

High-pressure sensors

Measurement up to 180 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 at the output to the 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 engines with direct gasoline injection or the diesel common rail system.

For 0 265 005 303:
 C_0 0,75
 C_1 $0,12 \cdot p / P_N$

Design and operation

Polysilicon thin-film metal strain gauge elements are used. These are connected to form a Wheatstone bridge. This permits good signal utilization and temperature compensation. Only for 0 265 005 303

The following additional diagnostic function distinguishes this sensor from conventional sensors:

Comparison of two signal paths in the sensor enables
 – Offset error
 – Amplification error
 to be detected.

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 0.1
 C_1 $0.8/P_N$ MPa!
 P_N Rated pressure [MPa]

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Part number

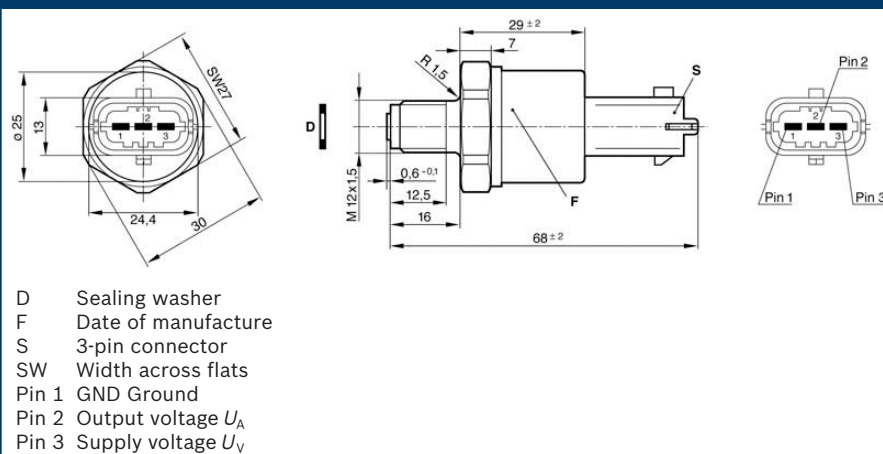
0 281 002 398

Technical data

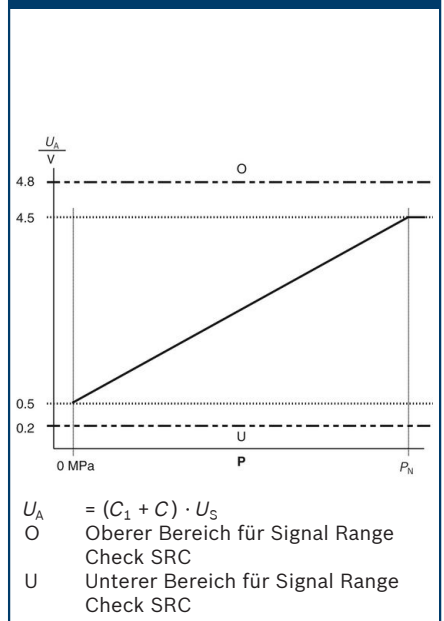
Pressure range 1800 (180)	P_N	bar (MPa)
Pressure-sensor type		RDS2
Thread		M 12 x 1,5
Connector		Compact 1.1
Pin		Gold-plated
Application/medium		Diesel fuel or biodiesel ²⁾
Accuracy of offset	U_V	1,0 % FS
Accuracy of sensitivity at 5 V - in range 0...35 bar	FS ¹⁾ of measured value	1,0 %
Accuracy of sensitivity at 5 V - in range 35...1800 bar	FS ¹⁾ of measured value	2,3 %
Max. feed voltage 16	U_S	V
Supply voltage 5 ± 0,25	U_V	V
Supply current 9...15	I_V	mA
Output current 2,5 ⁴⁾	I_A	µA...mA
Load capacitance to ground 10		nF
Temperature range 40 ...+ 120		-
Max. overpressure 2100	P_{max}	bar
Rupture pressure 3500	P_{berst}	bar
Tightening torque 70 ± 2	M_a	Nm
Response time 5	$\tau_{10/90}$	ms

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

Dimensional drawing

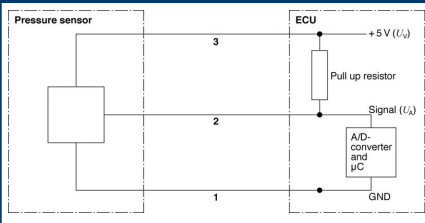


Characteristic curve





Measurement circuit



Accessories

Part number

Connector housing
 Contact pins
 Single-wire seal

	1 928 403 968
Contents: 100 x	1 928 498 054
Contents: 10 x	1 928 300 599

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