# CNPS High Temperature MWD

High Temperature MWD

## CNPS  High Temperature MWD Profile

CNPS high-temperature MWD is a independently developed wireless MWD tool that can provide directional and gamma measurement. It has the characteristics of fishing and replaceability, simple and convenient operation, low maintenance cost, long working cycle and long maintenance interval for single use, and is a cost-reducing and efficiency-increasing MWD tool. The CNPS high-temperature MWD adopts the bottom-key mud pulse signal generator, which has strong mud pressure signal, stable data transmission and strong anti-interference ability. The ground signal demodulation system adopts adaptive equalization and neural network intelligent algorithm for signal filtering and processing, with friendly operation interface, fully meeting customer needs.

The power source of the C N P S high-temperature MWD pulser is the high-temperature solenoid, which directly drives the pilot valve to act. The internal and external pressure is balanced by the piston. The main moving parts are made of ceramic materials, with stable performance and less mechanical wear. Under its normal operating conditions, it can achieve maintenance-free.

CNPS high-temperature MWD directional probe tube is designed with a special aviation quartz 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 high-temperature 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.

Dual battery mode is optional for CNPS high temperature MWD. The power management module can intelligently control dual battery discharge while ensuring the safety of battery discharge, effectively extending downhole working time.

CNPS high temperature MWD tool has an OD of 48mm and can be used with 3 1/2"-9 1/2". non-magnetic drill collars for a mud flow rate of 35-1100gal/min and can be used in a wide range of hole sizes. In case of complex downhole conditions, fishing tools can be used for fishing or replacement to reduce tool damage and trip cost losses, improve drilling efficiency and reduce operational risks.

## Application

✓  A low-cost, high-efficiency, salvageable, high-temperature MWD tool.

## Benefit

✓  Retrievable and replaceable, reducing the risk of loss to the wellbore and improving operation efficiency.

✓  Orthogonal calibration and temperature compensation design, high measurement accuracy.

## Feature

✓  High temperature 150℃/175℃

✓   Mud pulse signal generator, strong plugging ability, easy maintenance, high life.

✓  Advanced design of upper computer, strong signal demodulation ability

✓  can connect with APS pulser

## Schematic diagram of pulser and directional probe

# CNPS® 

# CNPS High Temperature 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°) | ±1° at 1 sigma | ±2° at 1 sigma |
| Resolution ratio | 0.1° | 0.5° |
| **Tool face** | | |
| Update time | 50s(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 |
| Distance between sensor and lower end of tools | 2m |

**Other parameters**

| | |
|---|---|
| Downhole operating temperature | 150°C/175°C |
| Maximum external pressure | 25,000psi |
| Working capacity range | 35 to 1100 gal/min |
| Drill collar OD | 3 1/2 to 9 1/2in |
| Maximum dogleg degree | 30°/100ft |
| Plugging material | 35-50 lbf/bbl medium bridge plugging agent |
| Mud type | Oil - based, water - based mud system |
| sand content | < 1% |
| Tool length | 6.5m |
| Tool weight | 45kg |
| Pressure resisting outer cylinder OD | 48mm |

打捞头
电池
定向探管
伽马
扶正器
脉冲器
下部组件

无磁钻铤
定向接头+循环套