

Measurement While Drilling (MWD) Kit Spec Mud Pulse / EM / PEM ("2-in-1", Mud Pulse and EM MWD tool)

The PDT MWD system provides a rugged reliable solution for the most demanding directional drilling applications. The system can be used with a positive pulse or Electromagnetic transmission. The Pulser and EM transmitter are modular design and can be interchangeable depending on the application. The system is completely adaptable to PDT's complete line of products.

FEATURES

- Bottom Landing Pulser or Top Landing Pulser depending on the drilling conditions
- Downlink, switch operating parameters without tripping between Pulse and EM
- Temp 150°C (Hi-Temp to 175°C special order)
- Long battery life
- Variable Pulse Widths
- Field programmable
- Industrial standard Directional sensor
- Real time gamma and focused gamma

BENEFITS

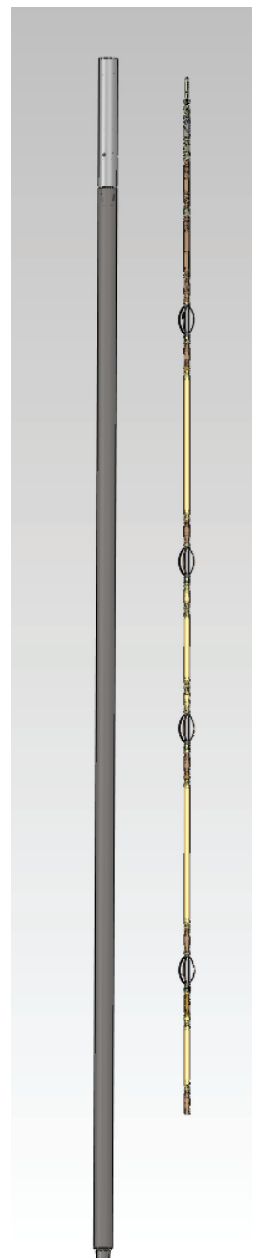
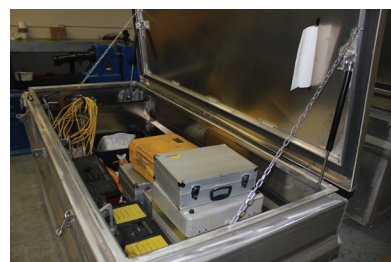
- Fully Wireline retrievable and reseatable
- Adaptable to other MWD systems
- Mud Pulse or EM compatible
- Ease of Maintenance and operation
- Packaged for field transportation

APPLICATIONS

- Short Radius wells
- Directional and Gamma

MWD MODULES – interchangeable

- Pulser (Top or Bottom Landing)/Driver
- Battery Pack
- Directional Sensors/Electronics
- Optional Gamma Detector
- Bowspring or Finned Centralizers



WE OFFER

MWD / LWD Drilling Services with MWD specialists

MWD / LWD Kit Rental daily / monthly

MWD / LWD Kit Sales – customize your kit depending on your needs

Part Sales

MWD / LWD shop setups

MWD / LWD training

SERVICES

In-house Repairs & Tool Servicing

In-house Subs Repairs & Coating

In-house Engineering Technology Development

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Diameter	1.88 in
Length	25 ft. standard directional only 32 ft. with gamma or second battery pack 39 ft. with gamma and second battery pack
Flow Ranges	75-165 gpm, 3.5 in. O.D. collar 100-300 gpm, 4.75 in. O.D. collar 150-600 gpm, 6.5 in. O.D. collar 400-1200 gpm, 8.0 in. O.D. collar
Pressure Drop	100 psi @ 400 gpm
Data Transmission	Positive-pulse telemetry
Electrical Power/Operating Time	Lithium battery operates for 200 to 400 hours per battery pack
Operational Modes	Operator-selectable sequences and downlinking options. Highly flexible operating software. Selectable resolution– all parameters
Maximum Lateral Displacement Error	2.6 ft./1000 ft. or a conical uncertainty of $\pm 0.15^\circ$ maximum
Inclination Accuracy	$\pm 0.1^\circ$
Azimuth Accuracy	$\pm 1.0^\circ$
Toolface Accuracy	$\pm 0.5^\circ$
Dip Angle Accuracy	$\pm 0.1^\circ$
Maximum Lost-circulation Material	40-50 ppb concentration, any size, pre-mixed
Operational at downhole temperatures to 150°C (Hi-Temp to 175°C special order)	

SPECIFICATIONS

Telemetry Type	Encoded Mud Pulse
Survey Presentation	Pason or separate computer monitor
BHA sizes available	3.50" (89mm) 4.75" (121mm) 6.50" (165mm) 8.00" (203mm)
Operating Temperature	150°C (175°C - special order)
Battery Life	800 hours
Operating Pressure	20,000 psi 138Mpa
Pressure Drop	70 Psi (482 kPA)

DIRECTIONAL SENSOR ACCURACY

Inclination	0.1 Degrees +/-
Operating Temperature	1.0 Degrees +/-
Dip Angle	0.7 Degrees +/-
Toolface	1.0 Degrees +/-

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