

Pressure and Temperature Gauges – Strain

Pressure and Temperature Gauges are deployed downhole for various applications including:

- Determining bottom hole reservoir pressure and temperature
- Production monitoring
- Gradient surveys

Reservoir capacity and production conditions can be determined by monitoring pressure and temperature trends over time. Nan Gall Energy Systems gauges have leading-edge capability, both measured in terms of performance (for example, temperature rating, pressure rating, accuracy, resolution and drift) and features (sampling, memory size and diagnostics).

The company has invested significantly in new gauge designs as part of its overall product development programme with the objective of improving temperature performance, reducing gauge length and improving feature capability. As a result, the Nan Gall Energy Systems gauge product range includes a 200°C-rated gauge and 'Short' quartz and strain gauges in addition to standard length gauges, plus features such as gauges with: 0.1-second sampling, one million data sets, self-diagnostic capability and up to two years' downhole battery life. Nan Gall Energy Systems is one of the few companies in the world that has a proven successful track record with 200°C products in the field today.

Nan Gall Energy Systems products can be categorised in two main ways:

- by deployment method
- by transducer type

The three main deployment methods are:

- Memory gauges (slickline and tubing conveyed applications)
- Surface Read Out (SRO) gauges (electric line applications)
- Permanent gauges (permanent/smart well installations)

Strain transducer:

- Strain (good accuracy, good resolution, moderate drift*)

Gauges with 'strain-based' transducers have an important role in the downhole data acquisition business. They have a much lower purchase price than quartz gauges and are ideal for shorter-term deployment applications. The performance of strain gauge transducers has improved considerably in recent years with the latest transducers on the market providing excellent accuracy and resolution capability and much improved drift performance – although not at quartz transducer levels.

Nan Gall Energy Systems has performed an exhaustive comparison exercise regarding the latest gauge transducers on the market and has released a new low-cost memory gauge with an outstanding performance specification.

(*drift is an acknowledged term in the industry as a measure of ability to maintain calibration.)



Nan Gall Energy Systems' gauges have leading-edge capability, both measured in terms of performance and features

Nan Gall Energy Systems Ltd
Unit 5, Nevis Business Park
Balgownie Road, Bridge of Don
Aberdeen AB22 8NT, Scotland, UK

sales@nangall.co.uk
www.nangall.com
T +44 1224 822580
F +44 1224 707153



measured performance

Pressure and Temperature Gauges – Strain

Product Specification Table

Tool Type	Outside Diameter	Maximum Pressure Range	Maximum Temperature	Pressure Resolution	Temperature Resolution	Long-Term Drift Range
Silicon-on-Sapphire Strain 5K psi	1.25" (3.2cm)	5,000psi (345 bar)	302°F (150°C)	0.01psi	0.01°C	<> 15psi per annum
Silicon-on-Sapphire Strain 5K psi	1.25" (3.2cm)	5,000psi (345 bar)	347°F (175°C)	0.01psi	0.01°C	<> 15psi per annum
Silicon-on-Sapphire Strain 10K psi	1.25" (3.2cm)	10,000psi (689 bar)	302°F (150°C)	0.01psi	0.01°C	<> 15psi per annum
Silicon-on-Sapphire Strain 10K psi	1.25" (3.2cm)	10,000psi (689 bar)	347°F (175°C)	0.01psi	0.01°C	<> 15psi per annum
Silicon-on-Sapphire Strain 15K psi	1.25" (3.2cm)	15,000psi (1034 bar)	302°F (150°C)	0.01psi	0.01°C	<> 15psi per annum
Silicon-on-Sapphire Strain 15K psi	1.25" (3.2cm)	15,000psi (1034 bar)	347°F (175°C)	0.01psi	0.01°C	<> 15psi per annum
Silicon-on-Sapphire Strain 20K psi	1.25" (3.2cm)	20,000psi (1379 bar)	302°F (150°C)	0.01psi	0.01°C	<> 15psi per annum
Silicon-on-Sapphire Strain 20K psi	1.25" (3.2cm)	20,000psi (1379 bar)	347°F (175°C)	0.01psi	0.01°C	<> 15psi per annum
Silicon-on-Sapphire Strain 30K psi	1.25" (3.2cm)	30,000psi (2068 bar)	302°F (150°C)	0.01psi	0.01°C	<> 15psi per annum
Silicon-on-Sapphire Strain 30K psi	1.25" (3.2cm)	30,000psi (2068 bar)	347°F (175°C)	0.01psi	0.01°C	<> 15psi per annum
Uni-Slim 10K psi	0.75" (19.05mm)	10,000psi	347°F (175°C)	0.01psi	0.01°C	<> 15psi per annum
Uni-Slim 15K psi	0.75" (19.05mm)	15,000psi	347°F (175°C)	0.01psi	0.01°C	<> 15psi per annum

Nan Gall Energy Systems Ltd
 Unit 5, Nevis Business Park
 Balgownie Road, Bridge of Don
 Aberdeen AB22 8NT, Scotland, UK

sales@nangall.co.uk
 www.nangall.com
 T +44 1224 822580
 F +44 1224 707153



measured performance