

ABSTRACT

A single-transducer fluid meter is adapted to measurement the flow of a fluid (e.g., water or natural gas). A transducer sends an ultrasonic signal within a flow pipe through which the fluid flows within the fluid meter. In the example, the ultrasonic signal is reflected twice, thereby traveling in a triangular path that starts and ends at the transducer. A time-of-flight of an ultrasonic acoustic signal is measured. The time-of-flight starts when an electrical signal excites the transducer, and ends when the acoustic signal returns to the transducer. The time-of-flight of the ultrasonic signal can be used (with the speed-of-sound of the fluid) to calculate a flowrate of the fluid. In a first example, a faster flowrate of the fluid can result in a shorter time-of-flight (e.g., if the ultrasonic signal moves with the fluid flow). A slower flowrate of the fluid can result in a longer time-of-flight.

FIG. 1