

Absolute Pressure Transducers

Series 4000KR



RANGES

6 Absolute Ranges

0-2000 psia to 0-20000 psia

FEATURES

- 0.01% Accuracy
- 0.0001% Resolution
- Frequency Outputs
- Small Rugged Package
- Low Power Consumption
- High Stability and Reliability
- Fully Calibrated and Characterized
- ISO 9001:2000 Quality System – NIST Traceable

APPLICATION AREAS

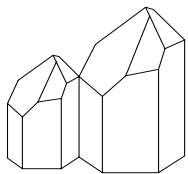
- Reservoir Analysis
- Production Logging
- Interference Testing
- Offshore Energy Exploration
- Oil, Gas and Geothermal Testing

Paroscientific manufactures and sells a complete line of high precision pressure instrumentation. Resolution of better than 0.0001% and typical accuracy of 0.01% are achieved even under harsh environmental conditions. High precision and resolution are mandatory for applications such as oil, gas, and geothermal energy exploration, reservoir analysis, production monitoring and permanent downhole installations. Accuracy comparable to the primary standards make the DigiQuartz® Transducers essential for a variety of application areas where **high resolution, accuracy, reliability, ruggedness, long-term stability, low power consumption** and **low cost of ownership** are important requirements.

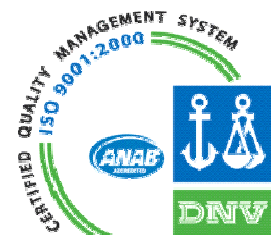
The remarkable performance of these transducers is achieved through the use of a precision quartz crystal resonator whose frequency of oscillation varies with pressure induced stress. A quartz crystal temperature signal is provided to thermally compensate the calculated pressure and achieve high accuracy over a broad range of temperatures. The transducers include integral shock protection to withstand extremely high acceleration, shock, and vibrational loads. Welded buffer tubes, electrical connections, and housings ensure transducer integrity. All transducers may be installed without the need for additional isolating diaphragms or bellows.

These compact, rugged, integrated KR Series sensors are available in 6 different pressure ranges up to 20000 psi and can operate up to 177 deg C. The transducers are easy to install in downhole tools and interface easily with counters and digital computer systems.

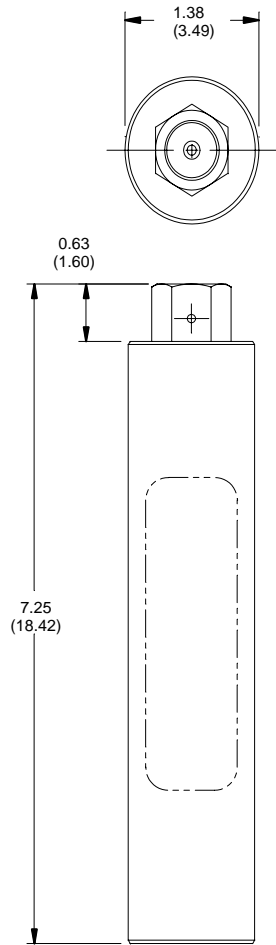
A Quality Management System that is certified to the requirements of the ISO 9001:2000 International Quality Standard provides consistency in our products and processes from design and development through production, calibration, test, and servicing. Our quality system and commitment to excellence ensure customers of outstanding products and services. As a result, we offer a **market-leading** five year limited **warranty** on all DigiQuartz® Transducers with the first two years covered at 100%.



Paroscientific, Inc.
DigiQuartz® Pressure Instrumentation



Series 4000 KR Absolute Pressure Transducers



Dimensions are inches—parenthesized dimensions are in centimeters

Model 4000KR Series

PERFORMANCE

Repeatability - Better than $\pm 0.01\%$ Full Scale
 Hysteresis - Better than $\pm 0.01\%$ Full Scale
 Acceleration Sensitivity - Better than $\pm 0.008\%$ Full Scale /g (Three axis average)

CHARACTERISTICS

Pressure signal is a frequency output with a 10% frequency change within the frequency band 30 KHz to 42 KHz.

Temperature signal is a frequency output with a 45 ppm/ $^{\circ}\text{C}$ sensitivity within the band 168 KHz to 172 KHz.

Both pressure and temperature output signals are nominally square waves of 4 volts amplitude peak to peak.

Conformance and temperature compensation equations and calibration coefficients are provided with each transducer.

Weight 11.1 ounces (311 grams)
 Power Requirements +5 to +16 VDC. 1.3 mA Max

ENVIRONMENTAL

Overpressure 1.2 times Full Scale
 Operating Temperature Range Please see the table below
 Shock The transducer will survive a drop shock of 3500 G's, 1/2 Sine, 0.25 msec on the tool axis, and a 2000G, 1/2, 0.25 msec shock on the radial axes. 42KR and 43KR survive 2000 G's all axes.
 Vibration The transducer will survive a vibration test per NAVMAT P-9492 section 3.2.1.

Pressure Ranges		Temperature Range							
psia	MPa	0-50°C		0-125°C		0-150°C		0-177°C	
		Model No	Part No	Model No	Part No	Model No	Part No	Model No	Part No
0-2000	0-13.8			42KR-101	1451-001 ⁽¹⁾	42KR-HT-101	1451-101 ⁽¹⁾	42KR-HHT-101	1451-201 ⁽¹⁾
0-3000	0-20.7			43KR-101	1452-001 ⁽¹⁾	43KR-HT-101	1452-101 ⁽¹⁾	43KR-HHT-101	1452-201 ⁽¹⁾
0-6000	0-41.4			46KR-101	1453-001 ⁽¹⁾	46KR-HT-101	1453-101 ⁽¹⁾	46KR-HHT-101	1453-201 ⁽¹⁾
0-10000	0-68.9			410KR-101	1454-001 ⁽¹⁾	410KR-HT-101	1454-101 ⁽¹⁾	410KR-HHT-101	1454-201 ⁽¹⁾
0-15000	0-103	415KR-101	1456-301 ⁽¹⁾			415KR-HT-101	1456-101 ⁽¹⁾	415KR-HHT-101	1456-201 ⁽¹⁾
0-20000	0-138	420KR-101	1457-301 ⁽¹⁾			420KR-HT-101	1457-101 ⁽¹⁾	420KR-HHT-101	1457-201 ⁽¹⁾



(1) Append - 0 to order oil-filled units.

Product defined by Specification Control Drawing.
 Specifications subject to change without prior notice.

Manufactured under one or more of the following U.S. Patents: 6,497,152 - 6,595,054. Other patents pending.
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