

Abstract

SIGNAL PROCESSING METHOD, SIGNAL PROCESSING APPARATUS, AND CORIOLIS FLOWMETER

A Coriolis flowmeter, in which a vibrator is actuated to vibrate at least one or a pair of flow tubes (2 and 3) so that a phase difference and/or a vibration frequency proportional to a Coriolis force acting on the flow tubes (2 and 3) is detected by a vibration detection sensor, to thereby acquire the mass flow rate and/or the density of a fluid to be measured. The Coriolis flowmeter comprises: a frequency meter (110) for measuring a frequency on the basis of an input signal frequency of one sensor in two frequency signals acquired by A/D-converting detection signals from a pair of vibration detection sensors (7 and 8); a transmitter (120) for transmitting and outputting a desired frequency signal on the basis of the measured frequency; frequency conversion units (130 and 140) for adding (or subtracting) a frequency detected by the pair of vibration detection sensors (7 and 8) and an output frequency of the transmitted (120), to thereby convert the detected frequency and the output frequency individually; and a phase difference measuring unit (150) for measuring the phase difference of the individual frequency signals which are to be converted by the frequency conversion units (130 and 140) and are detected by the pair of vibration detection sensors (7 and 8).

Figure 3