The Falcon Fire MP MWD is Scientific Drilling’s high-temperature Mud Pulse MWD system, ensuring safer operations, maximum reliability, precision wellbore placement, and deeper reach.

The system parameters are fully field-programmable, yielding predictable performance in the world’s harshest drilling environments, including extreme LCM conditions.

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

- Survey Inclination & Azimuth
- Tool Face
- API Calibrated Gamma Ray
- Drilling Dynamics: Axial and Lateral Vibration, Stick slip, Temperature
- Continuous Inclination

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**

- High-temperature environments
- Geothermal
- Unconventional resource plays
- Directional/horizontal drilling
- Relief well and re-entry
- Magnetic ranging (passive and Active)
- Steam assisted gravity drainage (SAGD)

**Benefits**

- 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
- Innovative electronics and mechanical design deliver optimal performance in high-temperature operations

**Features**

- Utilizes proprietary TUF™ preventative maintenance system
- Includes full accelerometer and drilling dynamics package
- Supports temperatures up to 350°F (177°C)
- Capable of 50-1500 GPM flow rates
- Supports BHA sizes 3.125” to 9.5”
- Positive displacement up to 5 bps
**GENERAL SPECIFICATIONS**

**TOOL OD**
- 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)

**PRESSURE RATING**
- 20,000 psi @ 300°F (30,000 psi available)
- 137,900 kPa @ 150°C (206,842 kPa available)

**TEMPERATURE RATING**
- 350°F (177°C)

**LOST CIRCULATION MATERIAL**
- Medium nut plug, 40 lbs/bbl (18Kg/bbl)

**TELEMETRY**
- Positive Displacement, up to 5bps

**SENSOR ACCURACY**
- Tool Face ±0.15” > 3
- Azimuth ±0.25” > 3
- Inclination ±0.15” at all angles

**MAX BIT PRESSURE**
- No limit

**RANGE OF FLOW RATES**

<table>
<thead>
<tr>
<th>TOOL OD</th>
<th>GALLONS/MINUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.125 - 3.5 in</td>
<td>50 - 200</td>
</tr>
<tr>
<td>4.750 - 6.5 in</td>
<td>100 - 400</td>
</tr>
<tr>
<td>6.250 - 6.5 in</td>
<td>200 - 600</td>
</tr>
<tr>
<td>6.750 - 8.0 in</td>
<td>250 - 1,000</td>
</tr>
<tr>
<td>9.5 in</td>
<td>400 - 1,500</td>
</tr>
</tbody>
</table>

**OPERATING TIME**
- 300+ Hours

**DIRECTIONAL SPECIFICATIONS**

**LENGTH**
- DIRECTIONAL ONLY: 16.8 ft (5.12 m) (+6 ft pulser sub)
- DIRECTIONAL & GAMMA RAY: 20 ft (6.1 m) (+6 ft pulser sub)

**DATA UPDATE PERIOD**
- Minimum 1.4 sec @ 0.1 sec pulse width
- Maximum 14 sec @ 1 sec pulse width

**CALCULATED SURVEY TIME**
- 7 Seconds

**RAW SURVEY TIME**
- 18.2 Seconds

**CONTINUOUS INCLINATION**
- SLIDING: Yes
- ROTATING: Yes

**VIBRATION SPECIFICATIONS**

**AXIAL**
- 4 g RMS for 3hr; 6 g RMS for 0.5hr

**LATERAL**
- 5 g RMS for 3hr; 7.5 g RMS for 0.5hr

**STICK-SLIP DETECTED (0.5HR)**
- 150% for 3hr, 200% or neg. rpm detected for 0.5hr

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*Specifications are subject to change without notice*