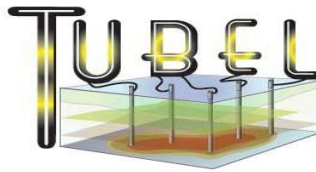


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PRODUCT DATASHEET

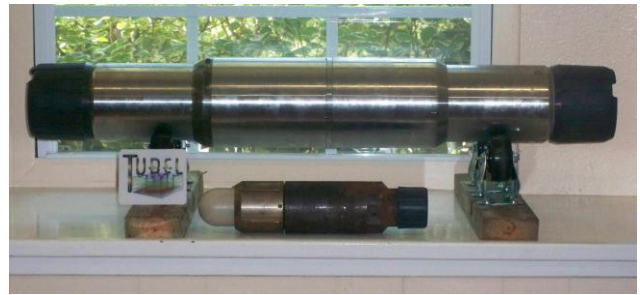
Wireless Downhole Frac/ DFIT/Flowback Monitoring Gauge

KEY FEATURES

- **Wireless Communications**
- **Gauge available for 4.5 in. 5.5 inch Frac string**
- **Multiple systems deployed in a single well**
- **Casing or liner deployment**
- **Sapphire and strain pressure and temperature sensors**
- **Tubing or Annulus monitoring**
- **High speed data – 1sample per second**

APPLICATIONS

- **Frac and Flowback monitoring**
- **Production Monitoring**
- **DFIT**
- **Build up tests for formation evaluation**
- **Zonal isolation monitoring for multistage stimulation treatments**



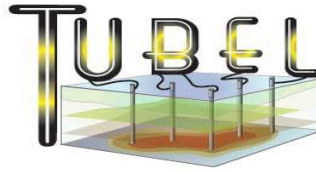
Tubel Energy provides a Wireless Frac System for monitor pressure and temperature inside a wellbore. The Wireless Frac gauge can be used to monitor all zones fractured in a well or multiple gauges can be deployed for monitoring individual frac zones. The system(s) is deployed as part of the casing and stays in the well permanently. The system collects Flowback, Frac and DFIT data.

The Wireless Frac System stores the acquired frac data in its memory and transfers the recorded data to a Wireless Receiver deployed in the well using slickline, electric line or coil tubing after the Frac is completed. The status of the data transfer is monitored at the surface in real time.

A SCADA system obtains the data from the Wireless Receiver once the receiver is returned to the surface. The data is loaded into a PC for processing.

The Wireless Gauges continue to work in the wellbore collecting production and pressure build

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up data for the life of the battery at approximately 3 years.

Length	63.75 inches

Specifications

Pressure	
Sensor	Strain
5.5 inch gauge	18,000 psi
Accuracy	0.1% Full Scale
Long Term Stability	0.1% Full Scale
Drift	< 3 psi / year
Resolution	0.025 % Full Scale
Response Time	Instantaneous
Power	
Source	Batteries
Battery life	3 years at 210 F
Data Acquisition	
Record Contents	Time, Pressure, Temperature
Sample location	Tubing or Annulus
Sample Interval	1.0 second
Downhole Comm.	Wireless
Surface Comm.	Wireless
Total samples	4 million
Gauge Housing	
5 ½ inch Pipe 23 lbs	
OD	7.00 inches
ID	4.55 inches

Receiver

Diameter	1 11/16 inches
Length	20 inches
Interface	Go Connection
Power	Internal Batteries
Storage	4 million samples

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