

Heat-Pulse Flowmeter

Probe Head



2.24m
(88.2")

Natural
Gamma

Thermistor 1

Heating Grid

Thermistor 2

Heat-Pulse Flowmeter Probe

The Heat-Pulse Flowmeter probe is used to detect low vertical flows within a borehole below the threshold limits of conventional impeller tools.

The probe is designed for stationary measurements only. Normal logging practice involves measurements at a series of depths across the zone of interest.

Principle of Measurement:

The probe contains a horizontal wire-grid heating element and thermistors located above and below it. Apertures in the tool permit the free flow of well fluid through the assembly. Pulses of electric current are applied to the heating grid under surface command, warming fluid in the vicinity of the grid. The warm fluid front migrates towards the thermistors where it is detected. Depending on the direction of flow, either upper or lower thermistor detects the warm fluid front first. The time taken to reach the detector gives an indication of flow rate.

SPECIFICATION:

Features

- Detection of very low vertical flow rates
- Auto-null command cancels tool offsets prior to each measurement

Measurements

- Up/down flow

Applications

Water

- Location of permeable zones in water wells
- Casing leak detection

Operating Conditions

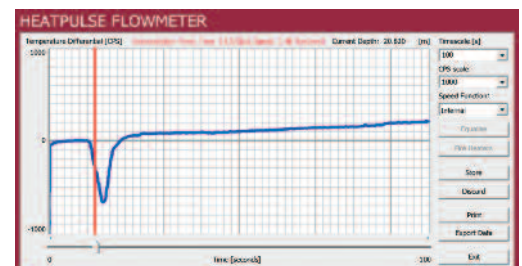
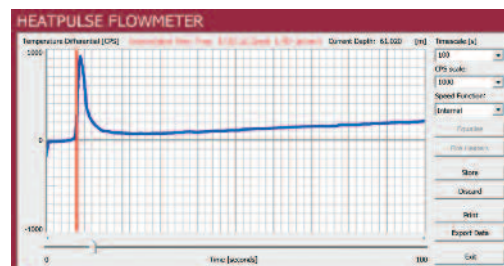
- Borehole type: open/cased hole, water-filled
- Centralisation: required
- Recommended Logging Speed: static measurements

Specifications

- Diameter: 51mm
- Length: 2.24m
- Weight: 8.0kg
- Temperature: 0-50°C
- Max. pressure: 20MPa
- Measurement range: 0.1 to 3m/min

Part Numbers

- 1002119 Heat-Pulse Flowmeter probe



Examples of logging data