

40GRP

Combination Gamma and Resistivity Probe

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The 40GRP-1000 standalone probe is ideal for slimline, one-pass hydrogeological studies, lithology work, uranium exploration, and general borehole formation data. This totally digital probe measures 16, 64 inch (0.4, 1.6 meter) normal resistivity, single point resistance (SPR), spontaneous potential (SP), and natural gamma. It operates with the newest LoggerSuite digital logging system and software.

The normal resistivity measurements, single point resistance, and spontaneous potential measurements are designed for surveying open (uncased) and fluid-filled boreholes. Gamma measurements can be measured in any borehole environment.

Application

- Bed boundary analysis
- Facies changes
- Quantitative geological formation properties
- Identification of hydrostratigraphic units
- Aquifer thickness and water quality
- Hydrocarbon intervals, ore body zones, in-situ Uranium assay
- Fluid contaminant monitoring, soil horizons, grain size estimation

Accessories

Isolation bridges

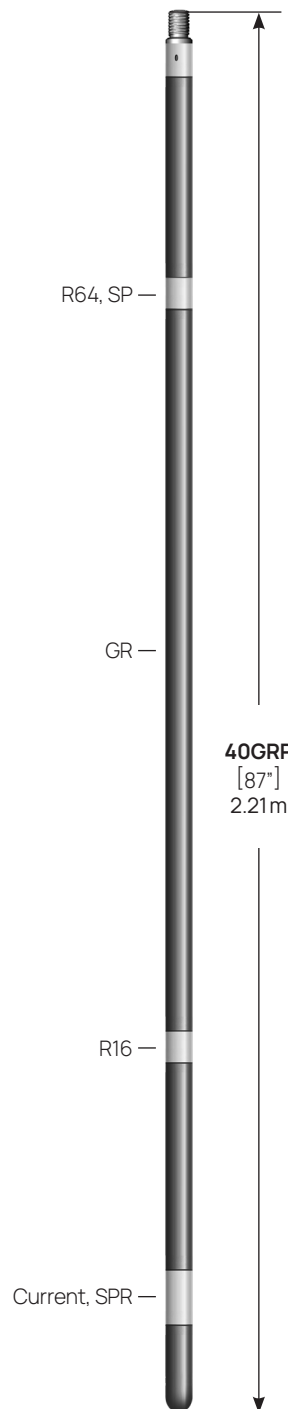
QL40-ISQL (QuickLink connection)
QL40-IS4 (GO4 probe top)

Calibration box (P.N. 17 202 096/TB001)

Normal Resistivity
Spontaneous Potential
Induced Polarization

Tool

Diameter : 43mm (1.7")
Length : 2.21m (87")
Weight : 8.8kg (19.5 lbs)
Temp : 0 - 70°C (32 - 158°F)
Max. Pressure : 200bar (2900psi)



Resistivity sensor

Sensor : stainless steel electrode
Resistivity range : 0,1 to 100.000 Ohm.m.
Resistivity accuracy : depends on measurement range
Below 1% of measured value
from 1 to 5.000 Ohm-m
Below 5% of measured value
from 5.000 to 50.000 Ohm-m
Resistivity resolution : below 0.04% of measured value
SPR range : 0,1 to 100.000 Ohm
SP range : ±18V
SP accuracy : ±2.5mV
SP Resolution : 0.5mV

Natural gamma sensor

30.875" (22.2mm) x 3" (75.6mm) NaI (Ti) scintillation crystal
Gamma range : 0 to 100,000 cps/API
Gamma accuracy : 1%
Gamma resolution : 0.02%

Operating conditions

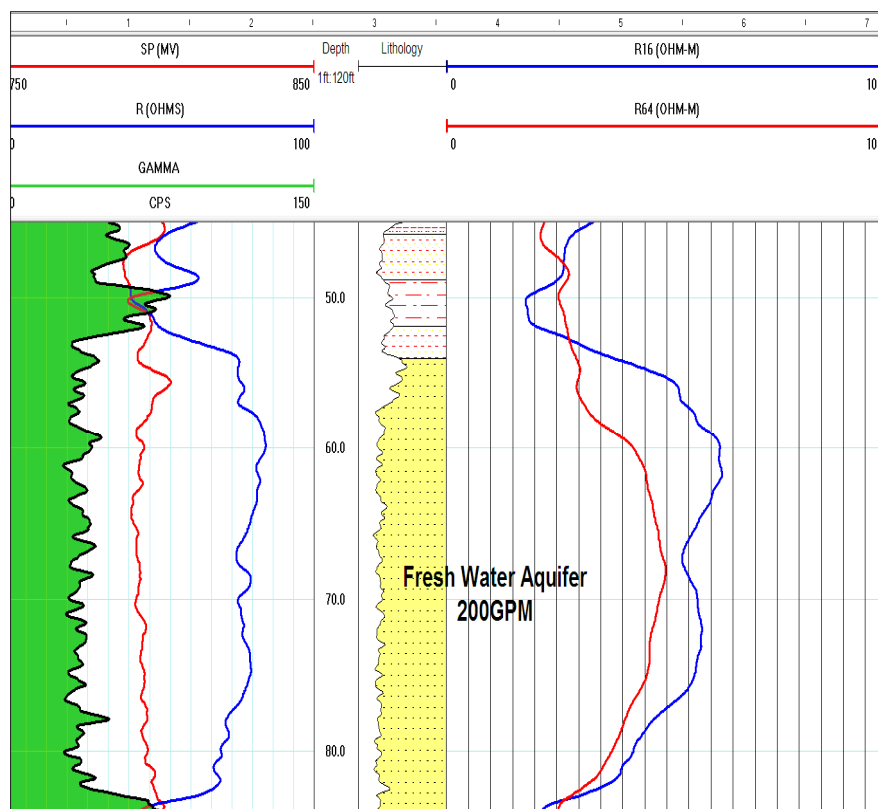
Cable type : Mono, multi-conductor, coax
Compatibility : Scout Pro / Opal (Scout / Bbox / Matrix)
Digital data transmission
Telemetry : Variable baudrate telemetry according to cable length/type & surface system
Logging speed : 5-6 m/min recommended
Centralisation : Not required
Borehole fluid : Gamma in any conditions
Resistivity in uncased, fluid-filled boreholes

Principle of measurement

An electric current is injected into the formation from the current electrode. Potentials due to this current flow are measured on various current electrodes on the probe with respect to a voltage reference electrode located at the top of the isolation bridle. The spacing between the current and individual measure electrode determines the depth of investigation of the measurement. The voltage measurements are proportional to the resistivity of the formation.

Measurement features

- N16 : 16" normal resistivity in ohm-m (short normal)
- N64 : 64" normal resistivity in ohm-m (long normal)
- SPR : single point resistance in ohms
- SP : spontaneous potential in mV
- GR : total gamma counts in cps/API



Sample Log from 40GRP-1000 in one logging pass.