

Production Inclinometer Accelerometer



The Production Inclinometer Accelerometer (PIA) measures the inclination of a toolstring while logging.

An inclination measurement is particularly useful where phase separation occurs within a horizontal well as the relationship between the phases can often be related to whether a phase is moving up or downhill. Consequently, a Production Inclinometer Accelerometer (PIA) is recommended whenever running a MAPS toolstring.

The PIA measures the acceleration due to gravity with a range of +/-2g. Within this, is the range of +/-1g corresponding to 0 to 180 degrees inclination. From 0 to 90 degrees the output is equivalent to the cosine of the deviation. Used as an accelerometer downhole tool movement may be recorded for data de-convolution purposes.

Operating Principle

The industry standard, high-resolution, high-temperature sensor consists of an arm with a capacitor plate held between a second capacitor plate and an electromagnet. The plate is held centralized by the electromagnet. The capacitance gap is used to monitor the position of the arm. Changes in acceleration due to gravity result in changes of the current required to hold the arm centralized. These changes in current are then converted to frequencies for output.

Applications

- Correction of differential pressure density measurements for well inclination
- Horizontal well production log interpretation
- Identification of major tubular buckling
- De-convolution of tool data for unsteady tool movement such as the yo-yo effect in deviated wells and when running on coiled tubing



Production Inclinerometer Accelerometer

Specifications	
Model	PIA 004
Max. Temperature	177°C (350°F)
Max. Pressure	15,000 Psi (103 MPa)
Diameter	1-11/16" (43mm)
Make-up Length	10.7" (272mm)
Measure Point	6.0" (152.4mm)
Weight	4.7lbs (2.15kg)
Supply Voltage	+18V DC
Current Consumption	23 to 27mA @18V DC
Range (where g = local gravitational acceleration)	-2g to +2g
Resolution (for 1 sec acquisition time)	0.004g
Accuracy	0.01g
Materials	Corrosion Resistant Throughout



Visit us online at:
www.geoilandgas.com

*Trademark General Electric Company.
 Copyright ©2015 General Electric Company. All rights reserved.
 GEA31834 (05/2015)