

Pressure Sensor Air PST

This sensor is designed to measure absolute air pressure and air temperature, especially the air box pressure of gasoline or Diesel engines.

An integrated circuit combines a piezo-resistive sensor element, electronics for signal-amplification and temperature-compensation. The output of the sensor is an analog, ratiometric signal. A NTC resistance is used for temperature measurements.

The main feature of this sensor is the integration of two functions (air pressure and air temperature) in one housing. A further benefit of the PST is the high quality of the production part at a low price.



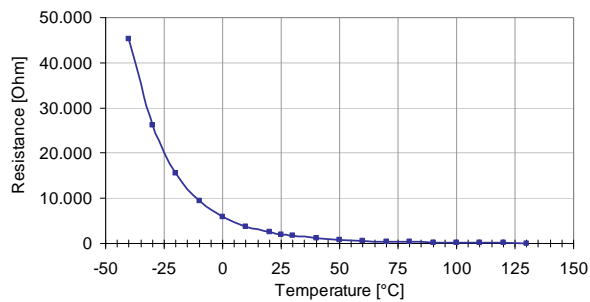
Application	
Application 1	0.1 ... 1.15 bar (a)
Application 2	-40 ... 125 °C
Pressure Reference Type	absolute
Max. Pressure	5 bar
Operating Temp. Range	-40 ... 125 °C
Media Temp. Range	-40 ... 125 °C
Storage Temp. Range	-40 ... 130 °C
Max. Vibration	0.19 mm @ 100 ... 200 Hz 250 m/s ² @ 200 ... 500 Hz sine

Mechanical Data	
Mounting	M6
Fitting	18 mm
Weight w/o Wire	30 g
Sealing	O-ring 13.95 x 2.62 mm

Electrical Data	
Power Supply U _s	4.5 ... 5.5 V
Max Power Supply U _s max.	16 V
Full Scale Output U _A @ 5 V	0.3 ... 4.8 V
Current I _s	9 mA

Characteristic Application 1

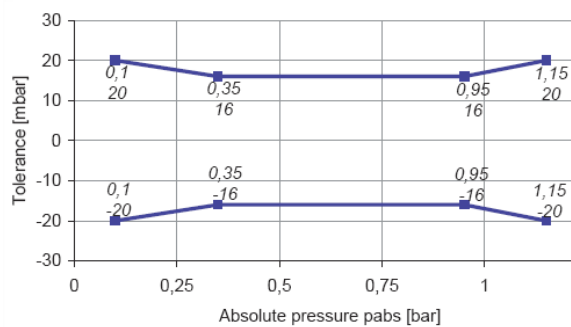
Response Time T10/90	0.2 ms
Compensated Range	10 ... 85 °C
Tolerance (FS) @ U _s = 5 V	± 0.016 bar
Tolerance (FS)	± 1.39 %
Sensitivity	4,047 mV/bar
Offset	-4.76 mV



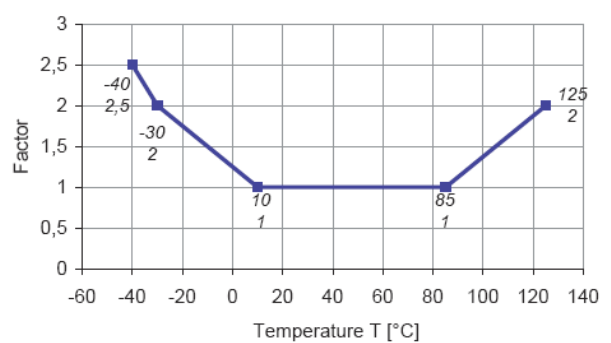
Characteristic Application 2

T [°C]	R [Ohm]
-40	45,313
-30	26,114
-20	15,462
-10	9,397
0	5,896
10	3,792
20	2,500
25	2,057
30	1,707
40	1,175
50	834
60	596
70	436
80	323
90	243
100	187
110	144
120	113
130	89
Resistance @ 20 °C	2.5 kOhm
Tolerance	5 %
Response Time τ_{63}	45 s @ air ; v = 6 m/s

Tolerance



Expansion of Tolerance f(T)



Connectors and Wires

Connector	Bosch Compact
Mating connector	D 261 205 336
Pin 1	Gnd
Pin 2	Temperature Sig
Pin 3	U _s
Pin 4	Pressure Sig
Pin 5	-

Various motorsport and automotive connectors are available on request.

Please specify the required wire length with your order.

Application Hint

The PST is designed for engines using ROZ95, ROZ98, M15, E22 and Diesel.

The sensor can be connected directly to most control units.

To avoid noise, an ECU-input circuit with a RC-lowpass filter ($\tau = 2$ ms) is recommended.

For the temperature measurement, a 1 kOhm pull-up at 5 V is recommended.

Use engine oil (5W40) as O-Ring grease (no silicone based grease).

Avoid miss-pinning (max. 5 minutes @ I = 0.3 A).

Please find further application hints in the offer drawing (<http://www.bosch-motorsport.com>).

Free download of the sensor configuration file (*.sdf) for the Bosch Data Logging System (<http://www.bosch-motorsport.com>).

Part Number

Absolute Pressure Sensor PST **0 261 230 022**

