

SIGNAL PROCESSING METHOD, SIGNAL PROCESSING DEVICE, AND CORIOLIS
FLOW METER

Abstract

[Summary]

[Object] To provide a signal processing apparatus with which, even when a temperature of a fluid to be measured changes, even when air bubbles are mixed into the fluid to be measured, or even when the fluid to be measured rapidly changes from gas to liquid, measurement may be always performed with constant precision and phase and density measurements may be performed with a small computing amount.

[Solving Means] A signal processing apparatus for a Coriolis flowmeter in which at least one flow tube or a pair of flow tubes which is included in a measurement flow tube is alternately driven by causing a vibrator to be actuated by a driving device to vibrate the at least one flow tube or the pair of flow tubes, and at least one of a phase difference and a vibration frequency proportional to a Coriolis force acting on the at least one flow tube or the pair of flow tubes is detected by a velocity sensor or acceleration sensor which is a vibration detection sensor, to thereby obtain at least one of a mass flow rate and a density of a fluid to be measured, includes: a transmitter (90) for transmitting a frequency signal which is modulatable; and a frequency conversion section (85) for performing frequency conversion to add (or subtract) an

output frequency F_x from the transmitter (90) to (or from) an input frequency detected by the velocity sensor or acceleration sensor and shifting a frequency value obtained by the frequency conversion to a constant value.

[Selected Drawing] FIG. 1