

SmartLog™ Downhole Gauge System

ACCURATE MONITORING FOR OPTIMIZED PRODUCTION

OVERVIEW

The SmartLog™ downhole gauge system provides reliable and economical downhole pressure, temperature, and vibration measurements for optimized reservoir and production management. The system allows an operator to monitor production status throughout the life of an asset, allowing for critical adjustment as needed when downhole conditions change.

The heart of the SmartLog system is a piezoresistive gauge technology. Other system components include the proven FMJ cable termination, splitter for multi-drop gauge applications, and economical mandrel configurations for common casing and tubing combinations. It uses industry standard tubing encased conductor (TEC), cross coupling protection, and wellhead outlets. The XPIO 2000™ data acquisition and communication system supports the SmartLog system and offers a variety of features for complete data management. Basic surface systems are also available.

APPLICATIONS

- » Real-time production monitoring
- » Artificial lift optimization
- » Coalbed methane monitoring

FEATURES

- » Piezoresistive gauge technology
- » Industry-proven FMJ metal-to-metal sealing arrangement on the cable termination
- » Multi-drop capability on single tubing encased conductor (TEC) with splitter
- » High accuracy, repeatability and reliability allows long life needed in downhole applications
- » 0.88-in. OD slimline design

BENEFITS

- » Provides optimized production management
- » Optimized wells with commingled zones
- » Identify continuity and communication between wells
- » Can be used to plan well placement
- » Provides accurate data to build reservoir model

TESTING

The gauge is subject to a Highly Accelerated Lifetime Test (HALT) and Quantitative Accelerated Lifetime Test (QALT) programs. HALT is a series of controlled environmental stresses designed to help ensure that stringent criteria are met for thermal shock, mechanical shock, and vibration. QALT is thermal aging that is performed to help accurately determine the life of the gauges at maximum operating temperature. The target reliability of 10 years at 90°C was met.



HAL122305

SmartLog™ Gauge Performance Specifications

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|----------------------------------|----------------------------|
| Calibration Pressure Range (psi) | Atmospheric - 10,000 |
| Pressure Accuracy (%FS) | <0.1 |
| Pressure Resolution (psi) | <0.05 |
| Maximum Operating Pressure (psi) | 10,000 |
| Calibrated Temperature Range | Ambient - 125°C |
| Temperature Accuracy | <0.5°C |
| Temperature Resolution | 0.01°C |
| Operating Temperature Range | -20°C to 125°C |
| Vibration Sensing | +/- 18g axis accelerometer |

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