

Density Probes

Formation Sidewall & Slim Trisonde Probes

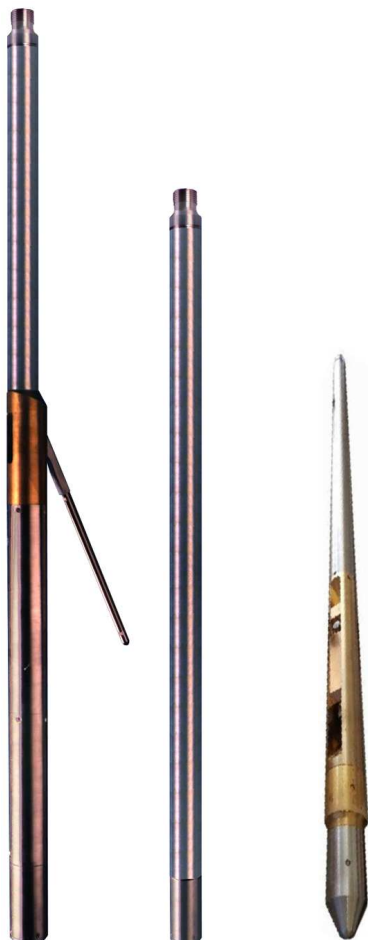
APPLICATIONS

FDSB

- Calculated Density Porosity
- Lithology and Ore-body identification
- Quantitative Density
- Borehole Diameter
- Bed Boundaries
- Coal ash & moisture content
- Petrophysical properties

Trisonde

- Mineral quality
- Lithology determination
- Coal bed identification
- Cement pile testing
- Petrophysical properties



The Geovista range of density probes are designed to measure high quality density measurements

OVERVIEW

Formation Density Probe (FDSB): This combinable sonde is suitable for quantitative formation density measurements in uncased holes. It uses a bottom loading gamma ray source (Typically 100 mCi activity) and a set of two or optionally three detectors at different spacing to detect the gamma rays scattered by the formation. The amount of scattered gamma rays is a function of the electron density of the formation material and hence, a function of its bulk density. This relationship is used to calibrate the density sonde and then use it to log the bulk density of the formations crossed by the borehole. In order to optimise performance, the sonde is designed with three main features:

1. A side-walling calliper to ensure that the detector measures only the radiation scattered by the formation.
2. A detector mandrel diameter that is large enough to minimise the sonde and borehole curvature mismatch and improve sonde to formation contact to minimise the effect of the borehole fluid.
3. An efficient detector shield to prevent gamma rays from travelling up, inside the sonde body.

Trisonde: Provides qualitative density measurements and a natural gamma ray with three detectors (radioactive source is bottom loading).

Slim Side Loading Density: Provides qualitative density measurements with two detectors and is a fully combinable probe (radioactive source is side loading)

SPECIFICATION

	FDSB	Trisonde 2-Pi Gamma-Gamma	Slim Side Loading
Weight	26 kg	5 Kg	5.0 kg
Length	2.06 m	1.65 m	1.44 m
Diameter	54 mm	38 mm	46 mm
Detector	x2, NaI crystals Spaced at 47 and 25 cm (Optional addition of a detector at 14 cm)	x3 NaI crystals (Gamma Ray, LS & SS density)	x2 NaI crystals (LS & SS density)
Source	¹³⁷ Cs or ⁶⁰ Co	¹³⁷ Cs (10mCi)	¹³⁷ Cs (10mCi)
Density Range	1-3 or 1- 4.5 g/cc	qualitative	qualitative
Caliper Range	60 to 350 mm	No caliper	No caliper
Max. Pressure	20 MPa	20 MPa	20 MPa
HP version	35 MPa	35 MPa	35 MPa
Max. Temperature	80°C	80°C	80°C
HT version	HT 125°C	HT 125°C	HT 125°C
Combinability	Modular (Can connect probes above only)	Modular (Can connect probes above only)	Modular
Borehole	Any Open Hole	Any Hole	Any Hole
Accessories	Calibration blocks Verification jig Source holder Source handling tool		