

Mold Cavity Pressure Sensor

Type 6159A...

with front: Ø2,5 mm

Quartz sensor for cavity pressures up to 2000 bar for injection molding of plastics.

- Suitable for industrial use
- Sensor front can be machined to adapt to the cavity wall (except for coated versions of the sensor)
- Exchangeable cable

Description

The quartz sensor for mold cavity pressure Type 6159A... has a front of 2,5 mm diameter. An O-ring seals the annular gap of <math><10 \mu\text{m}</math> between sensor and mounting bore and thereby also center aligns the sensor in the bore.

The pressure acts directly on the entire front of the sensor and is transferred to the quartz measuring element, which produces an electrical charge proportional to the pressure.

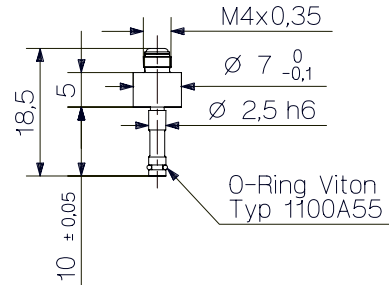
All parts of the sensor are corrosion-resistant. The exchangeable cable is screwed to the sensor with a tight seal.

The sensor Type 6159AE... 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 is exchangeable 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, a connector is included which is self-locking and splash-proof. With multi-cavity systems (described in data sheet of Type 6829A...), the sensor basic type is supplied with a single-wire cable, but without connector and mounting plate.

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

Application

The diaphragm-free sensor measures mold cavity pressures up to 2000 bar in injection molding. It is particularly suitable for industrial applications for monitoring and open and closed loop control in the injection molding of thermoplastics, elastomers, thermosets and SMC.



For abrasive melts (e.g. filled with glass fibers or carbon fibers, thermosets, BMC/SMC), the sensors are available as Types 6159A...U6 with a coated front.

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

Technical Data Type 6159A... and 6159AE...

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	<0,005
Operating temperature range		
Mold (sensor, cable, connector)	°C	0 ... 200*
Melt (at front of sensor)	°C	<450
Temperature coefficient of sensitivity	%/°C	±0,02
Insulation resistance		
at 20 °C	TΩ	≥100
at 200 °C	TΩ	≥1
Weight, (Type 6159A...)	g	25

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

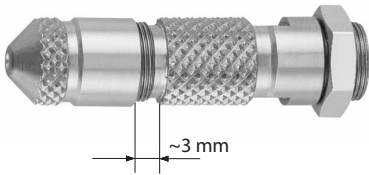
Installation: Single-Wire Cable with Connector (Art. No. 5.511.322)



1) Open the connector anti-clockwise.



3) Insert single-wire cable cut to length but without removal of insulation fully into the connector.



2) Connector must be opened up to a gap of ~3 mm.



4) Close connector clockwise. This automatically strips off the insulation and clamps the cable.

Accessories Included

	Art. No./Type
• Mounting nut (for sensor with cable only)	6457
• Mounting plate	3.520.328
• Identification lable	3.520.842
• Connector (for single-wire sensor only Type 6159AE...)	5.511.322
• Single-wire cabel with connection 1,5 m (for single-wire sensor only Type 6159AE...)	7.620.314
• O-ring, diameter 1,2 x 0,6 mm	1100A55

Optional Accessories

	Type
• Spacer sleeve	6459
• High temperature extension cable, Viton, Fischer SE102A014 – TNC pos., Length 2 m	1672B2
Length 5 m	1672B5
• High temperature extension cable, Viton, Fischer SE102A014 – BNC pos., Length 2 m	1667B2
Length 5 m	1667B5
• Dummy sensor	6549
• Two-wire-Teflon cable (green) 0 ... 200 °C as replacement cable for sensors Type 6159A...	1645C...
• Steel-braided two-wire-Teflon cable 0 ... 200 °C as a wear resistant substitute for Type 1645C...	1963A...

Set of accessories Type 1300A83 consisting of: Art. No.

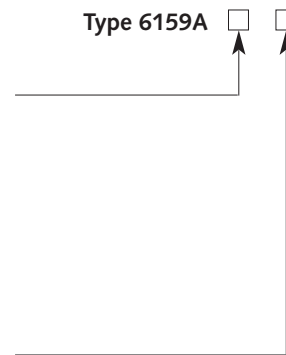
• Step drill, diameter 7,2/3,35	5.210.157
• Countersink	5.210.158
• Twist drill, diameter 10 mm	5.210.159
• Reamer, diameter 2,5H7	5.210.160
• Tap M8 x 0,75	5.210.161
• Finishing tool	7.110.296
• Hexagonal socket wrench	5.210.118
• Lapping tool	7.110.299
• Limit plug gage, diameter 2,5H7	5.210.163
• Checking tool	7.110.300
• Exchange pin	3.050.172
• Clamp	3.050.175
• Fork wrench SW4/SW5	5.210.164

Mounting accessories

	Type
• Socket wrench	1383
• Extraction tool (for sensors with steel-braided connection cables)	1362A
• Extraction tool	1315A
• Mounting piece for connectors	1401

Ordering Key

sensor only	-
0,2 m	0,2
0,4 m	0,4
0,6 m	0,6
0,8 m	0,8
1,5 m single-wire cable	E
Length as specified by customer	sp
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Coated front	U6



000-032e-06.03 (DB03.6159Ae)

Mounting Examples

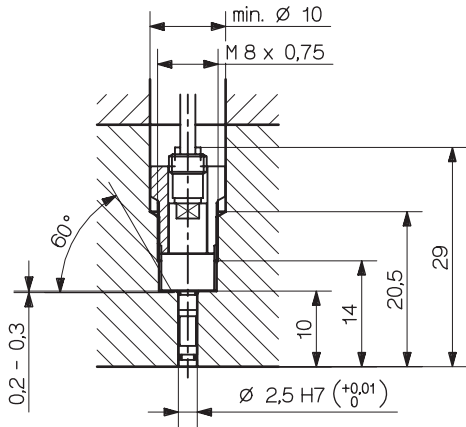


Fig. 1: Installation with mounting nut (Type 6457)

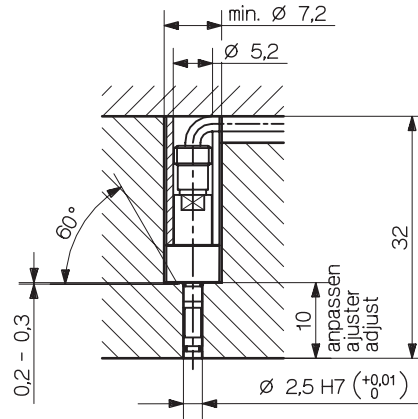


Fig. 2: Installation with spacer sleeve (Type 6459)

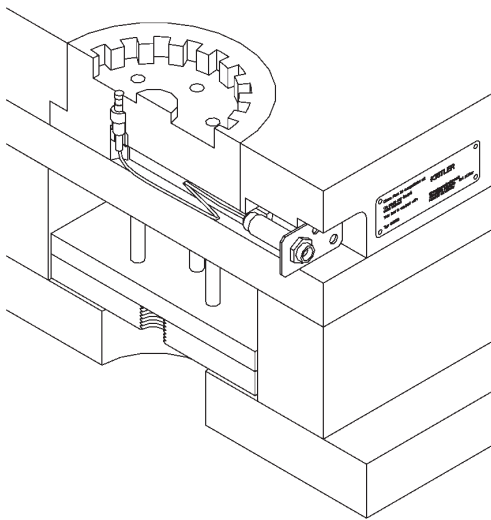


Fig. 3: Sensor, cable, mounting plate (Art. No. 3.520.328) and identification label (Art. No. 3.520.842)

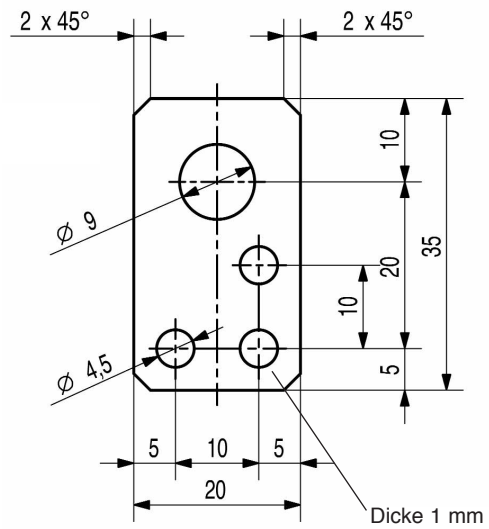


Fig. 4: Mounting plate (Art. No. 3.520.328)

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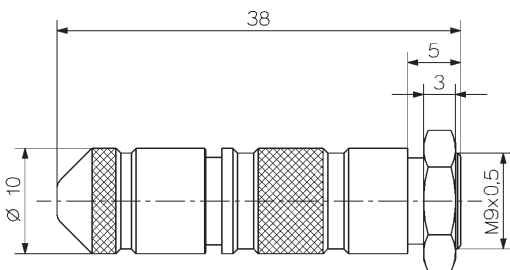


Fig. 5: Connector (Art. No. 5.511.322)