

Mold Cavity Pressure Sensor for RTM Method with $\varnothing 9$ mm Front

Typ 6161AA...

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

- Particularly suited to industrial use in HP-RTM tools
- Sensitive diaphragm sensor welded into cartridge
- Design with O-ring allows a vacuum to be created in the cavity. Integrated thread designed for straightforward mounting and removal
- Exchangeable cable

Description

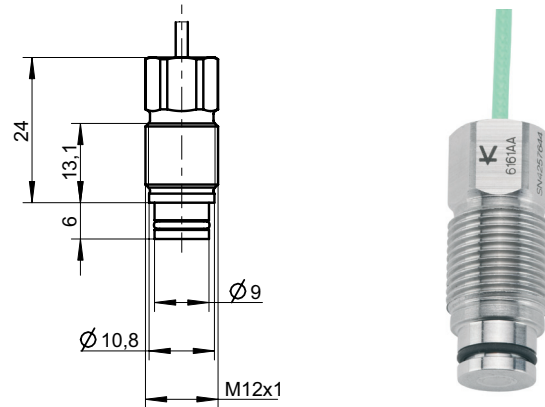
The Type 6161AA... sensor comprises a sensitive 4 mm diaphragm sensor welded into a robust 9 mm cartridge. The welded annular gap prevents penetration by low-viscosity resins and sensor signal distortion as the result of a force shunt. An O-ring ensures that a vacuum can be achieved inside the tool while preventing low-viscosity resin from entering the gap. Cables are exchangeable to facilitate repair.

The pressure acts directly on the front of the diaphragm and is in turn conveyed to the measuring element, which then emits an electric charge proportional to the pressure exerted. This is converted by an amplifier into a voltage ranging from 0 ... 10 V that is then present on the amplifier output.

Application

The robust sensor measures mold cavity pressures of up to 200 bar while processing cross-linked molding compounds in various low-pressure processes for lightweight plastic constructions in automotive and aviation engineering. It is particularly well suited to industrial applications for monitoring, controlling and regulating RTM (Resin Transfer Molding), high-pressure RTM (HP-RTM) and SMC (Sheet Molding Compound) methods exhibiting pressures of up to 150 bar.

Additional applications include processing of low-viscosity plastics such as silicone (LSR) and elastomers in thick-walled parts.



The welded front prevents penetration by low-viscosity plastics and therefore enables detection of the slightest of pressure changes. This is extremely important in long production runs that require precision monitoring.

Technical Data

Range	bar	0 ... 200
Overload	bar	300
Sensitivity	pC/bar	≈-18,5
Linearity, all ranges	% FSO	≤±1
Operating temperature range		
Tool (sensor, cable)		
Type 6161AA...	°C	200
Melt temperature (on front of sensor)	°C	<450
Connector	°C	0 ... 200*
Insulation resistance		
at 20 °C	TΩ	>10
at 200 °C	TΩ	>1

* The tool temperature can reach 240 °C during machine malfunctions without risking sensor damage. However, measurement accuracy at this temperature cannot be guaranteed.

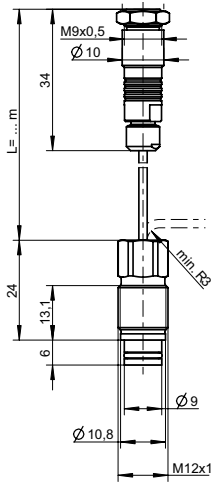
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**QUALITY
MOLDING**
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Pressure Sensor Type 6161AA2 & SP



Mounting

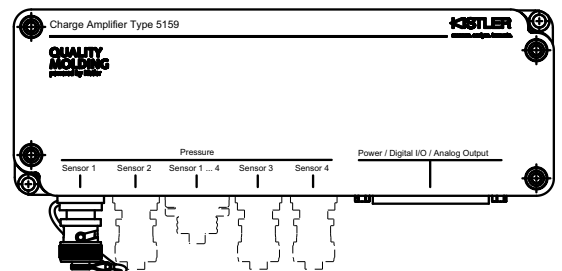
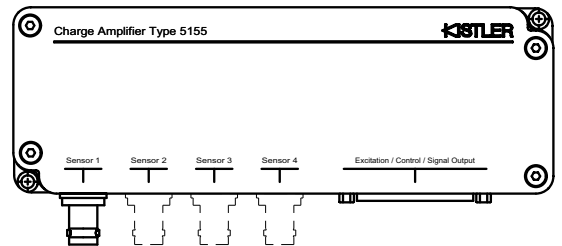
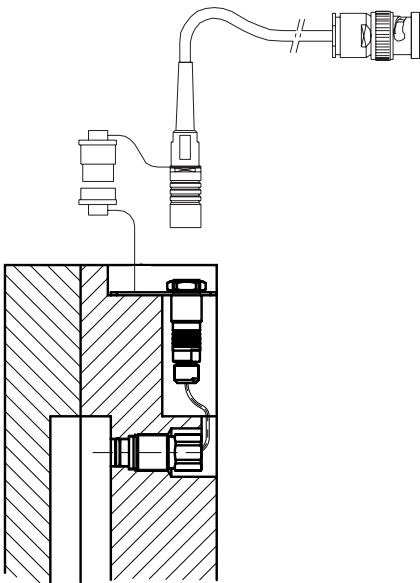
The sensor is screwed directly into the M12 internal thread of the mounting bore using an integral external thread. This also allows the safe dismantling of the sensor during tool servicing or cleaning work.

The sensor front forms part of the cavity wall. As a result the sensor must be fitted in such a way that its front forms a flush seal. No rework is permitted on the front owing to the risk of damage to the diaphragm.

The sensor is centered in the 9 H7 bore.

Fig. 1: Type 6161AA... with coaxial cable

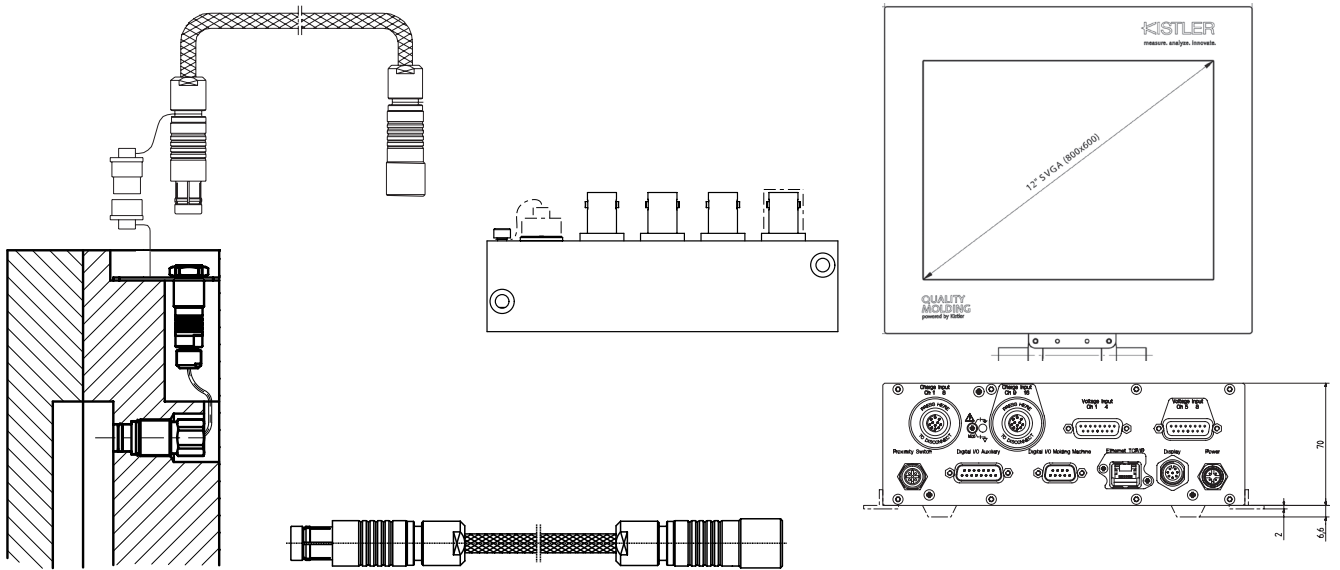
Cable and Amplifier for Measuring Chains Using the Type 6161AA... Sensor



- _____ Type 1667B... cable (BNC connector)
- _____ Type 5159A
- _____ Type 5155Axx2x/Axx4x/Axx8x

Fig. 2: Type 6161AA... sensor with Type 5155A... or Type 5159A... charge amplifier

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Type 1667A... on Type 5415A1 adapter on Type 1995A...

Type 2869B0xx

Type 2869B1xx

Type 1667A... on Type 5415A2 adapter on Type 1997A...

Type 2869B2xx

Type 2869B3xx

Fig. 3: Type 6161AA... sensor with Type 2869B... CoMo Injection monitoring system

Mounting Examples

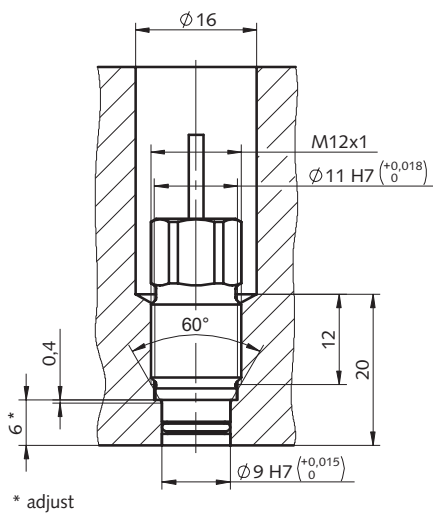


Fig. 4: Installation of Type 6161AA...

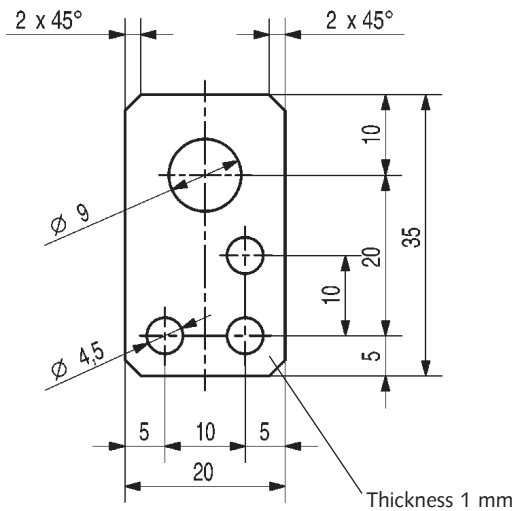


Fig. 5: Mounting plate (Mat. no. 65005208)

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Included Accessories	Mat. No./Type
• Mounting plate	65005208
• Identification plate	65005416
• High temperature connecting cable	1653A

Optional Accessories	Type
• Fluoroelastomer high temperature extension cable, Fischer SE102A014 – BNC pos., Length 2 m	1667B2
Length 5 m	1667B5
• O-ring (optional)	65007525
• Dummy sensor	6570

Mounting Accessories	Type
• Mounting tool L = 100 ... 800 mm, specify when ordering	1387sp
• M12x1 screw tap	1355
• Clamping piece for connector	1401
• Mounting tool for cable	1300A49

Ordering Key

Type 6161AA

Coaxial cable L in m	2
Coaxial cable in special lengths, specify L in m (L _{min} = 0,1 m / L _{max} = 5 m)	sp

