

TEMPERATURE / CONDUCTIVITY PROBE

This probe combination provides a continuous, depth-based measurement of fluid temperature and conductivity. Both parameters can be output in absolute and in differential forms. An optional natural-gamma detector is available for correlation purposes.

PRINCIPLE OF MEASUREMENT:

The sensors are located in an insulated housing at the base of the probe. During logging, borehole fluid flows freely through ports on the side and base of this housing and over the sensors. The temperature measurement uses a high-sensitivity semiconductor transducer. The conductivity cell comprises three carbon contact-rings driven by a constant-voltage source of alternating polarity to avoid cell polarisation effects.

FEATURES

- Stable, high-quality, semiconductor temperature sensor
- Graphite conductivity electrodes resist corrosion and are easily cleaned
- Optional natural-gamma detector

MEASUREMENTS

- Fluid Temperature/ differential temperature
- Fluid conductivity/ differential conductivity
- Natural gamma (optional)

APPLICATIONS

- Water**
- Fluid salinity
- Location of zones of different water quality
- Water-well monitoring
- Identification of zones of in-flow/out-flow
- Temperature gradient
- Water-level determination
- Location of grout behind casing
- Temperature compensation of other logs

OPERATING CONDITIONS

- Borehole type:** open/cased hole, water filled
- In normal logging operations, the borehole should be allowed to stand for 24 hours to reach stable conditions and this probe should be run first. The log is recorded downwards while running into the hole to minimise fluid disturbance.

SPECIFICATIONS

Diameter:	38mm
Length:	1.62m
Weight:	7.7kg
Max. temperature:	70°C (extended ranges available)
Max. pressure:	20MPa (extended ranges available)
Temperature range:	0°C to 70°C
Temperature accuracy:	+/-0.5°C
Differential:	temperature gradient over 1 metre
Conductivity range:	50 to 50,000 $\mu\text{S} / \text{cm}$
Conductivity accuracy:	+/- 2.5% at 500 $\mu\text{S} / \text{cm}$
Differential:	Conductivity gradient over 1 metre
Natural-gamma detector:	50mm x 25mm NaI(TL) scintillation crystal (larger sizes available)

SALES INFORMATION

Probe:	
25 046 000	Temperature /Conductivity probe
25 047 000	-includes natural gamma
Accessories:	
20 070 000	Natural-gamma API without source
30 010 000	3.7MBq ^{137}Cs source for natural-gamma calibrator

