

Capacitance Array Tool (CAT)

Oil, gas & water have different dielectric constants - the CAT uses this property to identify fluid phases in high deviation and horizontal wells. Run centralised in the well-bore, the CAT is fully combinable with other Sondex Ultrawire™ production logging tools.

Description

An array of 12 miniature sensors are mounted on the inside of a set of collapsible bowsprings and measure the capacitance of the surrounding fluid close to the well casing. All 12 values are simultaneously transmitted to surface or into a memory section. Taking measurements in a single plane across the diameter of the well-bore rather than along it, results in an accurate cross-sectional plot of fluid phases. Combined with data from the Spinner Array Tool (SAT) and the Resistance Array Tool (RAT), the tool allows quantitative estimates of the volumetric flow rate for each phase.

Features

- Array of 12 radial capacitance sensors.
- Tool orientation determined by internal relative bearing sensor.
- Through tubing phase identification.
- Simultaneous operation with Sondex Ultrawire™ tools.
- Radial fluid phase measurement.
- Collapsible bow-spring arms.
- Combinable with other tools of the Multiple Array Product Suite via Rotational Alignment Subs (RAS).
- CATview software (optional) is available for 3D phase profiling.

Specification

Temperature rating	350°F (177°C)
Pressure rating	15000psi (103.4MPa)
Tool diameter	1 11/16in (43mm)
Tool length	51.43in (1.306m)
Tool weight	17.3lbs (8.1kg)
Toolbus	Ultrawire™
Current consumption	28mA
Maximum opening	7in casing
Number of sensors	12
Sensor measure point	18.2in (462mm)
Relative Bearing accuracy	5°
Relative Bearing dev range	5° to 175°
Materials	Corrosion resistant throughout

Capacitance Array Tool (CAT)

