

Permanent Downhole Gauges

The need to gather real-time ongoing accurate downhole data as part of a properly managed reservoir monitoring programme has gained increasing importance in recent years.

In addition, the inherent danger associated with any well intervention operations such as wireline or coiled tubing is another driving factor towards the concept of permanent downhole instrumentation.

However, the cost of deployment of permanent installations, in tandem with the perceived lack of reliability of downhole instrumentation in the industry as a whole has been a limiting factor, which has restrained the use of permanent downhole data acquisition to date.

The experience that Nan Gall Energy Systems has gained in the design and manufacture of high temperature and pressure downhole products has placed it in an excellent position to provide permanent products that meet the demanding requirements of the downhole environment. In particular, Nan Gall Energy Systems' research and development in the field of high-temperature electronics design and manufacture has allowed it to develop products with outstanding reliability.

When this reliability performance is matched with Nan Gall Energy Systems' well-established electric line telemetry features – such as the addressable surface readout system, which allows up to eight different gauges to be communicating with the surface on a single cable – and Nan Gall Energy Systems' established real-time software, it provides a powerful combination to address the needs of any permanent downhole installation.

Nan Gall Energy Systems customises each permanent installation design to the needs of the customer, tailoring such features as:

- Transducer type
- Pressure connection
- Pressure housing seals
- Cable impedance matching
- Number of sensors per cable
- Surface hardware and software configuration
- Cable, clamp and penetrator systems



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Product Specification Table

Tool Type	Outside Diameter	Pressure Range	Temperature Range	Pressure Resolution	Temperature Resolution
Quartz	1.25" (3.175cm)	Up to 16000psi	up to 175°C (347°C)	0.01psi	0.001°C
Strain	1.25" (3.175cm)	Up to 15,000psi	up to 150°C (302°C)	0.01psi	0.001°C

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