

DataSphere® ERD™ and ERD-HT Downhole Gauge Systems

ACCURATE MONITORING FOR PRODUCTION APPLICATIONS

OVERVIEW

In today's challenging environments, there is an increasing need for reliable and accurate reservoir data, driving the need for continuous improvement of monitoring technology. The ERD™ and ERD-HT downhole gauge systems provide real-time downhole data. These latest additions to the DataSphere® permanent monitoring suite provide a unique level of performance bridging an area of application between quartz and piezo gauges.

ERD (Electrical Resonating Diaphragm) gauge sensor technology and sophisticated surface electronics eliminate the need for downhole electronics. Typical applications for the ERD system include single and dual zone monitoring. These gauges may be ported to tubing, annulus, or control line.

MONITORING APPLICATIONS

- » Real-time production
- » HPHT environments
- » Artificial lift
- » Unconventional
- » Thermal observation wells
- » Water and CO₂ floods
- » Tight gas

GAUGE FEATURES

- » ERD technology
- » Maximum of up to 260°C operating temperature
- » Superior shock and vibration performance
- » 1.0-in. OD slim line design
- » Field-testable metal-to-metal seal

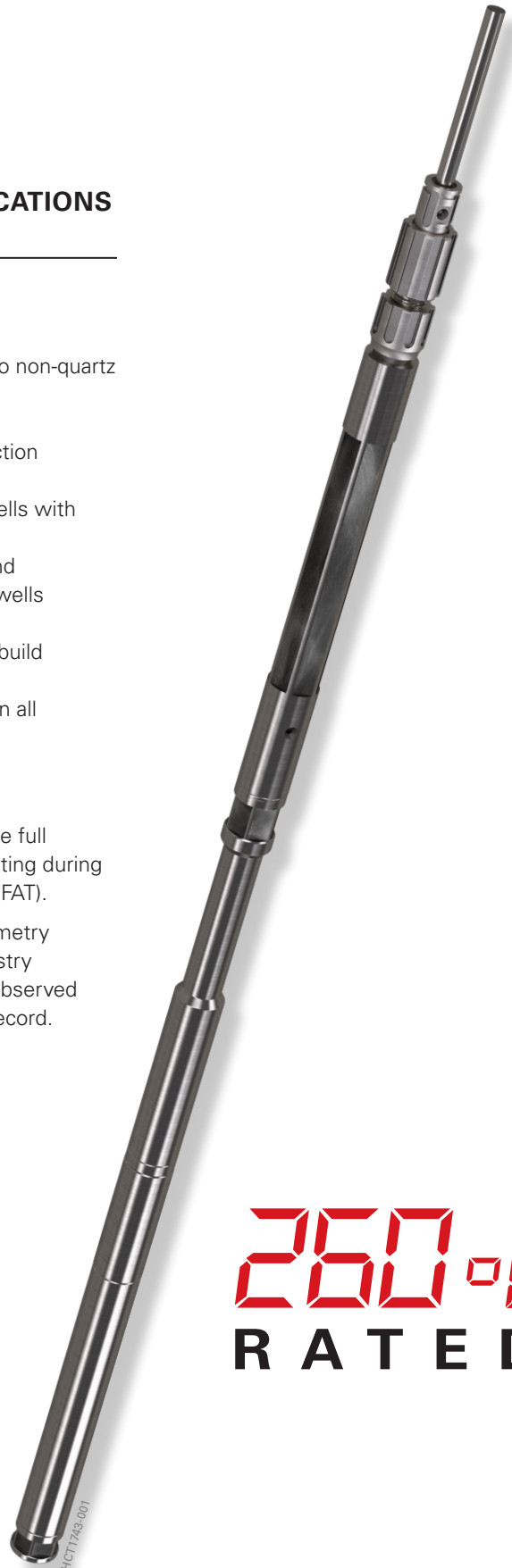
BENEFITS

- » High accuracy – superior to non-quartz offerings on the market
- » Field-proven reliability
- » Provides optimized production management
- » Enables optimization of wells with commingled zones
- » Identifies the continuity and communication between wells
- » Assists in well placement
- » Provides accurate data to build reservoir model
- » No downhole electronics in all applications

TESTING

ERD gauges are tested to the full pressure and temperature rating during Factory Acceptance Testing (FAT).

The gauge is subject to telemetry testing up to 35,000 ft. Industry reliability of 97% has been observed through its extensive track record.



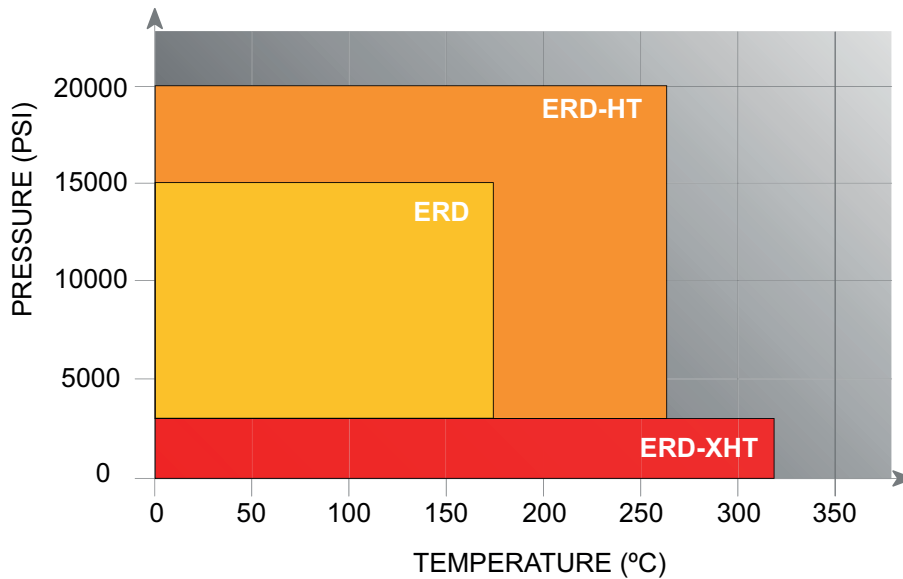
260°C
RATED

ERD™ and ERD-HT Gauge Performance Specifications

	ERD	ERD-HT 200	ERD-HT 260
Calibration Pressure Range (psi)	Atmospheric - 15,000*	Atmospheric - 20,000	Atmospheric - 20,000
Pressure Accuracy (%FS) (psi)	0.03 (4.5)	**	**
Pressure Resolution (psi/sec)	0.015	0.020	0.020
Max Operating Temperature (°C)	175	200	260
Temperature Accuracy (°C)	<0.5	<0.5	<0.5
Temperature Resolution (°C/sec)	0.01	0.01	0.01
Vibration Resistance	+/- 35g at 10 – 70 Hz and 500 G's	+/- 35g at 10 – 70 Hz and 500 G's	+/- 35g at 10 – 70 Hz and 500 G's

*ERD gauge variants available in 5,000 psi and 10,000 psi pressure rating.

**Accuracy at 20,000 psi and 260°C is presently rated at 0.08% FS. Accuracy at 15,000 psi and 260°C is 0.03% FS.



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