

probe specificiation

FOCUSED ELECTRIC PROBE (GUARD LOG)

A focussed resistivity measurement with excellent vertical resolution and reasonable depth of investigation. The guard log works well when high borehole fluid salinity and high formation resistance cause the 16" and 64" Normal resistivity logs to give inaccurate results.

PRINCIPLE OF MEASUREMENT:

The probe includes a central current-source electrode mounted between two guard electrodes, maintained at the same potential by internal electronics. Current from the central electrode is constrained to a thin disk by the presence of the guards and returns to the cable armour above a 10m insulated section. The potential of the central electrode with respect to a surface voltage-reference stake and the measured current are combined by a down-hole microprocessor to calculate the apparent formation resistivity.

FEATURES	SPECIFICATIONS
<p>Good depth of penetration with excellent bed-boundary resolution</p> <p>Down-hole calibration check using internal resistor</p> <p>Digital down-hole measurement avoids errors due to cable effects in deeper boreholes</p> <p>Constant-power down-hole current source give 4 decades of measurement without manual range switching</p> <p>Optional natural-gamma measurement and temperature</p>	<p>Diameter: 38mm</p> <p>Length: 2.82m</p> <p>Weight: 8kg</p> <p>Max. temperature: 70°C (extended ranges available)</p> <p>Max. pressure: 20MPa (extended ranges available)</p> <p>Guard Log sense electrode: 10cms</p> <p>Guard electrodes: 2 x 1m</p> <p>Current drive: 200Hz bi-directional</p> <p>Current return: Cable armour</p> <p>Voltage reference: Surface earth stake (fish)</p> <p>Measurement range: 1 to 10,000 ohm-m (extended ranges available)</p> <p>Natural-gamma detector: 50mm x 25mm NaI(Tl) scintillation crystal (larger sizes available)</p>
MEASUREMENTS	
<p>Focused resistivity</p> <p>Natural gamma</p>	
APPLICATIONS	
<p>Water</p> <p>Determination of water quality</p> <p>Indication of permeable zones and porosity</p> <p>Minerals/Engineering</p> <p>Strata correlation between boreholes</p> <p>Indication of fractures and permeable zones</p> <p>Bed-boundary and thickness measurements</p> <p>Moisture determination in coal</p>	
OPERATING CONDITIONS	
<p>Borehole type: open-hole, water-filled</p> <p>Centralisation: standoff recommended</p> <p>The logging cable armour above the insulated section must be immersed in well fluid, restricting top logging depth to 5-10m below the fluid level. Best results are obtained with borehole fluid resistivity well below formation resistivity.</p>	
	SALES INFORMATION
	<p>Probe:</p> <p>25 057 000 Focused electric probe</p> <p>25 058 000 -includes natural gamma</p> <p>Accessories:</p> <p>20 100 000 GLOG test box</p> <p>20 101 000 Surface earth stake</p> <p>20 070 000 Natural-gamma calibrator without source</p> <p>30 010 000 3.7MBq ¹³⁷Cs source for natural-gamma calibrator</p>

