AS6040

Ultrasonic Gas Volume and Flow Metering

- Integrated analog frontend with high voltage generation, analog switches, amplifier and offset stabilized zero cross detection
- Integrated 32 bit CPU for flow calculation
- High-precision Time-of-Flight (ToF) measurement

Product specification might be subject to change.

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AS6040 is an ultrasonic flow converter (UFC) solution dedicated to gas meters, but suitable for water meters, too.

The system is made of four major blocks: supervisor, front-end, post processing and interface. The supervisor manages all tasks and is the master of the whole system, making the AS6040 autonomous and ultra low power in operation.

The front-end integrates a 17V high-voltage driver, an integrated PGA and an offset-stabilized comparator in the receive path, a precision TDC for the time-of-flight measurement, amplitude measurement as well as an RDC unit for temperature measurement. A 32-bit CPU in combination with 4k of ROM code and 4k of NVRAM does the post processing for flow calculation

Applications

- Residential gas meters
- Industrial gas meters
- Clamp-on water meters
- Air flow sensors

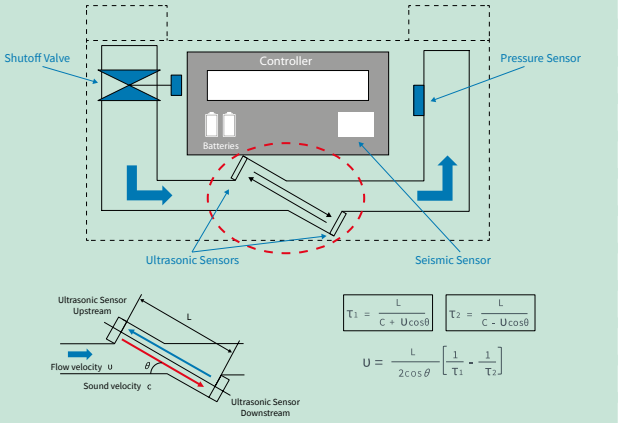
Features

- Integrated analog front-end with high voltage generation, analog switches, amplifier and offset stabilized zero cross detection
- Integrated 32-bit CPU for flow and volume calculation
- High-precision time-of-flight (ToF) measurement
- Ultra-low power consumption
- Temperature & pressure frontend
- Smallest number of external components
- Part of a diverse product family for ultrasonic flow metering

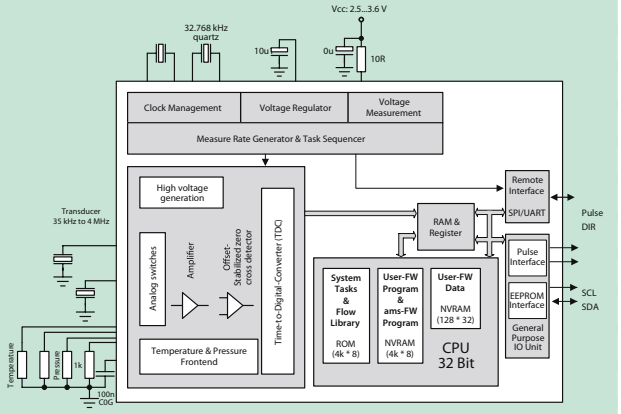
Benefits

- Single-chip solution provides ready flow information
- System design compatible with mechanical meters
- High flexibility in choice for external µP handling communication and further data management
- Operation from Battery
- Precision down to low flow rates
- Compact design, low BOM

Gas meter structure



Block Diagram



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