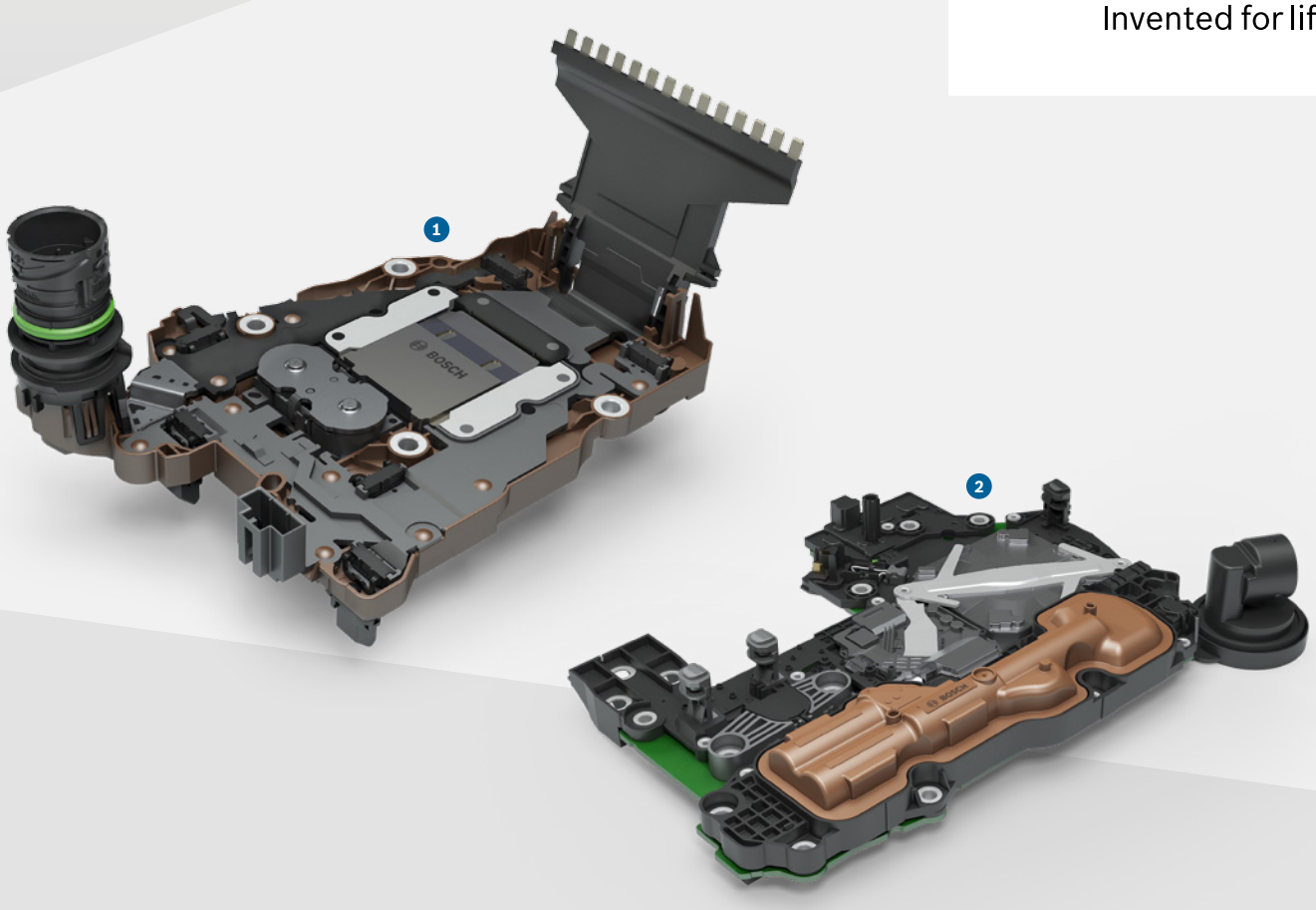
Transmission technology

Electronic modules

BOSCH
Invented for life



PRODUCT BENEFITS

- Weight reduction for automatic transmission
- Simple installation (transmission and vehicle)
- Reduced effort with logistics, administration and processing
- Proven module and a higher level of reliability for the entire system

1 EM-L electronic module
2 EM-P electronic module

high level of reliability

due to the reduced number of components

less weight

for automatic transmissions thanks to integration of the electronic components in one module

TASK

The electronic module consolidates the electronic components of the transmission control into one unit. The integrated transmission control unit controls the hydraulic valves, which are responsible for the gear selection, depending on the input torque on the transmission, the running speed of the engine and the vehicle speed. It also has extensive diagnostic functions.

FUNCTION

The electronic module consists of the integrated transmission control unit and several sensors for speed, position and pressure, as well as connectors for attaching to the hydraulic valves. Lead frames are used for linking the individual components. The electrical linkage is made by means of extremely robust weld connections.

VARIANTS

The electronic module is available in various versions: the EM-L is a mechatronic module for all types of automatic transmission. Sensors for speed, position and temperature are integrated. The transmission control unit is housed in an hermetically sealed casing. A lead frame is used for the module wiring.

The EM-P has integrated sensors for speed, position and pressure. A high-temperature circuit board is used for installation and wiring of the module, and this enables a large number of functions to be incorporated. The integration of the transmission control unit in a molded casing ensures that the design height is kept to a minimum.The EM-P also offers an actuator for electric oil pumps.

TECHNICAL CHARACTERISTICS

Operating temperature range	–40 °C to +145 °C
Circuit	optimized ASICs

Robert Bosch GmbH | PO 10 60 50 | 70049 Stuttgart | Germany | **www.bosch-mobility-solutions.com**