

# Wireless ELF-EM Gauge



Qteq's Wireless ELF-EM Pressure Gauge is positioned below tester valves in DST strings to monitor formation pressure transients. The gauge is housed in a Gauge Carrier that can be configured to sense either annulus or tubing pressure. Pressure data acquired on a pre-programmed interval is relayed to surface real-time, using an extra low frequency (ELF) electromagnetic (EM) signal. This signal is propagated through the overburden surrounding the well to one or more ground antenna at the surface.

Electrical power for the pressure gauge and the ELF EM transmitter, which is electrically isolated from the remainder of the DST string, is provided by dedicated battery packs.

Cables attached to the surface antenna and/or wellhead are routed to the Surface Data Acquisition (SDA) unit, which employs a signal processor to decode the detected modulated EM signal. The extracted pressure data is relayed via USB interface to a laptop computer to perform real-time pressure transient analysis (PTA).

The PTA software provides a means to view pressure data as text, and also graphically in various Cartesian, semi-log (Horner) and log-log (c/w derivative) plot formats. Acquired pressure data can also be shared real-time with remote client offices via an Internet connection or in-field IT infrastructure.



## Features and Benefits

- The EM transmitter system features a 'sleep mode', whereby transmission of data only commences once measured pressure exceeds a predefined threshold to extend battery life.
- Measured bottom hole pressure data can be relayed real-time to remote client offices.
- Short and slim compact design.
- Ruggedized and field proven.
- Versatile configuration for use in wide range of applications.

## Specifications

<b>Connection Types</b>	2.875" EUE, 3.500" EUE, Other connections available upon request
<b>Carrier Length</b>	1,320mm (Length may increase with extended battery packs)
<b>Carrier OD</b>	3.500" EUE: 4.5" 2.875" EUE: 3.7"
<b>Carrier Metallurgy</b>	J55 / 4140
<b>Electronics Length</b>	159 mm
<b>Electronics Housing OD</b>	48.5 mm
<b>Gauge Metallurgy</b>	316 Stainless Steel
<b>Battery Barrell Length</b>	Battery Pack dependant
<b>Electronics Pressure Rating</b>	8,000 psi
<b>Telemetry</b>	2 Channel 32 Bit Telemetry, broadcasting on 6 Hertz
<b>Transducer Type</b>	Piezo-Resistive
<b>Pressure Range</b>	Up to 8,000 psi
<b>Temperature Rating</b>	150 °C
<b>Pressure Accuracy</b>	0.25% FS
<b>Sample Rate</b>	15 seconds or slower