

# Pressure Sensor Combined PST-F 2

www.bosch-motorsport.com



- ▶ Absolute fluid pressure and temperature measurements
- ▶ Pressure measurement range 0 to 280 bar
- ▶ Temperature measurement range -40 to 140°C

This sensor is designed to measure absolute gasoline pressure and gasoline temperature in direct injection systems.

The pressure measurement is based on the expansion of a steel diaphragm, where strain gauges are placed to a Wheatstone bridge. The measured signal is proportional to the pressure and is processed in an application specific integrated circuit.

The temperature measurement is conducted by an NTC thermistor. The main feature of this sensor is its compact design and the integration of two functions (temperature and pressure measurements) in a common housing.

## Application

|                       |                      |
|-----------------------|----------------------|
| Application 1         | 0 to 280 bar (a)     |
| Application 2         | -40 to 140°C         |
| Reference             | Absolute             |
| Max. pressure         | 340 bar              |
| Operating temp. range | -40 to 130°C (140°C) |
| Media temp. range     | -40 to 130°C (140°C) |
| Storage temp. range   | -40 to 60°C          |

|                       |  |
|-----------------------|--|
| Biofuel compatibility | E26, E85   |
| Max. vibration        | 210 m/s <sup>2</sup> at 147 to 1,350 Hz<br>175 m/s <sup>2</sup> at 1,350 to 2,000 Hz |

## Technical Specifications

### Mechanical Data

|                     |             |
|---------------------|-------------|
| Male thread         | M10x1       |
| Weight without wire | 36 g        |
| Wrench size         | 27 mm       |
| Installation torque | 40 Nm       |
| Sealing             | Sealed cone |

### Electrical Data

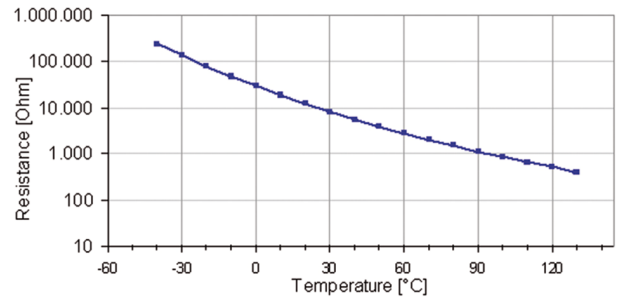
|                            |                                |
|----------------------------|--------------------------------|
| Power supply $U_s$         | 4.75 to 5.25 V                 |
| Max power supply $U_s$ max | 16 V                           |
| Full scale output $U_A$    | 0.5 to 4.5 V $U_s$ ratiometric |
| Current $I_s$              | 12 mA                          |

**Characteristic 1**

|                         |   |
|-------------------------|---|
| Response time T10/90    | Pressure: 0.2 to 0.8 ms<br>Temperature: 9 s (response time of temperature signal in oil dip bath 20 to 100°C) |
| Compensated range       | -40 to 130°C  |
| Tolerance (FS) at $U_s$ | +/- 1 % at 0 to 100°C<br>+/- 1.5 % at -40 to 0°C and 100 to 130°C   |
| Sensitivity             | 14.3 mV/bar at $U_s = 5$ V  |
| Offset                  | 500 mV at $U_s = 5$ V   |

**Characteristic 2**

| T [°C] | R [Ohm] |
|--------|---------|
| -40    | 243,241 |
| -30    | 135,753 |
| -20    | 78,716  |
| -10    | 47,258  |
| 0      | 29,287  |
| 10     | 18,684  |
| 20     | 12,240  |
| 30     | 8,218   |
| 40     | 5,642   |
| 50     | 3,955   |
| 60     | 2,826   |
| 70     | 2,055   |
| 80     | 1,519   |
| 90     | 1,141   |
| 100    | 868.4   |
| 110    | 669.9   |
| 120    | 523.2   |
| 130    | 413.3   |
| 140    | 330.0   |

**Connectors and Wires**

|                  |                  |
|------------------|------------------|
| Connector        | Bosch Compact    |
| Mating connector | F 02U B00 596-01 |
| Pin 1            | Gnd              |
| Pin 2            | Sig              |
| Pin 3            | NTC              |
| Pin 4            | $U_s$            |

**Installation Notes**

The sensor can be connected directly to most control units.

For temperature measurement please use a pull-up resistor with an optimal value of 4.6 kOhm.

Please note that using the adapter F 02U 002 956-01 in connection with the PST-F 2 the ambient conditions could be changed (e.g. medium temperature dissipation or undesired vibrations).

The sensor has a protection for overvoltage, reverse polarity and short-circuit.

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.

**Safety Note**

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

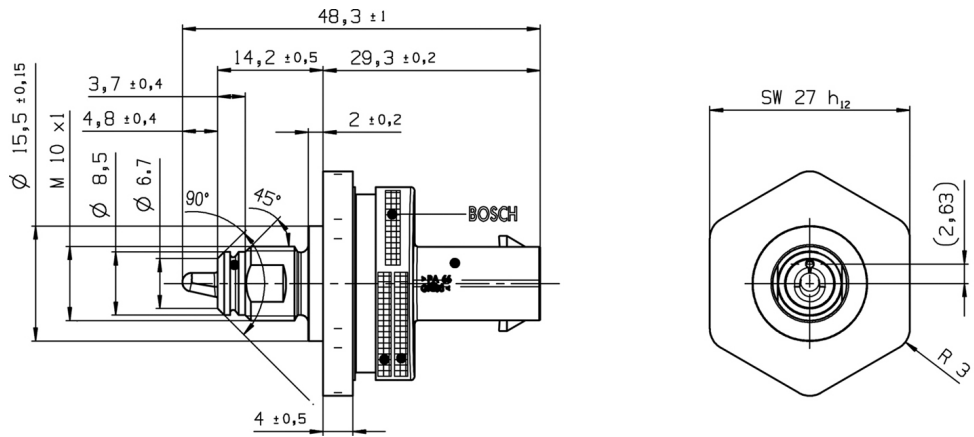
**Ordering Information****Pressure Sensor Combined PST-F 2**

Order number **0 261 545 101**

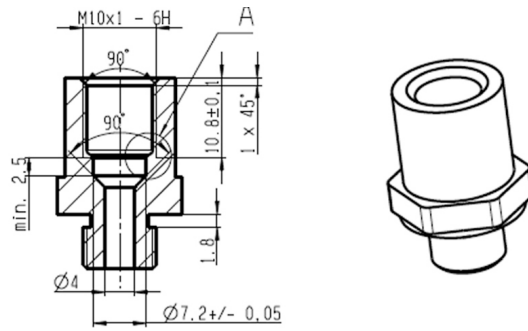
**Accessories****Pressure Sensor Fluid PST-F 2 Adapter**

Order number **F02U 002 956-01**

Dimensions



Sensor



Adapter

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