

Signature CQG Crystal Quartz Gauge

Precise, accurate, and responsive pressure measurements

APPLICATIONS

- Downhole reservoir testing
- Exploration or appraisal testing
- Interference testing
- Pressure surveys in production wells

BENEFITS

- Provides the highest-quality pressure and temperature measurements for optimal reservoir characterization

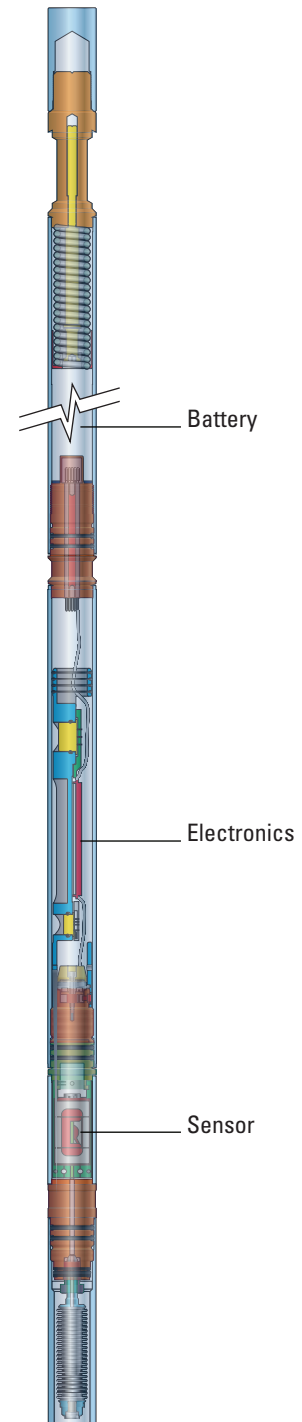
FEATURES

- Dynamic temperature compensation
- Enhanced accuracy and stability
- Resolution optimization
- Single ceramic multichip module (MCM)
- CQG* crystal quartz gauge sensor
- Memory guard and automatic data compression
- Battery voltage recording

The Signature CQG* crystal quartz gauge provides unparalleled resolution and accuracy in downhole measurements. The unique CQG sensor technology enables taking pressure and temperature measurements at the same point, on the same quartz crystal, to provide definitive answers on reservoir behavior. Using the same leading ceramic-MCM technology that has been field proven in the Signature* quartz gauges at its core, this latest-generation gauge delivers high data-sampling rates, large memory, and long battery life, all ensuring that the highest-quality measurements are taken with complete precision.

The CQG sensor is equipped with a dual-mode oscillator, which allows the single crystal to record both pressure and temperature. These simultaneous measurements enable precise, dynamic compensation and faster stabilization times to account for thermal and transient effects. This makes the gauge particularly well-suited for high-permeability reservoirs with small pressure drawdowns and interference testing where detection of minute pressure changes is required.

The gauges are designed for a wide range of reservoir conditions. With excellent crystal stability and a field-proven pressure resolution of 0.00002% of its calibrated range, the Signature CQG crystal quartz gauge provides the clearest, most comprehensive picture of boundaries, reserves, and productivity available.



Signature CQG crystal quartz gauge.

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Specifications

Model	TCQR
Sensor type	CQG crystal quartz
Pressure rating, psi [MPa]	16,000 [110]
Temperature rating, degF [degC]	347 [175]
Autonomy, [†] months	6
Datasets, maximum	5,000,000
Memory size, MB	16
Memory capacity at 1-s recording, [‡] days	40
Max. OD, in [mm]	1.2 [30.5]
Length, in [mm]	40.2 [1,021]
Weight (excluding battery), lbm [kg]	9.9 [4.5]

Material

Sensor	Inconel 718/C276
Sensor housing	C276
Bulkhead	Inconel 718
Battery housing	C276

[†]Function of temperature and recording rate. Contact your local Schlumberger representative for an accurate estimate based on job parameters.

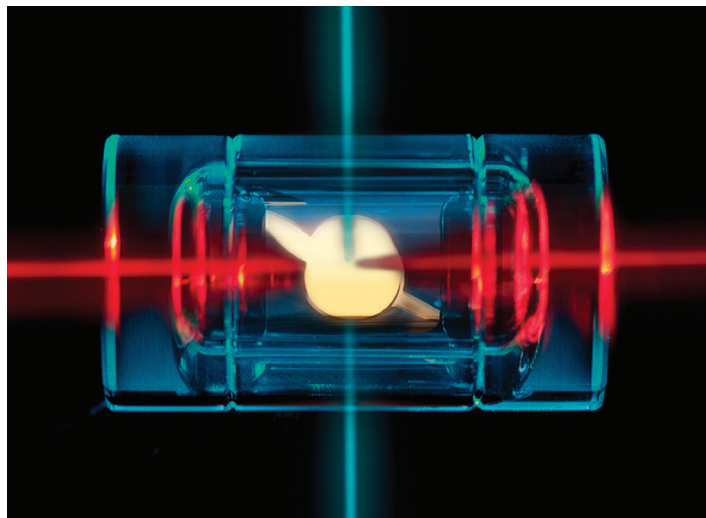
[‡]Exact figure depends on data compression ratio.

Metrology

Model	TCQR
Pressure	
Accuracy, [†] psi [kPa]	±1.2 [±8.3]
Resolution, psi [kPa]	0.003 [0.021]
Calibration range, psi [MPa]	Atmospheric to 15,000 [103]
Drift at pressure and temperature rating, % full scale/year	<0.01
Temperature	
Accuracy, degF [degC]	±0.4 [±0.2]
Resolution, degF [degC]	0.002 [0.001]
Calibration range, [‡] degF [degC]	77–347 [25–175]
Drift, degF/year [degC/year]	<0.2 [<0.1]
Scanning rate	0.1 s to 10 min

[†]Excludes reference dead-weight tester error of 0.01% full scale

[‡]Calibration range can be extended to 32 degF [0 degC] on request for seabed applications.



The Signature CQG gauge measures pressure and temperature simultaneously within the same crystal in a single quartz transducer. This eliminates temperature lags and discrepancies that can result from thermal response.

Run the Signature CQG gauge as part of the Quartet* high-performance downhole reservoir testing system. The Quartet system delivers the highest-quality pressure measurements and representative fluid samples with maximum safety and efficiency, for altogether better reservoir testing.

www.slb.com/CQG