
Audi A3 Sportback – the 1.5 TFSI as a mild hybrid

The 1.5 TFSI with a mild-hybrid system (combined fuel consumption in l/100 km: 5.0–4.7 (47.0–50.0 US mpg)*; combined CO₂ emissions in g/km: 115–109 (185.1–175.4 g/mi)*) has the same output as its sister engine. The performance is also identical; however, it is even more efficient.

A belt alternator starter (BAS) is installed on the combustion engine. It feeds a 48-volt electrical system that integrates a compact lithium-ion battery under the front passenger seat. A voltage converter connects the conventional 12-volt electrical system. In customer operation, the MHEV system achieves a fuel-consumption advantage of up to 0.4 liters per 100 kilometers. When the driver decelerates or applies the brake slightly, the BAS can recuperate up to 12 kW of power and feed it to the battery. When driving off and accelerating from a low rotational speed, it assists the TFSI with up to 9 kW and 50 Nm (36.9 lb-ft) of torque. In certain driving situations, it shifts the loads such that the engine's efficiency is further increased. It also manages the state of charge of the 48-volt battery. It stores enough power to enable the A3 Sportback to coast with the engine switched off in many situations. The BAS then quickly and conveniently restarts the TFSI, just like at the end of the start/stop phase, which already starts at a residual speed of 22 km/h (13.7 mph).

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