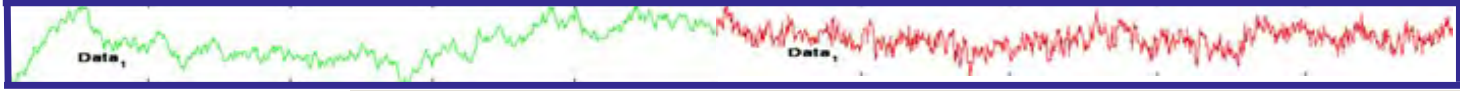


KMS-888 Shallow borehole microseismic/EM tool

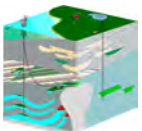


Shallow borehole tool



KMS-888 Shallow borehole tool

KMS-888 Shallow borehole tool (SBHT) is a sensor assembly designed for electromagnetic (EM) and microseismic recording to obtain resistivity and velocity structure to reduce risk for oil and gas/geothermal E&P. The unit can be used for both general purpose acquisition and long term monitoring services. The SBHT includes a 3-axis geophone assembly, a KMS-029 digital fluxgate sensor system, and 3 electric field sensor (Ex,y,z). The tool is designed to provide input signal for the KMS-820 Data acquisition unit. The hermetic housing of the tool allows to use it in a test wells of about 30 m of depth in order to make measurements that are hardly possible on surface.



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Product features

- Multi-physics: 3 component fluxgate magnetometer, Ex,y,z and 3C geophone.
- GPS synchronized.
- Ruggedized and water proof design for downhole application (50 m shotholes)
- Data is saved to SD card (16-32 Gbyte).
- Operation scheduler allows multi-physics & multi-method (MT, CSEM etc.) operation in ONE sensor drop.
- Standard sampling rate 1 kHz (adjustable)

Fluxgate magnetometer

- Low profile 3-component magnetometer DC-180 Hz.
- Low noise 32 bit acquisition module for high resolution applications.

Geophone

- High sensitivity >2 volts/second/inch.
- Low noise 3 component. (10 Hz)

Electric field

- Ez along plastic casing (20 m or 30 m)
- Ex, Ey at surface

Product specifications

Fluxgate KMS-029	
ADC resolution	32 bit – data used is 24-bit for compatibility reasons
Signal bandwidth	DC to 180 Hz
Sampling rate	62.5, 250, 1000 Hz
Input signal dynamic range	-5 V ~ +5 V
DC offset removal	Each channel has its own 16 bit DAC to remove external DC offset
Timing control	GPS synchronization by KMS-820
Total dynamic range	±78.0 μT
Dynamic range after compensation	±5.4 μT
Noise level @ 1 Hz	≤6 pT/√Hz
On-board sensors	Temperature, pressure, 3-axis acceleration
Power supply	±5, +3.3 V (from KMS-820)
Temperature rating	-30° C to 70° C
Digital interface	UART
Power consumption	425 mW
Geophone assembly	
Open-circuit sensitivity	85.8 V/m/s +5%, -3.5%
Frequency	10 Hz ±3.5%
Spurious frequency	240 Hz
Coil resistance	-5 V ~ +5 V
Open circuit damping	0.48 to 0.54
Sensitivity with 20 kΩ load	2.00 V/in/s (78.7 V/m/s) TYPICAL
Damping with 20 kΩ load	0.70 TYPICAL
Distortion from horizontal to ± 3° tilt	<0.15 % measured at 12 Hz with 0.7 in/s p-p
Distortion at horizontal	0.05% TYPICAL
Distortion from horizontal to ± 10° tilt	<0.15 % measured at 12 Hz with 0.7 in/s p-p
Distortion at vertical	0.05% TYPICAL
KMS-820 summary – see KMS-820 for latest data sheet	
Analog channels	3C electric field and 3C geophones
Digital interface	Connected to Fluxgate sensors; digital extension possible
Ruggedized operation	
Complete system shipped in transport container	