

## Fast Facts

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### Electronic pump control

The customer-specific control module is fully integrated into the electric motor and includes all components which are necessary for the control of an electronic motor. The inputs from the master control unit are transmitted via PWM, LIN or CAN to the microcontroller which calculates the speed and the necessary commutation of the electronic motor (block, trapezoidal or sine). With gate driver and power MOSFET the coils of the motor are energized. In this process the speed (with or without sensors), current, voltage and temperature are monitored and in case of an error reported back to the master control unit.



#### Typical applications

- Coolant pump for internal combustion engine, charge air cooling, electronic motor
- Oil pump, fuel pump, air- and vacuum pump

#### Special features

- High temperatures possible by using ceramic substrates (up to 160 °C)
- High performances in a small installation space by chip & wire technology
- High vibration permitted, assembly to combustion engine possible
- Fully integrated into the electric motor by high integration density
- Customer specific design