Array Fluid Velocity Resistance Capacitance Tool

Measures array fluid velocity, resistivity, and capacitance

Applications

- Whole wellbore fluid characterization
- Deviated wellbore production profiling
- Complex flow evaluation

Features and Benefits

- Co-located fluid velocity and holdup measurements
- Six-sensor packages arranged radially on 6 arms
- Bi-directional fluid flow evaluation
- Combinable with all HD services
- Can operate in SRO or Memory
- Combinable with Array Gas Holdup for 3-phase flow evaluation

Tool Description

The Weatherford array fluid velocity resistance capacitance tool is a compact 6-arm multi- sensor array production logging tool. Each arm provides three measurements via a fluid velocity sensor, and a co-located fluid resistance and fluid capacitance sensor.

The sensor configuration offers optimal coverage of the wellbore cross section. The tool is run with centralizers and the opening diameter of the arms should be adjusted to avoid contamination from debris on the casing wall, and to minimize risk of damage in open hole or horizontal sections.

Specifications

Rating and dimensions

Maximum temperature	350°F (177°C)
Maximum pressure	15,000 psi (103.4 MPa)
Outer diameter	1.69 in. (43.0 mm)
Length	80.0 in. (2,003.00 mm)
Weight	35.0 lb (15.9 kg)
Measure points: Fluid Velocity Fluid Velocity Resistance and Capacitance Resistance and Capacitance	 **Short** (x3): 25.4 in. (645.0 mm) **Long** (x3): 29.5 in. (749.0 mm) **Short** (x3): 23.0 in. (584.0 mm) **Long** (x3): 27.0 in. (686.0 mm)

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Specifications, continued

Measurements

Adjustment range	Up to 9.0 in. (228.6 mm)
Velocity output	+/- 300 rps, <10-500 FPM
Velocity threshold	<10 FPM water
Resistance output	Frequency: Post Log Processing determines Water Hold Up % (A Quick look Real-time Hold-up is presented during logging)
Capacitance output	Frequency: Post Log Processing determines Water Hold Up %

Hardware characteristics

Acquisition mode	Real-time (with TCU)	Memory (with MLT)
Combinability	All HD tools (RADii, iQ, PL, RAS, etc.) when connected to TCU	
Materials	Corrosion resistant materials used throughout	
Tool positioning	Centralized	
Deviation	0 - 180° and Tool rotation 0 – 360°	

Electrical specifications

Current	40 mA at 50 V	105 mA at 19 V