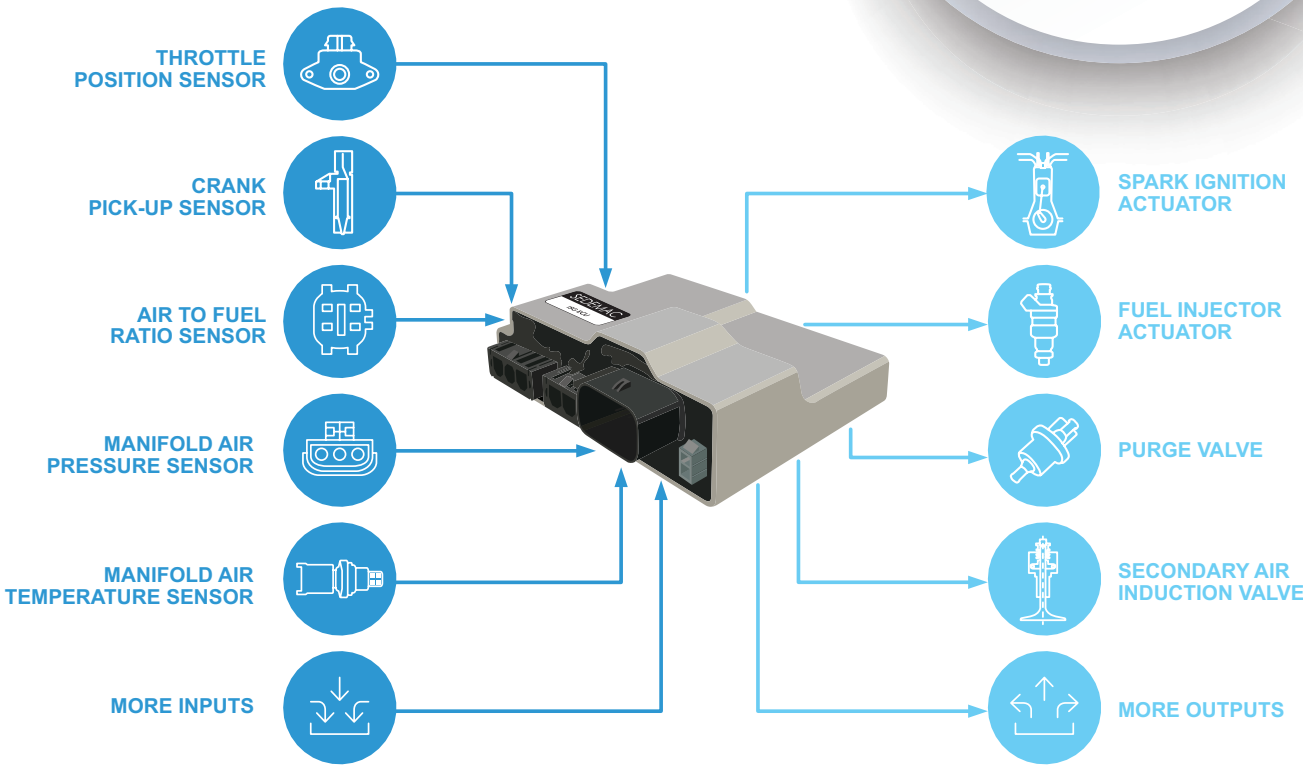


Sensorless Integrated Starter Generator (ISG) ECU

Integrated Starter Generator (ISG) is a technology that eliminates the need for conventional starter-motor based engine start systems. **ISG** results in instant and smooth engine start, improved reliability, and enables the idle-stop-start feature. **ISG** systems typically draw lesser currents (vis-à-vis starter motor systems) thereby enhancing improvement in battery life.

SEDEMAC's Sensorless ISG eliminates the need for hall effect sensors that are conventionally used for **ISG** applications, thereby making it suitable for high temperature applications (e.g. motorcycles) and further improves reliability. Additionally, **SEDEMAC's** integrated series regulation scheme improves fuel efficiency.



Integration Possibilities: The forward-looking **ISG ECU** architecture enables integration of electronics of other control intensive technologies such as Electronic Fuel Injection (EFI), and Automated Manual Transmission (AMT).

ISG+EFI ECU

SEDEMAC's ISG+EFI technology integrates Sensorless ISG (Integrated Starter Generator), which eliminates the conventional starter-motor based engine start system, with **EFI** (Electronic Fuel Injection) system together in single **ECU**. Elimination of hall-effect sensor also results in simplified electric machine design.

This **ECU** can be used in 2 & 3 wheelers with crankshaft mounted alternator. The combination of **ISG+EFI ECU** provides instant and smooth engine start, along with cleaner exhaust emission, to meet stringent emission norms. Integration of two technologies leads to avoid duplication of parts, which results in cost saving. This technology is integrated with the algorithms that deliver improved reliability in varied atmospheric conditions.

ISG eliminates all components of the starter motor system, as well as the ignition controller and battery charging controller. Typically, the following parts are eliminated: starter motor, one-way clutch/gearing, starter relay, ignition CDI/TCI, and VRR (voltage regulator). Following mentioned parts get eliminated and are replaced by a single part – **SEDEMAC's Sensorless ISG ECU** and **SEDEMAC's Sensorless ISG+EFI ECU**

