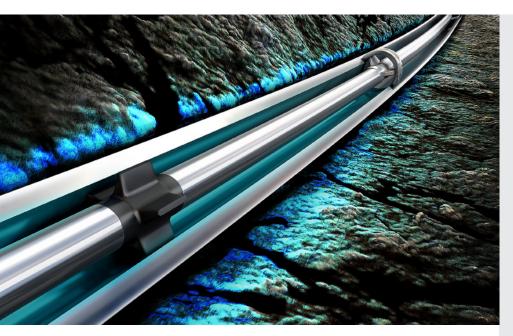
FALCON EM



The Falcon EM MWD is Scientific Drilling's electromagnetic MWD system, ensuring safer operations, maximum reliability, precision wellbore placement, and deeper reach.

The Falcon EM MWD is engineered to transmit downhole data to surface at speeds up to 14 bps. The telemetry transfer rate ensures drilling efficiency by transmitting surveys during pipe connections, enabling greater ROP, and increased data density for high-resolution reservoir analysis.

Falcon EM MWD provides the following borehole measurements in real-time:

- Survey inclination & azimuth
- High side & magnetic tool face
- Scintillation/API calibrated gamma ray
- Drilling dynamics: axial and lateral vibration, stick slip, temperature
- Continuous inclination
- Annulus and pipe pressure
- Gamma, inclination, and resistivity

For more information on improving your drilling efficiency [while staying on target] contact your Scientific Drilling sales representative or visit: http://scientificdrilling.com/mwd

APPLICATIONS

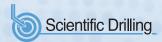
- Unconventional resource plays
- Under-balanced drilling with aerated fluids
- + Directional/horizontal drilling
- + Relief well and re-entry
- Magnetic ranging (passive and Active)
- + Geothermal
- Steam assisted gravity drainage (SAGD)

BENEFITS

- Supports all drilling fluid types (air, mist, foam, mud)
- Provides unlimited LCM tolerance, eliminating trips required due to plugged MWD pulsers
- Allows survey transmission during connections, significantly reducing NPT
- Pressure-compensated pulser design offers compatibility in a wide range of bottom hole pressure operations
- Bi-directional communication for MWD tool parameter customization while downhole
- Field-configurable system enables flexibility for changing well conditions
- Proven electronics and mechanical design provide superior reliability

FEATURES

- Supports BHA sizes 3.125" to 9.5"
 - Downhole to surface data transmission speeds up to 14 bps



GENERAL SPECIFICATIONS			
TOOL OD	DOG LEG SE		
3.125 in (79.4 mm) 3.500 in (89.9 mm) 4.750 in (120.7 mm) 6.250 in (158.8 mm) 6.500 in (165.1 mm) 6.750 in (171.5 mm) 8.000 in (203.2 mm) 9.500 in (241.3 mm)	Sliding 40° 37° 28° 20° 19° 12°	Rotating 17' 15' 12' 10' 10' 8' 7' 6'	
PRESSURE RATING	20,000 psi @ 300°F (30,000 psi available) 137,900 kPa @ 150°C (206,842 kPa available)		
TEMPERATURE RATING	302°F (150)*C)	
LOST CIRCULATION MATERIAL	No limit		
TELEMETRY	Electroma	gnetic, up to 14bps	
SENSOR ACCURACY	Tool Face ±0.15" > 3 Azimuth ±0.25" > 3 Inclination ±0.15" at all angles		
MAX BIT PRESSURE	No limit	No limit	
OPERATING TIME	150+ Hours		

DIRECTIONAL SPECIFICATIONS	;	
LENGTH	DIRECTIONAL ONLY 24.17 ft (7.37 m) (+6 ft gap sub & antenna)	DIRECTIONAL & GAMMA RAY 27.33 ft (8.33 m) (+6 ft gap sub & antenna)
DATA UPDATE PERIOD	Minimum .5 sec @ 32 ms pulse width Maximum 3.5 sec @ 250 ms pulse width	
CALCULATED SURVEY TIME	2.4 Seconds	
RAW SURVEY TIME	6.2 Seconds	
CONTINUOUS INCLINATION	SLIDING Yes	ROTATING Yes

VIBRATION SPECIFICATIONS	
AXIAL	4 g $_{\rm RMS}$ for 3hr; 6 g $_{\rm RMS}$ for 0.5hr
LATERAL	5 g $_{\text{RMS}}$ for 3hr; 7.5 g $_{\text{RMS}}$ for 0.5hr
STICK-SLIP DETECTED (0.5HR)	150% for 3hr, 200% or neg. rpm detected for 0.5hr

 $[\]star \mbox{Specifications}$ are subject to change without notice

