

Quartz High-Pressure Sensor

Type 601A, 601H

Quartz pressure sensor for measuring dynamic and quasi-static pressures up to 1 000 bar at temperatures up to 200 °C. Very small dimensions.

- Very small dimensions
- Temperatures up to 200 °C
- High natural frequency

Description

The measured pressure acts through the diaphragm on the quartz crystal measuring element, which transforms the pressure p (bar) into an electrostatic charge Q (pC = pico-Coulomb).

The stainless steel diaphragm is welded flush and hermetically to the stainless steel sensor body. The quartz elements are mounted in a highly sensitive arrangement (transversal effect), which is welded hermetically to the body.

The connector is welded to the body, but its Teflon® insulator is not absolutely tight.

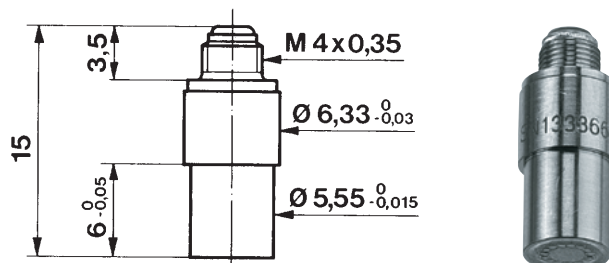
Application

The miniature quartz pressure sensors Type 601... are especially suited for dynamic pressure measurements on objects offering little mounting space.

If mounting space and max. measured frequency allows for, the sensor Type 701A should be selected because of its five times higher sensitivity.

Typical Applications

Pressure measurements on compressors, pneumatic and hydraulic installations (except injection pumps). Measurements of explosion and blast pressures (601H).



Technical Data

Type		601A	601H
Range	bar	0 ... 250	0 ... 1 000
Calibrated partial ranges	bar	0 ... 25	0 ... 100
	bar	0 ... 2,5	0 ... 10
Overload	bar	500	1 200
Sensitivity	pC/bar		≈-16
Natural frequency	kHz		≈150
Linearity	%FSO		≤±0,5
Acceleration sensitivity	bar/g		<0,001
Operation temperature range	°C		-196 ... 200
Temperature coefficient of sensitivity	%/K		<10 ⁻⁴
Insulation resistance at 20 °C	Ω		≥10 ¹³
Shock resistance	g		10 000
Capacity	pF		5
Weight	g		1,7
Connector, Teflon® insulator			M4x0,35

1 N (Newton) = 1 kg · m · s⁻² = 0,1019... kp = 0,2248... lbf;
 1 kgf = 9,80665 N; 1 inch = 25,4 mm; 1 kg = 2,2046...lb;
 1 N·m = 0,73756...lbft

Teflon® is a registered trademark of DuPont.

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Mounting

The sensor can be mounted directly into the measuring object or the adapter by means of a mounting nut (Fig. 1) or a connecting nipple (Fig. 2).

When mounted with a connecting nipple, the latter is pre-assembled with the sensor to a mounting unit. The junction between nipple and sensor can be sealed with "Loctite".

See also datasheets for:

Tools	1300_000-068
Adapter	6501_000-070
Connecting nipples	6401_000-069
Cables	1601B_000-352

Mounting Examples

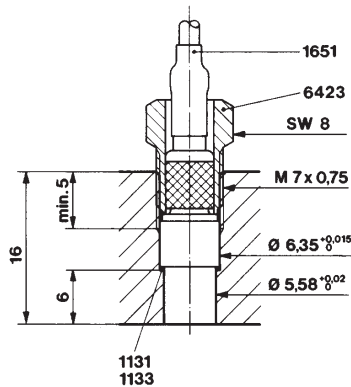


Fig. 1: Mounting with mounting nut

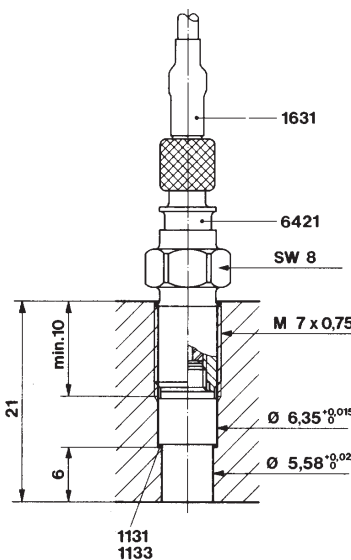


Fig. 2: Mounting with connecting nipple

Included Accessories

- None

Optional Accessories

- Copper seal 1131
- Nickel seal 1131A
- Teflon® seal 1133
- Key WS8 for connecting nipple 6421 1301
- Step drill 1331
- Extraction tool KIAG 10-32 and M4 1311
- Mounting nut WS8 6423
- connecting nipple M4/KIAG 10-32 6421
- Connecting nipple M4/BNC 6401
- Connecting nipple M4/TNC 6411
- Connecting nipple air cooled M4/KIAG 10-32 6461
- Heat-shrink tubing for connector 1021
- Mounting adapter M10x1 6503
- Mounting adapter M14x1,25 6501
- Mounting adapter conical 6505
- Mounting adapter M3 6507
- Cooling adapter M14x1,25 6509
- Cooling adapter conical 6515sp

Type/Art. No.

Ordering Key

Type 601

Sensor

Type 601A	A
Type 601H	H

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