

Electronic Single Shot Survey Instrument

- **Features and Benefits:**

- Adopt mini solid state high accuracy sensor.
- Low power consumption, rechargeable battery, small OD probe of Ø27mm.
- Provide parameters: attitude, magnetic density, temperature and power.
- High reliability, shock resistance up to 3500g.
- Have been widely used in the oil drilling field and coal bed gas well.
- The ideal substitute of photographic single shot instrument.
- Do not need extra consumable materials, such as develop solution and film, etc.



- **Main Technical Parameters:**

Inclination	0~180°	±0.2°
Azimuth	0~360°	±1.0°
High side tool face	0~360°	±0.5°
Magnetic tool face	0~360°	±0.5°
Magnetic density	0~100uT	±0.5°uT
Magnetic dip	90°~90°	±0.5°
Temperature	0~125°C	±0.2°C

- **Catalogues:**

Type	Outer	Pressure Resistance	Temperature	Notes
EC-SS-101	Ø45mm	75MPa	125°C	Common ESS
EC-SS-102	Ø45mm	75MPa	125°C	Common ESS
EC-SS-103	Ø45mm	75MPa	125°C	Common ESS
EC-SS-201	Ø35mm	120MPa	125°C	Small diameter ESS
EC-SS-301	Ø45mm	140MPa	125°C	High Temperature ESS
EC-SS-401	Ø50mm	75MPa	125°C	High Temperature ESS

Electronic Multi-Shot Tool (EMS)

- **Introduction:**

EMS system are mainly used to survey drill holes in a non-magnetic environment and offer high levels of accuracy, it is the smallest probe in the market.

Ø21mmx320mm



- **Features and Benefits:**

- Adopt high precision solid state sensor module with high accuracy.
- High reliable probe with shock resistance up to 3500g.
- Advanced software and can be modified according to customer request.
- Provide parameters: GTotal, Gx,Gy,Gz, Mtotal, Mx, My, Mz, Inclination, Azimuth, Temperature and Dip angle.
- Easy to calibrate with automatic software as part of QC Procedures.
- Equipped with data processing software providing the borehole trajectory.
- Rechargeable battery.
- Collect and store more than 2000 points of data.
- Can be run on any rig site by drop mode or slick line.

- **Specification:**

Inclination	Azimuth	Magnetic Tool face	Gravity Tool face
0 - 180° ±0.2°	0 - 360° ±1.0°	0 -360° ±.5°	0 - 360° ±.5°

Type	Temperature	Dimension	Pressure Resist.
EC-MS-101	125°C ±2.0°C	Ø45mmx5309mm	75MPa
EC-MS-201	125°C ±2.0°C	Ø35mmx4977mm	120MPa
EC-MS-203	140°C ±2.0°C	Ø35mmx3771mm	140MPa
EC-MS-220	125°C ±2.0°C	Ø27mmx294mm	140MPa
EC-MS-301	260°C ±2.0°C	Ø45mmx5780mm	140MPa
EC-MS-402	260°C ±2.0°C	Ø45mmx5337mm	150MPa
EC-MS-720	200°C ±2.0°C	Ø21mmx320mm	110MPa

Wireless Electronic Multi Shot (WEMS)

- **Introduction:**

This state-of-the-art Wireless Electronic Multi Shot (WEMS) is manufactured with the high end technology, providing the maximum accuracy and reliability of survey information.

The (WEMS) consists of two parts; the first part is the floating carrier and the second part is the down hole assembly equipped with rechargeable battery pack, the down hole assembly stores the survey data according to previously programmed schedule.



When it is necessary to collect the survey data, the carrier is pumped down hole to communicate with the down hole assembly via electronic waves in the drill collar.

This instrument possesses all the advantages of both EMS and self floating survey instruments, adding a great value to it.

- **Features and benefits:**

- Survey and record borehole survey parameters in the down hole assembly.
- Build-in rechargeable battery packs up to 200 hours of continues operation.
- Providing the parameters of INC, AZ, GTF and MTFetc.
- The down hole assembly can be retrieved and reinserted.
- Collect data when needed.

- **Application:**

- Survey and record borehole directional parameter in the down hole assembly.
- Collect data required.
- Retrieving the data could be done numerous times as required.

- **Applicable Environment:**

Inclination	$\leq 45^\circ$
Mud Specific gravity	1-2gm/cm ³
Temperature	0~125°C

- **Technical Specifications:**

Inclination	0~180°	±0.2°
Azimuth	0~360°	±1.0°
Tool-face	0~360°	±0.5°
Magnetic Tool-face	0~360°	±0.5°
Magnetic density	0~100°ut	±1.0°ut
Temperature	0°C~125°C	±0.2°C

Electronic Self-floating Tool

- **Introduction:**

This technology substitutes the conventional magnetic single shot instruments. The tool is pumped downhole inside drill string till it seated on the baffle plate by pump pressure. After finishing survey, the instrument floats off to the surface.



- **Features and benefits:**

- Saves rig time and drilling cost.
- Quick check for hole parameters.
- No wire line is needed.
- Adopt high precision solid state sensor module with high accuracy.
- High precision probe with shock resistance up to 3500g.
- Advanced software and can be modified according to customer request.
- Provide parameters, such as inclination, azimuth and magnetic density, etc.

- **Specification:**

Inclination	Azimuth	Magnetic Tool face	Gravity Tool face
0 - 60° ±0.2°	0 - 360° ±1.0°	0 -360° ±.5°	0 - 360° ±.5°

Type	Temperature	Dimension	Pressure Resist.	Average density
EC-SF-301	125°C ±2.0°C	Ø48mmx6189mm	75MPa	1.00 g/cm ³
EC-SF-302	125°C ±2.0°C	Ø48mmx7426mm	105MPa	1.10 g/cm ³
EC-SF-303	125°C ±2.0°C	Ø48mmx7426mm	120MPa	1.17 g/cm ³
EC-SF-304	125°C ±2.0°C	Ø48mmx6189mm	50MPa	0.97 g/cm ³
EC-SF-305	90°C ±2.0°C	Ø49mmx7593mm	75MPa	0.83 g/cm ³
EC-SF-306	90°C ±2.0°C	Ø49mmx6415mm	105MPa	0.97 g/cm ³
EC-SF-307	90°C ±2.0°C	Ø49mmx6415mm	50MPa	0.74 g/cm ³
EC-SF-309	90°C ±2.0°C	Ø49mmx7593mm	75MPa	0.81 g/cm ³
EC-SF-401	125°C ±2.0°C	Ø40mmx7402mm	65MPa	0.90 g/cm ³
EC-SF-501	125°C ±2.0°C	Ø36mmx7408mm	65MPa	0.95 g/cm ³
EC-SF-601	125°C	Ø49mmx7915mm	75MPa	0.90 g/cm ³