PRODUCT SPEC SHEET

HIGH ACCURACY gyroMWD

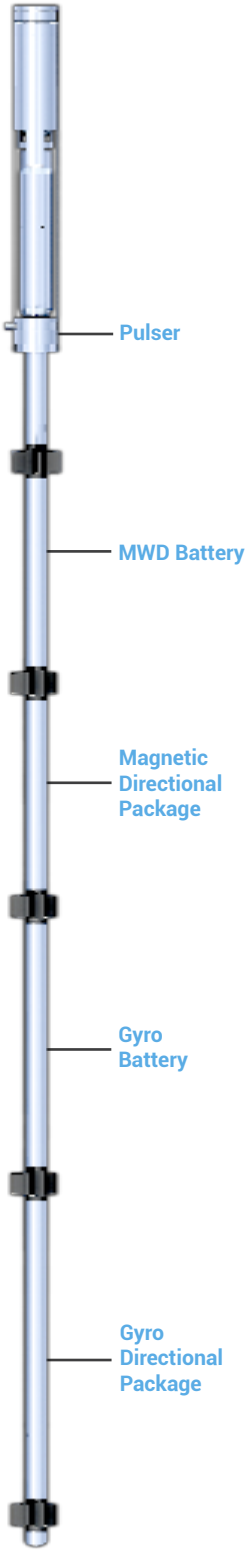
For over 30 years, Scientific Drilling has been dedicated to innovative surveying technology for optimal wellbore placement, delivering the precision, productivity and peace of mind you demand.

Powered by Scientific Drilling's proven north-seeking Keeper Gyro, the gyroMWD system delivers superior reliability and the ultimate drilling confidence by:

- Enabling precision surveying in the presence of magnetic interference
- Providing preventative measures for collision avoidance

DELIVERING THE ULTIMATE VALUE

- Enabling high accuracy surveying in multi-well environments
- Providing seamless compatibility with existing MWD, LWD and RSS systems
- Allowing continuous gyro tool face, from vertical, while sliding
- Enabling operational efficiency through flexibility of BHA configurations
- Enabling significant savings by the elimination of NPT from wireline orientation and survey check-shot runs



TARGET APPLICATIONS

- Collision Avoidance
- Multi-Well / Pad Drilling
- In-Fill Drilling
- Magnetic Ranging
- Gross Error Detection
- Survey Validation
- Whipstock Orientation
- Kick-off Assurance
- Sidetrack / Re-Entry
- Ellipse of Uncertainty Reduction

TECHNICAL SPECIFICATIONS

GENERAL SPECIFICATIONS

Tool Collar Size	Dog Leg Severity (per 100ft/30m)	
	Sliding	Rotating
3.125 in (79.40 mm)	40°	17°
3.500 in (88.90 mm)	37°	15°
4.750 in (120.7 mm)	28°	12°
6.250 in (158.8 mm)	20°	10°
6.500 in (165.1 mm)	20°	10°
6.750 in (171.5 mm)	19°	8°
8.000 in (203.2 mm)	12°	7°
9.500 in (241.3 mm)	12°	6°
Pressure	20,000 psi (139,900 kPa) 30,000 psi (206,840 kPa) Upon Request	
Gyro Temperature	250° F (125° C) 302° F (150° C) Upon Request	
Lost Circulation Material (LCM)	No Limitation (EM) Medium nut plug 40 lbs/bbl (18 kg/bbl) (MP)	
Gyro Vibration	$8g_{rms}$ (all axis)	
Operating Time	40 to 250 hrs depending on slide ratio or rig operations	

INSTRUMENT ACCURACY

	Gyro	MWD
Inclination	± 0.1° (all angles)	± 0.15°
Azimuth	± 0.1° (> 3° inclination)	± 0.25°
Tool Face	± 0.1° (> 3° inclination)	± 0.15°
System Accuracy	Subject to Well Profile	

Specifications are subject to change without notice.

Updated October 2015