KISTLER
measure. analyze. innovate.

Cavity Pressure Sensor

with Front: Ø2,5 mm

Type 6182AE

Miniaturized quartz sensor with single-wire technology for mold cavity pressures up to 2000 bar in the injection molding of plastics.

- Ideally suited for industrial applications.
- Designed without a diaphragm and with a level, machinable front face.

Description

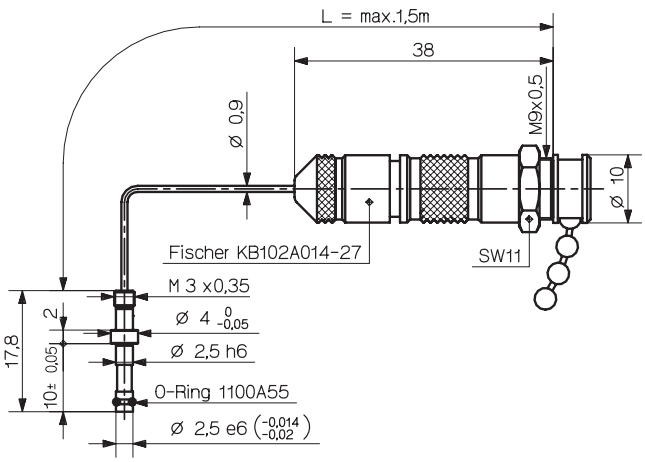
The miniaturized quartz sensor for mold cavity pressure Type 6182AE has a 2,5 mm diameter front face. The very small cross-sectional area of the single-wire cable allows flexibility of installation. Shielding in the single-wire technology is provided by the mold. It is therefore essential for the cable and connector to be integrated in the mold.

For multi cavity applications the sensor Type 6182A without the connector is used. Multi cavity systems are described in the data sheet for Type 6829A... .

The pressure acts directly on the entire front face of the sensor and is transferred to the quartz measuring element, which produces a charge proportional to the pressure. All parts of the sensor are corrosion resistant. The Fischer connector is self-locking and splash-proof.

This product complies with the CE standard 89/336/EEC.

Caution: This sensor must never be used for gases or liquids!



Application

This sensor is designed without a diaphragm and measures mold cavity pressures up to 2000 bar during injection molding. It is mainly suitable for industrial applications for monitoring and open-loop and closed-loop control in thermoplastic injection molding.

000-037e-05.03 (DB03.6182AEe)

KISTLER
measure. analyze. innovate.

Technical Data

Range	bar	0 ... 2000
Overload	bar	2500
Sensitivity	pC/bar	≈-2,5
Linearity, all ranges	% FSO	≤±1
Natural frequency	kHz	>80
Operating temperature range		
Mold (sensor, cable, connector)	°C	0 ... 200 *
Melt (on sensor front face)	°C	<450
Temperature coefficient		
of sensitivity	%/°C	≤±0,01
Insulation resistance		
at 20 °C	TΩ	>10
at 200 °C	TΩ	>1
Weight	g	25

* During mechanical faults, the mold temperature may be allowed to rise to 240 °C without damaging the sensor, but measuring errors can occur.

1 bar = 10^5 Pa = 10^5 N · m^{-2} = 1,0197... at = 14,503... psi; 1 psi = 0,06894... bar; 1 g = 9,80665 m · s^{-2}; 1 Nm = 0,73756... lbft; 1 g = 0,03527... oz

The electrical charge produced by the sensor (pC = picocoulomb) is converted by the Kistler charge amplifier into a proportional voltage of 0 … 10 V. The length of the sensor cable has no influence.

Installation

The sensor is preferably fixed in the mounting bore with the spacer sleeve (Art. No. 3.710.057). The front face of the sensor forms part of the cavity wall. The sensor must therefore be installed in such a way that its front face is exactly flush with the wall.

The sensor front face can be further machined up to 0,5 mm.

The single-wire cable must be installed completely in the mold. The connector supplied must be installed with the single-wire cable cut to length. The insulation of the cable must not be stripped prior to insertion into the connector. This connector is then sunk with the mounting plate in the mold and secured. The identification plate should also be fixed nearby indicating the type of sensor and its sensitivity.

The connector (Art. No. 5.511.322), the spacer sleeve (Art. No. 3.710.057), the mounting plate (Art. No. 3.520.328) and the identification plate (Art. No. 3.520.842) are included in the scope of delivery.

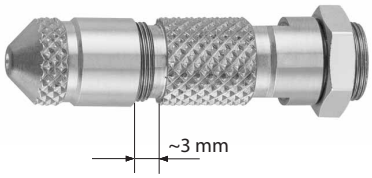
000-037e-05.03 (DB03.6182AEe)

KISTLER
measure. analyze. innovate.

Single-Wire Cable for Installation with Connector

1) Open the connector anti-clockwise.

3) Insert single-wire cable cut to length with insulation intact into the connector up to the limit.



2) Connector must be opened up to produce a gap of ~3 mm.

4) Close the connector clockwise. This automatically strips the insulation from the cable and clamps it.

Accessories Included	Art. No.
• Spacer sleeve	3.710.057
• Mounting plate	3.520.328
• Connector	5.511.322
• Checking tool	3.050.243
• Identification plate	3.520.842
• Cap with chain	7.621.004
• O-ring	1100A55

Optional Accessories	Type No.
• Dummy sensor	6558
• Extraction tool	1358
• Mounting nut	6458

000-037e-05.03 (DB03.6182AEe)

KISTLER
measure. analyze. innovate.

Mounting Examples

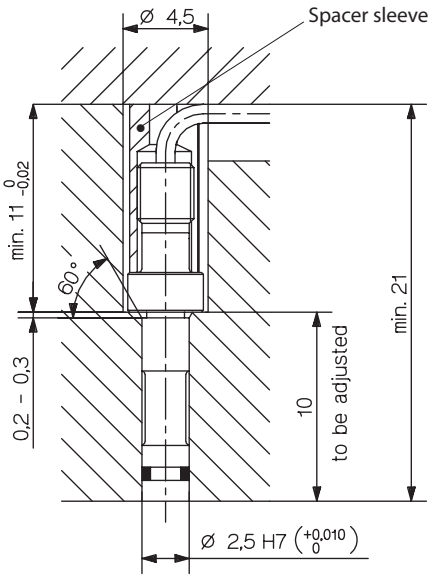


Fig. 1: Installation with spacer sleeve (Art. No. 3.710.057)

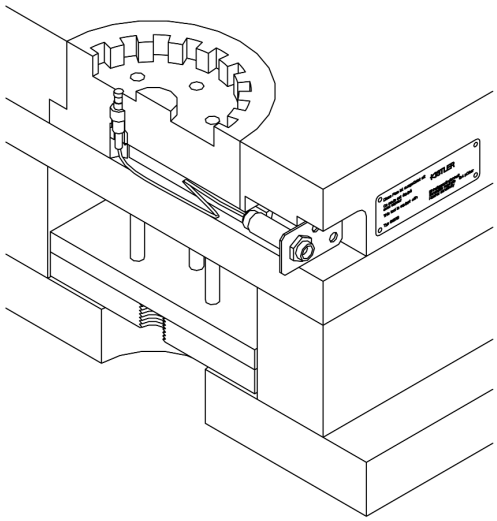


Fig. 2: Sensor, cable, mounting plate and ID plate

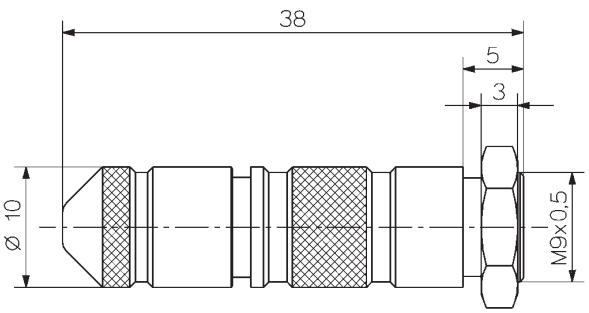


Fig. 3: Connector (Art. No. 5.511.322)

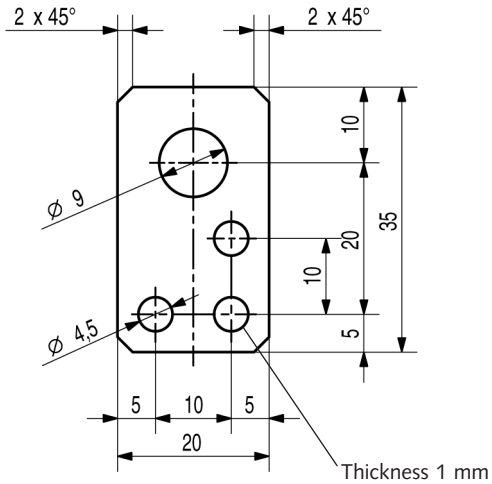


Fig. 4: Mounting plate (Art. No. 3.520.328)

000-037e-05.03 (DB03.6182AEe)