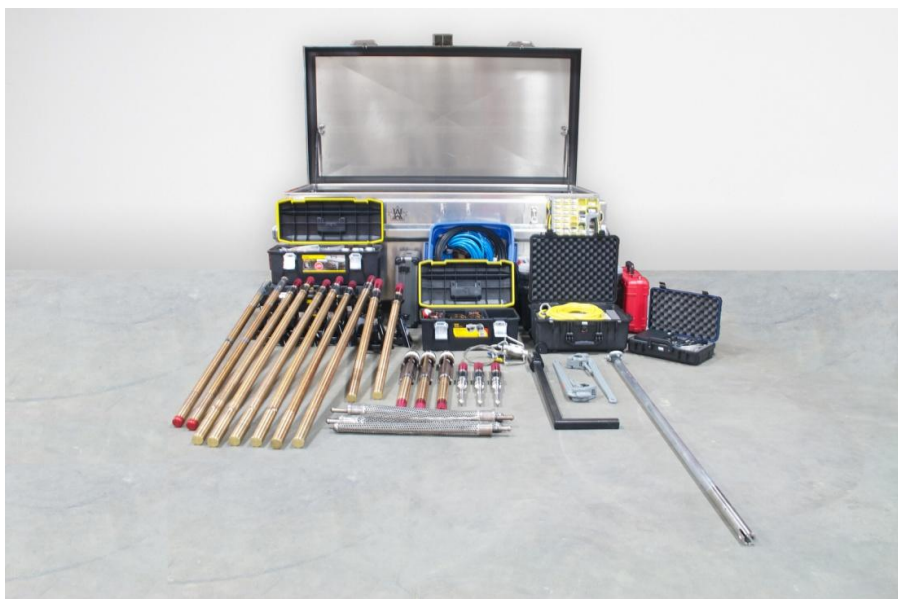




ZoneDirect
MWD SERVICES LTD.

Pilot MWD System



- The servo motor assembly exerts up to 100 lbs. Force to minimize plugging and increase tolerance to LCM.
- Single tool configurable for 3½" to 12" O.D. collars, and a range of flow rates.
- Sondex Rotary Connectors reliability significantly improves MTBF and increases integrity of downhole connections.
- Wireline retrievable and re-insertable design (minimum 2¼" I.D.)

The Pilot MWD is a Positive Pulse Measurement-While-Drilling tool. Its modular design and configuration provide optimum performance in a wide range of Collar diameters and flow rates.

Pilot is fully Retrievable and reseatable allowing extraction and replacement of the tool without tripping. Valuable rig time can be saved in the event of downhole complications and LIH liability is minimized in difficult drilling environments.

The Pilot MWD system uses a bottom mounted, retrievable/reseatable pulser to transmit survey data to surface by actuating a pilot valve which momentarily restricts mud flow through the drill string interior creating a positive pressure pulse. The pilot valve is actuated by a motor working in conjunction with a gear and leadscrew arrangement which exerts 100 lbs seating force providing exceptional tolerance to LCM. The Pilot Orientation Module combines tri-axial Flux Gate Magnetometers with Q-Flex type accelerometers to offer high accuracy and reliability.



Service Features and Benefits



- Retrievable and Reseatable
- High Temperature Compatibility
- Reliable
- User Friendly Software

General Tool Specifications	
Length	9.75m (32ft), 11.88m (39ft) with gamma
Size	47.625mm (1.875in)
Pressure Rating	137,895 kPa, (20,000 psi)
Battery Consumption	220-320 hours (medium-rate dual battery), 180-260 hours (medium-rate dual battery w/gamma). Consumption factors include resolution and pulse width settings.
Max. Operating Temperature	150 °C (302 °F), 175 °C (347 °F) available
Operational Modes	Operator selectable survey and steering sequences, resolution and pulse width settings
Downlink Capability	Pumps ON/OFF sequences for mode selection, steering and survey sequences, and pulse width settings

Sensor Specifications		
Parameter	Range	Accuracy
Inclination	0 - 180°	+/- 0.10°
Azimuth	0 - 360°	+/- 0.5°
Tool Face	0 - 360°	+/- 0.5°

Operating Specifications and Limits	
Data Transmission Type	Positive Mud Pulse
Collar Sizes	89mm-305mm (3.5"-12") Additional sizes available
Operating Flow Rate	0.28 – 4.45 m ³ /min (75-1200 gpm)
Wireline Retrievability	Retrievable and Re-insertable
Minimum I.D. for Retrievability	57mm (2.25")
Flow Switch	Vibration
Power Supply	Lithium 28 VDC / 3 amp (21 VDC / 5 amp available)
Shock Limit	1000 g, 0.5 msec, ½ sine all axes
Vibration Limit	5 – 30 Hz @ 1" double amplitude, 30 – 500 Hz 20g all axes
Pressure Drop (6.50 " w/Water)	689 kPa @ 1.51 m ³ /min (100 psi @ 400 gpm)
Velocity Rate (max)	10 m/sec (32 ft/sec)
Bend Radius (max)	20 deg/10m
LCM Tolerance (max)	40-50 ppb concentration, any size, premixed
Operating Pulse Width	0.600-2.00 sec
Data Upload Rate	10 – 28 sec
Survey Transmission Rate	< 120 sec (resolution and pulse width dependent)
Survey Procedure	Rotary OFF → Pumps OFF → Hold 60 sec → Pumps ON → Survey Sequence Received → Steering Sequence Received
BHA Configuration	UBHO – NMDC – NMDC
BHA Landing	Bottom Landing
Tool Configuration (Standard)	Pulser – Battery ₍₁₎ – Directional Module – Battery ₍₂₎
Tool Configuration (Gamma)	Pulser – Gamma – Directional Module – Battery ₍₂₎ – Battery ₍₁₎
Rotary Power Save Mode	Yes (RFS available)

SERVICES AVAILABLE

- Technical Support
- Installation and Setup
- Maintenance
- Application Support
- Hardware Support

Shop Location
15, 2916 5th Ave NE
Calgary, Alberta, Canada
T2A 6K4
Phone: +1 (403) 457-0133
Fax: +1 (403) 457-0134