

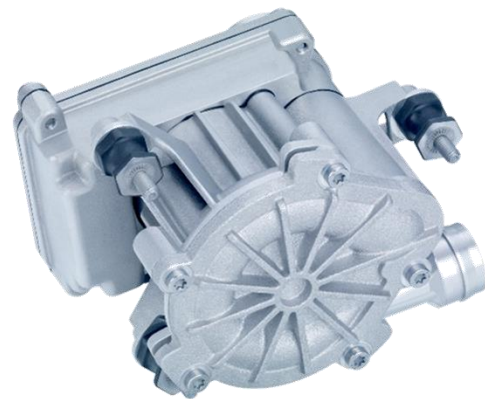
› Sensorless Control of Electric Motors

Pierburg GmbH (a brand of the Rheinmetall Automotive AG) is a global key player in the development of components and systems for sustainable drives and environmentally friendly mobility. The products are characterized by their high efficiency, durability and reliability. Typical applications can be found in classic combustion engines, in hybrid drives through to battery-electric and fuel cell drives. In the area of pre-series development, Pierburg uses the PUMA ECU platform both for the development and for testing of a wide variety of components and systems.

For speed-controlled systems such as electrically driven air conditioning compressors or secondary air pumps, Pierburg develops sensorless control algorithms that ensure robust and highly efficient operation of the electric motor. The PUMA development platform offers optimal conditions for this in the area of pre-series development and is an integral part of the mechatronic product development. In addition to the variants PUMA-MPI and PUMA-PTM with integrated power stages, Pierburg also uses the variant PUMA-PSI for controlling specially developed power stages, for example for electrical high voltage drives.



Electric Air Conditioning Compressor



Secondary Air Pump

With the support of dSPACE TargetLink as a series code generator and the resulting possibility for fixed-point scaling, the functional software developed for PUMA can largely be used without changes in series development. In this way, there is a high degree of synergy between the pre-series and series development, which significantly shortens the development cycle overall and thus also reduces costs.