

Cavity pressure sensor

Type 6163A...

for low-viscosity thermosetting materials and rubbers with $\varnothing 6$ mm front

Sensor for cavity pressures up to 1 000 bar during the pressing and injection molding of low-viscosity plastics and resins.

- Suitable for industrial use in compression molding and in processing of thermosetting materials and rubbers
- Sensitive diaphragm sensor welded into sleeve
- Interchangeable cable

Description

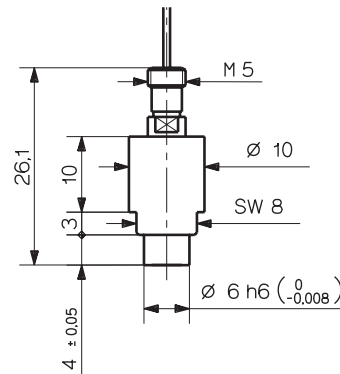
The sensor Type 6163A... consists of a sensitive $\varnothing 4$ mm diaphragm design welded into a robust $\varnothing 6$ mm sleeve. The welded ring gap prevents ingress of low-viscosity resins and falsification of the sensor signal by a force shunt. Interchangeable cables allow a choice of cable types 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 = Picocolomb). 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 cavity pressures up to 1 000 bar during various methods of processing of crosslinking molding compounds. It is mainly suitable for industrial use in monitoring, controlling and regulating compression molding processes such as those used for thermosetting materials, bulk molding compounds, free-flowing resins (melamine) and vulcanizable rubber compounds. These processes give rise to cavity pressures between 200 and 1 000 bar.



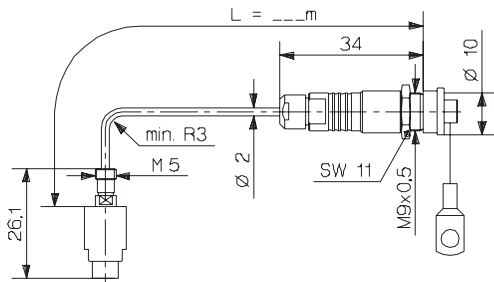
The welded front prevents ingress of low-viscosity plastics in order to allow recording of minute changes in pressure. This is particularly important in long production runs, which require accurate monitoring.

Technical Data

Range	bar	0 ... 1 000
Overload	bar	1 200
Sensitivity	pC/bar	≈-3,9
Linearity, all ranges	% FSO	≤±1
Operating temperature range		
Mold (Sensor, Cable)		
6163AA...	°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.

Pressure Sensor Type 6163A... with coaxial cable



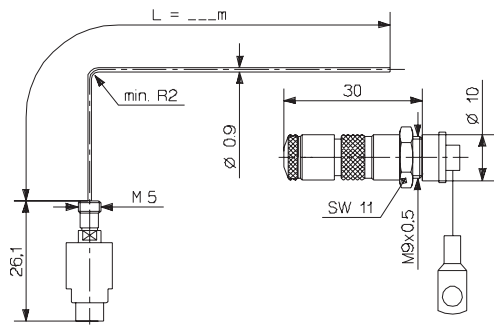
Installation

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).

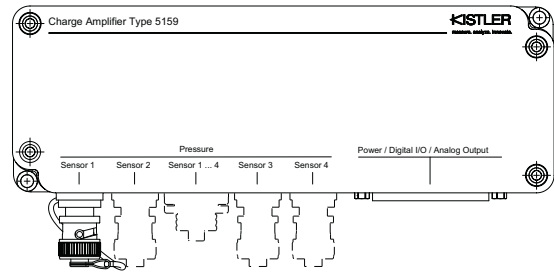
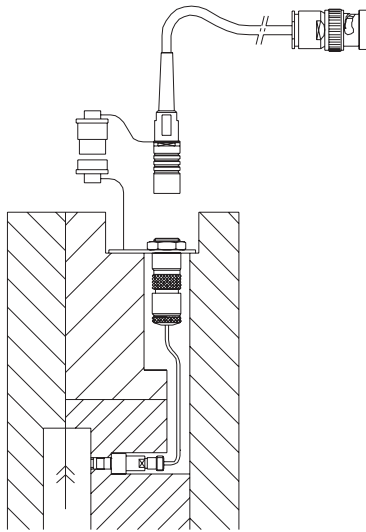
The sensor front forms part of the cavity wall. The hole must therefore be adapted so that the sensor front comes exactly flush and leaves no impression on the molded part. The front cannot be re-machined, as this would damage the diaphragm.

The sensor is center aligned in the $\varnothing 6$ H7 bore.

Pressure Sensor Type 6163A...with Single Wire cable

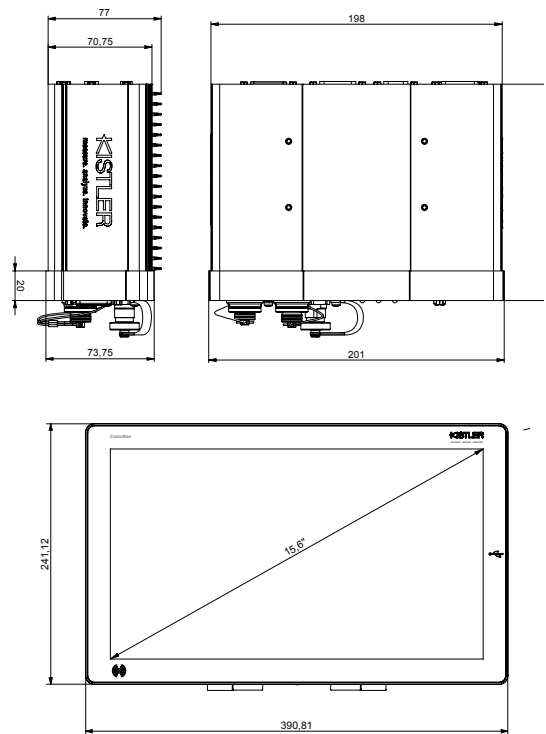
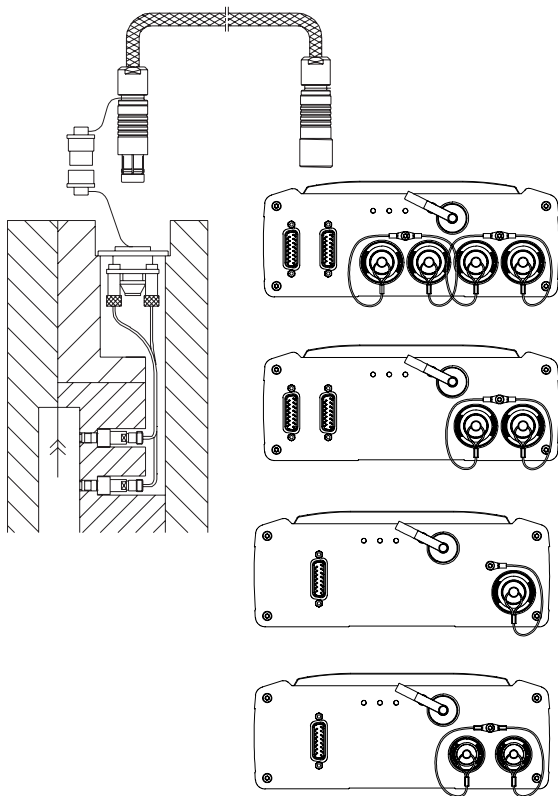


Cable and amplifier for measuring chain with sensor Type 6163A...



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

Fig. 1: Sensor Type 6163A... with charge amplifier Type 5159A.



4-channel cable Type 1995A... to connector Type 1722A4...	8-channel cable Type 1997A... on connector Type 1722A8...
Type 5887A1	Type 5887A2...
	Type 5887A3...
	Type 5887A4...

Fig. 2: Sensor Type 6163A... with Monitoring System ComoNeo Type 5887...

Installation examples

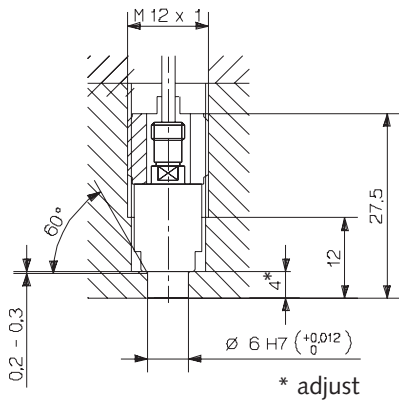


Fig. 3: Installation with mounting nut Type 6453

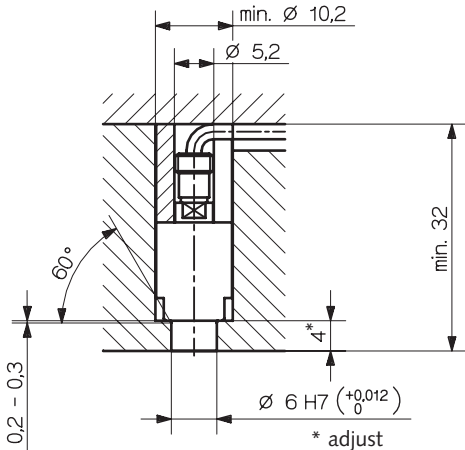


Fig. 4: Installation with spacer sleeve Type 6462

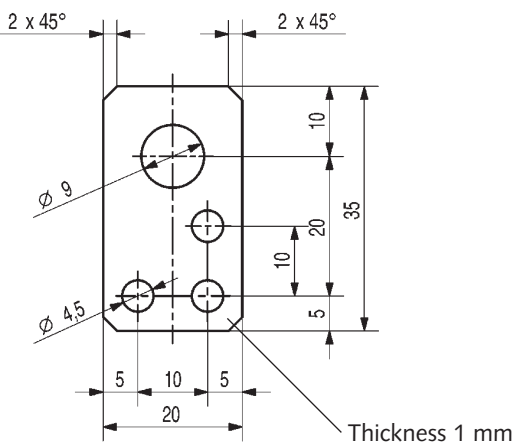


Fig. 5: Mounting plate (Art. No. 3.520.328)

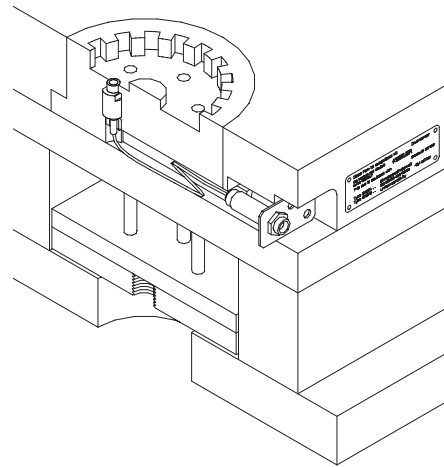


Fig. 6: Sensor, cable, mounting plate (Art. No. 3.520.328) and identification label (Art. No. 3.520.842)

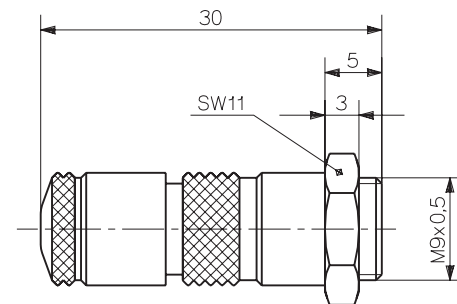


Fig. 6: Connector (Type 1839)

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Accessories included

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

Sensor with coaxial cable

• High temperature extension cable with single channel connector (Typ 6163A...0,2/0,4/0,6/0,8/1,0/1,2/1,5/1,6/2,0/2,5/3,0 and sp)	Art. No./Type	1645C...
• High temperature extension cable for Multichannel connectors Type 1722A... (L = 0,2/0,4/0,6/0,8/1,2 und Sp)		1650A4P...

Sensor with single-wire cable

• Connector (for single-wire technique only)	Art. No./Type	1839
• Single-wire cable M4, with the length of l= 1,5 m		1666A2

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 120 °C (for single-wire technique only)	1722A4...
• 8 channel connector 120 °C (for single-wire technique only)	1722A8...
• 4-channel connector for Type 6163A...G	1708...
• 8-channel connector for Type 6163A...G	1710...
• 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

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

Ordering key

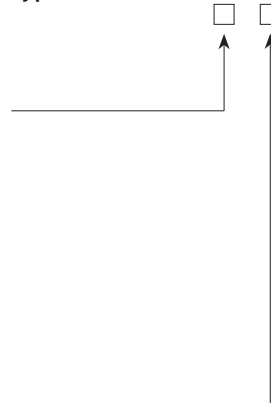
Sensor

Standart	A
Coated sensor Front	C

Cable

Coaxial cable with single channel connector, L in m	0,2
	0,4
	0,6
	0,8
	1,0
	1,2
	1,5
	1,6
	2,0
2,5	
3,0	
Coaxial cable with single channel connector 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 6163AAE (L = 1,5 m), without connector	G

Type 6163A



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