

Watercooled PiezoStar pressure sensor

Туре 7061С...

for combustion engine measurements

Ideally suited for combustion engine research and for thermodynamic investigations, sensor Type 7061C... exhibits a high sensitivity and excellent thermodynamic stability due to optimized water cooling. Type 7061C can be used in applications with classic fuels as well as with alternative fuels including hydrogen.

- Extremely high sensitivity of ~-92pC/bar
- Low thermal shock error
- Calibrated Ranges up to 300 bar
- Water cooled precision reference
- Optimized cooling and low signal noise
- Ideal for thermodynamic analysis
- Suitable for use in hydrogen combustion engines

Description

The Type 7061C... uses a PiezoStar crystal for very high sensitivity and high natural frequency. An excellent zero point stability is achieved thanks to the improved integrated water cooling of the Type 7061C... The durable optimized diaphragm with low thermal shock sensitivity guarantees precise measurements.

The sensor Type 7061C... is mounting compatible to the Type 7061B... The sensors are supplied with a mounted cable. For standard applications a rugged metalbraided cable is supplied.

Application

The miniature sensor Type 7061C... is ideally suited for thermodynamic measurements in large engines with high peak pressures. The low sensitivity to thermal shock and the excellent zero point stability yield precise measuring results. In addition, the excellent linearity across the whole range and the high sensitivity allows gas exchange to be analyzed accurately.

Cooling fluid specification

- Demineralized water according to norm VDE-Norm 0510
- Cooling fluid additive Glysantin G30 / G40 / G48 or similar products (do not mix with each other)
- Mixing ratio: 1 part additive with 4 parts demineralized water suitable for applications down to -9 °C
- For more information please refer to instruction manual of cooling unit Type 2621G

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Technical data

300 0/100/ 00/300 350 ≈-92
0/100/ 00/300 350 ≈-92
00/300 350 ≈-92
350 ≈–92
≈–92
≈58
≤±0.3
<0.015
<0.003
3 0.5
2 000
350
±0.4
≤0.2
≤0.5
≤0.5

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Technical data (continuation)

Insulation resistance at RT	Ω	≥10 ¹³
Tightening torque greased	N∙m	25
Weight, sensor with cable	g	28.5
Connector, ceramic insulator	-	KIAG 10-32

Mounting

Mounting examples

The sensor Type 7061C... may be screwed directly into a standard M14 bore. Fig. 1 shows flush mounting with the wall of the combustion chamber. Fig. 2 shows mounting with recessed diaphragm with a connection bore. For the ceramic-insulated connectors 10-32 UNF only the high temperature cables Type 1631C..., 1635C... or 1969A... may be used.



Fig. 1: Flush mounted sensor. Bore ø according to mounting tool

Direct mounting

The bore must be machined exactly to specification. Kistler tap Type 1361 ensures the correct tolerances are achieved.

In order to avoid pipe oscillations we recommend flushmounting the sensor in the cylinder head (Fig. 1). To reduce the thermal effect on the sensor, a recessed mounting position (up to 2 mm) is recommended.

An alternative installation method uses a mounting position with a small diameter boer in front of the diaphragm. This offers excellent thermal-shock protection but can be prone to pipe oscillation (Fig. 2).



Fig. 2: Recessed mounted sensor. Bore ø according to mounting tool

Accessories	Type/Art. no.
 Coupling 10-32 UNF neg. – BNC pos. 	1721
Cr-Ni-steel seal	1111A
 Connecting cable PFA steel braiding 	
- L=1m	1969A1
 with PiezoSmart, L = 1 m * 	1985A2S311
 Mounting key for cable 	1300A57
 Mounting key SW14/SW18 D17,8x250 	1377
 Torque wrench 8-40 Nm 	1300A11
 Wrench jaw insert SW18 for 	1300A15
Torque wrench type 1300A11	
 Dummy sensor M14x1,25 	7441A
Adapter for pressure generator type 6904A	7915
 Connecting hose for cooling water 	1225A2
 Fluoropolymer-hose for cooling water 	1203CSP
 Conditioning system 	2621G

*with factory calibration data, state SN with order

Ordering key



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Type 7061C

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Description of Icons

H ₂	H2 tested: Suitable for the use in hydrogen combustion engines	*	Anti Strain Design: Insensitive to mechanical strain effects
Ĭ	Ready to Use: Easy installation - minimal modifications	*	High Thermal Stability: Temperature stable over measuring range
CLCC	Closed Loop Combustion Control: Suitable for closed loop control applications	∲ <u></u> ≜(₹	High Robustness: High durability with good thermodynamic performance

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