



BGO-02 GYRO BOREHOLE ORIENTATION PROBE

DESCRIPTION

The BGO-02 borehole orientation probe is a digital probe that measures the position of the probe within the borehole relative to the starting position of the survey. The position of the probe is reported two times per second.

The probe is equipped with two gyro sensors. The first gyros spin axis is aligned with the axis of the borehole probe and the second gyros spin axis is at right angle to the probe axis. The gyro sensor is a gimbal mounted rotating mass sensor measuring the rate changes of the probe relative to the spinning axis of the rotating mass. The change of orientation of the borehole is measured on two axes on each gyro. The dip of the probe is measured with a two-axes tilt meter. Internally the microprocessor scales and calibrates all the measurements to engineering units before transmitting it to the surface.

The BGO-02 borehole orientation probe interfaces to all IFG logging systems. A typical system consists of a wire line winch equipped with a four conductor logging cable. A digital data interface (BIN-04), a optional depth encoder and a laptop computer.

The interface console supplies the power to the probe and receives the data from the sensors. This data is converted to a standard ASCII format by the console. Additional information like the depth of the probe and other external data can be appended to the data string. The ASCII data string is then transmitted via RS-232 data interface to a laptop or pen computer for the display and recording of the data to the disk drive.

The data acquisition software is the part that is specially designed for the orientation survey. It gives the operator the capability to enter the starting position or collar orientation of the borehole. The survey is generally run in continues mode at speeds of 10 to 15m per minute. The raw data is recorded for the post processing and plotting of the final survey results.



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SPECIFICATION	
Sensor Design	Gimbal mounted rotation mass
Rotation Speed	15,000 rpm
Sensitivity	0.0001°/sec
Maximum Response	100°/sec
Dynamic Range	360°
Maximum Load	1000g
Vibration: Random (20-2000 Hz)	30g
Vibration: Shock	600g, 30msec
Tilt: Dynamic Range	+/-90°
Tilt: Sensitivity	0.01°
Sample Period	2 samples per second
Probe Housing	Stainless Steel
Maximum Depth	2000m
Temperature	Storage: -35 to +70°C Operating: 0 to +70°C
Output	10mA current loop, 4800 baud
Supply Voltage	48 Vdc @ 0.3 (at probe header)
Probe Dimensions	48mm diameter x 170cm long
Probe Weight	6.8 kg