

The Flow Array Sensing Tool (FAST) enables comprehensive and accurate evaluation of multiphase flows in deviated and horizontal wells, unlocking surveillance opportunities previously unachievable with conventional technology.

Eight robust and interchangeable probes, mounted either side of 4 centralising arms, enable a wide range of complex flow regimes to be accurately quantified. High resolution temperature, MEMS pressure and Doppler flow imaging are also incorporated into the ultra-compact design. Oil, water and gas phase identification is achieved by combining miniaturised and highly responsive optical, electrical and flow-meter sensors. These are positioned cross-sectionally across the well-bore at 90 degree intervals, with multiple tool sections combined to increase the spatial resolution as required.

For more information, please contact your Scientific Drilling sales representative or visit: http://scientificdrilling.com/cased-hole-services

## APPLICATIONS

- Gas, oil, and water hold-up detection
- Qualitative sand and solids detection
- Multiphase flow profiling in highly deviated and horizontal wells
- Quantitative assessment of mixed and segregated flow regimes
- + In-depth phase analysis

## BENEFITS

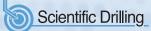
- Ultra compact and lightweight design (3ft, 12lbs) reduces rig-up time and deployment risk
  - True three-phase hold up fractions in segregated flow conditions
- Improved accuracy of production evaluation for highly deviated wells
- + Ultra low flow rate measurement with Doppler flow imaging
- Deployable on slickline, electric line, coil tubing or tractor

## FEATURES

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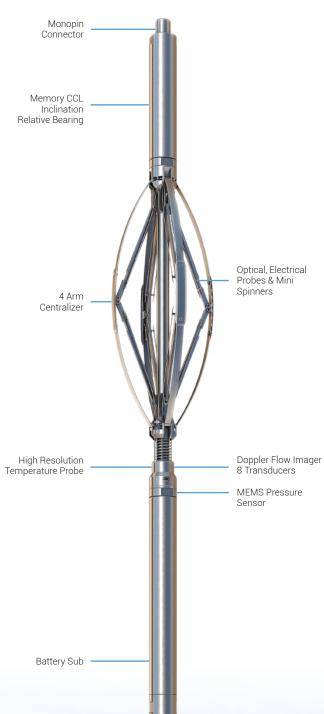
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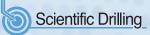
- Multi-electrode technology
  - Embedded computation of gas and water hold-ups & bubble count
  - Highly accurate cross sectional profiling of three phase hold-up at a single measurement point



GENERAL SPECIFICATIONS	
TOOL DIAMETER	1 $^{11}/_{16}$ in. (430 mm) - 1 $^{3}/_{8}$ in. slim tool optiona
MAX CASING ID	7 in.
ENGTH	3.5 ft. (1.07 m)
VEIGHT	10 lbs (5.0 kg)
EMPERATURE RATING	302° F (150° C)
PRESSURE RATING	15 kPSI (1034 bar)
MEMORY CAPACITY	192 MB
IEMORY/BATTERY URATION	Up to 150 hrs (continuous)
CQUISITION MODE	Memory/surface read out
SHOCKS	250 G, 2 ms
IECHANICAL ONNECTION	Top: 15/16 SR Pin Bottom: 15/16 SR Box
IATERIALS	NACE compliant stainless steel 316L, inconel, nickel, sapphire
RRAY HARDWARE & MEAS	SUREMENT SPECIFICATIONS
UID DETECTION	8 (2 per arm)
UMBER OF ARMS	4
AS HOLDUP PROBE	Optical
ATER HOLDUP PROBE	Electrical
LOWRATE PROBE	8 ultrasonic Doppler array or 8 mini spinners
PRESSURE	MEMS pressure sensor Accuracy 1.0 psi / Resolution 0.01 psi
PRESSURE ACCURACY/RESOLUTION	± 1.0 psi / 0.01 psi
EMPERATURE PROBE	Platinum RTD probe Accuracy 0.1 °C / Resolution 0.01°C
AND DETECTION	Acoustic sensor
CL	Differential Magnetometer
ELATIVE BEARING Ange/Accuracy	0-360° ± 3°
NCLINATION ANGE/ACCURACY	0-90° ± 1°

\*Specifications are subject to change without notice





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