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(54) **APPLICATION SPECIFIC INTEGRATED CIRCUITRY FOR CONTROLLING ANALYSIS OF A FLUID**

(Continued)

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 3 days.

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(52) **U.S. Cl.** **702/25**

(58) **Field of Search** 702/25, 45, 50,
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ABSTRACT

A circuit for determining characteristics of a fluid under-test is provided. The circuit includes analog-to-digital processing circuitry for interfacing with a sensor and host electronics. The analog-to-digital processing circuitry includes a frequency generator for providing stimulus to the sensor and receiving a response signal from the sensor. Conditioning circuitry for reducing analog signal offsets in the response signal and signal detection circuitry for identifying amplitude data of the response signal are provided. Further provided is analog-to-digital conversion circuitry for converting the detected amplitude data into digital form. Memory for holding calibration data and approximated fluid characteristics of the fluid under-test is included in the circuitry. The digital form of the response signal is processed in conjunction with the calibration data and approximated fluid characteristics to generate fluid characteristics of the actual fluid under-test.

52 Claims, 16 Drawing Sheets

