

Strain Sensor for internal strain measurements

Type S-2



This new longitudinal measuring pins are designed for monitoring internal strain in structures, especially for the pressure measurement in nozzles of injection molding machines. The sensors patented sensing element, with Crystal Match™ technology, enables exceptional signal qualities over the entire temperature range. The industrial grown single-crystal GaPO₄ guarantees excellent signal quality and constant sensitivity.

BENEFITS

- High sensitivity
- Excellent signal quality
- Separable steel braided cable
- Virtually constant sensitivity over the entire lifetime

VERSIONS

- **S-2p** yields positive charge under compression
- **S-2n** yields negative charge under compression

SPECIFICATIONS

Operating principle	Piezoelectric, charge output
Sensing element	GaPO ₄ (gallium phosphate)
Dynamic measuring range	-800 ... 800 µε
Overload range	-1500...1500 µε
Sensitivity ¹⁾	±22 pC/µε
Electric charge yield when tightening ¹⁾	±30.000 pC
Linearity ²⁾	< 0.5% FSO (typ. 0.15% FSO)
Hysteresis ²⁾	< 1% FSO
Operating temperature	-70 °C ... +300 °C, (-94 °F ... +572 °F)
Insulation resistance	> 10 ¹² Ω (25 °C / 77 °F), > 10 ¹⁰ Ω (300 °C / 572 °F)
Rigidity (measuring pin only)	350 N/µm
Resonant frequency	> 50 kHz

1) S-2p yields positive charge, S-2n...yields negative charge

2) measured on calibration unit

SENSOR AND MOUNTING BORE DIMENSIONS

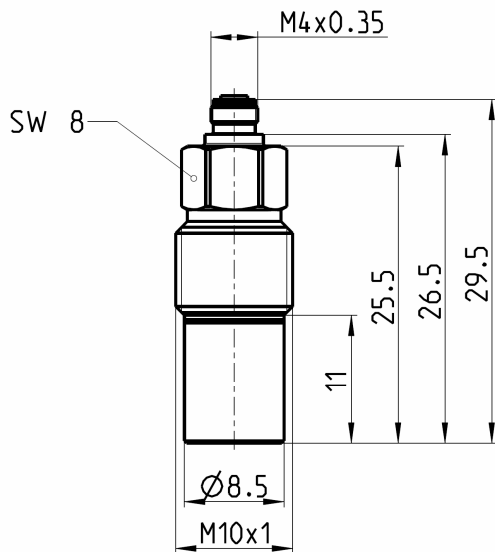


Fig. 1: Sensor dimensions

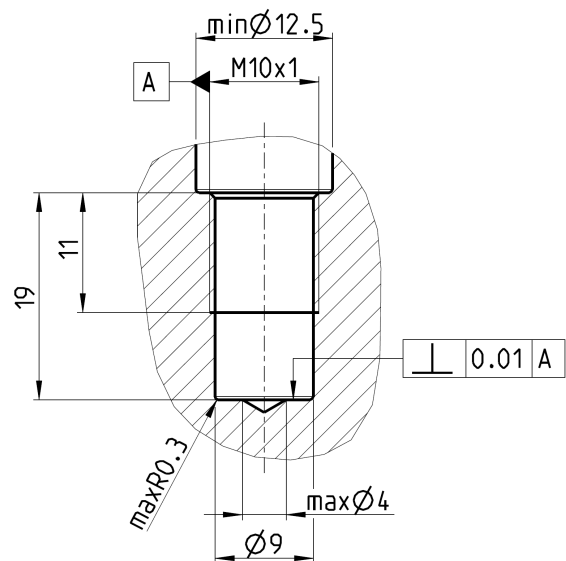


Fig. 2: Mounting bore dimensions

CALIBRATION

Each sensor is calibrated in a steel cylinder and is shipped with the test chart valid for this calibration mounting. For indirect melt pressure measurements it is favorably to calibrate the sensor in the final assembly.

MOUNTING

Prepare mounting bore as shown in Fig. 2. Use Anti-seize paste for lubricating thread and contact area of sensor to prevent getting stuck of sensor.

Install the sensor in its mounting bore and preload it to the specified value (30 000 pC) with a socket wrench.

ACCESSOIRES

- Steel braided cable 1 m (BV2444)
- Steel braided cable 2 m (BV2446)
- End finishing tool to prepare the mounting bore on request

Piezocryst reserves the right to change specifications and accessories without notice.