

Low Pressure Transducer

Type 7261

Ultrahigh Sensitive – for Measuring Smallest Pressure Fluctuations

Low pressure quartz transducer for dynamic and short term static pressure measurements from vacuum to 10 bar. High resonant frequency and flush welded diaphragm.

The charge signal of the transducer is transformed into a proportional output voltage in a charge amplifier. Within wide limits, the output voltage does not depend on the length of the transducer cable.

- Very high sensitivity
- Very robust

Description

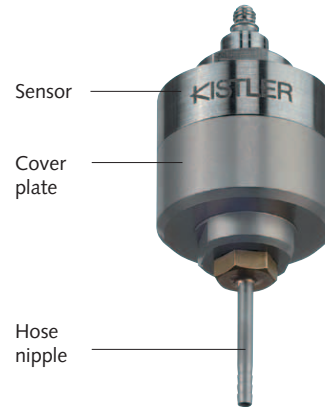
The measured pressure acts through the diaphragm on the quartz crystal measuring element which transforms the pressure into an electrostatic charge. The stainless steel diaphragm is welded flush and hermetically to the stainless steel transducer body. The quartz elements are mounted in a highly sensitive arrangement (transversal effect) in the quartz chamber, which is welded hermetically to the body. The screw-on cover and the hose nipple simplify in many cases the connection to the measured pressure.

Application

The low pressure transducer Type 7261 is suited for fast dynamic pressure measurements if used without cover. In case both cover and nipple are mounted, the frequency response is reduced considerably due to the Helmholtz resonator effect. Quasistatic measurements of several minutes duration are possible under appropriate conditions.

Typical applications:

- Dynamic and quasistatic pressure measurements, e.g. in pipes of blowers or compressors for investigating the dynamic behaviour of the air columns
- Pressure measurements in carburettors of combustion engines and in pneumatic control circuits and fluidics
- Measurement of pressure pulses in automatic oil firing plants
- Measurement of sound pressure in rough environment



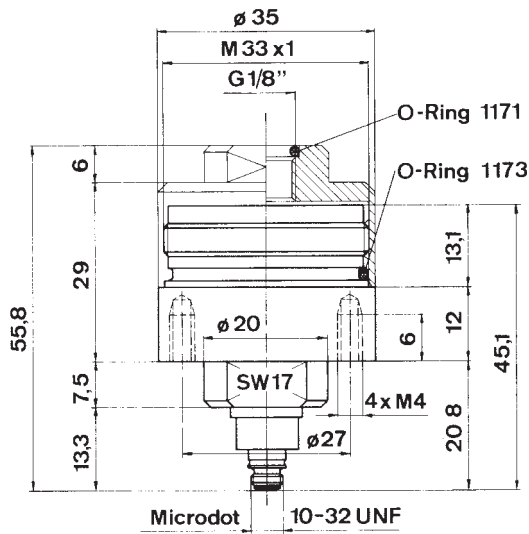
Technical Data

Measuring range	bar	-1 ... 10
calibrated	bar	0 ... 1
partial ranges	bar	0 ... -1
Overload	bar	12
Max. pressure resolution		
with charge amplif. Type 5015	bar	≈1×10 ⁻⁵
with charge amplif. Type 5018	bar	≈2,5×10 ⁻⁶
Sensitivity	pC/bar	2 200
Natural frequency	kHz	≈13
with cover	kHz	≈2,5
with hose nipple Type 1227	kHz	≈0,35
Linearity	%FSO	≤±0,8
Hysteresis	%FSO	<0,5
Dead volume	cm ³	1,5
Insulation resistance	Ω	>5×10 ¹³
Capacitance	pF	24
Acceleration sensitivity	bar/g	<10 ⁻³
Temperature coefficient of sensitivity	%/°C	-0,02
Operating temperature range	°C	-40 ... 240
Shock resistance	g	2 000
Weight	kg	0,18

1 bar = 10⁵ N·m⁻² = 1,019... at = 14,50... psi;
 1 at = 1 kp · cm⁻² = 1 kgf · cm⁻² = 0,980665 bar, 1 psi = 0,06894... bar;
 1 in = 25,4 mm

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Dimensions



If flush mounting is desired, the thread M33x1 may be used (Fig. 3, left half) or the transducer may be introduced with its front part into a bore of 33 mm ϕ and fixed with a flange (Fig. 3, right half). In all cases the o-ring Type 1173 is used for sealing. The four threaded holes M4 may be used for fixing the transducer (Fig. 1 and 2). It is recommended to use a thermo-shrink-sleeve to seal and secure the Microdot-connection of the transducer cable.

Mounting

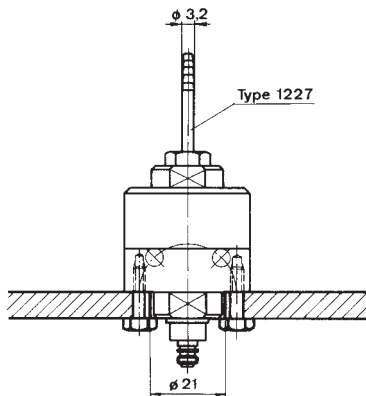


Fig. 1: Measured pressure connection with hose nipple

Usually the transducer Type 7261 is not mounted on the test object but connected by a hose (Fig. 1). For this purpose the hose nipple Type 1227 (including O-ring seal Type 1171) is supplied (Fig. 2). For measuring fast pressure variations, the connecting hose or pipe should be short and of adequate crosssection. For this case it is recommended to use a 1/8" gas pipe that is screwed directly into the cover.

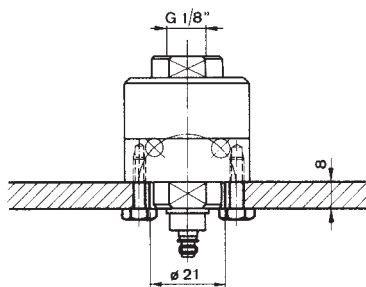


Fig 2: At quick pressure deviations direct pressure line G_{1/8}"

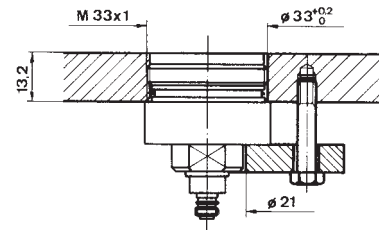


Fig. 3: Mounting with flange

Included Accessories

- Hose nipple
incl. o-ring seal

Type/Art. No.

1227
1171

Optional Accessories

- None

Ordering Code

- Ultrahigh sensitive low pressure transducer for measuring smallest pressure fluctuations

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