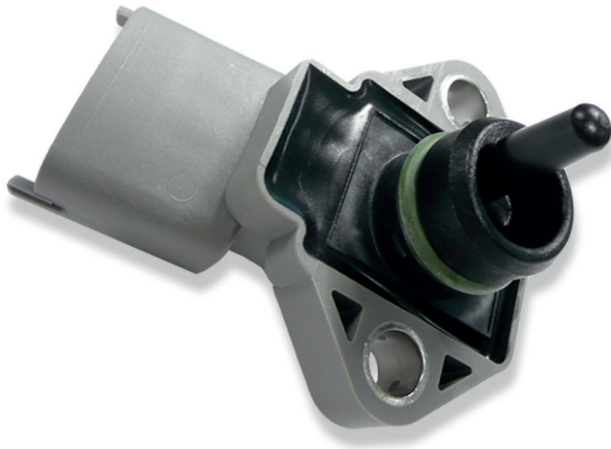


# Pressure Sensor Combined PST

www.bosch-motorsport.com



- ▶ Absolute air pressure and temperature measurements
- ▶ Measurement range 0.1 to 1.15 bar
- ▶ Analog output
- ▶ Very short response time

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, ratio metric signal. An 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 series part at a low price.

## Application

Application 1	0.1 to 1.15 bar (a)
Application 2	-40 to 125°C
Pressure reference type	absolute
Max. pressure	5 bar
Operating temp. range	-40 to 125°C
Media temp. range	-40 to 125°C
Storage temp. range	-40 to 130°C
Max. vibration	0.19 mm at 100 to 200 Hz 250 m/s <sup>2</sup> at 200 to 500 Hz

sine

## Technical Specifications

### Mechanical Data

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

### Electrical Data

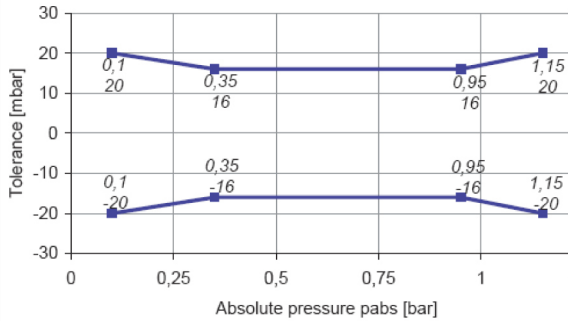
Power supply $U_s$	4.5 to 5.5 V
Max power supply $U_s$ max.	16 V
Full scale output $U_A$ at 5 V	0.3 to 4.8 V
Current $I_s$	9 mA

### Characteristic Application 1

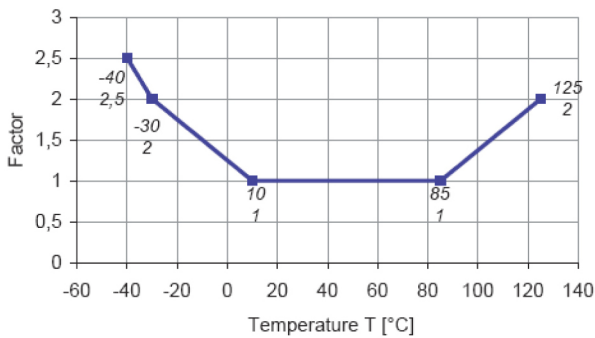
Response time T10/90	0.2 ms
Compensated range	10 to 85°C
Tolerance (FS) at $U_s = 5 V$	± 0.016 bar

Tolerance (FS)	± 1.39 %
Sensitivity	4,047 mV/bar
Offset	-4.76 mV

**Tolerance**



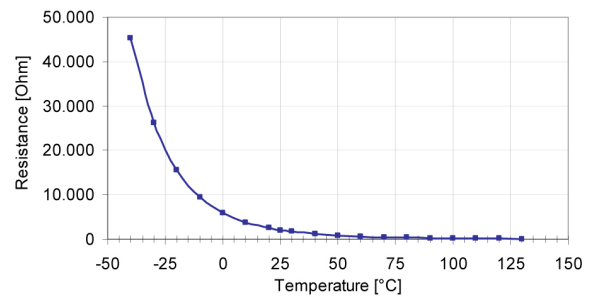
**Expansion of Tolerance**



**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 at 20°C	2.5 kOhm
Tolerance	5 %
Response time tau <sub>63</sub>	45 s at air ; v = 6 m/s



**Connectors and Wires**

Connector	Bosch Compact
Mating connector	D 261 205 336-01
4-pole Compact	
Pin 1	Gnd
Pin 2	NTC
Pin 3	U <sub>s</sub>
Pin 4	Pressure Sig
Pin 5	-

**Installation Notes**

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-low pass filter (tau = 2 ms) is recommended.

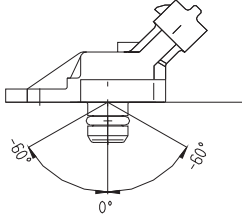
For the temperature measurement, a 1 kOhm pull-up at 5 V is recommended.

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

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

Please find further application hints in the offer drawing and free download of the sensor configuration file (\*.sdf) for the Bosch Data Logging System at our homepage.

To avoid damage caused by condensate the maximum mounting position from vertical is  $\pm 60^\circ$ .



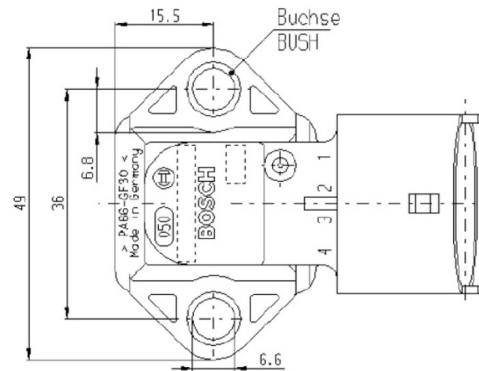
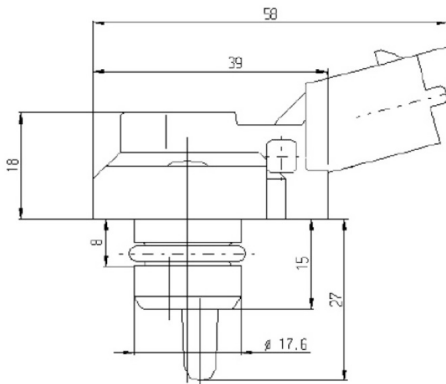
**Safety Note**

The sensor is not intended to be used for safety related applications without appropriate measures for signal validation in the application system.

**Ordering Information**

**Pressure Sensor Combined PST**  
Order number **0 261 230 022**

**Dimensions**



**Represented by:**

**Europe:**  
Bosch Engineering GmbH  
Motorsport  
Robert-Bosch-Allee 1  
74232 Abstatt  
Germany  
Tel.: +49 7062 911 9101  
Fax: +49 7062 911 79104  
motorsport@bosch.com  
www.bosch-motorsport.de

**North America:**  
Bosch Engineering North America  
Motorsport  
38000 Hills Tech Drive  
Farmington Hills, MI 48331-3417  
United States of America  
Tel.: +1 248 876 2977  
Fax: +1 248 876 7373  
motorsport@bosch.com  
www.bosch-motorsport.com

**Latin America:**  
Robert Bosch Ltda  
Motorsport  
Av Juscelino Kubitscheck de  
Oliveira 11800  
Zip code 81460-900  
Curitiba - Parana  
Brasil  
Tel.: +55 41 3341 2057  
Fax: +55 41 3341 2779

**Asia-Pacific:**  
Bosch Engineering Japan K.K.  
Motorsport  
18F Queen's Tower C, 2-3-5 Minato Mirai  
Nishi-ku, Yokohama-shi  
Kanagawa 220-6218  
Japan  
Tel.: +81 45 650 5610  
Fax: +81 45 650 5611  
www.bosch-motorsport.jp

**Australia, New Zealand and South Africa:**  
Robert Bosch Pty. Ltd  
Motorsport  
1555 Centre Road  
Clayton, Victoria, 3168  
Australia  
Tel.: +61 (3) 9541 3901  
motor.sport@au.bosch.com