Servolectric® electric power steering system

Electronic control unit

PRODUCT BENEFITS
- Intelligent and fast calculation of steering assistance and corrections within milliseconds
- For innovative assistance functions and automated driving
- Advanced driver assistance
- Incorporation into vehicle electrical system via CAN bus, CAN FD or FlexRay™
- Fully integrated and hermetically sealed unit

1 Plug-in contacts
2 Control electronics with heat sink
**32-bit**

Microprocessor flash memory

**Task**
The electronic control unit (ECU) is the intelligent heart of the Servolectric® electric power steering system. Based on the steering signal from the torque sensor, the ECU calculates the optimal assistance and sends this information to the electric motor. In addition, the ECU processes various vehicle parameters and calculates the necessary steering corrections in milliseconds.

**Function**
The ECU links the electric steering to the electrical system of the vehicle and to other vehicle components. In this way, the electric power steering has access to parameters such as speed, steering angle, wheel revolutions and yaw rate. On the basis of these, the ECU can continuously calculate the longitudinal and lateral guidance of the vehicle as well as the optimal steering assistance, and intervene correctly with the aid of driver assistance systems in emergency situations. The vehicle manufacturer decides which driver assistance systems are used and in which way. For instance, it is possible to influence the lateral guidance of the vehicle in dangerous situations to prevent accidents or lessen the consequences. In future applications for highly automated driving, redundant electronics are provided in order to ensure control of the servo assist function in the event of a fault.

**Technical Characteristics**

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<table>
<thead>
<tr>
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<th></th>
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<tbody>
<tr>
<td>Processor</td>
<td>32-bit microprocessor</td>
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<tr>
<td>Memory technology</td>
<td>Flash</td>
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<td>Networking options</td>
<td>CAN bus, CAN FD, FlexRay™</td>
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<td>Current</td>
<td>60 to 110 A</td>
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**New functions**

through networking with the vehicle electrical system

**Function of the control unit:**

1. Acquisition of the steering signal by the torque sensor and sending to the control unit
2. Acquisition of the vehicle’s speed over the communication bus and sending to the ECU
3. Calculation of the optimal assistance and motor actuation

![Diagram of the electronic control unit](image-url)