Smart static flow meters using MSP430™ ultrasonic sensing microcontrollers

Time to Market: Develop your solution within months rather than years of R&D

High performance (measurement accuracy)
- High accuracy within <±1% of flow measurement
- Improved Zero-flow-drift measurements yielding higher dynamic range and support very low (<1 liter/hr) flow-rates
- Excellent Single shot standard deviation measurement accuracy to eliminate need for higher measurement rates (eg: 8Hz) during normal operation, helps reduce overall system-level average current consumption (<3uA per measurement results)
- Immune to transducer variations with temperature and age

Increased functionality to add differentiation
- Leak detection
- Bubble detection
- Freeze/Unfreeze detection with Alarm

Cost effective (system level)
- Integrated AFE and gain amplifier to enable a truly single-chip SoC for water metering
- Ability to work with off-the-shelf low-cost transducers upto 2MHz
- Calibration supports customized temperature and flow-rates, reducing manufacturing costs

Scalable platform
- Residential (DN15-25) and industrial pipe sizes (DN50-DN1000) with Multiple transducer pair support
- Single platform for Water & Gas metering with Ultrasonic Analog Front-end (AFE) and Software Library with GUI
- Family of products from 32KB-256KB with 64,80,100 pin package

Get started with Ultrasonic Sensing MCUs

| Evaluation kits                  | EVM for Water Metering (EVM430-FR6047), EVM for Gas Metering (EVM430-FR6043) |
| Software                        | Ultrasonic Design Center |
| Quick Start Guides              | Quick Start guide for developing Water Meters, Gas Meters |
| TI Designs                      | Ultrasonic Sensing Water Meter Front-End Reference Design (TIDM-1019) |
|                                 | Ultrasonic sensing subsystem reference design for gas flow measurement |
|                                 | Optimized ultrasonic sensing metrology reference design for water flow measurement (TIDM-02005) |
|                                 | Replacing platinum RTD sensors with digital temperature sensors reference design for Heat Meters (TIDA-010002) |
| Technical training              | Video Series : Ultrasonic Sensing for water flow meters |
|                                 | Video Series : Ultrasonic Sensing for gas flow meters |

Learn more at www.ti.com/ultrasonicmcus
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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
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