

Cavity Pressure Sensor

Type 6183A...

with Front $\varnothing 1$ 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

Description

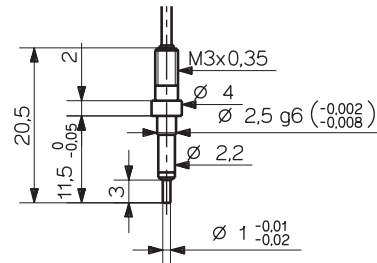
The miniaturized sensor for mold cavity pressure Type 6183AE has a 1 mm diameter front face. The very small crosssectional area of the single-wire cable allows flexibility of installation. Shielding in the single-wire technology is provided by the mold. It is therefore essential for the cable and connector to be integrated in the mold.

For multi cavity applications the sensor Type 6183A... is used without the single-wire connector Type 1839. The Multi Cavity Set Type 6829A... and the Multi Sensor System Type 6831B... are described in the appropriate data sheets.

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.

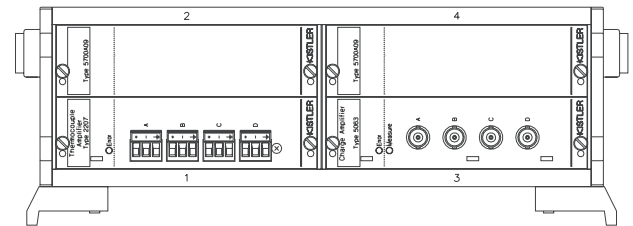
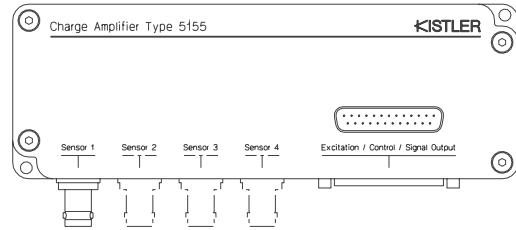
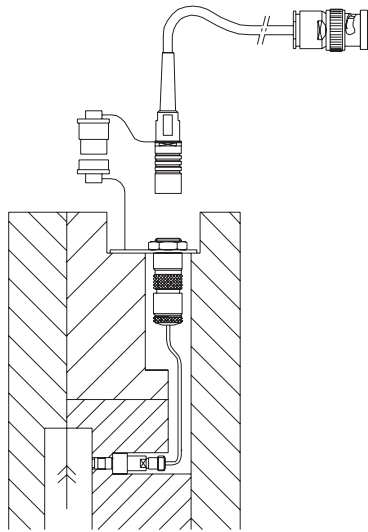


Technical Data

| | | |
|---------------------------------|--------|-------------|
| 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 |

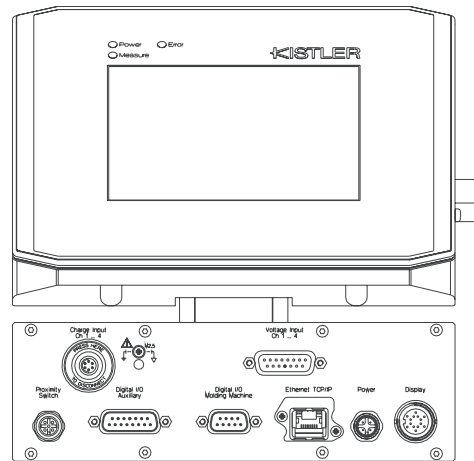
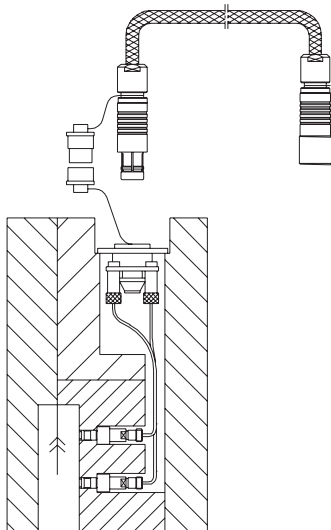
* During machine down-time, the mold temperature may be allowed to rise to 240 °C without damaging the sensor. However, measuring errors may occur

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



| Cable Type 1667B... (BNC connector) | Cable Type 1672B... (TNC connector) |
|--|-------------------------------------|
| Type 5039Axx2 | Type 5039Axx1 |
| Type 5049Axx2 | Type 5049Axx1 |
| Type 5155Axx2x/Axx4x/Axx8x | Type 5155Axx1x/Axx3x/Axx7x |
| Type 5063A1 in Type 2859A.../2865A.../2865B... | |

Fig. 1: Sensor Type 6183A... with Charge Amplifier Typ 5155A... or Signal Conditioner Type 2859/2865...



| 4-channel cable Type 1995A... to connector Type 1708A.. | 8-channel cable Type 1997A... on connector Type 1710A... |
|---|--|
| Type 2869A0xx | Type 2869A2xx/2869B2xx |
| Type 2869A1xx/2869B1xx | Type 2869B3xx |

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

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Installation Examples

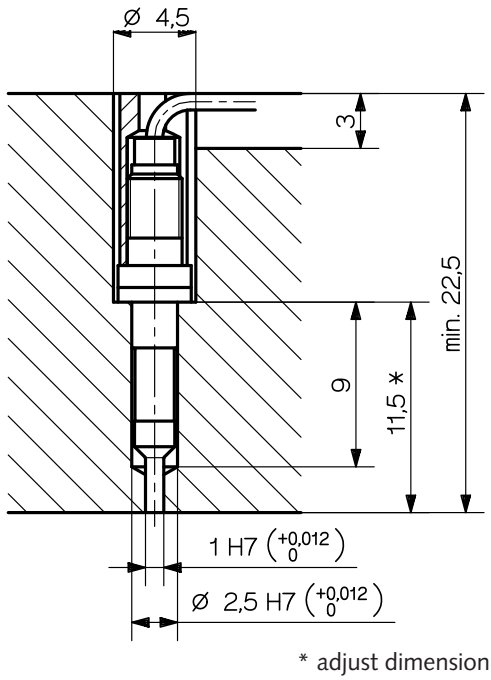


Fig. 3: Installation with spacer sleeve Type 6464A...

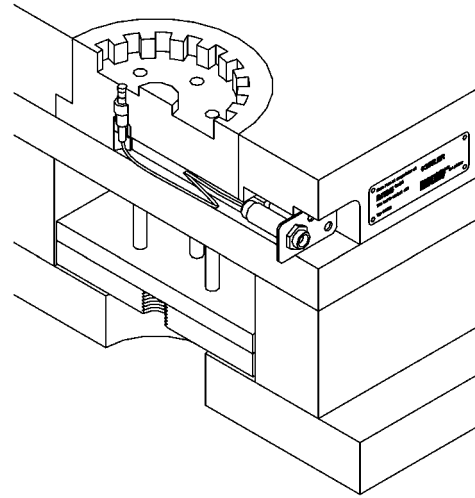


Fig. 4: Sensor, cable, mounting plate and identification plate

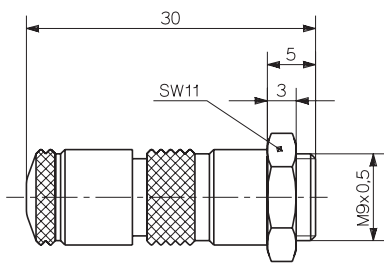


Fig. 5: Connector Type 1839

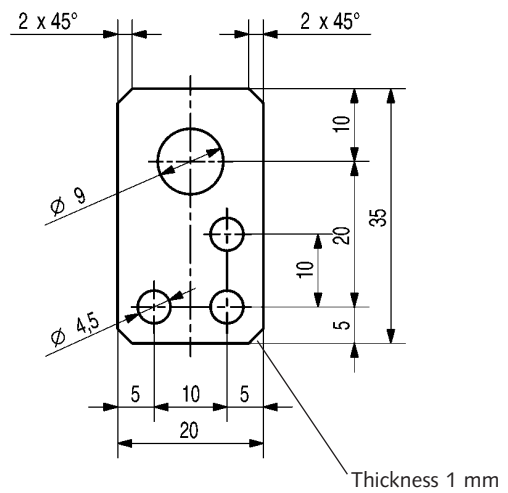


Fig. 6: Mounting plate (Mat. No. 65005208)

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Installation

The sensor is preferably fitted in the mounting bore with the spacer sleeve (Type 6464A1). 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 of all unchromed sensors can be machined up to 0,5 mm.

The sensor front of Types 6183AC... may not be machined.

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 6183A

| | |
|---|------|
| Standard sensor with single-wire cable Length 1,5 m and connector | E |
| Sensor with single-wire-cable chromed front, length = 1,5m, connector | CE |
| Sensor Type 6183AE without connector | G |
| Sensor Type 6183ACE without connector | CG |
| For contact elements Types 1712A... and 1714A... | |
| Sensor with single-wire cable and crimped pin (Mat. No. 65003747). Cable with special length. Specify cable length l in m. $L_{\min} = 0,04 \text{ m} / L_{\max} = 1,5 \text{ m}$ | Zsp |
| Sensor with chromed face, single-wire cable and crimped pin (Mat. No. 65003747). Cable with special length. Specify cable length l in m. $L_{\min} = 0,04 \text{ m} / L_{\max} = 1,5 \text{ m}$ | CZsp |

Accessories Included

| | Mat. No. / Type |
|-----------------------------|-----------------|
| • Spacer sleeve (L = 50 mm) | 6464A1 |
| • Mounting plate | 65005208 |
| • Connector (with cap) | 1839 |
| • Checking tool | 65000144 |
| • Identification plate | 65005416 |

Optional Accessories

| | Mat. No. / Type |
|--|-----------------|
| • Dummy sensor | 6579 |
| • Extraction tool | 1358A |
| • Mounting nut | 6458 |
| • 4-channel connector for Type 6183AG and ACG | 1708A0 |
| • 8-channel connector for Type 6183AG and ACG | 1710A0 |
| • Contact elements 1 channel | 1712A0 |
| • Contact elements 4 channels | 1714A0 |
| • Crimped pin | 65003747 |
| • Crimpset with tools | 1381A0 |