

Piezotron® Quartz Pressure Sensor for Engine Diagnostics

Type 7613C

Piezoelectric sensor with integrated amplifier (Piezotron®) for periodically cylinder pressure measuring in medium and low speed engines, suitable for all types of fuel, e.g. HFO, Diesel and various types of gas.

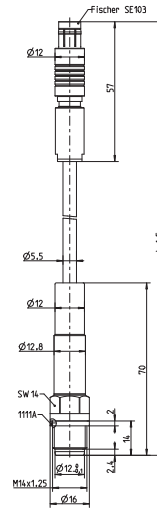
- Excellent Linearity
- M14x1, 25 mounting thread
- Operating temperature up to 350 °C

Description

The sensor and the Piezotron amplifier are connected by a strong, fluorelastomer coated cable. The quartz-measuring element is extremely stable and provides a very accurate signal over the whole life time. The sensor has an M14x1, 25 mounting thread for mounting into the Kistler Thompson-Adapter 7513A for measuring at the indicator valve of large bore engines. The sensor is calibrated and adjusted to a sensitivity of 20 mV/bar.

Application

The Type 7613C is mainly used for periodically cylinder pressure measurements at the indicator valve for low speed and medium speed with high accuracy. This sensor is not designed for continuous cylinder pressure measurement.



Technical Data

Range	bar	0 ... 250
Overload	bar	300
Sensitivity	mV/bar	-20
Natural frequency	kHz	≈70
Linearity, all ranges	%FSO	≤±0,5
Acceleration sensitivity		
axial	bar/g	<0,002
transverse	bar/g	<0,001
Operating temperature range		
Front part of sensor	°C	-50 ... 350
Hex-nut to connector	°C	-50 ... 150
Electronics in plug	°C	-50 ... 90
Sensitivity shift		
200 ... ±150 °C	%	≤±3
200±50 °C	%	≈1
Thermal shock		
at 1 500 1/min, IMEP = 9 bar		
Δp	bar	≤±0,3
ΔIMEP	%	≤±2
Supply current	mA	4
Output bias	VDC	9 ... 14
Time constant at 20 °C	s	≈1 800
Time constant at 350 °C	s	≈10
Output impedance	Ω	<100
Shock resistance	g	2 000
Tightening torque	N·m	25
Weight	g	160
Plug	Type	Fischer SE 103 pos.

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This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

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Mounting

Can be fitted without adapter into an indicator hole (ø18 mm, thread M14x1,25). Due to its low impedance voltage output the sensor is insensitive to interferences and can be used with economical electronics.

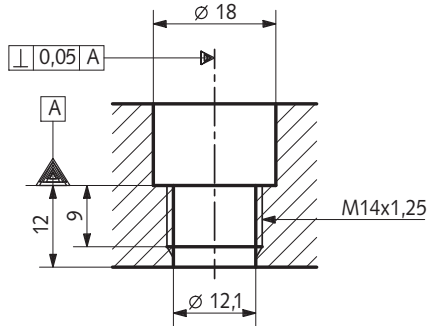


Fig. 1: Fitted into combustion chamber with hole ø18 mm, seal Type 1111A, diaphragm flush mounted with the combustion chamber

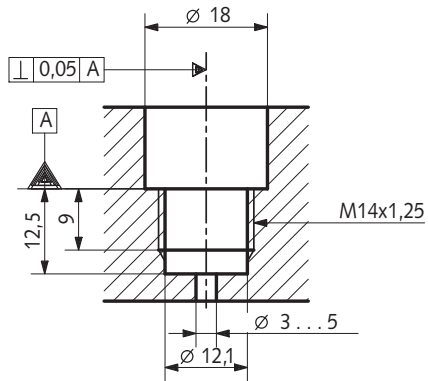


Fig. 2: As fig.1, with set-back diaphragm. Admissible bore length depends on the application. Too long bore may interfere the quality of the measuring results

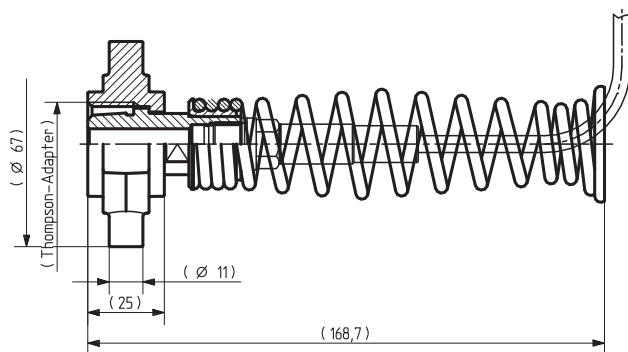


Fig. 3: Fitted in Thompson adapter Type 7513A on indicator valve

Accessories

- Nickel seal Type 1111A
- Thompson adapter 7513A
- Connecting cable Fischer KE103 neg. – BNC pos. 1673A2/A5
- Engine Peak Meter 2516B1

Mounting Accessories

- Torque wrench 8 ... 40 N·m Type 1300A11
- Fork wrench hex. 18 mm for torque wrench 1300A15
- Tubular socket wrench hex. 14 mm for ø18 mm fitting hole 1377
- Special key for Thompson adapter 7513A 1300A1

Ordering Key

		Type 7613C <input type="checkbox"/>
Pressure sensor	-	↑
Pressure sensor mounted in Thompson adapter Type 7513A	A	

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