

Cavity pressure sensor

for low-viscosity crosslinking compounds with $\varnothing 4$ mm front

Type 6165A...

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

- For industrial use during the embedding of chips and circuit boards (Transfermolding)
- High sensitivity sensor housed in sealed cartridge
- Exchangeable cable

Description

The Type 6165A... is a high sensitivity sensor with a 2,5 mm front diaphragm which is welded into a robust 4mm diameter cartridge. This welded annular gap design prevents the ingress of low-viscosity resins and so ensures a high quality signal with no distortion. Cables are exchangeable to facilitate simple cable exchange and/or cable repair.

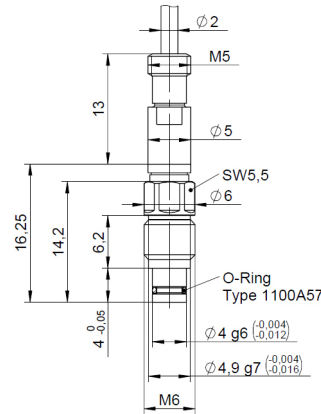
The pressure acts directly on the front of the diaphragm and is in turn conveyed to the measuring element, which outputs an electric charge that is proportional to the pressure. This is converted by an amplifier to a voltage ranging from 0 ... 10 V and is then available at the amplifier output.

The sensor is available in two cable designs. The coaxial design uses high-insulation cables that do not need to be laid in the mold. The practical single-wire design is based on a cable that can be cut to any length. The connector with cut and grip technology can be connected upon installation in the mold. The facilitates simple installation and service.

Application

The robust sensor measures cavity pressures of up to 200 bar during the processing of crosslinked molding compounds in various low-pressure processes in the plastics industry. It is particularly well suited for industrial use for the monitoring, controlling and regulating of transfer molding processes in which electronic chips or circuit boards are cast and sealed in plastic.

The welded front prevents the penetration of low-viscosity plastics and thereby enables the detection of the slightest changes in pressure.



Technical data

Range	bar	0 ... 200
Overload	bar	300
Sensitivity	pC/bar	≈-4.0
Linearity	% FSO	≤±1
Operating temperature range		
Tool (sensor, cable)		
Type 6165A...	°C	200
Melt (on the front of the sensor)	°C	<450
Connector	°C	0 ... 200*
Insulation resistance		
at 20 °C	TΩ	≥10
at 200 °C	TΩ	≥1

* The mold temperature may reach 240 °C during machine malfunctions without risking sensor damage. Measurement errors may occur, however.

Cable and amplifier for measuring chains with sensor Type 6165A...

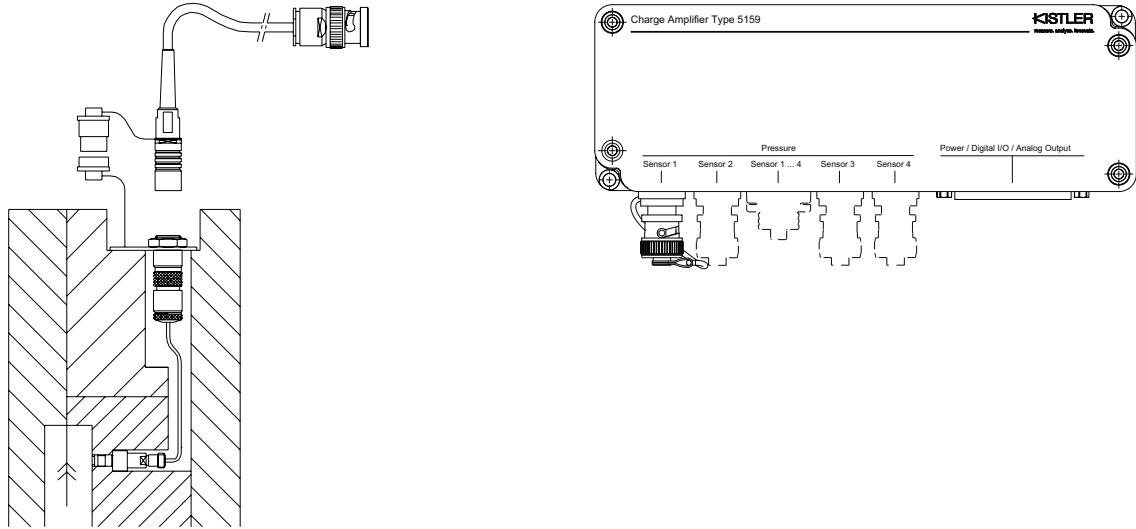
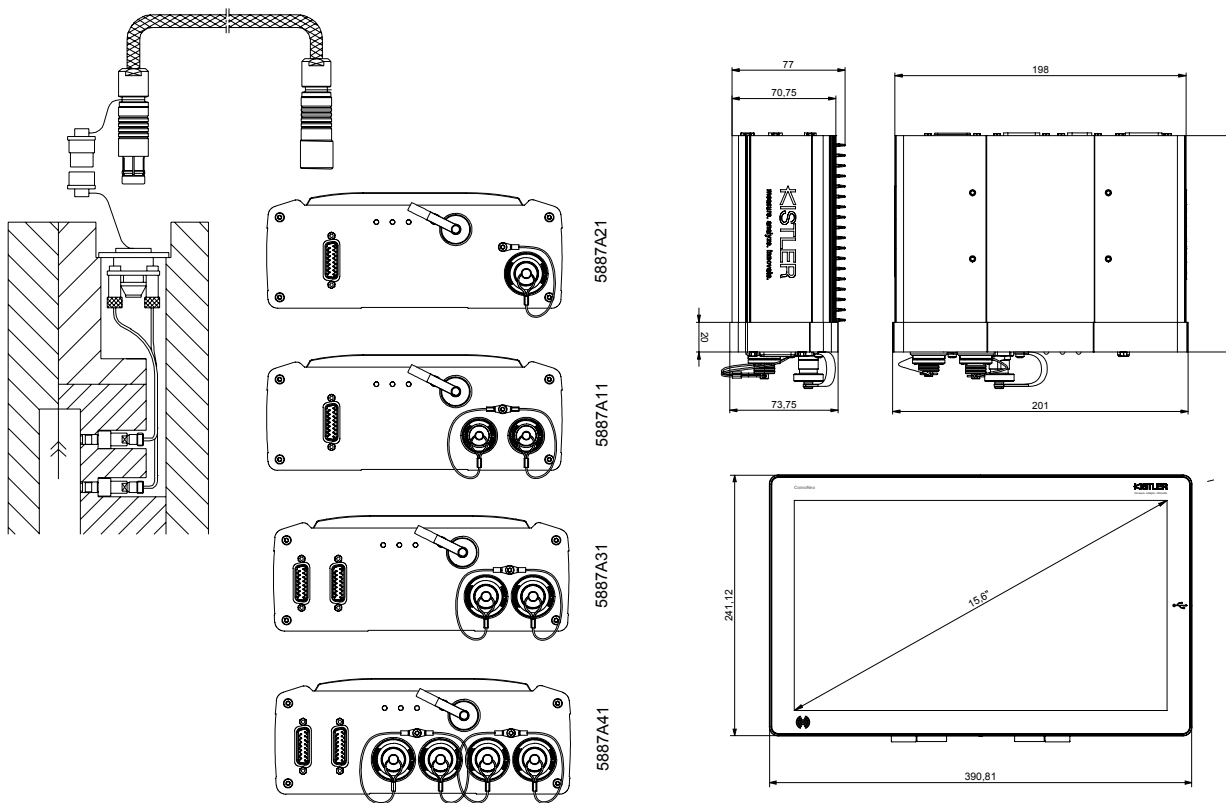


Fig. 1: Sensor Type 6165A... with charge amplifier Type 5159A



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

Fig. 2: Sensor Type 6165A... with ComoNeo monitoring system, Type 5887...

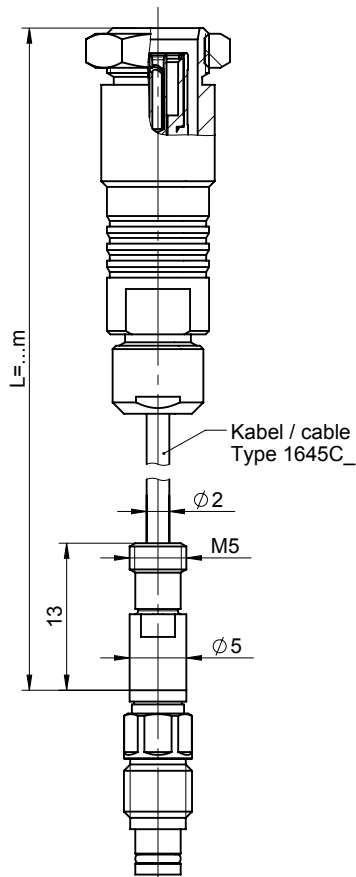


Fig. 3: Sensor 6165A with coaxial cable

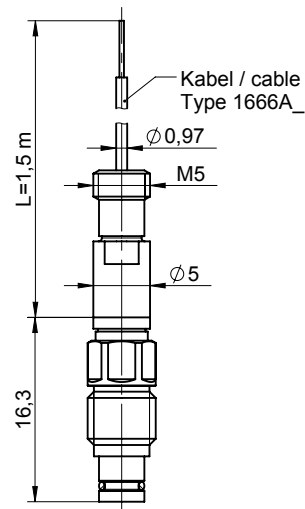


Fig. 4: Sensor Type 6165A... with single-wire cable

Mounting examples

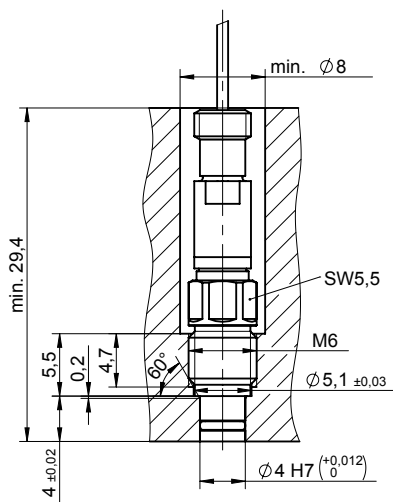


Fig. 5: Sensor Type 6165A installed

6165A_003-284e-03_18

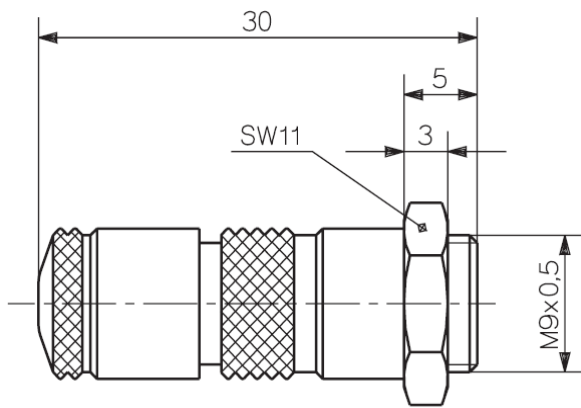


Fig. 6: Type 1839

Mounting

The sensor is screwed directly into the M6 internal thread of the mounting bore using the integrated external thread. This also allows the safe removal of the sensor during servicing or cleaning of the mold.

The sensor front forms part of the cavity wall. As a result, the sensor must be fitted so that its front is exactly flushmounted. The front cannot be reworked, as this would damage the diaphragm.

The sensor is centered in the 4 H7 mounting bore.

Included accessories

- | | |
|--|----------------------------------|
| • Mounting plate for connector
(for sensor with coaxial cable and Type 6165AAE) | Mat. No./Type
65005208 |
| • Identification plate | 55147987 |
| • Checking tool | 55155671 |

Sensor with coaxial cable

- | | |
|---|----------|
| • Coaxial cable 0 ... 200 °C with M4 and Fischer connector | 1645C... |
| • Coaxial cable 0 ... 200 °C with M4 connection and MiniKoax connectors | 1650A4P |

Sensor with single-wire cable

- | | |
|--|--------|
| • Connector at single-wire variants with connector | 1839 |
| • Single-wire cable with M4 connector L 1,5 m | 1666A2 |

Optional accessories

- | | |
|--|-----------------------------------|
| • 4-channel connector, up to 120 °C (for MiniCoax and single-wire cable) | Mat. No./Type
1722A4... |
| • 8-channel connector, up to 120 °C (for MiniCoax and single-wire cable) | 1722A8... |
| • 4-channel connector, 120 ... 200 °C (for single-wire models) | 1708... |

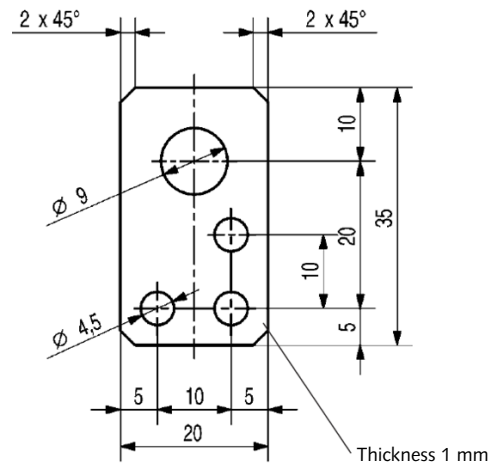


Fig. 7: Mounting plate (Mat. No. 65005208)

Optional accessories

- | | |
|--|---------------------------------|
| • 8-channel connector, 120 ... 200 °C (for single-wire models) | Mat. No./Type
1710... |
| • Dummy sensor | 6497A1 |
| • Contact elements 1 channel (for single-wire technique only) | 1712B0 |
| • Contact elements 4 channels (for single-wire technique only) | 1714B0 |

Mounting accessories

- | | |
|-------------------|----------------------------------|
| • Mounting wrench | Mat. No./Type
1300A177 |
|-------------------|----------------------------------|

Ordering key

Sensor design

up to 200 °C	A
--------------	----------

Cable

Coaxial cable 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 special length, 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 = 1,5 m) without connector	G

Type 6165A

6165A_003-284e-03.18