

Mold Cavity Pressure Sensor

Type 6162AA...

for Low-Viscosity Crosslinking Molding Compounds with $\varnothing 6$ mm Front

Sensor for cavity pressures up to 200 bar during the processing and injection molding low-viscosity plastics and resins.

- Suitable for industrial use with conventional and high-pressure RTM, LSRs and SMCs
- Sensitive diaphragm sensor welded into sleeve
- Interchangeable cable

Description

The sensor Type 6162A... consists of a sensitive $\varnothing 4$ mm diaphragm design welded into a robust $\varnothing 6$ mm sleeve. The welded ring gap prevents ingress of low-viscosity resins and falsification of the sensor signal by a force shunt. Interchangeable cables allow a choice of cable types and/or repairs.

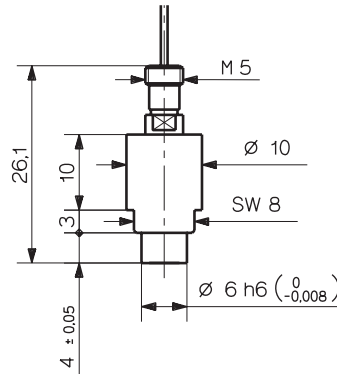
The pressure acts over the diaphragm front of the sensor and is transmitted to the measuring element, which produces a proportional electric charge ($pC = \text{Picocoloumb}$). This is converted into a voltage of 0 ... 10 V in the amplifier and is then available as an amplifier output.

The sensor is available in two versions for different types of cable. The coaxial version uses high-insulation cables that do not necessarily have to be laid in the mold. The practical single-wire alternative is based on a cable that can be cut to any length. The cut-and-grip connector can be connected during mounting in the mold. This makes both installation and servicing easier.

Applications

The robust sensor measures mold cavity pressures up to 200 bar during processing of crosslinking molding compounds in various low-pressure methods for lightweight plastic construction in the automobile and aerospace industries. It is primarily suitable for industrial monitoring, control and regulation of conventional and high-pressure resin transfer molding (RTM) and sheet molding compound (SMC) methods involving pressures up to 150 bar.

Other applications include processing of low-viscosity plastics such as silicones (LSRs) and elastomers in thick-walled parts.



The welded front prevents ingress of low-viscosity plastics in order to allow recording of minute changes in pressure. This is particularly important in long production runs, which require accurate monitoring.

Technical Data

Range	bar	0 ... 200
Overload	bar	300
Sensitivity	pC/bar	≈-18,5
Linearity, all ranges	% FSO	≤±1
Operating temperature range		
Mold (Sensor, Cable)		
6162AA...	°C	200
Melt (at front of sensor)	°C	<450
Connector	°C	0 ... 200*
Insulation resistance		
at 20 °C	TΩ	>100
at 300 °C	TΩ	>0,01

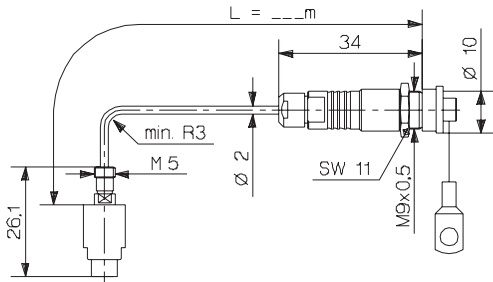
* During machine down time, the mold temperature may rise to 240 °C without damaging the sensor; however, this may lead to measuring errors.

QUALITY MOLDING
powered by Kistler

This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

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Pressure Sensor Type 6162AA...



Sensor with coaxial cable

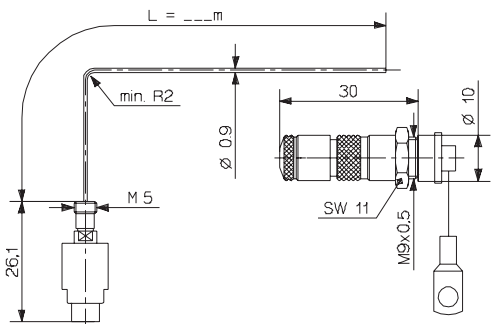
Mounting

The sensor is normally fixed in the mounting bore (Fig. 3) with the mounting nut (Type 6453), but a spacer sleeve (Type 6459) can also be used (Fig. 4).

The sensor front forms part of the cavity wall. The hole must therefore be adapted so that the sensor front comes exactly flush and leaves no impression on the molded part. The front cannot be re-machined, as this would damage the diaphragm.

The sensor is center aligned in the 6 H7 bore.

Pressure Sensor Type 6162A...E

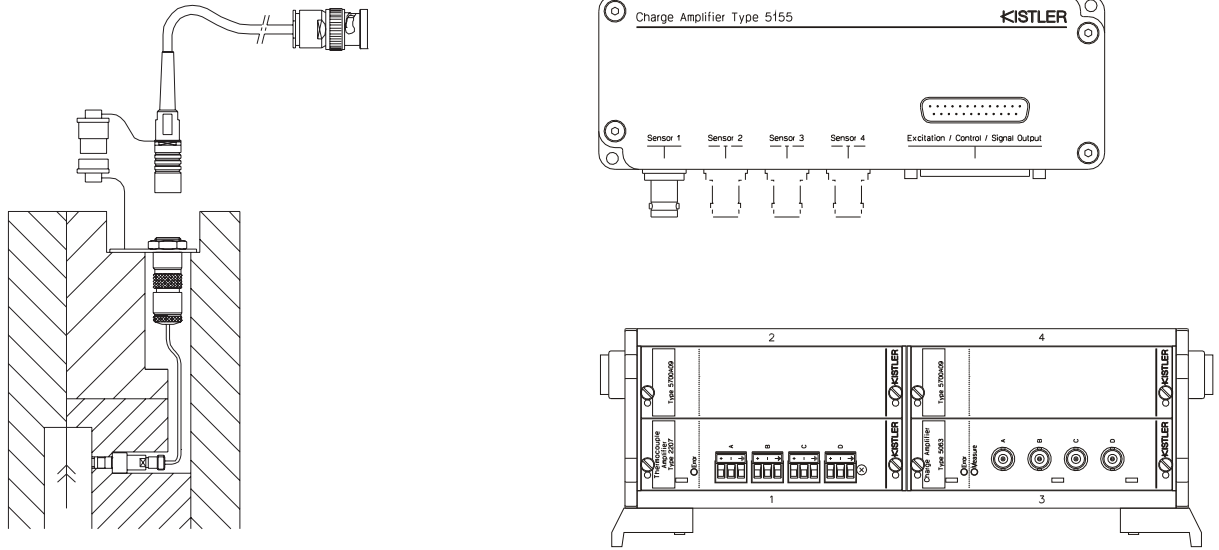


Sensor uses single-wire technique for easy installation. The sensor Type 6162A...E is provided with a single-wire cable with a very small cross-sectional area and can be installed flexibly in the injection mold. The single-wire cable Type 1666A... is interchangeable and can be cut to length as required. 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, for Types 6162A...E... a connector is included which is self-locking and splash-proof.

The following sensors with single-wire technique are available:
 Types 6162AAE... and 6162AAG... .

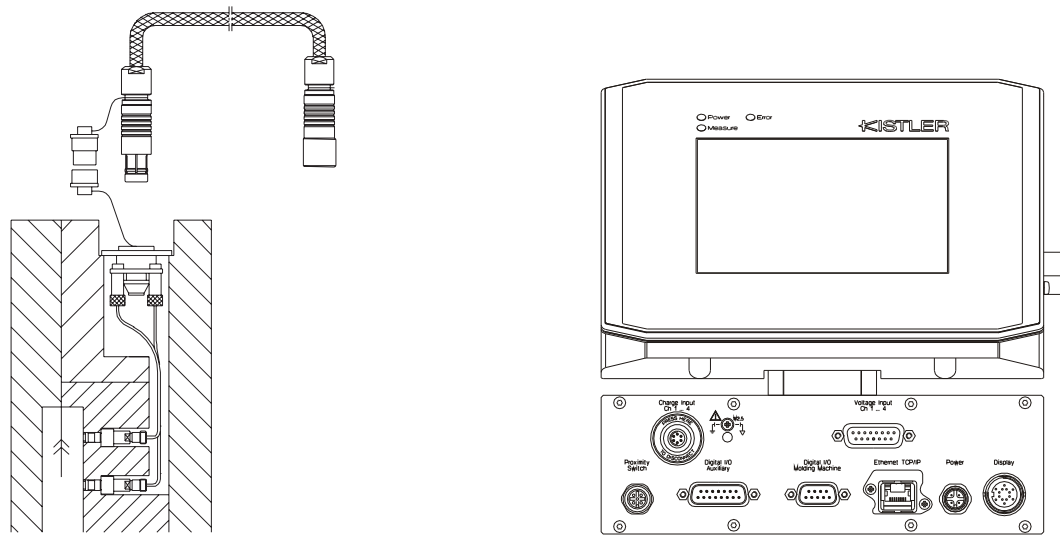
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Cable and Amplifier for Measuring Chain with Sensor Type 6162AA...



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 6162AA... with Charge Amplifier Type 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 6162AA... with Monitoring System CoMo Injection Type 2869...

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Installation Examples

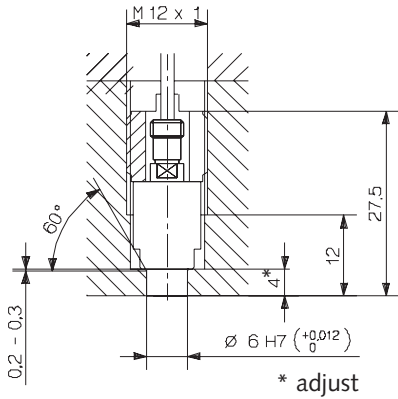


Fig. 3: Installation with mounting nut Type 6453

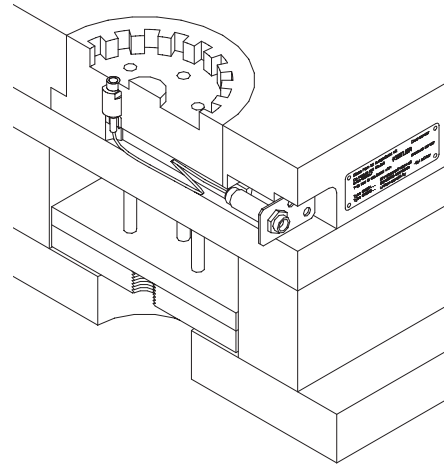


Fig. 6: Sensor, cable, mounting plate (Art. No. 3.520.328) and identification label (Art. No. 3.520.842)

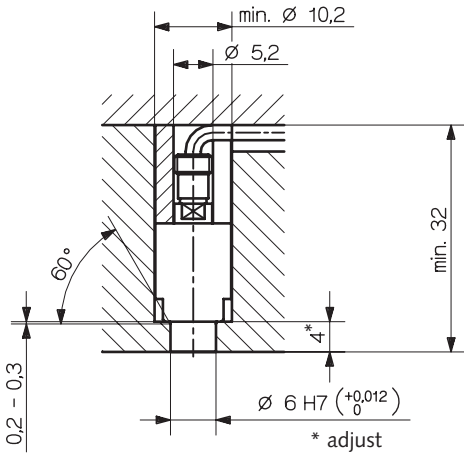


Fig. 4: Installation with spacer sleeve Type 6462

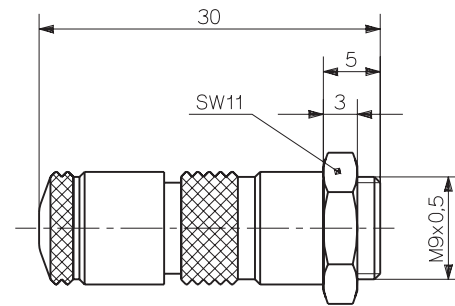


Fig. 7: Connector (Type 1839)

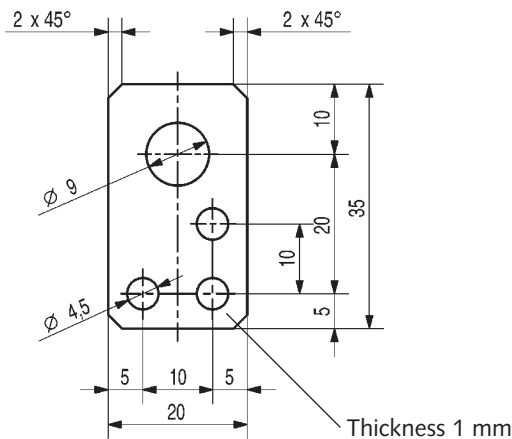


Fig. 5: Mounting plate (Art. No. 3.520.328)

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Accessories Included

- Mounting nut Art. No./Type 6453
- Mounting plate 3.520.328
(for sensor with cable only)
- identification label 3.520.842

Sensor with coaxial cable

- High temperature extension cable 1645C...
(Type 6162AA 0,2/0,4/0,6/0,8 und sp)

Sensor with single-wire cable

- Connector (for single-wire technique only) 1839
- Single-wire cable, with the length of 1,5 m 1666A2
(Types 6162A...E... and A...G...)
- Single-wire cable, with the length of 5 m 1666A4
(Types 6162A...E... and A...G...)

Optional Accessories

- High temperature extension cable Viton® Fischer SE102A014 – BNC pos.,
Length 2 m Art. No./Type 1667B2
- Length 5 m 1667B5

- High temperature extension cable Viton Fischer SE102A014 – TNC pos.,
Length 2 m 1672B2
- Length 5 m 1672B5
- Spacer sleeve 6462
- 4 channel connector for Type 6162A...G and G1 1708A...
- 8 channel connector for Type 6162A...G and G1 1710A...
- Dummy sensor 6552

Mounting Accessories

- Socket wrench Type 1383
- Extraction tool 1315A
- Tap M12x1 1355
- Mounting piece for connector (not for Types 6162AAE... and AAG...) 1401

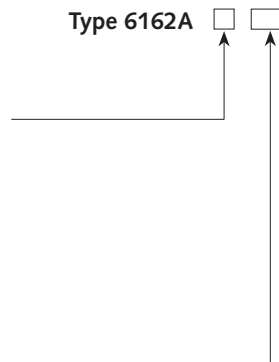
Ordering Key

Sensor

up to 200 °C	A
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Cable

Coaxial cable, L in m	0,2
	0,4
	0,6
	0,8
Coaxial cable with special lengths, specify L in m (L _{min} = 0,1 m / L _{max} = 5 m)	sp
with single-wire-cable (L = 1,5 m)	E
with single-wire-cable (L = 5 m)	E1
Type 6162AAE (L = 1,5 m), without connector	G
Type 6162AAE1 (L = 5 m), without connector	G1



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