

Title (en)
DETERMINATION OF THE PROPAGATION TIME DIFFERENCE IN AN ULTRASOUND FLOW SENSOR WITH MULTIPLE ZERO CROSSING DETECTION

Title (de)
BESTIMMUNG DER LAUFZEITDIFFERENZ BEI EINEM ULTRASCHALL-STRÖMUNGSSENSOR MIT MEHRFACHER NULLDURCHGANGSDETEKTION

Title (fr)
DETERMINATION DE LA DIFFERENCE DE DUREE DE PROPAGATION SUR UN CAPTEUR DE RAYONNEMENT ULTRASONORE AVEC REPETITION DE DETECTION DE PASSAGE PAR ZERO

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Application
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Priority
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• DE 102004013249 A 20040318

Abstract (en)
[origin: WO2005090925A2] The invention relates to an ultrasound flow sensor, particularly for measuring a volume or mass flow of a fluid (1), comprising two ultrasound converters (A,B), which are offset in the direction of flow (Z) and which respectively transmit a periodic ultrasound signal (S1,S2) to the other ultrasound converter (B,A), and a control and evaluation unit (4) which detects several reception moments (ti',tl) per ultrasound signal (S1,S2) when an ultrasound signal (S1,S2) is received by an ultrasound converter (B,A), enabling a measuring variable (S) to be determined therefrom. The accuracy of the measurement can be improved substantially if the control and evaluation unit (4) comprises at least two counters (5a,5b), whereby the first counter counts a time period (DELTA t') from a first switching or reception moment (ti') of a signal (S2,P) at least until a first reception moment (tl) of the ultrasound signal, and the second counter determines respectively the amount of time (DELTA t) between a first and second moment in time (ti',tl), which are combined in pairs, of the signals (S1,S2,P).

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