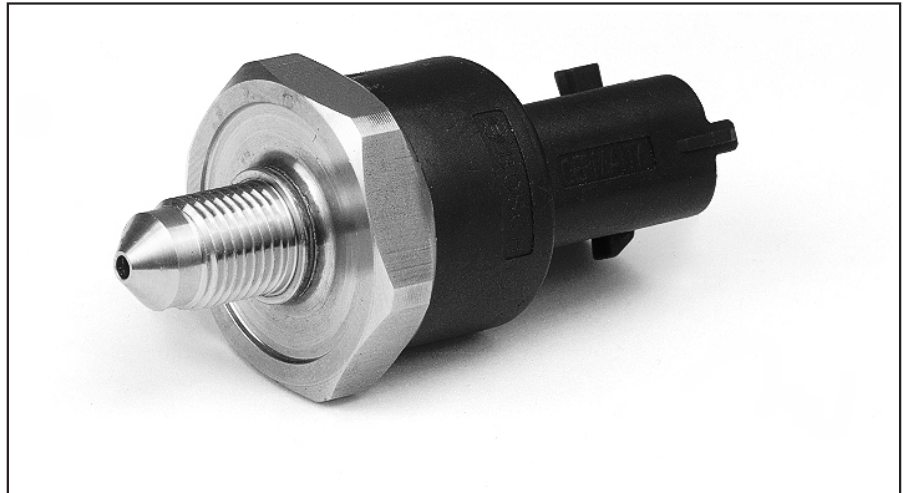


High-pressure sensors

Measurement up to 14 MPa

- Ratiometric signal evaluation (relative to supply voltage)
- Self-monitoring offset and sensitivity.
- Excellent media resistance as the medium only comes into contact with stainless steel.
- Resistant to brake fluids, mineral oils, fuel, water and air.
- Protection against reverse polarity, overvoltage and short circuit of the output to supply voltage or ground.



Application

Pressure sensors of this type are used in motor vehicles to measure the pressure in a braking system or in the fuel rail of direct-injection gasoline engines or common-rail system diesel engines.

Design and operation

Use is made of polysilicon metal thin-film strain gauge elements. These are connected to form a Wheatstone bridge. This permits good signal utilisation and temperature compensation. The measurement signal is amplified in an evaluation IC and corrected with regard to offset and sensitivity. Further temperature compensation is then implemented, so that the calibrated measurement cell and ASIC unit exhibits only a low degree of dependence on temperature. The evaluation IC also incorporates a diagnosis function for detection of the following possible faults: - Break in bonding wire to measurement cell. - Break in any signal wire at any point. - Break in supply and ground wire at any point. Only for 0 265 005 303 The following additional diagnosis function distinguishes this sensor from conventional sensors: The comparison of two signal paths in the sensor permits detection of - Offset error - Amplification error.

Storage conditions

Temperature range: -30...+60 °C
 Rel. humidity: 0...80 % rF
 Maximum storage time: 5 years
 The specified storage conditions do not cause any change in function.
 The sensors are no longer to be used once the maximum storage time has expired.

Explanation of characteristic quantities

U_A	Output voltage
U_V	Supply voltage
bar	Pressure
U_S	Feed voltage
p	Pressure [MPa]
C_0	0.1
C_1	$0.8 * p/P_N$ Rated pressure [MPa]

Robert Bosch GmbH
 Automotive Aftermarket
 Postfach 410960
 76225 Karlsruhe
 Germany

www.bosch-sensoren.de



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Part number

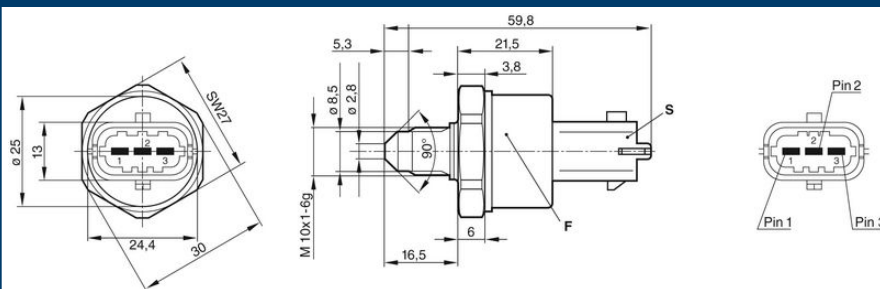
0 261 545 006

Technical data

Pressure range 140 (14)	P_N	bar (MPa)
Pressure-sensor type		KV2 BDE
Thread		M 10 x 1
Connector		Compact 1.1
Pin		Gold-plated
Application/medium		Unleaded fuel
Accuracy of offset	U_V	0,7 % FS
Accuracy of sensitivity at 5 V - in range 35...140 bar	FS ²⁾	of measured value 1,5 %
Max. feed voltage 16	U_s	V
Supply voltage 5 ± 0,25	U_V	V
Supply current 9...15	I_V	mA
Load capacitance to ground 13		nF
Temperature range 40 ...+ 130		°C-
Max. overpressure 180	p_{max}	bar
Rupture pressure > 300	p_{berst}	bar
Tightening torque 22 ± 2	M_a	Nm
Response time 2	$\tau_{10/90}$	ms

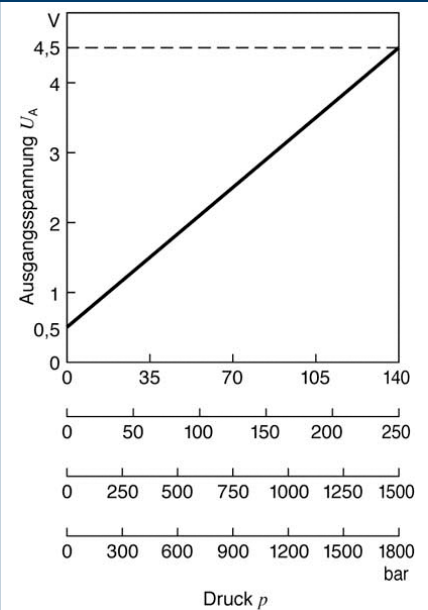
Accessories are not included in the scope of delivery of the sensor and are therefore to be ordered separately as required.

Dimensional drawing



Space required for connector, approx. 25 mm
 Space required for connection, approx. 50 mm
 SW Width across flats
 Pin 1 GND ground
 Pin 2 Output voltage
 Pin 3 Supply voltage

Characteristic curve

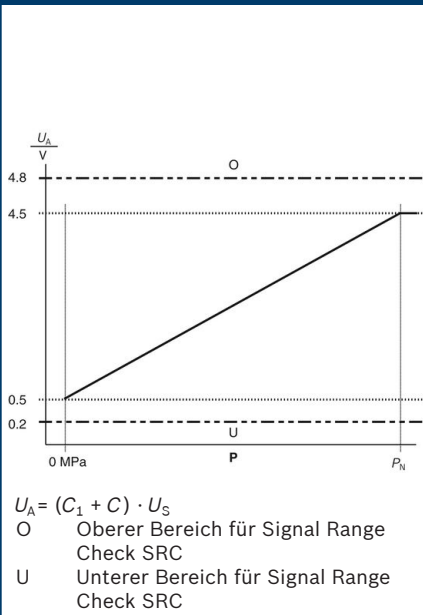


$$U_A = (0.8 \cdot p / + 0.1) U_V$$

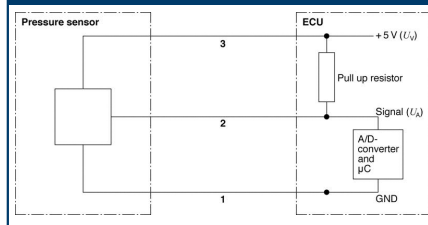

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Characteristic curve



Measurement circuit



Accessories

Part number

Connector housing	3-pin	1 928 403 966
Contact pins	For \varnothing 0.5...1.0 mm ² ; Contents: 100 x	1 928 498 054
Contact pins	For \varnothing 1.5...2.5 mm ² ; Contents: 100 x	1 928 498 055

Accessories are not included in the scope of delivery of the sensor and are therefore to be ordered separately as required.