

Title (en)
ULTRASONIC FLOW AND PARTICLE MEASURING SYSTEM

Title (de)
ULTRASCHALL-DURCHFLUSS- UND PARTIKELMESSSYSTEM

Title (fr)
SYSTÈME DE MESURE DE DÉBIT ET DE MESURE DE PARTICULES À ULTRASONS

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Abstract (en)
[origin: WO2011051006A1] The invention relates to an ultrasonic flow and particle measuring system (1), comprising a first ultrasonic transducer (2) and at least one further, second ultrasonic transducer (3), wherein the first ultrasonic transducer comprises at least one first ultrasonic transducer element (4) and at least one first coupling element (5), wherein acoustic signals can be emitted and received by the first ultrasonic transducer element (4) during operation via the first coupling element (5). The first and second ultrasonic transducers (2, 3) are arranged in a measuring tube (8) for determining the flow such that the acoustic signals propagate along at least one signal path (9) in the measuring tube (8) between the first and the second ultrasonic transducers (3), wherein at least the first coupling element (5) is designed as an acoustic lens. The ultrasonic flow and particle measuring system (1) comprises an evaluation unit, which is suited to analyze the amplitude of reflection signals of acoustic signals reflected by particles to the first ultrasonic transducer (2), wherein in a predetermined time interval a number of amplitudes of the reflection signals can be counted using the evaluation unit, which are greater than a predetermined threshold value. The invention further relates to a method for determining the flow of a measuring medium through a measuring tube (8) and for detecting particles in the measuring medium using an ultrasonic flow and particle measuring system (1) according to the invention.

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