QL40MGS-1000 MAGNETIC SUSCEPTIBILITY

The QL40MGS-1000 (Bartington BSS-02A) borehole magnetic susceptibility tool operates with the Matrix Console and is typically used in mining and lithology applications; in particular it’s used in the delineation of kimberlite deposits. All electronic circuitry resides in a high strength non-magnetic enclosure and features a wide measuring range from 10-5 to 10–1 cgs and will resolve strata down to 25 mm.

**Technical Specifications:**

<table>
<thead>
<tr>
<th>Principle of Operation:</th>
<th>AC induction frequency discrimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Frequency:</td>
<td>1.439 KHz</td>
</tr>
<tr>
<td>Sensing Coil Type:</td>
<td>Focused Dual Coil</td>
</tr>
</tbody>
</table>

**Borehole Diameter Effect:**

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Response Centralized</th>
<th>Response De-Centralized</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>0.75</td>
<td>0.725</td>
</tr>
<tr>
<td>80</td>
<td>0.275</td>
<td>0.5</td>
</tr>
<tr>
<td>100</td>
<td>0.009</td>
<td>0.45</td>
</tr>
</tbody>
</table>

**Calibration:** Record 1 x 10-5 cgs directly in 50 mm borehole

**Sensor Location:** 16 cm from probe bottom

**Diameter:** 40 mm Sensor diameter 44mm

**Length:** 86 cm

**Operating Temp.:** up to 120 C

**Operating Pressure:** 340 Bar (5000 PSI)

**Weight:** 4.75 Kg

WellCAD screenshot QLGAM +QLMGS + QLIP showing mineralization Central China
QL40MGS-1000 MAGNETIC SUSCEPTIBILITY

Features
The QL40MGS-1000 (Bartington BSS-02A) probe is intended to be used for prospection of magnetic minerals and stratigraphic correlation to depths of 6000m. The operating frequency is chosen to be sufficiently low to avoid interference from rock conductivities and the circuitry is temperature compensated to minimize thermally induced drift. The region of detection is situated 160mm from the tip of the pressure-equalized housing. The detector features a single focused coil arrangement to achieve a single response to strata. The detection region has a full-width-half-maximum response of 25mm and measurements are digitized at a rate of approximately 20 per second giving a theoretical maximum logging rate of 0.5m per second. The tool is calibrated for operation in 50mm diameter unclad boreholes. Larger diameter holes can be logged where the angle of the borehole assures decentralization. The BSS-02B is calibrated in the cgs system. To convert to SI units multiply the cgs value by 4pi.

For example: \(1 \times 10^{-5} \text{ cgs} \equiv 1.26 \times 10^{-4} \text{ SI}\)

Advantages
Possibility to quantify data with empirical calibration

QL Stack Possibilities
QL40GR (gamma) + QL40IP + QL40MGS (Magnetic susceptibility): mining, exploration
QL40GR (gamma) + QL40MGS: lithology, glacial till characterization

Recommended Spares
QL40GO4-1000 or Q40MS1-1000, probe top
Spanner wrenches, 40-42 mm
Diaphragm oil

---

Terraplus Inc.
52 West Beaver Cr. Rd. #12, Richmond Hill, ON, Canada L4B 1L9
Tel: 905-764-5505  Fax: 905-764-8093  Email: sales@terraplus.ca  Website: www.terraplus.ca