Sondex™
a Baker Hughes business

Resistance Array Tool (RAT)

Determine the water hold up across the entire wellbore

Applications

- Phase identification in horizontal and highly deviated wells
- Calculation of the percentage of each phase present
- Plotting of phase composition along the wellbore
- Identification of water entry areas
- Changes in wellbore fluids with either time or different production rates
- Cross-sectional water holdup profiling
- Water holdup in any fluid regime in vertical to horizontal wells

Features and Benefits

- Combinable with other Sondex **Ultrawire™ production logging tools**
- Combinable with other tools of the Multiple Array Product Suite via Rotational Alignment Subs (RAS)
- 3D imaging of water holdup profile with MAPview software
- Memory and surface read out operations

The Sondex **Resistance Array (RAT001) Tool** has 12 micro resistance sensors deployed on bow springs to determine the water holdup profile across the whole wellbore. Water (brine) is conductive, while oil and gas are non-conductive.

Phase segregation occurs in many wells, including those with little deviation from vertical; the lighter phases migrate to the high side of the well, the heavier phases to the low side.

The Resistance Array Tool differentiates between conductive water and hydrocarbons, which are non-conductive, and will detect very small, fast moving bubbles. This allows determination of the water holdup crosssectional profile in wellbores of any deviation, from vertical to horizontal, and in any flow regime.

Combined with data from the Spinner Array Tool (SAT), Capacitance Array Tool (CAT) and Gas Array Tool (GAT), the tool allows quantitative estimations of volumetric flow rate for each phase with a much higher degree of certainty, and thus provides vital and more precise information for reservoir management.

Specifications	
	RAT001
Temperature rating	350°F (177°C)
Pressure rating	15,000 psi (103.4 MPa)
Tool diameter	1 11/16 in. (43 mm)
Tool length	51.4 in. (1.306 m)
Tool weight	18.0 lb (8.2 kg)
Toolbus	Ultrawire production logging tool
Current consumption	70 mA
Maximum opening	7 inch casing
Number of sensors	12
Sensor measure point	15.7 in. (398.8 mm)
Relative bearing accuracy	5°
Relative bearing dev range	5° to 175°
Materials	Corrosion resistant throughout