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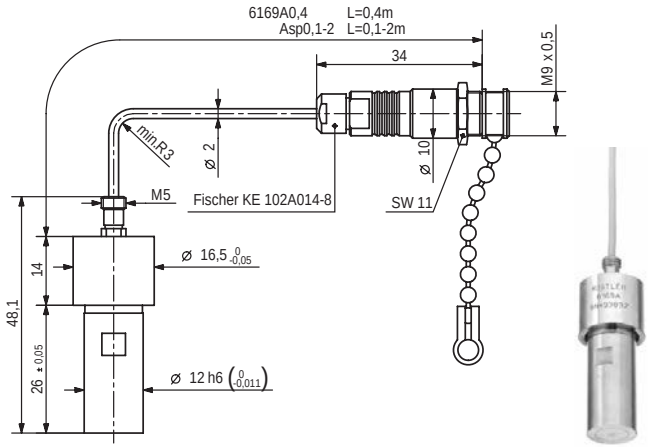
Mold Cavity Pressure Sensor

Type 6169A...

with front: Ø12 mm

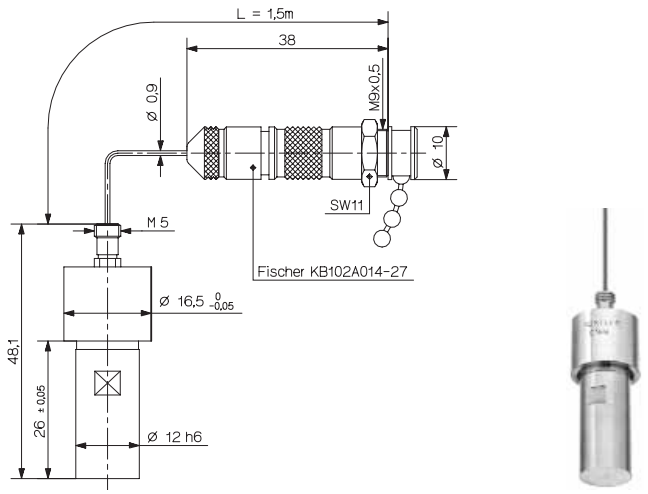


Pressure sensor Type 6169A...

Quartz sensor for mold cavity pressures up to 200 bar for low-pressure injection molding methods (e.g. RIM). Diaphragm-free design with a flat front. Exchangeable high-temperature cable with connector.

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

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



Pressure sensor Type 6169AE

Alternative version of sensor Type 6169A… with single-wire technique. Simplified sensor installation thanks to the single-wire cable, which can be flexibly installed in the mold and cut to length as required. Both single-wire cable and connector are exchangeable. This product complies with the CE standard 89/336/EEC.

Technical data Type 6169A... and Type 6169AE

Range	bar	0 ... 200
Calibrated partial range	bar	0 ... 20
Overload	bar	250
Sensitivity	pC/bar	≈–90
Linearity, all ranges	% FSO	≤±1
Natural frequency	kHz	>30
Acceleration sensitivity	bar/g	<0,005
Operating temperature range		
Mold (sensor, cable, connector)	°C	0 ... 200*
Melt (at front of sensor)	°C	<450
Temperature coefficient		
of sensitivity	%/°C	±0,01
Insulation resistance		
at 20 °C	TΩ	>10
at 200 °C	TΩ	>1
Weight, (Type 6169A0,4)	g	60

* During machine faults, the mold temperature may rise to 240 °C without damaging the sensor; however, this may lead to measuring errors.

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.

Description

The sensor Type 6169A… is a highly sensitive quartz sensor for mold cavity pressure with an exchangeable cable, fitted in a rugged adapter. The sensor with 12 mm front diameter comes flush with the adapter front with an annular gap of <10 µm and measures the pressure directly. The gap is filled with silicone to prevent it from becoming contaminated.

The pressure acts on the quartz measuring element, which produces an electrical charge proportional to the pressure.

All parts of the sensor are corrosion-resistant. The exchangeable cable is screwed to the sensor with a tight seal. The connector is self-locking and splash-proof.

000-034e-03.02 (DB03.6169Ae)

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The sensor 6169AE is provided with a single-wire cable with a very small cross-sectional area and can be installed flexibly in the injection mold. The single-wire cable is exchangeable and can be cut to length as required. With the single-wire technique, electrical shielding is provided by the mold. It is therefore essential for the cable and connector to be completely integrated in the mold. To ensure easy installation, a connector is included which is self-locking and splash-proof. With multi-cavity systems (described in data sheet 6829A...), the sensor basic type is supplied with a single-wire cable, but without connector and mounting plate.

Application

The rugged, diaphragm-free sensor measures mold cavity pressures up to 200 bar in injection molding. It is particularly suitable for industrial applications for monitoring and open and closed loop control in all types of low-pressure injection molding processes (e.g. RIM).

Installation

The sensor is normally fixed in the mounting bore with the mounting nut (Art. No. 6453), but a spacer sleeve can also be used.

The sensor front forms part of the cavity wall. The sensor must therefore be fitted so that its front comes exactly flush and leaves no impression on the molded part. The front can be further machined up to 0,5 mm. Full details can be found in the operating instructions.

The sensor is center aligned in the 12 H7 bore.

If possible affix the connector to a protected part of the mold with the mounting plate (Art. No. 3.520.328) supplied.

For installing the sensor 6169AE equipped with single-wire technique, the following additional points must be observed. 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 but without removal of the insulation. The connector is fitted and secured in the mold with the mounting plate.

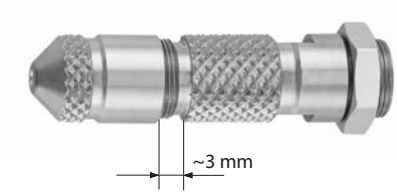
In addition, the identification label (Art. No. 3.520.842) supplied indicating the sensor type and its sensitivity must also be fitted.

The mounting plate (Art. No. 3.520.328), the mounting nut (Art. No. 6453) and the identification label (Art. No. 3.520.842) are included in the parts supplied. For the sensors 6169AE, the schedule of parts supplied is supplemented with the connector (Art. No. 5.511.322).

Installation: single-wire cable with connector (Art. No. 5.511.322)

1) Open the connector anti-clockwise.

3) Insert single-wire cable cut to length (but without removal of insulation) fully into the connector.



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

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

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Scope of delivery	Art. No.
• Mounting nut	6453
• Identification label	3.520.842
• Mounting plate	3.520.328
• Connector (for single-wire technique only)	5.511.322
• Single-wire cable, with the length of 1,5 m (ready installed with sensor, for single-wire technique only)	7.620.314

Accessories	Type
• O-ring, diameter 5 x 1 mm, for Type 6169A...	5.110.012
• O-ring tool for exchanging the cable	1364
• High temperature extension cable, Teflon, Fischer SE102A014 – TNC pos.,	
Length 2 m	1667B2
Length 5 m	1667B5
• High temperature extension cable sheathed in steel braiding, Fischer SE102A014 – TNC pos.,	
Length 2 m	1672A2
Length 5 m	1672A5
• Mounting piece for connectors	1401
• Dummy sensor	6569

Mounting accessories	
• Socket wrench	3.050.165
• Extraction tool	1315A

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Mounting examples

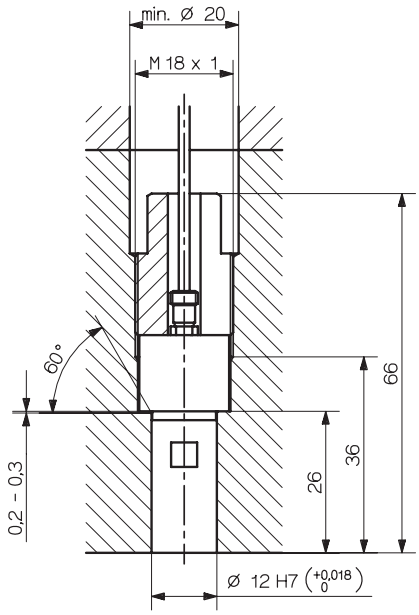

Fig. 1: Installation with mounting nut (Art. No. 6453)

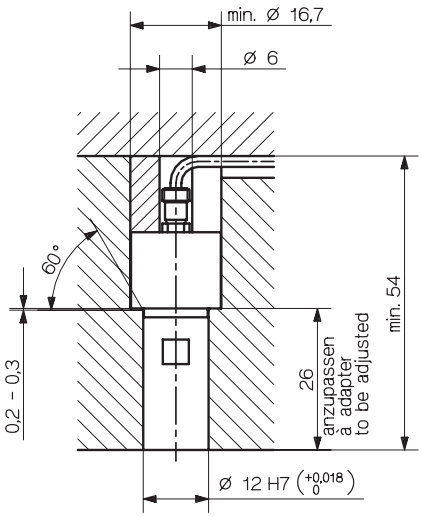

Fig. 2: Installation with spacer sleeve

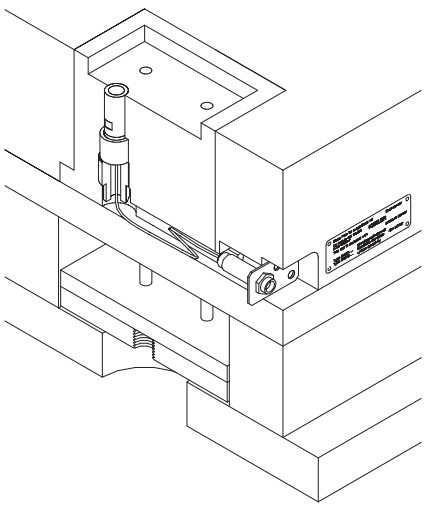

Fig. 3: Sensor, cable, mounting plate (Art. No. 3.520.328) and identification label (Art. No. 5.520.842)

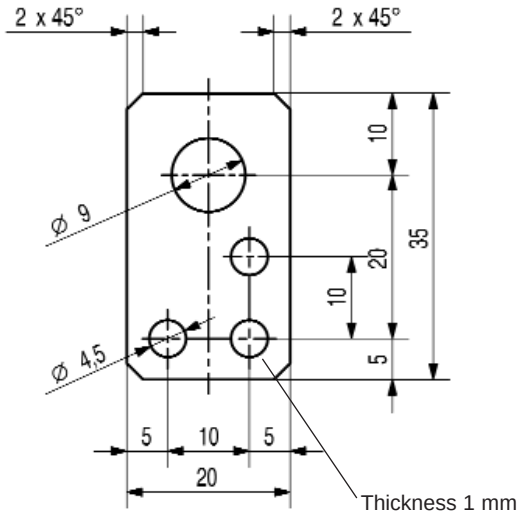

Fig. 4: Mounting plate (Art. No. 3.520.328)

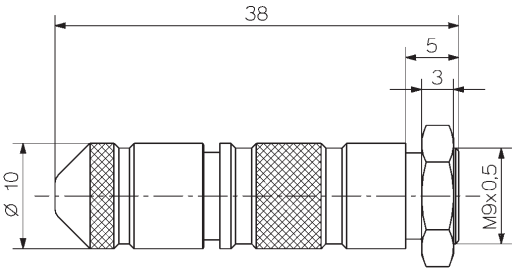

Fig. 5: Connector (Art. No. 5.511.322)

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