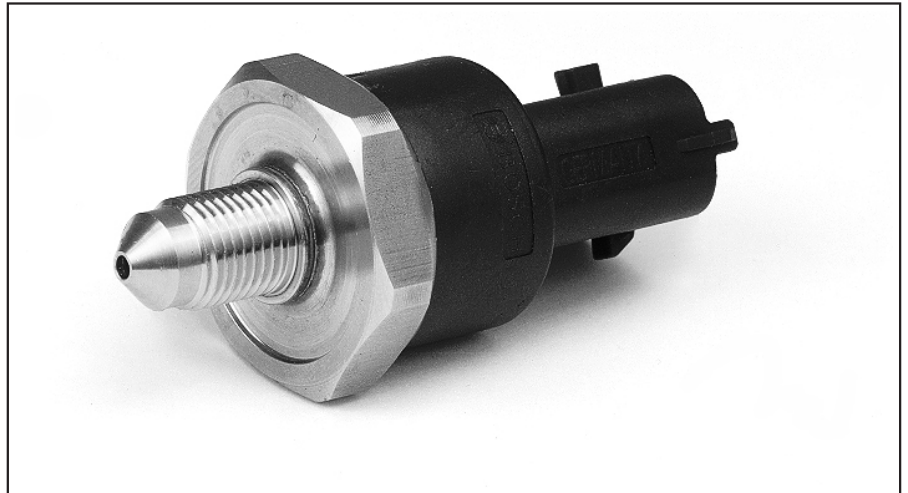


# High-pressure sensors

## Measurement up to 25 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 engines with direct gasoline injection or the diesel common rail system.

### 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.

The measurement signal is amplified in an evaluation IC and corrected in terms of 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 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 <sub>N</sub> MPa!
$P_N$	Rated pressure [MPa]
For	0 265 005 303:
$C_0$	0,75
$C_1$	0,12 · p / P <sub>N</sub>

Robert Bosch GmbH  
Automotive Aftermarket  
Postfach 410960  
76225 Karlsruhe  
Germany

www.bosch-sensoren.de



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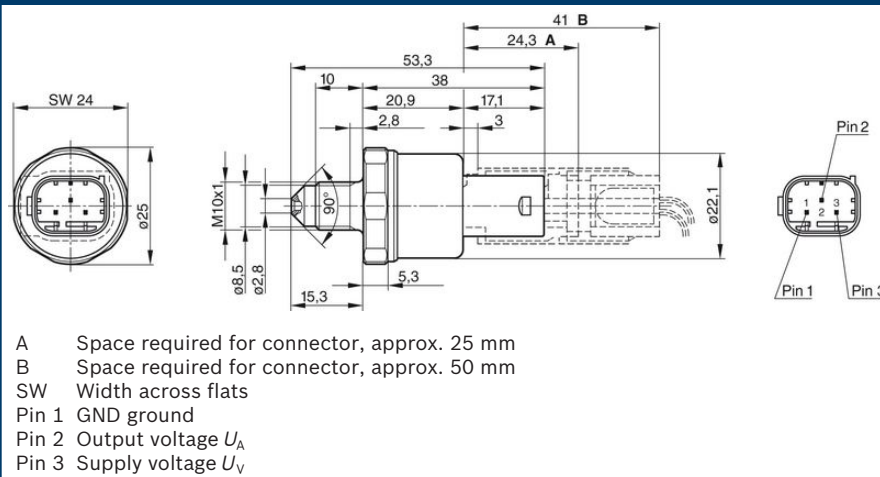
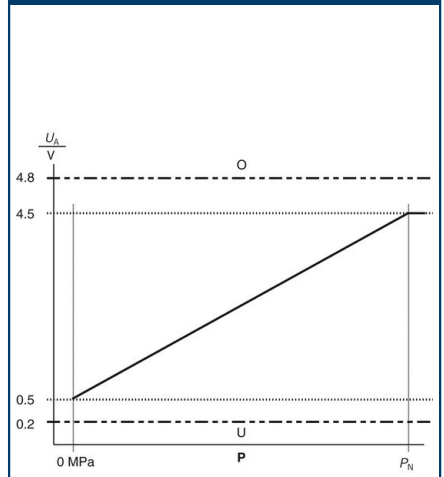
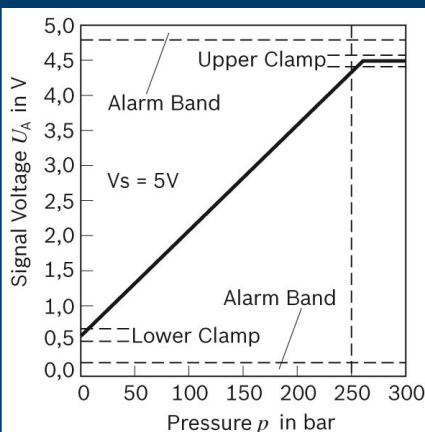
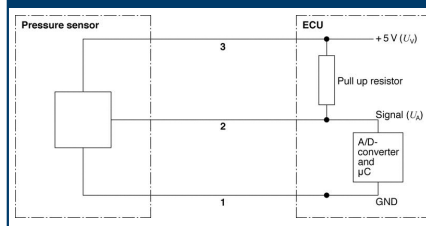
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**Part number**
**0 265 005 303**
**Technical data**

Pressure range	$P_N$	bar (MPa)	250 ( 25 )
Thread		M 10 x 1	
Connector		PSA	
Application/medium		Brake fluid	
Accuracy of offset	$U_V$		2,0 %
Accuracy of sensitivity at 5 V - in range 0...35 bar		FS <sup>1)</sup> of measured values	≤ 0,7 %
Accuracy of sensitivity at 5 V - in range 35...250 bar		FS <sup>1)</sup> of measured values	≤ 5,0 % <sup>3)</sup>
Supply voltage	$U_V$	V	5 ± 0,25
Supply current	$I_V$	mA	≤ 20
Output current	$I_A$	µA...mA	-100...3
Temperature range		°C	- 40 ...+ 120
Max. overpressure	$p_{max}$	bar	350
Rupture pressure	$p_{berst}$	bar	> 500
Tightening torque	$M_a$	Nm	20 ± 2

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

<sup>1)fkE</sup>Available from Tyco Electronics

**Dimensional drawing**

**Characteristic curve**

**Characteristic curve**

**Measurement circuit**


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**Accessories****Part number**

Connector housing	Tyco number	2-967 642-1 <sup>1)</sup>
Contact pins	Tyco number	965 907-1 <sup>1)</sup>
Individual seal	Tyco number	967 067-1 <sup>1)</sup>

Accessories are not included in the scope of delivery and are therefore to be ordered separately as required.  
<sup>1) (KE)</sup> Available from Tyco Electronics