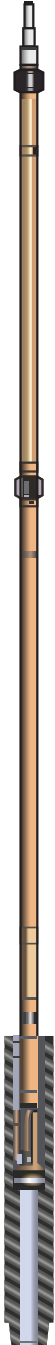


Short MWD System

Mud Pulse Telemetry

Product Sheet



Bench Tree's Short MWD system offers an alternative to reliability and accuracy issues inherent with longer legacy systems. By harnessing the benefits of its advanced 3D-I directional and drilling dynamics instrument, the Short MWD system provides operators precise, dependable directional information to maximize drilling efficiency and payzone exposure.

The Short MWD system streamlines operations because it is shipped pre-assembled in a standard MWD kit box, with only one battery connection to be made at the rigsite. Its reduced length and weight make it easier to handle than other systems. It also helps shorten and reduce the weight of extra-long strings, such as dual-telemetry, integrated resistivity, PWD, and gyro.

Enhanced Performance in a Smaller System

The Short system's high-speed mud pulse transmission allows users to leave the legacy platform, while eliminating the need for expensive EM and dual-telemetry systems with limited depth capability.

The system's directional stability and repeatability are unmatched in the industry due to its industry-leading

magnetometers, accelerometers, and proven high-temperature electronics.

Reliability is improved by eliminating many of the failure points found in other systems. For instance, the 3D-I, m+ Pulser, and gamma all fit in one standard DM pressure housing. The system also has 95% fewer field-mated connectors and less wiring than legacy systems.

The Short MWD system comes with Bench Tree's surface system and can be set up as retrievable or latch-mounted.

To improve your reliability, accuracy, and drilling efficiency, contact the Bench Tree sales team for assistance.

Applications



Directional and horizontal drilling



Sidetracking



SAGD drilling



Custom drilling

Benefits

- Minimizes costs (up front and long-term maintenance compared to dual-telemetry tools)
- Improves reliability and operational efficiency
- Increases accuracy compared to most standalone directional sensors
- Saves battery costs, with around 600 hours per eight-cell pack (expandable): MWD+ gamma
- Decreases downtime with high-speed memory download: <10 minutes

Features

- High-operating temperature: 175°C (347°F), 185°C (365°F)
- High-speed mud pulse transmission available
- Patented instantaneous dynamic synchronization
- Drilling dynamics: RPM, shock, vibration, temperature, continuous inclination, azimuth, stick-slip
- Mode change with flow and/or rotation status
- m+ Pulser with various gamma options
- Reduced connectors

PHYSICAL SPECIFICATIONS

Parameter / Feature	Values / Ranges
Size	1 7/8 x 7.5 in. (4.76 x 228.6cm) Plus lower end and battery
Operating voltage ¹	7 to 36VDC
Operating power	< 2W peak watt
Communications	Q-bus, CAN
Connections	MDM, 15P & 15S, 10 thru wires
Built-in sensors (memory and real time)	Temperature, precision mags, precision accelerometers (Q-Flex®), shock, vibration, rotation
Gamma	Pulse
Flow	Built into m+ Pulser module

PERFORMANCE SPECIFICATIONS

Parameter / Feature	Values / Ranges
Accuracy, std configuration ²	
Inclination	< ±0.1°
Azimuth (dip A <70°, 90°incl) ²	< ±0.2°
Gravity	< ±1.5 mg
Dip	< ±0.15°
Total mag field	< ±0.75 mGauss
Temperature	< ±1°C (<± 1.8°F)
Rotation (0 to 300)	± 12 RPM
Drilling inclination	± 0.35° typical
Memory	32 Mb
Memory download time	< 10 minutes
Drilling dynamics	Memory and real time

ENVIRONMENTAL SPECIFICATIONS FOR PERFORMANCE

Parameter / Feature	Values / Ranges			
	Low	LT	ST	HT
Operating temp, std ³	25°C	150°C	175°C	185°C
Survival temperature	-40°C	200°C	200°C	200°C
Temperature ramp	3°C /minute max			
Vibration	20g Grms, 30 to 1000 Hz			
Shock	1000g 0.5mSec-÷ Sine			

1: Dependent on manufacture of gamma module

2: Tighter performance on request

3: Contact Bench Tree for other ranges

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