

Quartz Measuring Tongue for mold cavity pressure

Type 9221A, 9221AA...,
9221AB..., 9221AC...

Quartz Measuring Tongue Type 9221 for measuring cavity pressure in injection molding of plastics and die casting of metals. The pressure is measured indirectly via a measuring or an ejector pin. The sensor can be used with several tools by simply changing it.

- Force range 0 ... 10 kN
- Easy repositioning in different molds
- Exchangeable coaxial cable
- Corrosion-resistant

Description

The cavity pressure is transmitted by a measuring or ejector pin to the convex force-sensitive face of the sensor. The quartz element yields an electric charge proportional to the force, hence proportional to the pressure.

The large measuring range of the sensor allows to use pins of any usual diameter (up to 14 mm) without danger of overload.

All parts of the measuring tongue are corrosion-resistant. The exchangeable cable is screwed tight on the sensor. The Fischer connector is selflocking and splashwater-proof

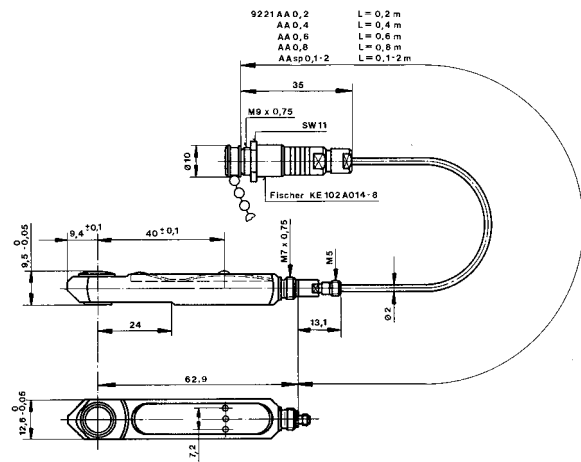
Application

- in tools which already have been hardened or which do not offer enough space for a directly measuring sensor.
- temporary equipping of a tool for measuring cavity pressure, e. g. for optimizing the gate profile or the machine settings.

Installation

The measuring tongue is inserted with the extracting tool Type 1315A into the prepared and thoroughly cleaned slot. The tongue must be positioned precisely to assure that the force is acting in the center of the sensor.

The cable connector of the tongue can be fixed with the mounting plate Mat. No. 65005208 (Fig. 1).



Technical data

Measuring range	kN	0 ... 10
Overload	kN	12
Treshold	N	<0.01
Sensitivity	pC/N	-3.3
Linearity, also for partial ranges	%/FSO	≤±1
Hysteresis	%/FSO	≤1
Rigidity, mean value	N/μm	≈160
Natural frequency	kHz	≈60
Operating temperature range	°C	-50 ... 200
Temperature coefficient of sensitivity	%/°C	-0.02
Temperature error	N/°C	<±5
Capacitance (with cable Type 1645C0,4)	pF	≈200
Insulation resistance		
at 20°C	TΩ	≥10
at 120°C	TΩ	≥1
Weight (without cable)	g	160

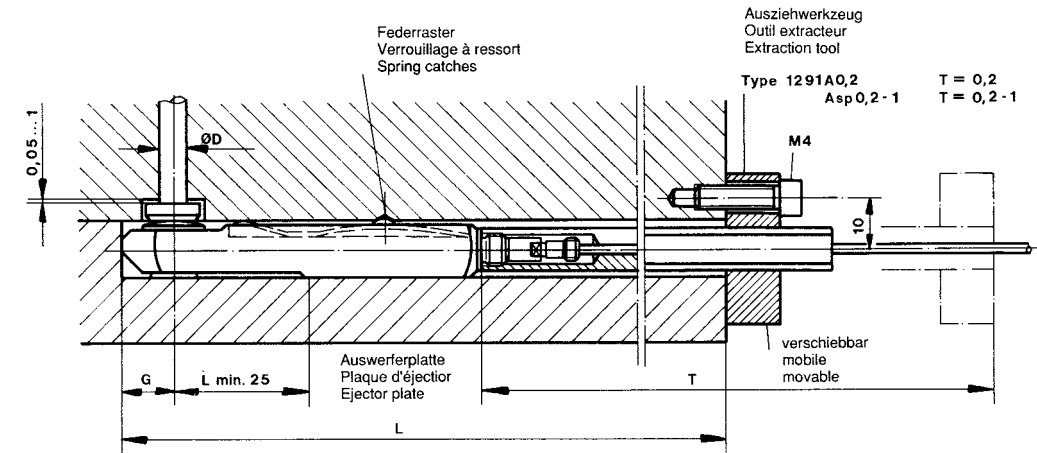
1 N (Newton) = 1 kg · m · s⁻² = 0.1019... kp = 0.2248... lbf; 1 kgf = 9.80665 N;
1 inch = 25.4 mm; 1 kg = 2.2046... lb; 1 Nm = 0.73756... lbft

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This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

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Mounting example



$G = 10^{+0,5}_0, (E = 3.7), L \geq 45 \text{ mm}$

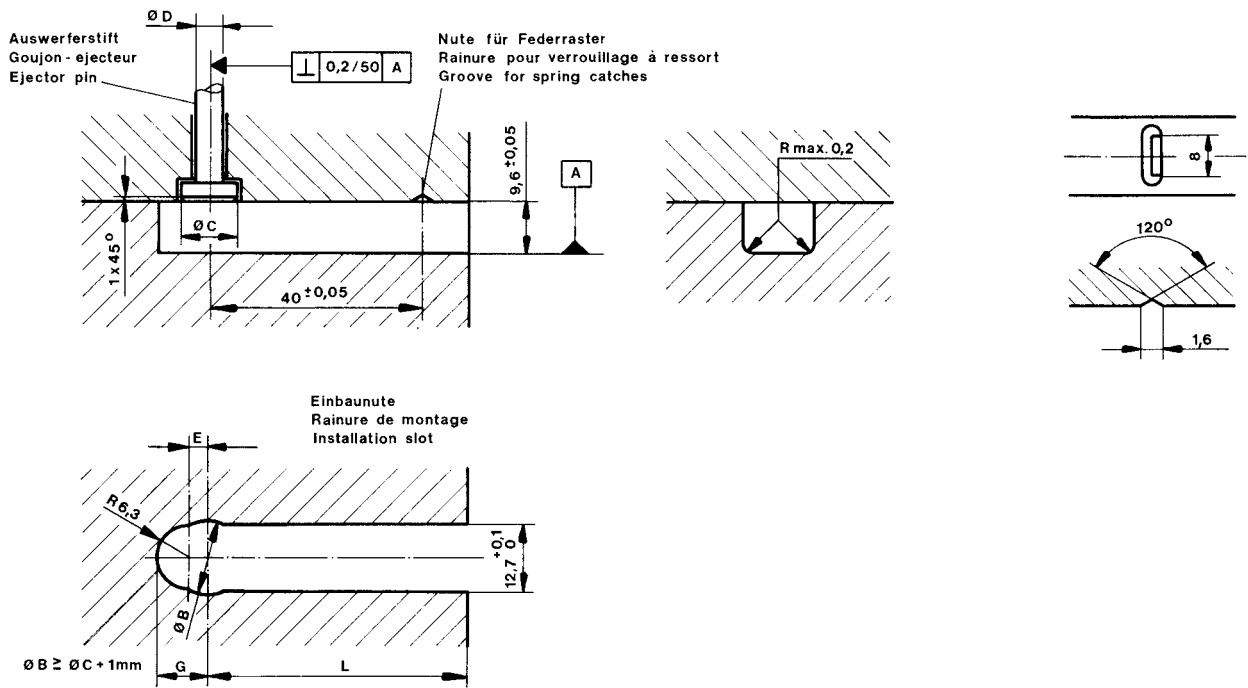


Fig. 1: Mounting example

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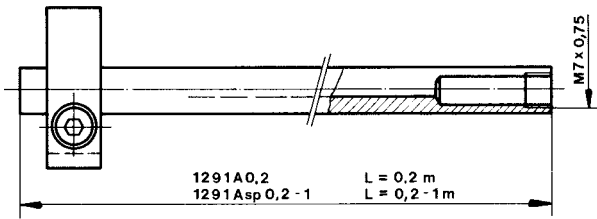


Fig. 2: Extraction tool Type 1291Asp0,2-1

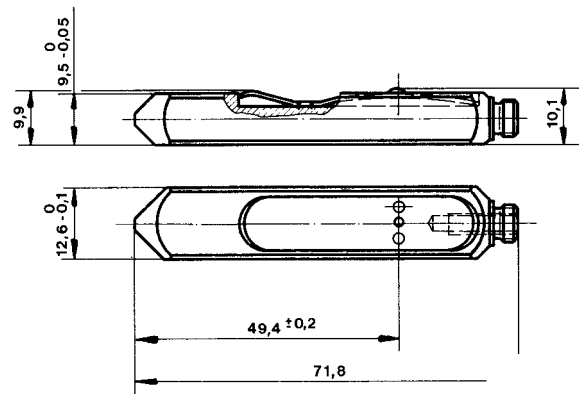


Fig. 3: Dummy sensor Type 9400A1

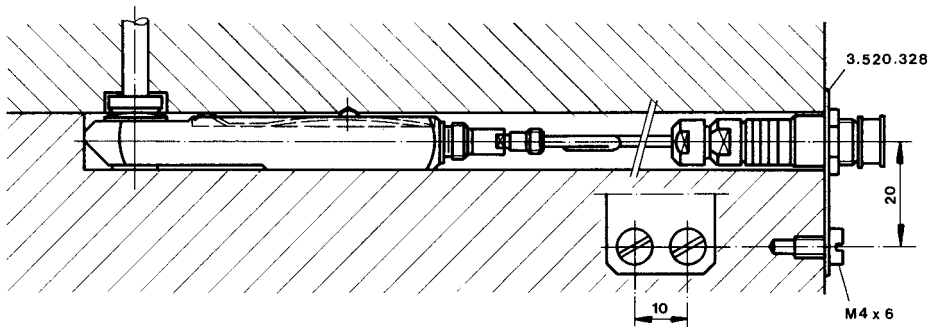


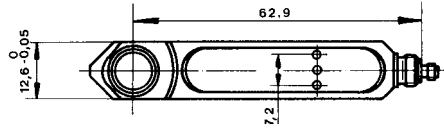
Fig. 4: Fixation for Fischer connector

Cable variants

The following synopsis gives an overlook on possible cable connections between sensor and charge amplifier.

Measuring tongue without cable

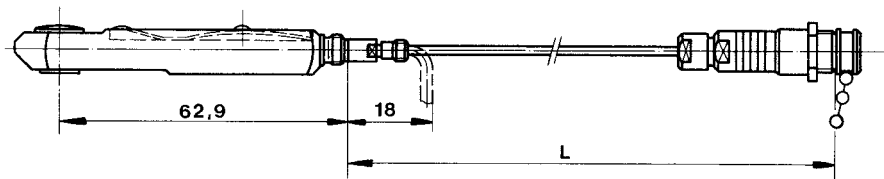
Type 9221A



Measuring tongue with high temperature connecting cable Type 1645C...

(Teflon, ø2 mm)

Type 9221AA0,2
9221AA0,4
9221AA0,6
9221AA0,8
9221AAsp0,1-2

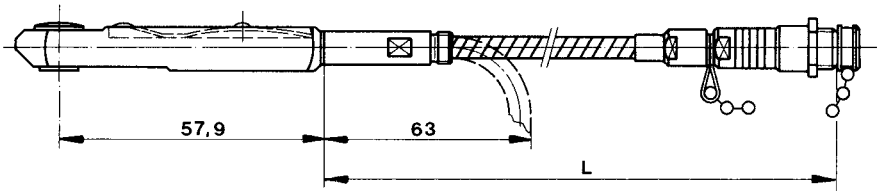


Measuring tongues with standard cable, length 0.2, 0.4, 0.6, 0.8 m (or special lengths from 0.1 to 2 m)..

Measuring tongue with high temperature connecting cable Type 1649A...

(in metal tubing)

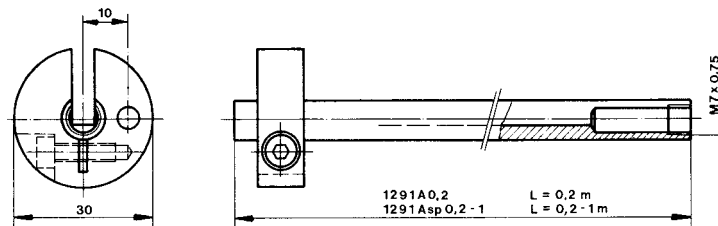
Type 9221AC1
9221ACsp0,1-2



Measuring tongues with high temperature connecting cable, in metal tubing, length 1 m (or special lengths from 0.1 to 2 m).

Extraction tool

Type 1291A0,2
1291Aasp0,2-1



Extraction tool, standard length 0.2 m (or special lengths from 0.2 to 1 m).

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Included accessories

- Mounting plate

Optional accessories

- Extraction tool (Fig. 2)
- Dummy (Fig. 3)
- High temperature extension cable, Fischer SE1024A014 pos. – BNC pos., length 5 m
- Mount. piece for connector

Type/Mat. No.
65005208

Type/Mat. No.
1291A0,2/
1291Asp0,2-1
9400A1
1661A5

1401

Ordering key

with PFA cable, L = 0.2 m	A0.2
with PFA cable, L = 0.4 m	A0.4
with PFA cable, L = 0.6 m	A0.6
with PFA cable, L = 0.8 m	A0.8
with PFA cable, L = ... m	Asp0.1-2

with PFA cable, in metal tubing, L = 1 m	C1
with PFA cable, in metal tubing, L = .. m	Csp0.1-2

Type 9221A

