

Cavity Pressure Sensor

for Low-Viscosity Thermoset Resins with $\varnothing 6$ mm Front

Type 6162A...

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.

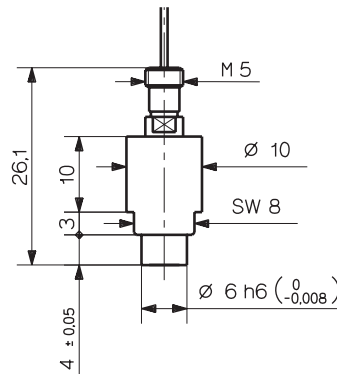
The pressure acts over the diaphragm front of the sensor and is transmitted to the measuring element, which produces a proportional electric charge (pC = Picocoloumb). This is converted into a voltage of 0 ... 10 V in the amplifier and is then available as an amplifier output.

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.



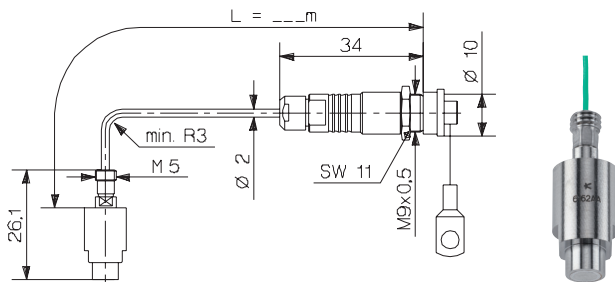
The welded front prevents ingress of low-viscosity plastics in order to allow recording of minute changes in pressure. This is particularly important in long production runs, which require accurate monitoring.

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 200 °C	TΩ	>1

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

Pressure Sensor Type 6162AA...



Sensor with coaxial cable

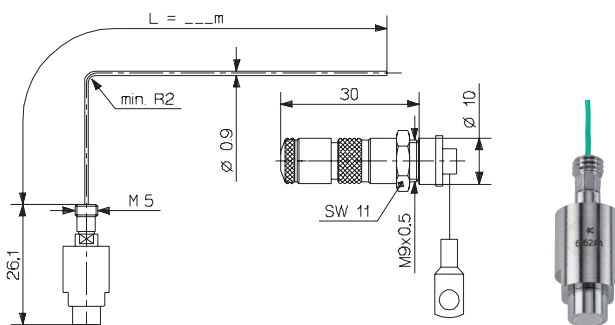
Mounting

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 $\varnothing 6$ H7 bore.

Pressure Sensor Type 6162A...E



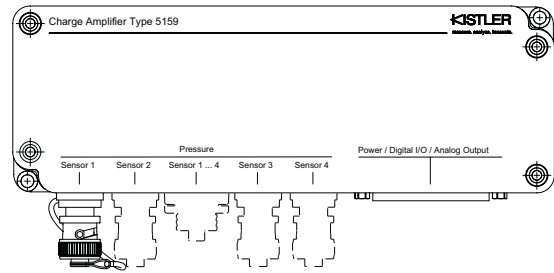
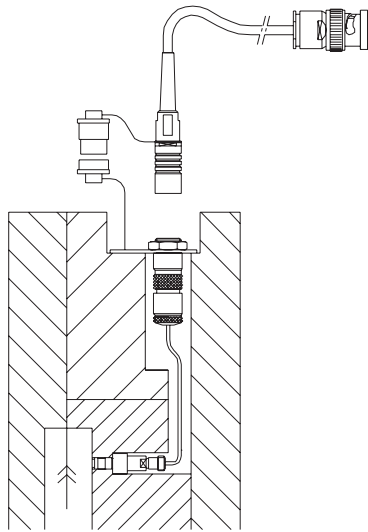
Sensor uses single-wire technique for easy installation. The sensor Type 6162A...E is provided with a single-wire cable with a very small cross-sectional area and can be installed flexibly in the injection mold. The single-wire cable Type 1666A... is interchangeable and can be cut to length as required. 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 6162AE... and 6162AG... .

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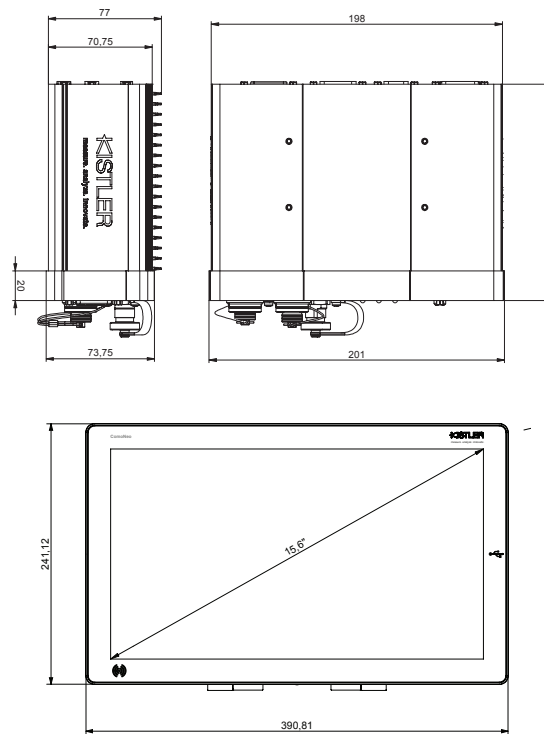
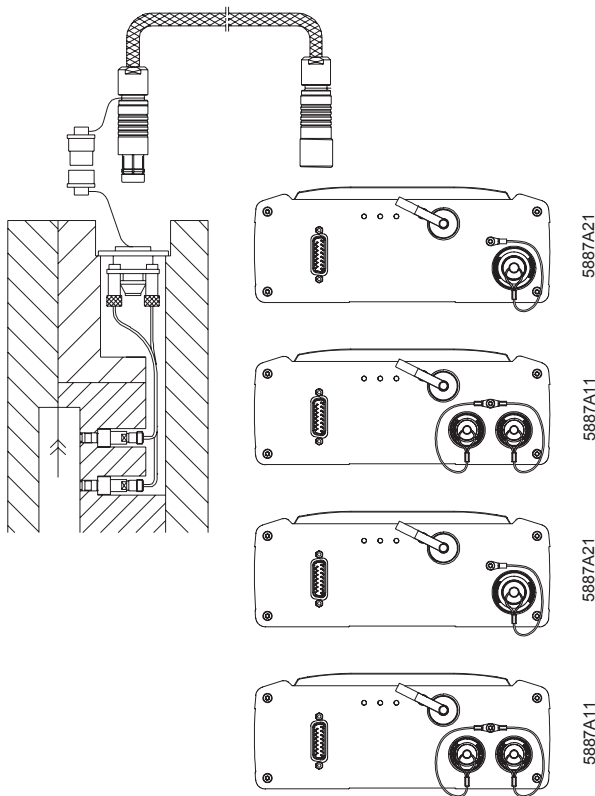
Cable and Amplifier for Measuring Chain with Sensor Type 6162A...



Cable Type 1667B... (BNC connector)

Type 5159A

Fig. 1: Sensor Type 6162A... with Charge Amplifier Type 5159A.



4-channel cable Type 1995A... to connector Type 1722A4... Type 5887A1	8-channel cable Type 1997A... on connector Type 1722A8... Type 5887A2... Type 5887A3... Type 5887A4...
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Fig. 2: Sensor Type 6162A... with Monitoring System ComoNeo Type 5887...

Installation Examples

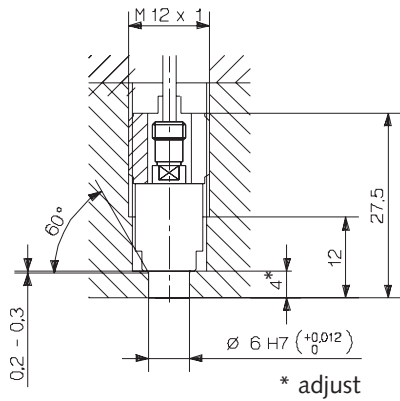


Fig. 3: Installation with mounting nut Type 6453

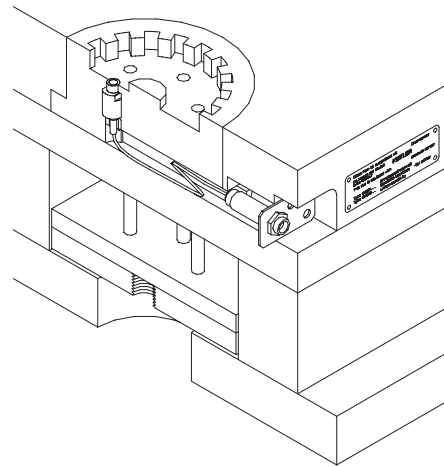


Fig. 6: Sensor, cable, mounting plate (Art. No. 3.520.328) and identification label (Art. No. 3.520.842)

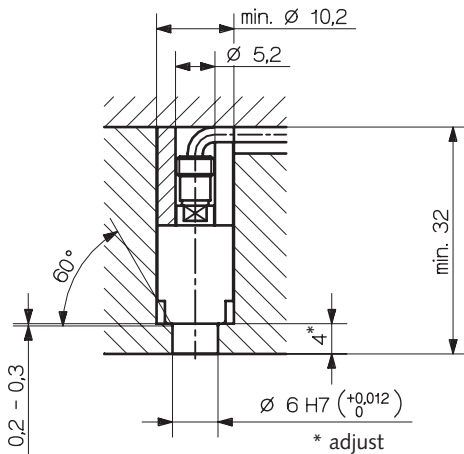


Fig. 4: Installation with spacer sleeve Type 6462

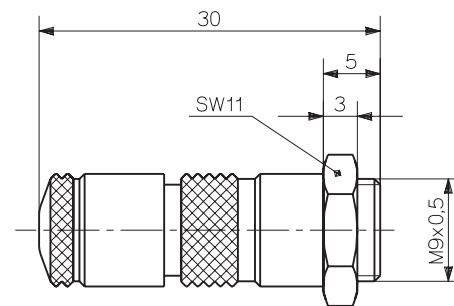


Fig. 7: Connector (Type 1839)

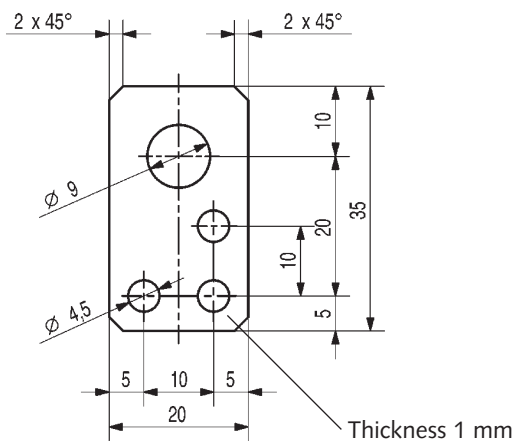


Fig. 5: Mounting plate (Art. No. 3.520.328)

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Accessories Included

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

Sensor with coaxial cable

• High temperature extension cable (Type 6162AA 0,2/0,4/0,6/0,8/1,2 und sp)	1645C...
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Sensor with single-wire cable

• Connector (for single-wire technique only)	1839
• Single-wire cable, with the length of 1,5 m	1666A2

Optional Accessories

	Art. No./Type
• High temperature extension cable Viton® Fischer SE102A014 – BNC pos., Length 2 m	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 200 °C (for single-wire technique only)	1722A4...
• 8 channel connector 200 °C (for single-wire technique only)	1722A8...
• Dummy sensor	6552
• Contact elements 1 channel (for single-wire technique only)	1712B0
• Contact elements 4 channels (for single-wire technique only)	1714B0

Mounting Accessories

	Type
• Socket wrench	1383
• Extraction tool	1315A
• Tap M12x1	1355
• Mounting piece for connector (for coaxial cables only)	1401

Ordering Key

Sensor

up to 200 °C	A
C	

Cable

Coaxial cable, L in m	0,2
	0,4
	0,6
	0,8
	1,2
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
Type 6162AAE (L = 1,5 m), without connector	G

