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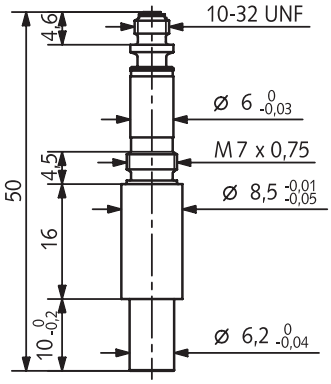
ThermoCOMP®-
Quartz Pressure Sensor Type 6125B...

Ground-insulated high temperature pressure sensor for cylinder pressure measurements in internal combustion engines. Doesn't need additional cooling and measures with minimal thermal shock error and load change drift due to its ThermoCOMP® diaphragm. The ground insulated design avoids electrical interferences due to ground loops.

Technical Data

Range	bar	0 ... 250
Calibrated partial range	bar	0 ... 50
Overload	bar	300
Sensitivity	pC/bar	≈–16
Natural frequency	kHz	≈75
Linearity, all ranges	%FSO	≤±0,5
Acceleration sensitivity		
axial	bar/g	<0,002
radial	bar/g	<0,003
Operating temperature range	°C	–50 ... 350
Sensitivity shift		
200 ... ±150 °C	%	≤±2
200 ... ±50 °C	%	≤±1
Thermal shock		
at 1500 min^{-1}, 9 bar IMEP		
Δp	bar	≤-0,3
ΔIMEP	%	<-2
Δp_{max}	%	<-1
Insulation resistance at 20°C	Ω	≥10^{13}
Ground insulation	Ω	≥10^{6}
Shock resistance	g	2000
Tightening torque	Nm	10
Weight, with cable	g	29
Connector, ceramic insulator	Type	10-32 UNF

1 bar = 10^5 Pa = 10^5 N · m^{-2} = 1,0197... at = 14,503... psi;
1 psi = 0,06894... bar; 1 g = 9,80665 m · s^{-2};
1 Nm = 0,73756... lbft; 1 g = 0,03527... oz



- Ground-insulated
- Very small load change drift
- Very small thermal shock
- Available with oilproof viton cable Type 1983AC1

Description

The use of polystable quartz elements assures safely against twinning even under high mechanical loads. This guarantees a practically constant sensitivity over the temperature range of -50°C ... 350°C.

The ground insulation and the extremely small thermal errors are the outstanding features of this sensor.

The sensor is available with high temperature connecting cable Type 1967A1, L=1 m, or with oilproof viton cable Type 1983AC1, L=1 m (refer to ordering code).

Application

The non cooled sensor Type 6125 is mainly used for precise measurements in spark ignited and Diesel engines under restricted space conditions. Thanks to its ground insulation this sensor is ideal for mounting in test cells with electrical ground loop problems. It is also very well suited for transient engine testing due to the very small load change drift.

The special Type 6125BU20 with its thicker diaphragm is very suitable for knock measurements.

000-025e-10.01 (DB03.6125Be)

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Mounting example

The sensor can directly be mounted in the cylinder head (B11/B21 version, Fig. 1) or across water ducts by means of a mounting sleeve Type 6433A/34A (Fig. 2). It should be installed flush with the combustion chamber in order to avoid pipe oscillations.

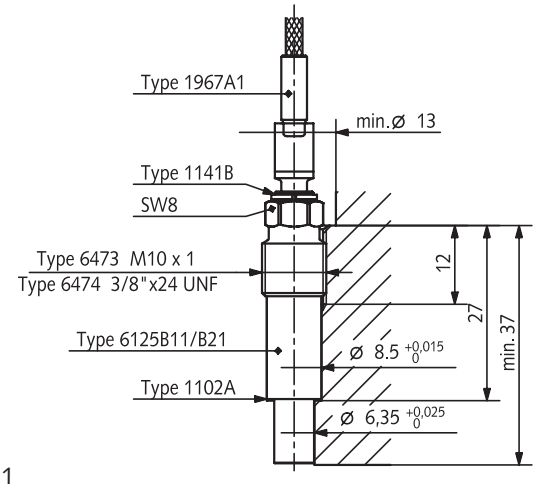

Fig. 1

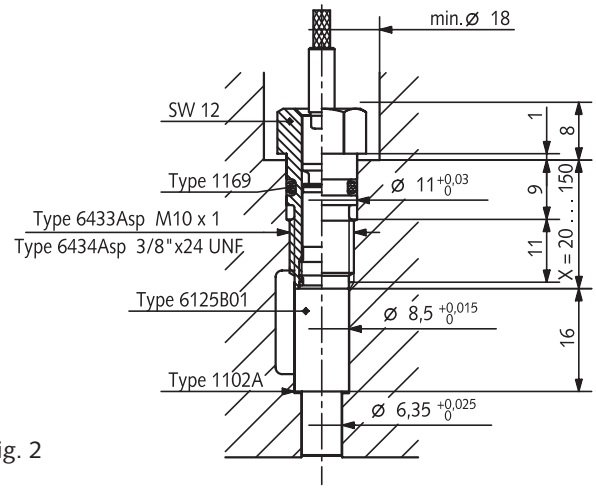

Fig. 2

Scope of delivery	**Type**
• Sensor with cable 1967A1 or 1983AC1	6125B...
• Coupling 10-32UNF neg. – BNC pos.	1721
• Seals	1102A

Accessories	**Type**
• Torque wrench. 5...40Nm	1371B
• Tubular socket wrench WS8	1373
• Step drill	1337
• Screw tap M10x1	1353
• Extraction tool	1317
• Mounting sleeve M10x1 incl. O-ring	6433A...
• Mounting sleeve 3/8"x24UNF incl. O-ring	6434A...
• O-ring for mounting sleeve	1169
• Mounting nut M10x1	6473
• Mounting nut 3/8"x24UNF	6474
• Clamping ring for nut	1141B
• Copper seal	1102
• Nickel seal	1102A
• Spare cable 10-32 UNF, l=1m	1967A1
• Adapter M10x1 for pressure generator Type 6906A	6952A1
• Adapter 3/8"x24UNF for pressure generator Type 6906A	6952A2
• Sensor dummy	6469A

Ordering Code:

6125B: without mounting nut, without cable
6125B01: without mounting nut, with cable Type 1967A1
6125B02: without mounting nut, with cable Type 1983AC1

6125B10: with mounting nut M10x1, without cable
6125B11: with mounting nut M10x1, with cable Type 1967A1
6125B12: with mounting nut M10x1, with cable Type 1983AC1

6125B20: with mounting nut 3/8"x24UNF, without cable
6125B21: with mounting nut 3/8"x24UNF, with cable Type 1967A1
6125B22: with mounting nut 3/8"x24UNF, with cable Type 1983AC1

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