

High-pressure sensors

For dynamic measurements up to 10 000 bar

Type 6213...
Type 6215...
Type 6217...

The front-sealing pressure sensors enable highly dynamic measurement at highest pressures. The robust design makes them suitable for adverse environments (e.g. hot gases and high shocks).

- Excellent life-time
- Great linearity
- Highly dynamic

Description

Piezoelectric technology enables measurements of high-speed events with excellent accuracy in full and partial ranges. The front-sealing design optimizes the robustness to mechanical and thermal stress.

The piezoelectric sensing element provides a high stability of sensitivity and does not lead to pyroelectric drift.

Accessories are available for all of these sensors to further improve their performance in the presence of high thermal shocks (e.g. due to pyrotechnical devices).



Application

These high-pressure sensors are ideally suited for highly dynamic pressures, even in the presence of high thermal shocks. Specific applications include:

- Propellant testing
- Testing of airbag components
- EPVAT & CIP testing

Technical data

	Unit	6213B	6213BK	6215	6217
Measuring range	bar	10 000	8 000	6 000	2 000
Calibrated range	bar	0 ... 8 000 0 ... 1 000	0 ... 8 000 0 ... 1 000	0 ... 6 000 0 ... 600	0 ... 2 000 0 ... 200
Overload	bar	11 000	11 000	6 600	2 400
Sensitivity	pC/bar	-1.2	-1.2	-1.4	-13
Linearity	%FSO	≤±0.5	≤±0.3	≤±1	≤±0.5
Natural frequency	kHz	>150	>150	>240	>180
Rise time	µs	2	2	1	2
Acceleration sensitivity					
axial	bar/g	<0.005	<0.005	<0.002	<0.002
radial	bar/g	<0.005	<0.005	<0.005	<0.002
Shock resistance					
axial	g	25 000	25 000	25 000	20 000
radial	g	10 000	10 000	10 000	20 000
Temperature coefficient of sensitivity	%/°C	≤±0.02	≤±0.02	≤±0.02	≤±0.02
Temperature range	°C	-50 ... 200	-50 ... 200	-50 ... 200	-50 ... 200
Mounting thread	–	M12x1	M12x1	M10x1	M12x1
Mounting torque	N·m	40	40	20	20
Insulation resistance	Ω	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³

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Mounting

To mount the sensor, a threaded bore as per manual is sufficient. The contact surface needs to be finished with the surface finishing tool Type (see accessories). It is possible to install the sensor without thermal protection, using only the sealing ring Type 1100 (Fig. 1).

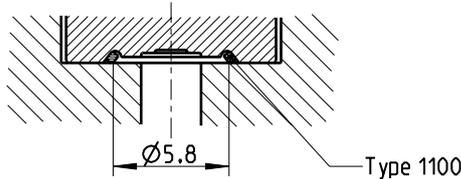


Fig. 1: Direct mounting

The front sealing principle allows the installation of attachments. For protection against powder particles and other fragments use of the diaphragm protection is recommended (Fig. 2).

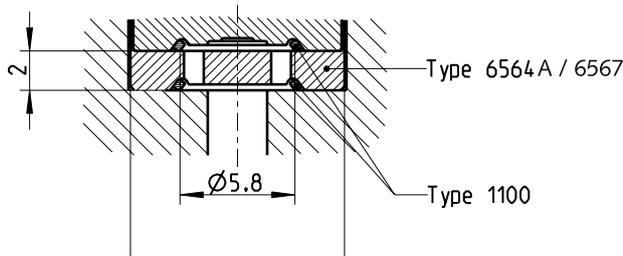


Fig. 2: Mounting with diaphragm protection Type 6564

For protection against hot gases installation of the thermal protective plate (Type 1181) and thermal protection shield (Type 6563A) is recommended (Fig. 3).

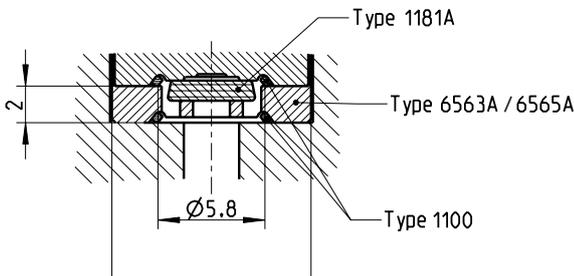


Fig. 3: Mounting with thermal protective plate and thermal protection shield

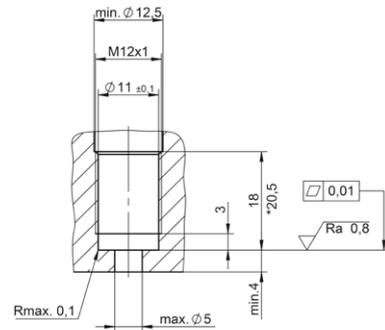


Fig. 4: Mounting bore Type 6217AA02000

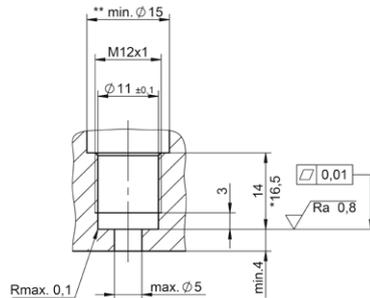


Fig. 5: Mounting bore Type 6217AB02000 and 6217AC02000

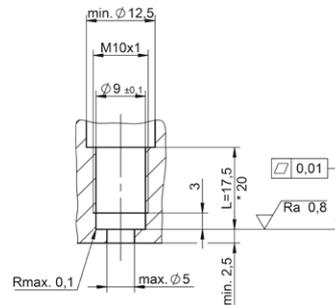


Fig. 6: Mounting bore Type 6215

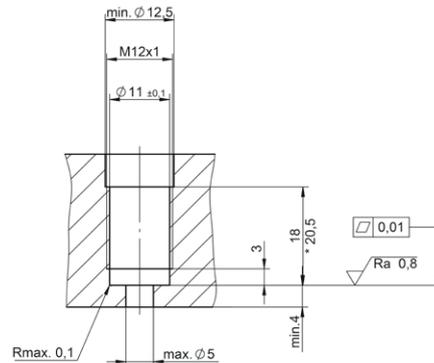


Fig. 7: Mounting bore Type 6213B

The length of the thread can be reduced if the material quality allows it. A reduction below 80% thread length is never recommended.

*With thermal or membrane protection

Included accessories

All sensors come with 10 pcs. of sealing rings (Type 1100) and appropriate special grease (Type 1063).

Optional accessories

	6213B	6213BK	6215	6217
Sealing ring	1100			
Thermal protection	6563A		6565A	6563A
Diaphragm protection	6564		6567	6564
Adapter for 6906 calibration system	6923B1		6925	6923B2
Drilling tools	1341		1327	1341
Screw tap	1355		1353	1355
Surface finish tool	1300A23		1300A25	1300A23
Torque wrench	1371B			
Bit for socket wrench	1373A1			
Dummy plug	6467		6449	6467
Extension cable	1699AA0.5			
Tool to extract membrane protection	1255A			
Adapter for 6203 / 6211 bores	–	–	Z14998	–
Connecting nipple BNC	–	–	–	6217-Acc--001
Connecting nipple TNC	–	–	–	6217-Acc--002
Connecting nipple 10-32 UNF	–	–	–	6217-Acc--003

Ordering key

Configuration

Quartz high-pressure sensor	–
Quartz high-pressure sensor additional accessories included types 1341, 1355, 1300A23 + 1373A1	1
Short version with integr. cable	A
Selected high-pressure quartz sensor with linearity ≤0.3 %	K

Type 6213B



Configuration

Quartz High-Pressure Sensor	–
Quartz High-Pressure Sensor with additional accessories included Types 1300A25, 1327, 1353, 1373A1	A1

Type 6215



Configuration

Kistler KIAG 10-32	A
BNC	B
TNC	C

Type 6217A



Pressure range

Range 2 000 bar	02000
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