ER-DMA/B Electronic Inclinometer

1.1 Functions and Application

Measuring the inclination angle, orientation of magnetic operating face and orientation of high side operating face of at the end of the drilling hole or a specific position while drilling.

Widely applied for survey of well-hole drilling in the fields of petroleum, coal mine, irrigation establishment.

1.2 Features

- For various operational purposes:
  Satisfying various survey purposes either for suspending measurement or self-floating measurement once equipped with different external protectors
- High precision and reliability:
  As the key part of inclinometer, acceleration sensor with a shockproof accelerometer have characteristics of high linearity, little temperature drifting and good recurrence, etc.
- Power-off protection:
  Power failure caused by shakes or pressures would not result in operational disruption or data loss.
- Dynamic performance:
  Excellent data collecting and processing in either dynamic or static performance.
- Shock and impact-resistance:
  External multi-vibrate-resist buffer, both radial and axial.
- Low temperature environment suitable:
  Normal performance at -40°C
- Deep-well measuring:
  Equipped with heat insulation protector, normal working at 250°C, under 125MPa
1.3 Specification:
Φ32 and Φ27

1.4 Working conditions:
Temperature: -40°C ~ 125°C (max. 250°C with heat insulation protector);
Shock resistance: ≤4.5g, 10 ~ 100Hz,
Impact resistance: ≤2000g, 0.5ms

2. Technical Parameters

<table>
<thead>
<tr>
<th>Item</th>
<th>Range</th>
<th>Precision</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inclination</td>
<td>0 ~ 180°</td>
<td>±0.2°</td>
<td></td>
</tr>
<tr>
<td>Azimuth</td>
<td>0 ~ 360°</td>
<td>±1.0°</td>
<td>Well inclination ≥6°</td>
</tr>
<tr>
<td>High side operating face</td>
<td>0 ~ 360°</td>
<td>±0.5°</td>
<td>Well inclination ≥6°</td>
</tr>
<tr>
<td>magnetic operating face</td>
<td>0 ~ 360°</td>
<td>±1.0°</td>
<td>Well inclination ≤8°</td>
</tr>
<tr>
<td>Temperature</td>
<td>-40 ~ 125°C</td>
<td>±2°C</td>
<td></td>
</tr>
</tbody>
</table>

Other parameters

Voltage: DC6V ~ DC8V
Electricity: under DC5V, stand-by condition ≤30mA, data-collecting ≤150mA
Temperature: -40 ~ 125°C
Impact resistance: 2000g, 0.5ms.
Shock resistance: 10g, 20 ~ 100Hz.
Dynamic performance: when vibrating acceleration is 3g, frequency is 20Hz, possible inclination error: ≤0.2° compared with static measurement.
Range of Delay: 1 ~ 99min, minimum 1min;
Interval scope: 1 ~ 99sec, minimum 1sec (only for multi-shot)
Max. sampling: 3600 points (only for multi-shot)
Continuous working time: min 20 hrs (only for multi-shot)

3. Rechargeable battery barrel

For single shot
Voltage output: DC7.2V.
Electricity output: ≥500mAh
Working Temperature: -40 ~ 125°C
Charge or discharge times: ≥800 times
Charging time: 2～4H
Discharging time: ≥30min

For multi shots
Voltage output: DC6V
Electricity output: ≥2000mAh
Working Temperature: -40～125℃
Charge or discharge times: ≥800 times
Charging time: 16～17H
Discharging time: ≥12h