

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-STR M UNGSSENSOR 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

Publication
EP 1728053 A2 20061206 (DE)

Application
EP 05701551 A 20050119

Priority
• EP 2005050208 W 20050119
• 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).

IPC 8 full level
G01F 1/66 (2006.01); **G01P 5/24** (2006.01)

CPC (source: EP KR US)
G01F 1/66 (2013.01 - KR); **G01F 1/667** (2013.01 - EP US); **G01P 5/00** (2013.01 - KR); **G01P 5/24** (2013.01 - KR); **G01P 5/247** (2013.01 - EP US)

Citation (search report)
See references of WO 2005090925A2

Designated contracting state (EPC)
DE FR

DOCDB simple family (publication)
WO 2005090925 A2 20050929; WO 2005090925 A3 20051110; DE 102004013249 A1 20051006; EP 1728053 A2 20061206; JP 2007529724 A 20071025; KR 20070004724 A 20070109; US 2007162239 A1 20070712

DOCDB simple family (application)
EP 2005050208 W 20050119; DE 102004013249 A 20040318; EP 05701551 A 20050119; JP 2007503315 A 20050119; KR 20067018911 A 20060915; US 58768505 A 20050119