



Smart Motor Geosteering System (SMGS)

Enhanced Navigation

Scientific Drilling's Smart Motor Geosteering System (SMGS) is configured to facilitate enhanced navigation in horizontal and directional wellbores.

The SMGS contains a power section, a smart housing containing the sensors, a bent housing and a bearing section.

The sensor section contains accelerometers and an azimuthal gamma ray sensor, which are housed in the payload attached to the motor housing.

The placement of the sensors on the motor, just above the bend, allows more accurate inclination readings and protects the sensors from extreme downhole conditions.

The SMGS uses Scientific Drilling's proprietary Wi-Sci communication link to achieve real-time, bi-directional wireless communication between the MWD and Smart Motor.

Advantages

- Azimuthal Gamma Ray for Geosteering
- Gamma and Inclination sensors closer to the bit
- Smart Motor is compatible with EM and MP MWD systems
- Shorter spacing allows earlier detection of formation boundaries
- On-Motor Inclination gives true measurement of inclination without correction for motor bend.



Graphic not to scale

TECHNICAL SPECIFICATIONS

Outer Diameter	3.75 in (95.3 mm)	4.75 in (120.7 mm)	6.5 in (165.1 mm)
Motor Configurations	7:8, 2.3, 10.75 ft (3.28 m)	7:8, 2.0, 18.27 ft (5.57 m) 7:8, 2.2, 22.56 ft (6.88 m)	7:8, 3.0, 26.1 ft (7.9 m) 7:8, 5.0, 31.9 ft (9.7 m)
Dimensions	Smart Housing	6.3 ft (1.92 m)	7.3 ft (2.2 m)
	Bit Box to Bend	2.6 ft (0.81 m)	5.25 ft (1.6 m)
Bit Box to Sensor Distance	4.6 ft (1.41 m)	6.4 ft (1.95 m)	8.4 ft (2.57 m)
Effective Rotational O.D.	4.05 in (102.9 mm)	5.0 in (127 mm)	6.7 in (170.2 mm)
Maximum Temperature	280° F (138°C)		
Sensors	Tri-axis Accelerometers - Inclination Solid State Accelerometers - Shock & Vibe Sodium Iodid (NaI) Gamma Crystal		
Inclination Accuracy	±0.15° all angles		
Update Rate	8 - 14 seconds		
Drilling Medium Compatibility	Water Based Mud, > 0.2 ohm-m resistivity Oil Based Mud, non-compatible Two-Phase programs require analysis		

Specifications are subject to change without notice.

