Combining mono-crystal micro sensing elements with corrosion and HPHT resistant protective casing that can fit in the palm of your hand, OpenField™ sensors are unique in making microchip technology work in the harshest environments, giving well operators superior data on downhole pressure and temperature.

**OEM INTEGRATION IN DOWNHOLE TOOLS WHERE SIZE CONSTRAINTS ARE CRITICAL**

The extremely fast settling time of OpenField™ proprietary MEMS technology drastically improves dynamic data acquisition and interpretation during Well Test operations. Thanks to its tiny size, this gauge can be integrated in any room-constrained application to allow measurement where it would be impossible with conventional sensors. Protected by a corrosion resistant diaphragm, the sensor boasts miniaturised electronics performing in-situ digital conversion and computation to store engineering values in its memory while communicating in real time. Single wire communication and low power requirements simplifies connectivity to tool boards.

All of this with data quality superior even to Quartz technology.

**GENERAL DESCRIPTION**

- **OD** 8mm (5/16")
- **Length** 38mm or 25mm depending on memory option
- **Power** 3.6V 2mA
- **Memory** up to 2.8 million data points
- **Pressure range** 5 to 15 kPsi
- **Temperature range** 125/150/170°C (257/302/338°F)
- **Pressure Accuracy** +/-0.01% FS
- **Pressure Resolution** 0.00005% FS
- **Temperature Resolution** 1 mK at 1 Hz
- **Measurement period** From 128Hz to 1 data every 64sec
- **Deployment** OEM integration in Downhole Tools
- **Interface** One wire UART

**FEATURES**

**APPLICATIONS**

- OEM integration in downhole tools
HIGH ACCURACY - HIGH RESOLUTION
MEMS MICRO-SENSOR FOR PRESSURE AND TEMPERATURE

MEMS SENSING ELEMENT

MEMS stands for “Micro Electro Mechanical Systems”. MEMS devices combine mechanical, electromagnetic, thermal and chemical functions on a millimetre-size chip. The technology is an extension of microelectronics processes to create micro-machined structures integrating sensing and actuating capabilities to computing power. It often yields better performance and better reliability through the use of high quality clean room processes. Moreover, miniature sensing element stabilise quicker than their macroscopic counterparts, leading to better acquisition rates and more accurate measurements during transients.

PACKAGING

To interact with downhole fluids, MEMS elements must be protected against corrosive compounds. Additionally, although the sensing element is exposed to pressure, the acquisition system must be isolated from high pressure conditions. This is achieved by placing the sensing element in a pressure feedthrough, behind a protective diaphragm. Combined in a miniaturised system, all these elements contribute to produce an outstanding sensor.

SMART ELECTRONICS

The micro-recorder electronics makes use of the latest analog to digital conversion and MCU technologies coupled with state-of-the-art memory devices. All these are fitted in a compact package and tested through thermal cycles. Tailored, embedded firmware processes data on the fly to adapt recording behaviour and optimise battery power consumption.