

CALIBRATION OF MULTI-PHASE FLOW METER



INVENTION

Multiphase flow meters to monitor fluid flow rate (oil-gas-water) and water content in oil & gas industry are expensive and not enough accurate.

This invention is a semi-closed loop system for multi-phase flow meter calibration. The system consists of oil-gas-water separator, oil, gas and water flow meters, test section for multi-phase flow (oil gas-water) or water-cut meter, single-phase flow loop section containing the flow calibration square tank, manual and solenoid valves, homogenizer and pumps.

The designed system has a two-step calibration process for different fluid flow rates, water-cuts and gas volume fractions (GVFs).

MARKET SIZE AND GROWTH

- The market size of flow meters is estimated to be USD 7.7 billion in 2021 and it is projected to reach USD 10.3 billion by 2026, at a CAGR of 6.2% between 2021 and 2026.
- Asia Pacific is the key market for flow meters globally, followed by Europe and North America, in terms of value.

- (Markets & Markets)

APPLICATIONS

- The proposed system can accurately calibrate the multi-phase flow and water-cut meters.
- The proposed system can be used for calibration of single-phase, two-phase and three-phase flow meters.

PATENT PROTECTION

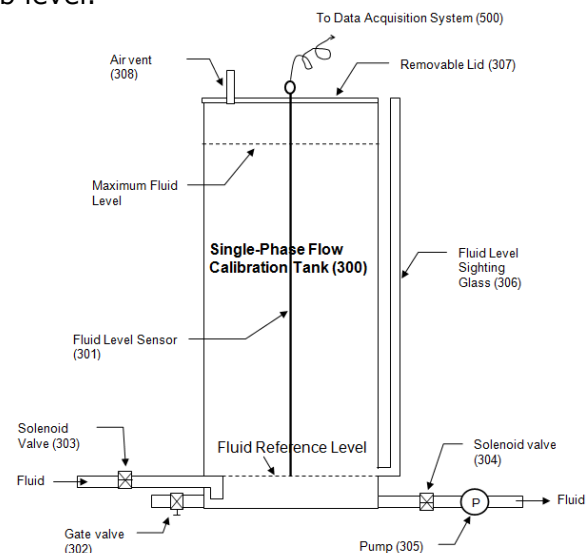
A US patent application [16/592863](#) covers the multiphase flow meter calibration system, method and apparatus. The IP is owned by King Fahd University of Petroleum & Minerals (KFUPM).

ADVANTAGES

- The present system is simple in design and accurately measures the flow parameters such as the fluid mixture flow rates, water content, and gas volume fractions.
- The system can calibrate flow meters that monitor a flow rate of a fluid mixture that contains a gas component.

PROJECT STATUS

The calibration system is designed and tested at lab level.



LOOKING FOR DEVELOPMENT PARTNER

KFUPM is interested in seeking market feedback from industry, licensing the technology to a company to commercialize it and/or partner with a company for developing this Calibration System.

ABOUT KFUPM

KFUPM was established in year 1963 and located in Dhahran city of Saudi Arabia. KFUPM currently ranks at 163 in QS World University Rankings 2021. KFUPM's Innovation & Technology Transfer office strives for taking innovation from lab to marketplace.

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