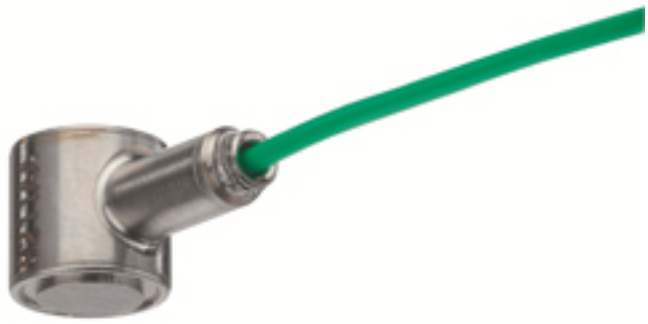
Miniature Piezoelectric Force Sensor Features Single-Wire Technology



Kistler has introduced the Type 9211BE miniature quartz force sensor with single-wire technology, designed for high-reliability dynamic and quasi-static mold cavity measurements of up to 3,000 bar (43,511 psi), over a range of 0 to 2,500 N, in support of demanding plastics injection molding operations. With a total diameter measuring six millimeters, the compact Kistler Type 9211BE operates on the piezoelectric principle, whereby the high-resolution force sensor charge signal output is converted within the charge amplifier or monitoring unit into a proportional output voltage of up to 10 V which is largely dependent upon sensor cable length. Piezoelectric sensing elements are housed within a rugged welded case with replaceable cable. The sensor feature's the company's single-wire technology, allowing for the shortening of an individual cable to required length, with connection via the proven cut-and-grip technique. Single-wire cables transmit the necessary electrical charge with required shielding provided by the injection mold itself, with both cables and connectors completely integrated into the mold. Single-wire cabling is also fully field-repairable and exchangeable and may be cut to desired lengths. Cables can be fitted directly into mold cavity bores to minimize milling, protecting bores from potential mechanical damage. They may also be connected to Kistler multichannel charge amplifiers for cost-effective multi-cavity mold preparation.

With its compact size and unique performance characteristics, the Type 9211BE is particularly suitable for plastics injection molding applications, where space is at a premium and measured force levels are high. Indirect pressure measurements with the Type 9211BE are also particularly ideal for molds with small cavities or a large number of ejectors. Within this application environment, the sensor is positioned under the ejector pin in the ejector plate and measures the force curve via the ejector, allowing for calculation of actual mold cavity pressure.

Kistler
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