

# Piezoelectric Low Pressure Sensor

Type 7261

## Very High Sensivity – Pressure Range 10 bar

Low pressure quartz sensor 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 sensor 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 sensor cable.

- Very high sensitivity
- Very robust

### Description

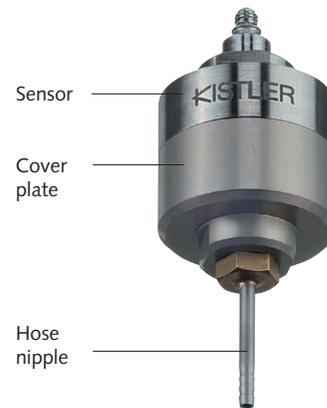
The measured pressure acts through the diaphragm on the quartz crystal measuring element which transforms the pressure into an electrostatic charge. The stainless steel diaphragm is welded flush and hermetically to the stainless steel sensor body. The quartz elements are mounted in a highly sensitive 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 sensor 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. Quasi-static measurements of several minutes duration are possible under appropriate conditions.

Typical applications:

- Dynamic and quasi-static 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 calibrated partial ranges	bar	-1 ... 10	
	bar	0 ... 1	
	bar	0 ... -1	
Overload	bar	12	
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 <sup>3</sup>	1,5	
Insulation resistance	Ω	>5×10 <sup>13</sup>	
Capacitance	pF	24	
Acceleration sensitivity	bar/g	<10 <sup>-3</sup>	
Temperature coefficient of sensitivity	%/°C	-0,02	
	Operating temperature range	°C	-40 ... 240
Shock resistance	g	2 000	
Weight	kg	0,18	

1 bar = 10<sup>5</sup> N·m<sup>-2</sup> = 1,019... at = 14,50... psi;  
 1 at = 1 kp · cm<sup>-2</sup> = 1 kgf · cm<sup>-2</sup> = 0,980665 bar, 1 psi = 0,06894... bar;  
 1 in = 25,4 mm

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**Dimensions**

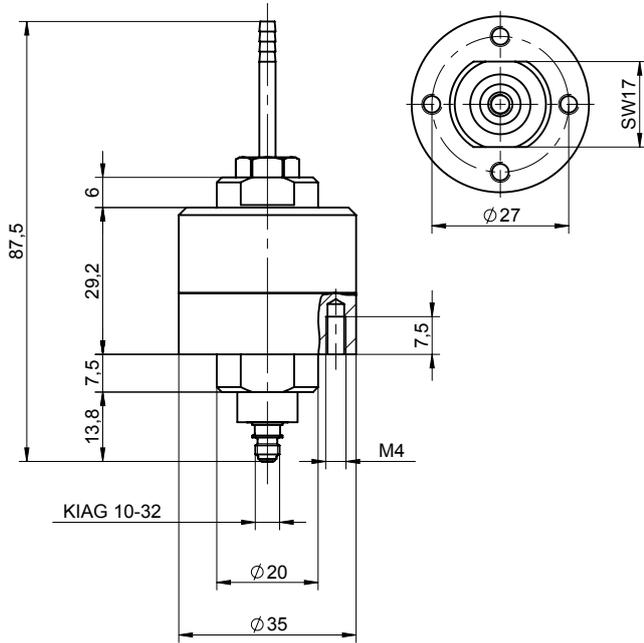


Fig. 1: Dimensions, Type 7261

**Mounting**

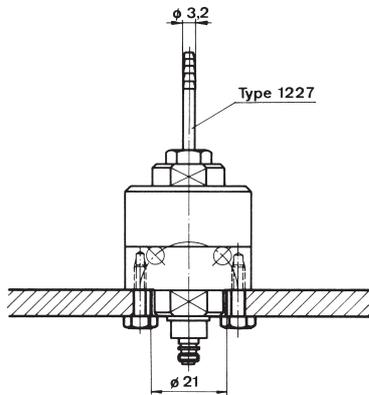


Fig. 2: Measured pressure connection with hose nipple

Usually the sensor Type 7261 is not mounted on the test object but connected by a hose (Fig. 2). For this purpose the hose nipple Type 1227 (including O-ring seal Type 1171) is supplied (Fig. 3). 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.

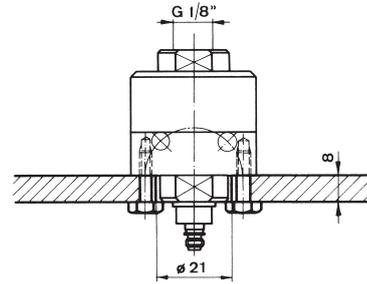


Fig 3: At quick pressure deviations direct pressure line G 1/8"

If flush mounting is desired, the thread M33x1 may be used (Fig. 4, left half) or the sensor may be introduced with its front part into a bore of 33 mm  $\phi$  and fixed with a flange (Fig. 4, 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 sensor (Fig. 2 and 3). It is recommended to use a thermo-shrink-sleeve to seal and secure the Microdot-connection of the sensor cable.

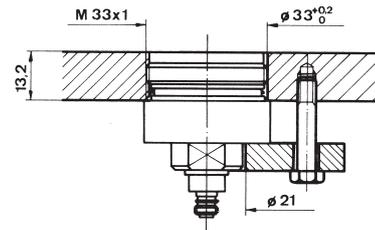


Fig. 4: Mounting with flange

**Included Accessories**

- Hose nipple  
incl. O-ring seal

**Type/Art. No.**

1227  
1171

**Optional Accessories**

- None

**Ordering Code**

- Piezoelectric Low Pressure Sensor –  
Very High Sensivity – Pressure Range 10 bar

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