with its new type of 3D sound adds the spatial dimension of height. Its amplifier delivers 755 watts of audio power to 19 loudspeakers. The Audi tablet serves as a flexible Rear Seat Entertainment device, even outside of the car.

Driver assistance systems

The wide range of driver assistance systems in the two new S models sets new standards. Audi is bringing them from the full-size class to mid-size cars, and in the S4* it is bundling them into the Tour, City and Parking packages.

Playing a central role here is adaptive cruise control (ACC) Stop&Go including traffic jam assist. It relieves drivers in slow-moving traffic up to a driving speed of 65 km/h (*40.4 mph*) not only by assuming the tasks of braking and accelerating but also steering on well-built roads. The predictive efficiency assistant, unique in this vehicle class, helps by offering drivers situation-specific tips on how to save fuel. It evaluates GPS information in the immediate vicinity of the car. On highways it can improve fuel economy by up to ten percent in this way.

Moreover, Audi also offers an entire array of innovations that improve safety. Park assist uses twelve ultrasonic sensors to assist in parallel and perpendicular parking, so that the driver only has to control the accelerator, shift gears and brake. Rear cross traffic assist helps in backing out of parking spaces with poor visibility and warns of approaching traffic – visually, acoustically and by a brake jolt.

The exit warning system becomes active when the new Audi S4* and S4 Avant* has come to a stop. Now, if other vehicles are approaching from the rear, the system warns all occupants before opening the doors by lighting LED light conductors in the interior side trim. Collision avoidance assist is automatically enabled if the new mid-size sports car has to drive around an obstacle to avoid an accident. Based on data from the front camera, ACC and radar sensors, it computes a recommended driving line within fractions of a second. Its first action is a warning jolt to alert the driver to the danger. As soon as the driver steers, the system helps to change lanes by intervening in the power steering system with steering torques that guide the driver.

Turn assist monitors oncoming traffic when turning left over a driving speed range from two to ten km/h (*1.2 - 6.2 mph*). In a dangerous situation, it brakes the car to a stop. The system is active in the background as soon as the driver activates the turn signal to turn across the carriageway.

The production solution Audi pre sense city monitors for other vehicles and pedestrians up to a driving speed of 85 km/h (*52.8 mph*); in an emergency it can brake the car to a stop. Other assistance systems such as camera-based traffic sign recognition, Audi active lane assist and Audi side assist round out the line-up.

Exterior design

With a length of 4.75 meters (*15.6 ft*) and a wheelbase of 2.83 meters (*9.3 ft*), the new S4 models* have a strong street presence. Their flowing design with sharp lines expresses the core trait of the Audi brand – sporty elegance. The front and rear designs are characterized by horizontal lines that emphasize the car’s width. Dual aluminum cross bars give structure to the Singleframe grille. The air inlets, surrounded by distinctive contours, have arrow-shaped fins – also coated with aluminum. To improve aerodynamics, they are designed to guide a portion of the airflow into the wheel housings.

The headlights with their distinctive serrated lower borders are rich in facets and designed with a three-dimensional look. In the Audi S4*, Audi delivers them in standard LED technology with dynamic turn signals at the rear. Matrix LED headlights are available as an option; their twelve high-beam LEDs illuminate the road with a light similar to daylight. They also control the light beam such that it does not cause glare to oncoming road users. The dynamic turn signals are also standard at the front. Another technical innovation is an anti-glare function for traffic signs. When the light falls on a very reflective traffic sign, it is dimmed by around one-third in that area.

On the car’s sides, the exterior mirror housings in aluminum look create accents. The powerfully contoured side sill trim also contributes to the sharpened look of the new S models. On the trunk lid or at the back of the roof, a trailing edge and spoiler – whose profile descends sharply – improve air flow. The rear bumper integrates a flat, black honeycomb grille, and the diffuser trim in matt aluminum silver surrounds the two dual tailpipes.

The fenders of the Audi S4* and S4 Avant* sport V6 T logos, while S4 logos with a red diamond trim the radiator grille and the trunk lid. The paint colors, with a total of 16 different choices, include the colors Navarra blue (new) and Misano red which are exclusively reserved for the new S models.

Body

The Audi intelligent mixed construction concept makes the car bodies of the new S4 models* very torsionally stiff and safe. Hot-formed parts form the high-strength, crash-safe backbone of the passenger cell. In comparison to the previous model the bodies are 15 kilograms (*33.1 lb*) and therefore form the basis for the low unladen weight of the new S4* and S4 Avant*. The Sedan weighs 1,630 kg (*3,593.5 lb*) with the standard quattro drive, while the Avant weighs 1,675 kg (*3,692.7 lb*) – each is 75 kg (*165.3 lb*) less than the weight of the previous models.

Another of the body's strengths is aerodynamics. With a c_d figure of 0.31, the new Audi S4 Avant offers the best figure in its competitive field. The drag coefficient of the S4 Sedan is a low 0.29. These top results come from refined design of the exterior skin and covering of large areas of the underbody which minimizes lift.

Audi S4 Avant

The new Audi S4 Avant* combines a sporty character with a high level of everyday utility. Its luggage compartment offers a basic cargo capacity of 505 liters (*17.8 cu ft*) – more than its competitors in the premium segment. When the rear seat backrests are folded, and cargo is loaded to the headlining, stowage space increases to 1,510 liters (*53.3 cu ft*). The rear seat backrest has a 40:20:40 split and can be folded down to the seat cushions using levers in the luggage compartment.

The tailgate also has a standard power drive unit. The optional sensor control initiates opening or closing of the tailgate in response to a foot movement. The car is rounded out by other features such as a variable folding mat, storage and luggage compartment package, partition net, rail system and power unlatching trailer hitch. The S4 Sedan has a luggage capacity of 480 liters (*17.0 cu ft*).

Equipment

Compared to the previous models, the standard features content of the new Audi S4 models* is now much more comprehensive – highlights include LED headlights and dynamic rear turn signals. The new S4 Avant* has a power tailgate and luggage compartment cover as well as roof rails made of anodized aluminum.

These options underscore the high-tech character of the two new S models. Some noteworthy examples are Matrix LED headlights, the head-up display, sensor control of the S4 Avant tailgate, three-zone deluxe automatic air conditioning and the convenience key for easy access and engine starting.

The new Audi S4* and new Audi S4 Avant are coming to dealerships in Germany and other European countries in the second half of the year 2016. Their base prices are 59,300 euros and 61,150 euros.

Audi S models in the mid-size class

At Audi the S is a direct reference to motorsport. The first car to bear the S designation was the Sport quattro S1 – the legendary rally car of the 1985 world championship season.

The letter S made its way into production cars in 1990 – in the S2 Coupé whose turbocharged five-cylinder engine produced 162 kW (220 hp). A small S family quickly grew; its members had two traits in common – a quattro drive and an understated visual image. Audi launched the S2 Avant on the market at the end of 1992; the S2 Sedan followed one year later. Engine power was increased to 169 kW (230 hp). By 1995, a total of 9,488 cars came off the assembly line in three body versions.

Starting in 1997, two S models also came from the first generation Audi A4 that launched in 1994. The five-cylinder turbo engine gave way to a newly developed biturbo V6 with 2.7 liters of displacement which was derived from the 3.6-liter V8. The six-cylinder engine had five-valve cylinder heads and one turbocharger per bank and delivered 195 kW (265 hp) of power and 400 Nm (*295.0 lb-ft*) of torque.

In 2003, Audi converted its mid-size S models over to naturally aspirated engines. The 4.2-liter V8, which could also be combined with a six-speed tiptronic, had a power output of 253 kW (344 hp) and 410 Nm (*302.4 lb-ft*) of torque. It was used in the Sedan, the Avant and in the new edition of the Cabriolet.

Boosted to 260 kW (354 hp) of power and 440 Nm (*324.5 lb-ft*) of torque, the eight-cylinder engine was also used in the next generation of Audi mid-size models, specifically in the S5 Coupé of 2007. The S4, S4 Avant, S5 Sportback and S5 Cabriolet, which followed somewhat later, already got a new 3.0-liter V6 with supercharging, and the two-door coupé followed in 2011. Its key specification data were 245 kW (333 hp) and 440 Nm (*324.5 lb-ft*), and propulsive forces could be transferred to all four wheels via a seven-speed S tronic that was initially offered as an option and later as standard equipment.

As a side event to the 24 Hours of Le Mans endurance race in 2012, Audi presented the Audi SQ5 TDI – the first S model in the Q series. It was also the first S model to have a diesel engine. Its 3.0 TDI produces 230 kW (313 hp) and a hefty 650 Nm (*479.4 lb-ft*) of torque.

Fuel consumption of the models named above:

Audi S4 3.0 TFSI quattro tiptronic (260 kW)

Combined fuel consumption in l/100 km: 7.5 – 7.3** (*31.4 – 32.2 US mpg*);

combined CO₂ emissions in g/km: 170 – 166** (*273.6 – 267.2 g/mi*)

Audi S4 Avant

Combined fuel consumption in l/100 km: 7.6 – 7.5** (*30.9 – 31.4 US mpg*);

Combined CO₂ emissions in g/km: 175 – 171** (*281.6 – 275.2 g/mi*)

Audi A4 2.0 TFSI ultra (140 kW)

Combined fuel consumption in l/100 km: 6.1 – 4.8** (*38.6 – 49.0 US mpg*);

Combined CO₂ emissions in g/km: 139 – 109** (*223.7 – 175.4 g/mi*)

** Fuel consumption and CO₂ emissions data are dependent on the choice of wheels and tyres as well as on the combination of engine and gearbox.