BGO-01 GYRO BOREHOLE ORIENTATION PROBE

DESCRIPTION

The BGO-01 gyro borehole orientation probe is a digital probe that measures the rate of change within a borehole in continues mode. This rate of change measurement is converted to units of Deg/sec. The rate is measured and reported two times per second.

The gyro sensor is a gimbal mounted rotating mass sensor measuring the changes of the probe within a borehole relative to the spinning axis of the gyro sensor. The rate change of the borehole is measured on two axes. Additionally the dip of probe is measured with a two-component tilt meter. Internally the microprocessor scales and calibrates all the measurements to engineering units, before the data is transmitted to the surface.

The BGO-01 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), an 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 are 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 the storage of the data on 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 geographic starting position of the borehole. The survey is generally run in continues mode at speeds of 5 to 15m per minute. Both the computed and the raw data are recorded for further post processing and plotting.

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SPECIFICATION	
Sensor Design	Gimbal mounted rotation mass
Rotation Speed	15,000 rpm
Sensitivity	0.0001°/sec
Dynamic Range	+- 80° from vertical
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 @ 2mA (at probe header)
Probe Dimensions	48mm diameter x 170cm long
Probe Weight	5.6 kg