

# Analogue Pressure Gauge



Qteq's Analogue Pressure Gauge is a field-proven reliable means to diagnose and optimize well and completion performance and to monitor long term reservoir trends to aid reservoir management decisions. The pressure gauge employs a monocrystalline silicon piezo-resistive sensor, with a wheatstone bridge etched into the silicon substrate. This results in excellent long term stability characteristics and optimises sensor sensitivity.

Qteq's analogue gauges are employed in a variety of applications, which include but are not limited to, monitoring fluid levels to optimise pump performance and monitoring and optimising reservoir drainage efficiency through production history matching.



## Features and Benefits

- The gauge is a fully welded assembly and incorporates an integral cable head to minimise the number of potential leak paths.
- Pressure testable cable head and metal-to-metal seals with the armoured downhole instrument cable.
- The gauge outputs a 4-20 mA signal, eliminating need for dedicated surface electronics, thereby improving reliability.
- Use of a 4-20 mA output signal also simplifies interface with third party surface data loggers, pump control systems and other PLC systems.
- State of the art electronic circuit design and packaging techniques are employed to miniaturise gauge size and improve robustness to in-well shock and vibrations.
- A patented pin and socket design provides excellent repeatability of connection, and surety of connection
- Qteq has developed recommended wiring instructions and Galvanic Isolators to comply with hazardous area regulations where applicable.

## Specifications

<b>Sensor Type</b>	Piezo Resistive
<b>Measurements</b>	Pressure
<b>Signal Type</b>	Analogue
<b>Communication Protocol</b>	4-20 mA
<b>Proof Pressure</b>	6000 psi
<b>Pressure Range</b>	50, 300, 500, 1000, 1500, 2000, 3000 psi
<b>Pressure Accuracy</b>	± 0.1% full scale *
<b>Pressure Resolution</b>	Data logger dependent
<b>Temperature Range</b>	-40 °C to 105 °C
<b>Sampling Frequency</b>	Data logger dependent
<b>Long Term Vibration Resiliency</b>	8g at 100 Hz measured peak-to-peak (14-day bench test)
<b>Material</b>	316L stainless steel
<b>Outside Diameter</b>	24.13 mm (0.95")
<b>Length</b>	196.85 mm (7.75")
<b>Certification (optional)</b>	IECEX Ex ia IIB T3 Ga intrinsically safe Tamb = -20°C to 105°C (-4°F to 221°F)
<b>Applicable Standards (where applicable)</b>	IEC 60079-0: 2007-10 and IEC 60079-11: 2006
<b>Cable Head Pressure Test</b>	Yes, up to 2,000psi

\* Full scale error best straight-line fit, typical average error +/- 0.16% full scale (5-point verification at 20°C). Average error is calculated from a sample batch of 100 units. All errors are expressed as a positive value to calculate the average. Maximum allowable single error is ± 0.5% absolute full-scale.