Well Monitoring

Memory Gauge
SPM Internal

Reservoir Group's SPM Internal dual function gauge outperforms conventional gauge carriers and can be recovered without pulling the completion.

The SPM Internal Piezo gauge assemble is designed with seal stacks for plugging off an industry-standard 1.5" side pocket mandrel. The gauge is fully automatic, capable of recording accurate real-time internal tubing pressure and temperature. With the SPM Internal gauge located in place, full bore access is gained into the well.

The gauge is supplied in monitor mode and will record data at a pre-set sampling interval to memory when a user-programmed pressure or temperature threshold has been exceeded. The gauge reverts to monitor mode and stops recording data when the well pressure and temperature fall below both threshold values. Data is captured for the entire operation with no operator input required.

This low power gauge has a built-in real time clock that ensures accurate data is stored with real-time values, and that the data from each survey is stored individually in its large memory for easy download and analysis.

Reservoir Group's Windows-based Memory Gauge software is easy to operate, even for the beginner, with simple communication steps to download data from the gauge to provide a graphical plot display. For the more advanced user, features such as plot manipulation tools, data export options and Gradient Survey/Report generation tools, are available.

Features	Benefits
Fully automatic	Ideal for remote operation because no operator input is needed to record data
All data is stored with real-time values	Enables quick and easy analysis
Large data set memory (1,000,000)	Provides long duration recording at fast sample rates
Innovative electronics	Dramatically reduces power consumption
Full bore access	Makes assembly ideal for frac jobs
No dangerous goods paperwork required	Easy shipping

SPM Internal for Demanding Applications

- Frac monitoring with full bore access to the well
- Gas lift mandrels
- Long duration data recording
- Production monitoring and artificial lift control
- Production Optimization

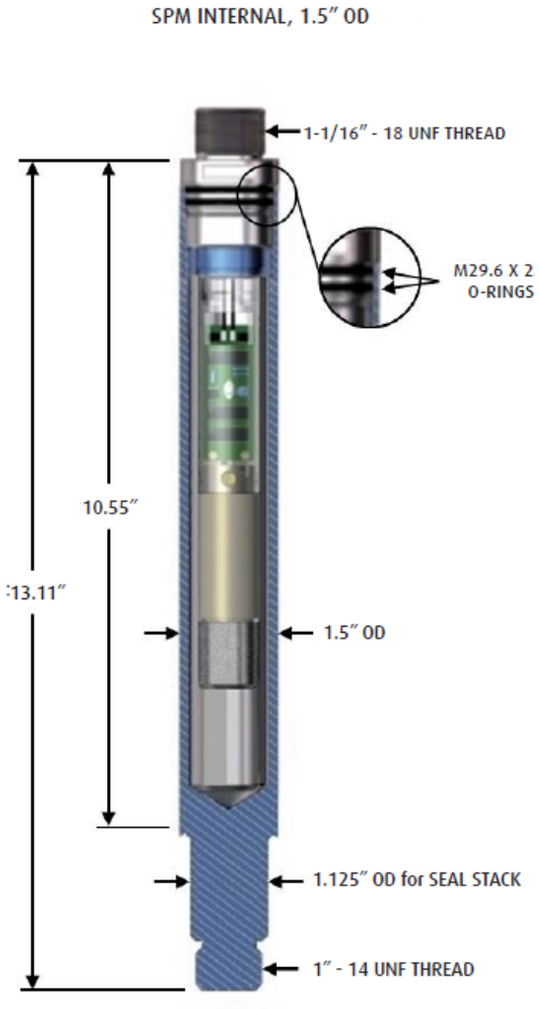
www.reservoirgroup.com info@reservoirgroup.com

RESERVOIR GROUP

Technical Specifications

Pressure	
Maximum external pressure	Must not exceed sensor range or 25 15 max
Sensor range	2 options, 8.6 ksi and 15 ksi
Sensor type	Piezo-resistive
Accuracy	<±0.06% FSO
Accuracy typical	±0.04% FSO
Resolution	0.2 psi
Temperature	
Maximum temperature	Must not exceed range or 150°C
Operating range	0°C to 150°C
Accuracy	±1.0°C
Repeatability	±0.5°C
Resolution	0.05°C
Power	
Battery type	AA type lithium, hardwired
Operating voltage	3.6 to 3.9 V
Battery Life*	More than 1 year
Memory	
Sampling interval	1 to 600 seconds
Memory type	Non-volatile
Capacity	1,000,000 datasets
Record contents	Real time, pressure, temperature
Other	
Top thread connection	1 1/4" x 18 TPI UNF
Materials	SS 17-4 PH, gauge sub K500 monel
Service	Standard and H_2S

*Battery life varies with temperature and sampling interval



RESERVOIR GROUP