CNPS®

CNPS Small Diameter MWD

Small Diameter MWD

CNPS Small Diameter MWD Profile

CNPS small diameter MWD is a self-developed wireless MWD tool that provides directional and gamma measurements. It can be salvaged and replaceable, simple operation, convenient, low maintenance cost, a single use of long working cycle, long maintenance interval, is a cost-reducing and efficient MWD tool. CNPS small diameter MWD adopts shear valve mud pulse signal generator, strong mud pressure signal, stable data transmission, strong anti-interference ability. Surface signal demodulation system adopts adaptive equalization and neural network intelligent algorithm for signal filtering and processing, friendly operation interface, fully meet customer needs.

The power source of the CNPS small diameter MWD pulser is a brushless DC motor that directly drives the shear valve. Internal and external pressure by piston balance, the main moving parts are hard alloy material, stable performance, less mechanical wear, in its normal operating conditions, can realize maintenance free.

CNPS small-diameter MWD directional probe tube is designed with a special aviation gravity accelerometer and calibrated by a calibration algorithm with independent intellectual property rights. Through orthogonal calibration and temperature compensation, the directional probe tube is within the full temperature range and the deviation accuracy is ± 0.1°.

CNPS small-diameter MWD can intelligently identify the downhole working mode. During compound drilling, the instrument may enter the sleep mode occasionally, and activate at regular intervals to save electricity.

The dual-battery power supply mode is optional for the CNPS small-diameter MWD. The power management module can intelligently control the dual-battery discharge under the premise of ensuring the safety of battery discharge, effectively extending the downhole working time.

Application

- ✓ A low-cost, high-efficiency, small-diameter MWD tool.

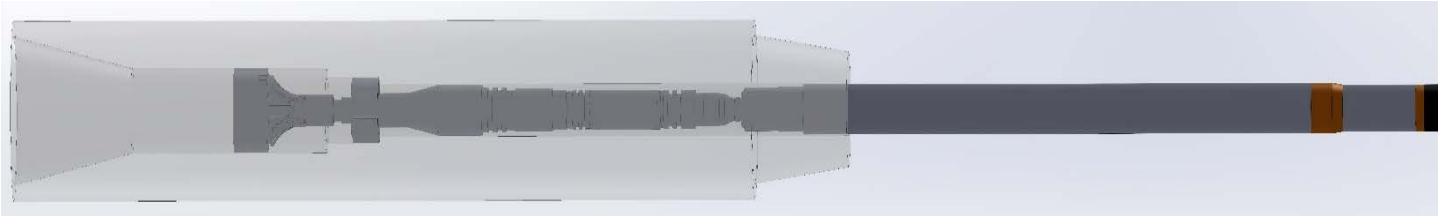
Benefit

- ✓ High reliability, replaceable, and improve operation efficiency.
- ✓ Orthogonal calibration and temperature compensation design, high measurement accuracy.

Feature

- ✓ The operating temperature is 125 ℃/150 ℃/175 ℃.
- ✓ The mud pulse signal generator has strong anti-blocking ability, simple maintenance and long service life.
- ✓ The upper computer has advanced design and strong signal demodulation capability
- ✓ can connect with lower seat key pulser

Schematic Diagram of Pulser and Directional Probe



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CNPS Small Diameter MWD Technical Parameter

	Static measurement	Dynamic measurement
Tool attitude measurement		
Well deflection		
Measuring range	0 to 180°	0 to 180°
Measurement accuracy	±0.1° at 1 sigma	±0.2° at 1 sigma
Resolution ratio	0.05°	0.1°
Orientation		
Measuring range	0 to 360°	30 to 330°
Measurement accuracy (> 5°)	±0.5° at 1 sigma	±1° at 1 sigma
Resolution ratio	0.1°	0.5°
Tool face		
Update time	30s(AVG)	
Measuring range	0 to 360°	
Measurement accuracy	±2° at 1 sigma	
Resolution ratio	2°	
Gamma measurement		
Measuring range	0 to 250API	
Measurement accuracy	±6%	
Statistical resolution	0.5cps(35mm仪器)	
Distance between sensor and lower end of tools	0.5m	
Other parameters		
Downhole operating temperature	125/150°C/175℃	
Maximum external pressure Working	15,000/20,000/30,000psi	
capacity range	35 to 1100 gal/min	
Drill collar OD	3 1/2 to 9 1/2in	
Maximum dogleg degree Plugging	90°/100ft(Flexible Coupling)	
material	35-50 lbf/bbl medium bridge plugging agent	
Mud type	Oil-based, water-based mud system	
sand content	recommend < 1% , max. 3%	
Tool length	acc. to OD of the tool	
Tool weight	35-50kg	
Pressure resisting outer cylinder OD	35/38/45mm	

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