

p-T-Sensor

Type 6190A...

for Mold Cavity Pressure and Temperature

p-T-sensor for mold cavity pressure up to 2000 bar and contact temperature in the cavity when injection molding plastics. Design without diaphragm but with flat front.

- Suitable for industrial use
- Measures pressure and temperature

Description

The p-T sensor Type 6190A... for mold cavity pressure and temperature has a front diameter of 4 mm.

The pressure acts over the entire front of the sensor and is transmitted to the quartz measuring element, which produces a proportional electric charge which is converted into a voltage in the amplifier and is then available at the amplifier output.

The contact temperature of the melt is measured on the front of the sensor by one pair of thermocouples, type K (NiCr-Ni). The sensor front can therefore not be machined.

This product complies with **CE** standard 89/336/EEC.

Application

The p-T sensor measures the mold cavity pressure and the contact temperature of the injection molded part in the cavity. It is suitable for industrial application for monitoring, controlling and regulating the injection molding of thermoplastics, elastomers.

Caution! This sensor must never be used for gases or liquids!



Technical Data

Range	bar	0 ... 2000
Overload	bar	2500
Sensitivity	pC/bar	-2,5
Linearity, all ranges	%FSO	≤±1
Natural frequency	kHz	>80
Acceleration sensitivity	bar/g	<1
Temperature coefficient of sensitivity (pressure)	%/°C	±0,01
Thermocouple, Type K		NiCr-Ni
Operating temperature range		
Mold (sensor, cable, connector box)	°C	0 ... 200*
Melt (at the front of the sensor)	°C	<450
Insulation resistance		
at 20 °C	TΩ	100
at 200 °C	TΩ	1

* During malfunctions of the machine the mold temperature may reach 240 °C without damaging the sensor. However there may be errors in the measurement.

The electric charge yielded by the sensor (pC = picocoulomb) is converted into a proportional voltage of 0 ... 10 V by the Kistler charge amplifier. The length of the sensor cable has no influence.

Mounting

The sensor is fixed with the mounting nut in the mounting hole.

Since the sensor becomes part of the cavity wall, it must be fitted in such a way that its front is exactly flush. The sensor is centered in the diameter 4 H7 bore.

The housing must be mounted in a well-protected position on the mold.

Intermediate cable lengths (e.g. 0,6 m cable length) can be realised by the user by pulling the excess cable length into the connection tool and securing it. A simple Allan key (2,5 mm) and a Phillips screw driver are required (see Fig. 1).

Accessories Included

- Mounting nut with slit
- Cap with chain
- Cylinder screw

Art. No./Type

- 6457
- 7.621.004
- 6.120.029

Optional Accessories

- High-temperature extension cable (pressure)
Fischer SE102 A014 – BNC pos.
Length 2 m
Length 5 m
- High-temperature extension cable (pressure)
Fischer SE102 A014 – TNC pos.
Length 2 m
Length 5 m
- Compensation lead (temperature)
Length 2 m
Length 5 m
- Dummy sensor
- Spacer sleeve

Type

- 1667B2
- 1667B5
- 1672B2
- 1672B5
- 2290A2
- 2290A5
- 6545
- 6459

Mounting accessories

- Tubular socket wrench
- Extraction tool

Type

- 1383
- 1362A

Set of accessories Type 1300A81 consisting of:

- Step drill, diameter 7,2/3,85 mm
- Countersink
- Twist drill, diameter 10 mm
- Reamer, diameter 4 H7
- Tap M8x0,75
- Finishing tool
- Hexagonal socket wrench
- Lapping tool
- Limit plug gage, diameter 4 H7
- Checking tool
- Clamp
- Fork wrench SW4/SW5

Art. No.

- 5.210.156
- 5.210.158
- 5.210.159
- 5.210.160
- 5.210.161
- 7.110.296
- 5.210.118
- 7.110.298
- 5.210.162
- 7.110.300
- 3.050.175
- 5.210.164

000-039e-06.03 (DB03.6190Ae)

Ordering Key

Cable length L in m	0,4
	0,8
	1,2
	1,6
	2,0
Specify cable length	sp

Type 6190A

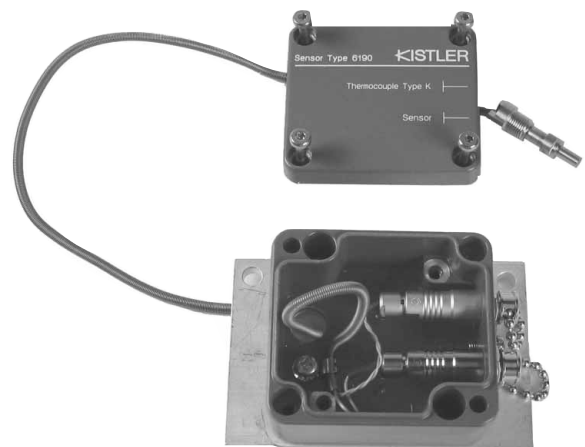


Fig. 1: Shortening the cable

The response of a thermocouple depends on its mass. The smaller the mass, the faster the thermocouple will react to temperature fluctuations. In the case of the Type 6190A..., the individual thermocouple leads are fed separately to the sensor front thereby minimizing its mass. The actual thermocouple is produced by welding the two thermocouple leads to the sensor front. It should be pointed out in this respect, that it is

not the mass temperature of the melt which is measured but the contact temperature on the surface of the molded part.

The thermocouple Type K is used for this application based on the technical advantages such as the corrosion resistance.

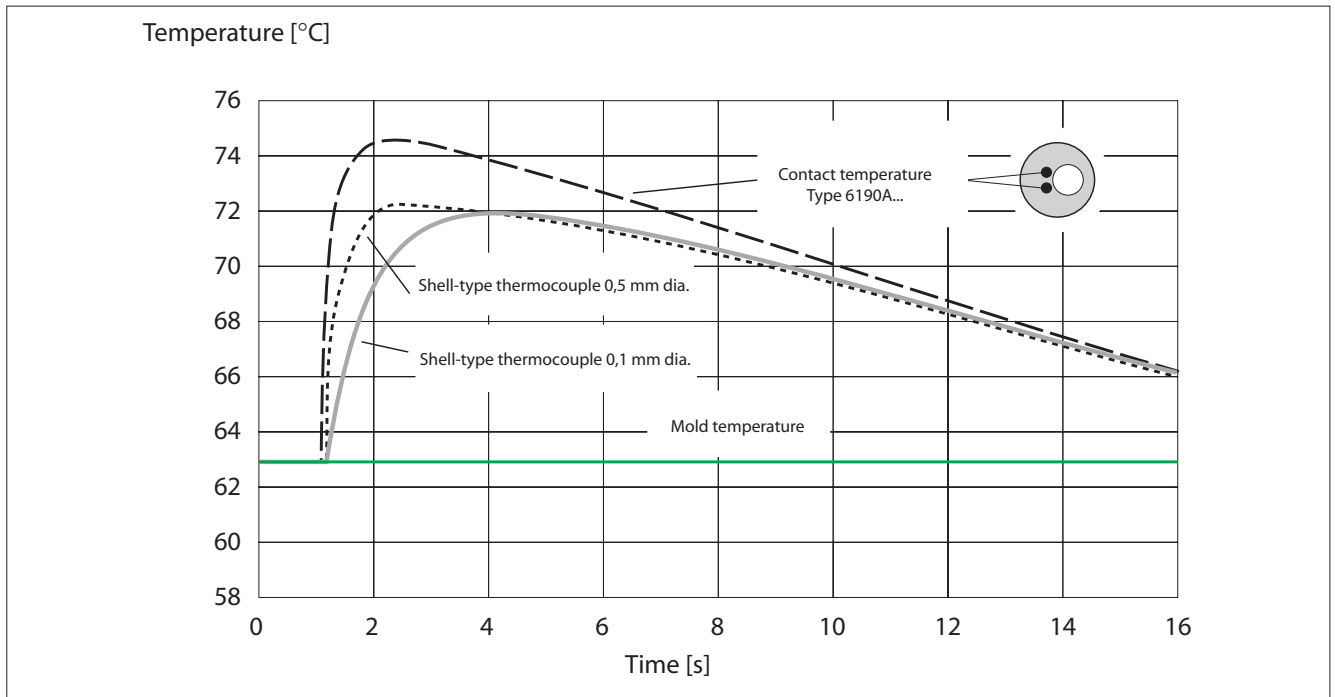


Fig. 5: Comparison with shell-type thermocouples