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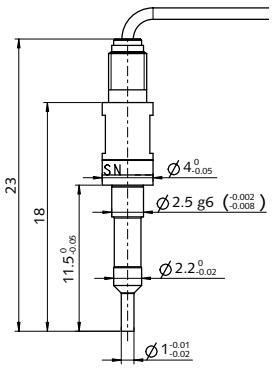
Cavity Pressure Sensor

Type 6183C...

with Front ø1 mm

Miniaturized piezoelectric sensor with single-wire technology for mold cavity pressures up to 2 000 bar in the injection molding of plastics.

- Ideally suited for industrial applications
- Designed without a diaphragm and with a level, machinable front face
- Also available with chromed face for abrasive plastics
- Exchangeable cable
- With venting slot for degassing plastics



Description

The miniaturized sensor for mold cavity pressure Type 6183C... has a 1 mm diameter front face. The very small crosssectional 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.

In the uncoated versions, the front face can be machined up to 0,5 mm in order to adapt it to the contour of the mold cavity. For these Types, it is thus possible to mount a keyway-pin which prevents the sensor rotating in the mounting bore.

For multi cavity applications the sensor Type 6183C...G is used without the single-wire connector Type 1839.

The pressure acts over the entire front of the sensor and is transmitted to the measuring element, which produces a proportional electric charge (pC = Picocoloumb). This is converted into a voltage 0 ... 10 V in the amplifier and is then available as an amplifier output.

Application

It is mainly suitable for industrial applications for monitoring and open-looped and closed-looped control in thermoplastic injection molding.

Technical Data

Range	bar	0 ... 2 000
Overload	bar	2 500
Sensitivity	pC/bar	≈2,5
Linearity, all ranges	% FSO	≤±1
Operating temperature range		
Mold (Sensor, cable, connector)	°C	0 ... 200*
Melt (on sensor front face)	°C	<450
Insulation resistance		
at 20 °C	TΩ	>10
at 200 °C	TΩ	>1

* During machine down-time, the mold temperature may be allowed to rise to 240 °C without damaging the sensor. However, measuring errors may occur

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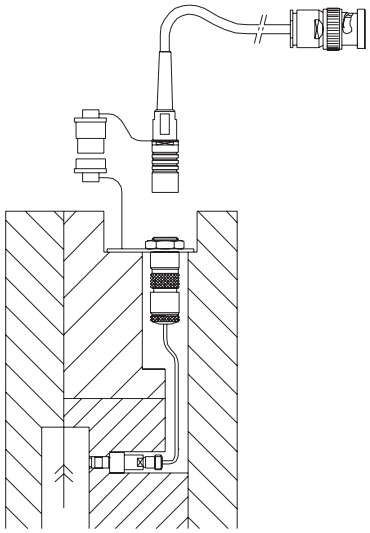
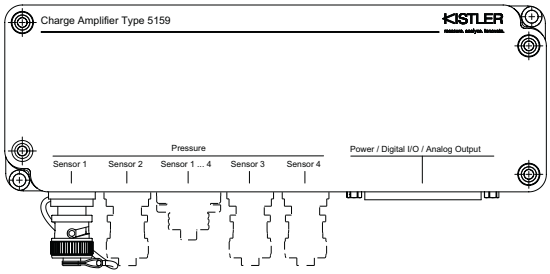
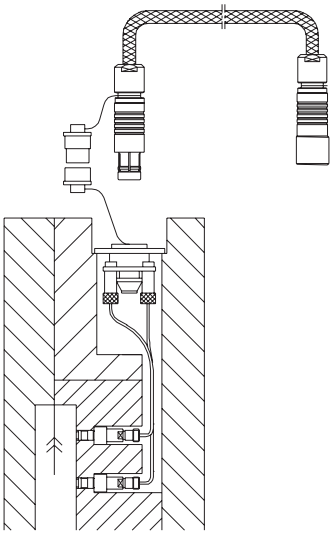
Cable and Amplifier for Measuring Chain with Sensor Type 6183C...

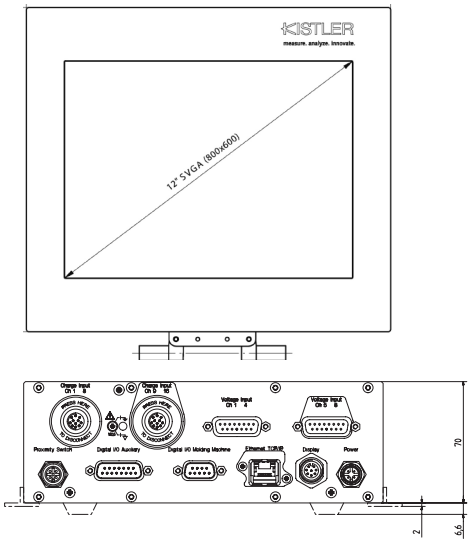




Cable Type 1667B... (BNC connector)
Type 5159A

Fig. 1: Sensor Type 6183C... with Charge Amplifier Type 5159A.





4-channel cable Type 1995A... to connector Type 1708...	8-channel cable Type 1997A... on connector Type 1710...
Type 2869B0xx	Type 2869B2xx
Type 2869B1xx	Type 2869B3xx

Fig. 2: Sensor Type 6183C... with Monitoring System CoMo Injection Type 2869...

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Installation Examples

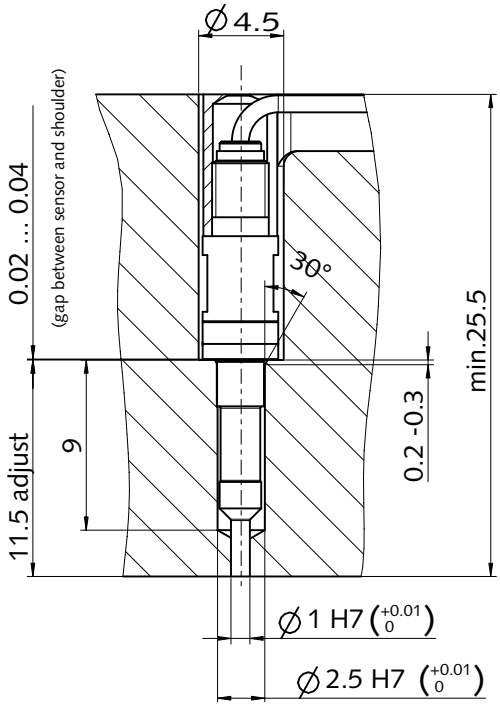

Fig. 3: Installation with spacer sleeve Type 6464A1

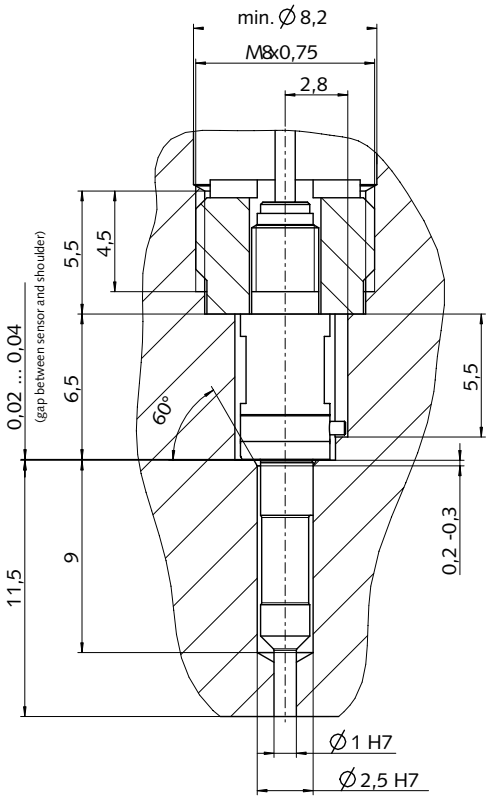

Fig. 4: Optional installation with mounting nut Type 6460A1 and key way pin Type 65001430

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Installation Examples

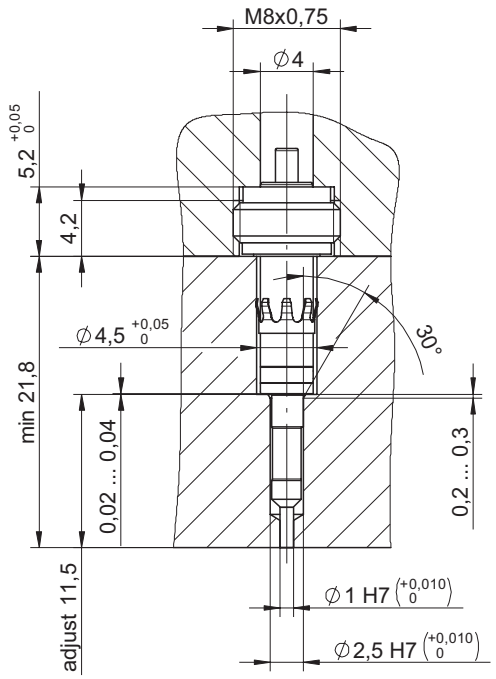

Fig. 5: Installation of the Types 6183C...N... with conducting spacer sleeve

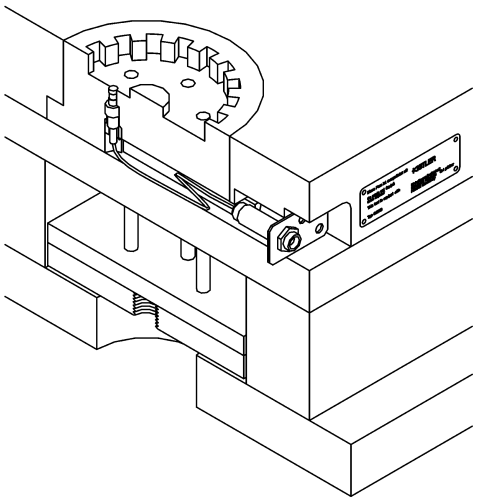

Fig. 6: Sensor, cable, mounting plate and identification plate

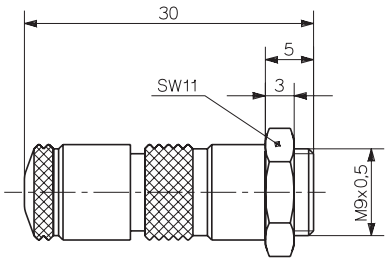

Fig. 7: Connector Type 1839

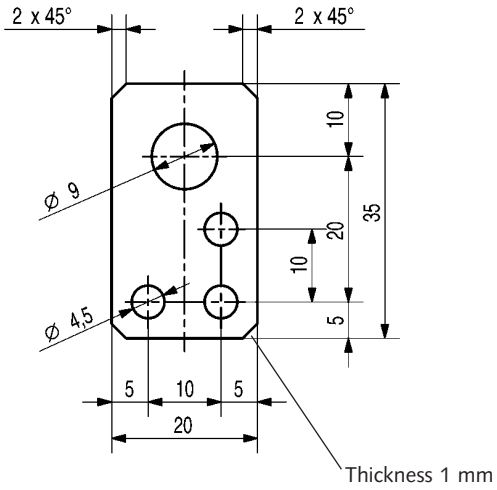

Fig. 8: Mounting plate (Mat. No. 65005208)

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Installation

The sensor is preferably fitted in the mounting bore with the spacer sleeve (Type 6464A1). In case of installation with a keyway pin, however, the mounting nut Type 6460A1 should be used.

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 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 fitted in the mounting plate and this secured in a recess in the mold. The identification plate should be fixed nearby, indicating the type of sensor and its sensitivity.

Ordering Key

Type 6183C□□

Sensor

Sensor front uncoated, keyway pin	**A**
Sensor front chromed	**C**

Cabel

Sensor with single-wire-cable (L = 1,5 m)	**E**
Sensor with single-wire-cable (L = 5 m)	**E1**
Sensor with single-wire-cable, without connector (L = 1,5 m)	**G**
Sensor with single-wire-cable, without connector (L = 5 m)	**G1**
For contact elements Types 1712A... and 1714A...	
Sensor with single-wire-cable and crimped pin (Mat. Nr. 65003747). Cable with special lengths. Specify L in m. (L_{min} = 0,04 m/L_{max} = 1,5 m)	**Zsp**
Sensor with conducting spacer sleeve Type 1720A1 and contact element Type 1712A1	**NE**
Sensor with conducting spacer sleeve Type 1720A1 and contact element Type 1712A1, without connector	**NG**

Accessories Included	**Mat. No. / Type**
• Spacer sleeve (L = 50 mm)	6464A1
• Conducting spacer sleeve (L = 40 mm)	1720A1
• Mounting plate	65005208
• Connector (with cap)	1839
• Checking tool	65000144
• Identification plate	65005416

Optional Accessories	**Mat. No. / Type**
• Replacement cable single wire 1,5 m	1900A17L1,5
• Replacement cable single wire 5 m	1900A17L5
• Auxilary tool to dismount the cable	1300A30
• Fork wrench AF 3,5	5.210.445
• Dummy sensor	6456A
• Extraction tool	1358A
• Mounting nut	6460A1
• Installation tool for mounting nut	1300A131
• Keyway pin	65001430
• 4-channel connector for Type 6183C...G and 6183C...G1	1708...
• 8-channel connector for Type 6183C...G and 6183C...G1	1710...
• Contact elements 1 channel for Type 6183C...Zsp	1712A0
• Contact elements 4 channels for Type 6183C...Zsp	1714A0
• Crimped pin	65003747
• Crimpset with tools	1381A0

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