



MICRO - 25

QUARTZ PRESSURE SENSOR

Oil and Gas Industry Applications

- Measurement While Drilling / Logging While Drilling
- Conventional Wireline Logging
- Permanent Downhole Monitoring
- Wellhead Monitoring – Surface and Subsea
- Portable Pressure Transfer Standards

CrystalTech, Inc. manufactures and markets the MICRO-25 pressure sensor designed for use in hostile environments.

This technology employs the use of a thickness-shear quartz resonator that changes frequency in response to applied pressure. The MICRO-25 sensor is designed for precision measurement of pressures to 25,000 psi at temperatures to 200° C. The inherent stability of quartz and the ruggedness of the assemblies have made this the preferred technology for down-hole data acquisition in the energy industry.

The measurement of electrical properties is made by driving the sensor into oscillation with a crystal impedance meter, gain-phase analyzer, spectrum analyzer or similar device, and measuring the resultant parameters. CrystalTech measures and records electrical data using Saunders Model 250B and Model 110HF Crystal Impedance Meters. With the 250B meter, resistive and capacitive loads and drive level are user selectable. We typically test sensors at 200 ohms, 30 pF, and 50 μ watts, respectively.

PHYSICAL PROPERTIES

| | |
|------------------------------|------------------------|
| Operating Pressure Range | 0 to 25,000 psig |
| Maximum Pressure at 25°C: | 30,000 psig |
| Operating Temperature Range: | 0 to 200°C |
| Pressure Accuracy: | 0.025% of F.S.Pressure |
| Overall Length: | 0.425in. \pm 0.005in |
| Overall Diameter: | 0.375in. \pm 0.005in |

ELECTRICAL PROPERTIES:

| | |
|-----------------------------|---------------------------------|
| Series Resonant Frequency: | 7.210 MHz \pm 1.5 kHz at 25°C |
| Series Resonant Resistance: | < 250 ohms at 25°C |

| | |
|----------------------------------|-------------------------|
| Static Capacitance: | 1.40 pfd (typ) |
| Motional Capacitance of Crystal: | 0.33 ffd (typ) |
| Nominal Pressure Sensitivity: | 2.0 hertz per psi (typ) |
| Inductance: | 1.4 henry (typ) |

Note: The following electrical parameters are included as typical values to aid in the design of oscillator circuits. CrystalTech, Inc. reserves the right to change product specifications without notice..



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