Engine management

Electronic engine control units for powertrain management

**PRODUCT BENEFITS**

- Common platform for gasoline, diesel, and alternative powertrains with increased performance and scalability for current and future customer requirements
- Long-term availability of microcontrollers and reusability of application software
- Supports functional safety requirements (ISO 26262) and offers new kinds of access and tuning protection

1. Electronic control unit MD1CP
2. Electronic control unit MD1CE/EDC17CV
3. Electronic control unit MD1CS/EDC17C
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Reduced emissions
Support to achieve current and future requirements of exhaust-gas legislation worldwide

Superior safety
due to highest safety standards: Automotive Safety Integrity Level (ASIL)

Task
As the main control unit, the electronic engine control unit is the heart of the engine management system. It controls fuel supply, air control, fuel injection, and ignition. Due to its scalability and enhanced performance, the control unit is also able to control the exhaust system, the transmission, and/or vehicle functions. The electronic ECU was developed for use in diesel and gasoline engines as well as for those using alternative fuels.

Function
Software inside the electronic engine control unit processes the incoming system information and controls the various functional groups; the unit networks the individual functions to form an efficient overall system. To do this, it uses a new generation of high-performance microcontrollers. Introducing the multicore architecture into engine management opens up resources for innovative refinements. The software platform also guarantees maximum functional flexibility, as the previous-generation application software can be used with Autosar R4-compatible basic software. Engine and chassis mounting are possible depending on the type.

Technical Characteristics

<table>
<thead>
<tr>
<th>µC technology</th>
<th>55/65 Nm multicore</th>
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<tbody>
<tr>
<td>µC performance category</td>
<td>dev. 1 – dev. 4</td>
</tr>
<tr>
<td>CPU speed</td>
<td>80 – 300 MHz</td>
</tr>
<tr>
<td>Flash memory</td>
<td>1.5 MB – 8 MB</td>
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<tr>
<td>RAM</td>
<td>72 – 628 KB RAM</td>
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<tr>
<td>Basis software</td>
<td>Autosar R4</td>
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