

Powertrain system

High-pressure sensor for GDI and CNG systems



BOSCH

Invented for life



PRODUCT BENEFITS

- ▶ High measuring precision and reliability
- ▶ Resistant to media, hermetic sealing of measured media
- ▶ Variation of plug connection, hydraulic connection and mounting position possible
- ▶ Low signal sensitivity to mounting torque
- ▶ Fault diagnostics using signal-range check
- ▶ Compact design, low height

- 1 High-pressure sensor for hydraulic application
- 2 High-pressure sensor with temperature sensing
- 3 Single or dual high-pressure sensor



0.9%

Very high accuracy over lifetime

TASK

The high-pressure sensor measures the fuel pressure in the high-pressure fuel rail of engines with gasoline direct injection. This information is required by the engine control unit for the exact metering of the injected fuel mass. The CNG high-pressure sensor measures the pressure in the pressure control module.

TECHNICAL CHARACTERISTICS

| Type | PS-HPS4 (-HPS5) | PS-HPS4 (CNG) | PS-HPS5-Dual |
|-----------------|---|--|---|
| Mounting place | DI-fuel rail | CNG pressure control module | DI-fuel rail |
| Technology | steel membrane with metal thin-film strain gauges on top | steel membrane with metal thin-film strain gauges on top | steel membrane with twin-metal thin-film strain gauges on top |
| Circuit | digital | digital | digital |
| Output signal | analog (digital) | analog | digital |
| Connector | 3 pin (also with temperature signal) | 3 pin | 3 pin |
| Characteristics | 5V, 3.3V (optional) | 5V, 3.3V (optional) | 5V, 3.3V (optional) |
| Pressure range | 14, 20, 26, 28, 40, 50, 60MPa | 26, 28MPa | 26 – 42MPa |
| Special feature | optional with integrated NTC for fuel temperature sensing | CNG type approved by KBA (Kraftfahrt-Bundesamt) | absolute redundant signal generation and transmission for OBD requirement |

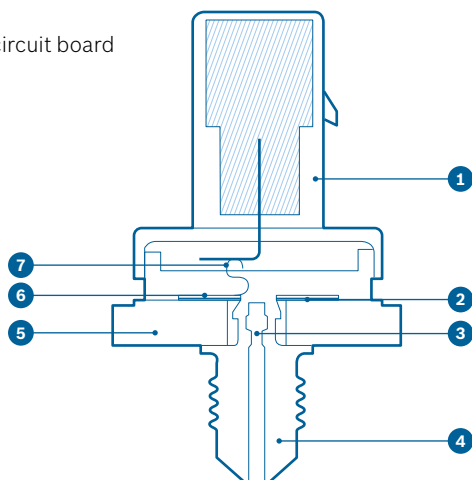
factor 1.2

High robustness against vibration with very low amplitude transmission factor

FUNCTION

The sensing element consists of a metal membrane onto which strain gauges are mounted. When pressure is applied, the gauges are detuned and generate an electric voltage. This voltage changes proportionately with pressure. It is amplified and digitized by an electronic evaluation circuit.

- 1 Connector housing
- 2 Glue
- 3 Sensor element
- 4 Thread part
- 5 Hexagon
- 6 Printed circuit board
- 7 S spring



- 8 Connector housing
- 9 Sensor element
- 10 Thread part
- 11 Negative temperature coefficient for temperature sensing
- 12 Hexagon
- 13 Printed circuit board

