

DUAL FOCUSED INDUCTION PROBE

A seven-coil focussed electromagnetic probe that provides two simultaneous conductivity logs, corresponding to “medium” and “deep” radii of investigation into the formation. The probe offers more information than the single-spaced induction probe in porous, permeable formations where displacement of formation fluids by drilling mud creates an “invasion zone” with different electrical properties.

PRINCIPLE OF MEASUREMENT:

An oscillating high-frequency magnetic field from a transmitter coil within the probe induces an alternating electrical current within the surrounding conductive formation. This current, in turn, induces voltages within receiver coils in the probe proportional to the formation conductivity. The transmitter-receiver spacings determine the depth of investigation of the measurements. Additional focussing coils minimise the contribution of the borehole signal.

FEATURES

- Formation conductivity measurement in wet/dry boreholes or through plastic casing
- Separate deep and medium penetrating measurements give information on invaded zone
- Seven-coil focussed measurements almost eliminates borehole signal
- PSD (phase-sensitive detector) discriminates between magnetic susceptibility and conductivity signals
- Option of natural gamma for correlation

MEASUREMENTS

- Deep formation conductivity
- Shallow formation conductivity
- Natural gamma

APPLICATIONS

- Water**
 - Indicator of permeable zones and porosity
 - Formation water salinity
 - Long-term well monitoring
- Mineral/Engineering**
 - Ore identification and quality
 - Correlation
- Other**
 - Indication of hydrocarbons

OPERATING CONDITIONS:

- Borehole type:** open/plastic or grp cased, air/water-filled
Fin stand-off recommended

SPECIFICATIONS

- Diameter:** 38mm
- Length:** 2.32m
- Weight:** 8kg
- Max. temperature:** 70°C
(extended ranges available)
- Max. pressure:** 20MPa
(extended ranges available)
- Number of coils:** 7
- Operating frequency:** 39kHz
- Effective TX-RX spacings:** ILM 50cm (20"); ILD 81cm (32")
- Resolution:** 1mS/m
- Accuracy:** 3% of reading over temperature range
- Natural-gamma detector:** 50mm x 25mm NaI(Tl) scintillation crystal
(larger sizes available)

SALES INFORMATION

- Probe:**
 - 25 060 001 Dual focussed induction probe with field calibrator
 - 25 061 001 -with natural gamma
- Accessories:**
 - 23 001 000 Fin stand-off
 - 20 070 000 Natural-gamma API calibrator without source
 - 30 010 000 3.7MBq ¹³⁷Cs source for natural-gamma calibrator

