



Scientific Drilling's HPHT electromagnetic multi-shot solution (EMS) is designed to deliver maximum reliability for core orientation and extreme temperature surveying applications.

SDI's HPHT EMS is memory-based and leverages the configurability and proven performance of Scientific Drilling's MWD systems, supporting a wide range of surveying and orientation recording challenges. With a maximum temperature and pressure rating of 600°F (315°C) and 20,000 psi (137,900 kPa), the HPHT EMS provides dependable survey acquisition in HPHT wells, geothermal applications, and any environment where tool survivability and measurement confidence are non-negotiable.

The HPHT EMS can be conveyed in the BHA using a standard UBHO, SDI-provided hang-off sub, or dropped at section TD, providing excellent operational flexibility. With both pressure barrel and flanged housing options, it can obtain directional surveys in the hottest wellbores on the planet.

The HPHT EMS provides the following borehole measurements:

- Survey inclination & azimuth
- Tool face (Magnetic or Highside)
- 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/wellbore-surveying>

### APPLICATIONS

- + Core Orientations
- + Extreme Temperature Surveying
- + Survey Redundancy
- + Geothermal

### FEATURES

- + Rated to 600°F (315°C)
- + Advanced solid-state sensors
- + Utilizes proprietary TUF preventative maintenance system
- + Low Power Consumption
- + Large Memory capacity
- + Alkaline or Lithium Battery Powered
- + Optional 30,000 psi (137,900 kPa) configuration available

### BENEFITS

- + Superior reliability
- + Precision measurements
- + Field-configurable system enables flexibility for changing well conditions
- + Proven architecture, built for extreme downhole environments

## GENERAL SPECIFICATIONS

	PRESSURE BARREL CONFIGURATION	FLASKED CONFIGURATION
<b>TOOL OD</b>	1.75 in (44.4 mm)	1.85 - 2.125 in (47-54 mm)
<b>PRESSURE RATING</b>	20,000 psi (137,900 kPa) (30,000 psi [137,900 kPa] optional)	20,000 psi (137,900 kPa)
<b>TEMPERATURE RATING</b>	350°F (177°C)	600°F (315°C)
<b>SENSOR ACCURACY</b>	Tool Face $\pm 0.15^\circ$ Azimuth $\pm 0.25^\circ > 3^\circ$ inc Inclination $\pm 0.15^\circ$ at all angles	
<b>MAX BIT PRESSURE</b>	No limit	
<b>MAX FLOW VELOCITY</b>	60 ft/s (18.2 m/s)	
<b>OPERATING TIME</b>	300+ Hours	Dependent on well temperature
<b>LENGTH</b>	16-22 ft (4.8-6.7 m)	

## VIBRATION THRESHOLDS

<b>AXIAL</b>	4 g <sub>RMS</sub> for 3hr; 6 g <sub>RMS</sub> for 0.5hr
<b>LATERAL</b>	5 g <sub>RMS</sub> for 3hr; 7.5 g <sub>RMS</sub> for 0.5hr
<b>STICK-SLIP DETECTED (0.5HR)</b>	150% for 3hr, 200% or neg. rpm detected for 0.5hr

\*Specifications are subject to change without notice

