



## VARTA. THE DRIVING FORCE BEHIND START-STOP TECHNOLOGY. SUPPLIER OF OVER 80% OF ALL BATTERIES FITTED TO NEW START-STOP VEHICLES.

In close partnership with leading vehicle manufacturers like Audi, BMW, Ford, Mercedes-Benz, Volvo and VW, VARTA has developed innovative battery solutions to support Start-Stop systems. Today over 80% of new Start-Stop vehicles are originally equipped with VARTA.

**Innovative batteries from VARTA.** Trust the driving force behind Start-Stop

**More information:** [www.varta-startstop.com](http://www.varta-startstop.com)

### OE CONTRACTS AT A GLANCE

Manufacturer/ eco-friendly model	Description	VARTA Start-Stop batteries
<b>Audi e</b>	Independent eco label applied to especially economical vehicles throughout the entire Audi range. A gear change display provides the driver with all the necessary consumption data, offers personalised fuel economy tips and helps select the correct gear. The efficiency programme indicates which systems require extra energy and, therefore, fuel.	Original equipped VARTA BY JOHNSON CONTROLS
<b>BMW EfficientDynamics</b>	Now standard in all BMW models. The BMW Group has managed to reduce the fuel consumption of its European fleet by more than 25% over the last two model generations – an achievement made possible by EfficientDynamics technology. EfficientDynamics consists of a range of coordinated technologies designed to reduce fuel consumption and CO <sub>2</sub> emissions.	Original equipped VARTA BY JOHNSON CONTROLS
<b>Ford ECONetic</b>	The Ford system designed to minimise CO <sub>2</sub> emissions and fuel consumption. It's based on the combination of exceptionally efficient TDCi diesel engines and a range of concepts for reducing driving resistance, including technologies to help reduce rolling resistance, enhance the aerodynamics and optimise the engine and transmission.	Original equipped VARTA BY JOHNSON CONTROLS
<b>Hyundai Blue Drive</b>	Technologies and drive concepts that ensure eco-friendly mobility. There are already models in the i10, i20 and i30 ranges that have gone below the 120 g/km CO <sub>2</sub> emissions threshold. The Hyundai i30 and i30cw "Blue" models are also fuel-efficient and low in emissions thanks to their exceptionally eco-friendly automatic Start-Stop system (idle stop and go).	Original equipped VARTA BY JOHNSON CONTROLS
<b>KIA EcoDynamics</b>	For fuel economy as standard, eco-friendly manufacturing processes, an affordable lightweight construction and the use of sustainable materials. The KIA ISG Start-Stop system recognises when the car comes to a stop. Provided certain parameters are met, the engine turns off automatically and then on again as soon as the clutch is engaged. An accelerator with rev limiter and low-rolling-resistance tyres reduce rolling resistance and therefore consumption.	Original equipped VARTA BY JOHNSON CONTROLS
<b>Land Rover E</b>	A concept incorporating the latest technologies that reduces CO <sub>2</sub> emissions by up to 30% and lowers fuel consumption by around 5 l/100 km (based on vehicles similar to the Freelander 2 in size). It also includes automatic Start-Stop technology, which comes as standard in all Freelander 2 diesel models (manual) and reduces CO <sub>2</sub> emissions by 7%.	Original equipped VARTA BY JOHNSON CONTROLS
<b>Mercedes-Benz BlueEFFICIENCY</b>	This system features modifications to the engine, bodywork and chassis designed to reduce the average fuel consumption by up to 0.9 l/100 km. In conjunction with efficient engine consumption, CO <sub>2</sub> emissions are reduced by up to 23%. BlueEFFICIENCY will be successively introduced into all Mercedes-Benz ranges.	Original equipped VARTA BY JOHNSON CONTROLS
<b>Mini MINIMALISM</b>	Equipment featured in all MINI models from the 2008 model year onwards, with the exception of JCW models. MINIMALISM consists of an automatic start-stop system (in connection with manual transmission), a gearshift indicator and regenerative braking like that used in all four-cylinder BMWs. According to the manufacturer, these technologies reduce fuel consumption and emissions by up to 20 per cent.	Original equipped VARTA BY JOHNSON CONTROLS
<b>Seat Ecomotive</b>	An eco label that brings together a whole range of exceptionally economical vehicle models. The engine control unit has been modified and the vehicle weight reduced to enhance aerodynamics. Finally, the higher gears of the transmission ratio have also been modified so that the driver is required to actively change between them. New Ecomotive models boast an automatic Start-Stop system and regenerative braking.	Original equipped VARTA BY JOHNSON CONTROLS
<b>Smart mdh</b>	As soon as the vehicle brakes and falls to a speed of below 8 km/h, micro hybrid drive (mhd) technology, also called automatic Start-Stop technology, switches off the engine. As soon as you take your foot off the brake pedal, the engine restarts instantly. Instead of a conventional starter generator and alternator, the smart fortwo mhd features a belt-driven automatic Start-Stop generator that uses the engine's "rest periods" to maximum efficiency, allowing you to reduce fuel consumption by up to 20% in urban traffic.	Original equipped VARTA BY JOHNSON CONTROLS
<b>Vauxhall ecoFLEX</b>	ecoFLEX is the environmental initiative of Vauxhall, the largest General Motors brand. It ensures low consumption, significantly reduced CO <sub>2</sub> emissions and real efficiency across vehicles of all classes. It's an initiative based on the idea that GM Europe wants to use materials and, therefore, resources responsibly across all models – from development right through to recycling.	Original equipped VARTA BY JOHNSON CONTROLS
<b>Volvo DRIVE</b>	DRIVE models reduce CO <sub>2</sub> emissions with efficient diesel engines and a whole range of optimisation features, not to mention a low-consumption automatic transmission, wider transmission ratios, a gearshift indicator on the dashboard and an automatic Start-Stop system. The air conditioning system is set to standby mode as sensors monitor and maintain the car's internal climate. All DRIVE models feature regenerative battery recharging.	Original equipped VARTA BY JOHNSON CONTROLS
<b>VW BlueMotion</b>	A signature for vehicles that are designed to be economical. Low fuel consumption is achieved through features such as an intelligent engine control unit, optimised aerodynamics, tyres optimised against rolling resistance and a wider transmission ratio. Furthermore, all BlueMotion models will come with an automatic Start-Stop system and regenerative braking in the future.	Original equipped VARTA BY JOHNSON CONTROLS



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