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FIELD SERVICES

PILOT PLUS™ MWD System

The PILOT PLUS™ MWD system offers a competitively priced and reliable MWD system. The cost-efficient PILOT PLUS™ MWD system is easy to operate and maintain because the design is based on the industry-proven bottom mounted positive pulser concept. The PILOT PLUS™ MWD system uses a power efficient motor driven pulser (MDP) that prolongs battery life compared to a conventional solenoid pulser. The powerful MDP transmits a well defined pulse shape for easier surface detection and has improved LCM tolerance.
The retrievable and re-seatable PILOT PLUS™ MWD tool can be operated over a wide flow rate range in collar sizes from 3 1/2 in. O.D. to 9 1/2 in. O.D. The compact design of the Rig Floor Computer and simple tool assembly procedures ensures rapid well site rig-up for efficient, cost-effective deployment.

Features and Benefits

Retrievable and Re-seatable

The PILOT PLUS™ probe can be retrieved by wireline to reduce lost-in-hole exposure. The PILOT PLUS™ probe can also be reseated by wireline for cost efficient tool replacement if operations require.

Cost Efficient

The competitively priced modern design incorporates power saving features to prolong battery life. Improved utilization - PILOT PLUS™ modules are interchangeable between collar sizes, enabling use in the one tool for a range of MWD applications from shallow kick-offs to deep horizontal sections.

Low Maintenance

The modern design of the PILOT PLUS™ system provides simplicity of operation, easy maintenance, and rapid assembly delivering improved equipment utilization and return on investment.

Wireless Communication

Wireless communication between the Rig Floor Computer and an operator's laptop ensures rapid rig-up/rig-down of the system.
Eliminating long cable runs improves signal quality and system reliability by reducing the risk of accidental cable damage.

Rotary Connections

Modules are connected using a proprietary rotary connector, ensuring trouble-free module assembly.
The connector design results in increased service reliability by reducing the incidence of damaged connectors and intermittent electrical contact.

Surface Rig Display

The easy to use back-lit, touch screen interface, with Windows based software, is robust and compact for easy drill floor placement.
Digital signal processing ensures that pulse detection is efficient over a wide range of drilling conditions.

Motor Driven Pulser

A high-torque, high-efficiency brush-less DC motor design delivers 100 lb-force, which produces a sharper pulse shape for ease of detection and improved tolerance to LCM.

Gamma

Real time and memory gamma data provides lithology identification, casing/core point selection, and optimal well placement.

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The First Directional PILOT PLUS™ positive pulse robust modular design Measurement While Drilling tool string. The modular design and configuration provide optimum performance with integral mounted boards potted into machined aluminum strong back chassis. An integrated assembly which prevents internal movement even during the toughest drilling operations. The unique rotary connector is compact and prevents connection miss-alignment during assembly. The Pilot Plus™ directional module combines tri-axial Flux Gate Magnetometers with Q-Flex accelerometers to offer high accuracy and reliability with an industry proven sensor package.

Measurement	Range	Accuracy
Azimuth	0 - 180°	+/- 0.5°
Inclination	0 - 360°	+/- 0.1°
Tool Face	0 - 360°	+/- 0.5°

Mechanical	Imperial Units	Metric Units
UBHO Sub O.D.	3.5 to 12 in.	89 to 305 mm
Probe O.D.	1 7/8 in.	47.625 mm
Tool Length (Single Battery / Dual Battery)	17 ft 11.3 in. / 23 ft 3.5 in	546.9 cm / 709.9 cm
Minimum Flow Rate	130 GPM in Water	0.5 m^3 / min
Maximum Flow Rate	1060 GPM in Water	4 m^3 / min
Max Temperature	302 °F	150 °C
Operating Pressure	20,000 PSI	137.9 Mpa
Shock	1000 g/0.5 millisecond	
Vibration	25g RMS 30 - 500Hz Random, 30g 50 - 500Hz Sine	
Mud Sand Content	Less than 1%	
Lost-Circulation Material	Up to 50lb/bbl premixed Medium Nut Plug or Cedar Fiber	