

Title (en)

IMPROVED METHOD AND SYSTEM FOR MEASURING MULTIPHASE FLOW USING MULTIPLE PRESSURE DIFFERENTIALS

Title (de)

VERBESSERTES VERFAHREN UND SYSTEM ZUR MESSUNG EINER MEHRPHASENSTRÖMUNG UNTER VERWENDUNG MEHRFACHER DRUCKDIFFERENZEN

Title (fr)

TECHNIQUE ET SYSTEME AMELIORES DE MESURE D'UN DEBIT MULTI-PHASE AU MOYEN DE DIFFERENTIELS DE PRESSION MULTIPLES

Publication

**EP 1409966 A1 20040421 (EN)**

Application

**EP 00965242 A 20000921**

Priority

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- US 40094699 A 19990922
- US 40137599 A 19990922

Abstract (en)

[origin: WO0122041A1] An improved method and system for measuring a multi-phase flow in a pressure flow meter. An extended venturi (114) is used and pressure of the multi-phase flow is measured at three or more positions in the venturi, which define two or more pressure differentials in the flow conduit. The differential pressures are then used to calculate the mass flow of the gas phases, the total mass flow, and the liquid phase. The method for determining the mass flow of the high void fraction fluid flow and the gas flow includes certain steps. The first step is calculating a gas density for the gas flow (210). The next two steps are finding a normalized gas mass flow rate through the venturi and computing a gas mass flow rate (220). The following step is estimating the gas velocity in the venturi tube throat (230). The next step is calculating the pressure drop experienced by the gas phase due to work performed by the gas phase in accelerating the liquid phase between the upstream pressure measuring point (142) and the pressure measuring point in the venturi throat (240, 250).

IPC 1-7

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IPC 8 full level

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CPC (source: EP)

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