

TDC-GP30



Intelligent Analog Frontend for Ultrasonic Flow Metering

- Solution for higher sample rates with lowest power in ultrasonic water meters
- On-chip firmware allows fastest time-to-market
- Best measurement performance for leakage detection
- Development suite, calibration and characterization tool available
- User gains flexibility due decoupling of flow measurement from other μ C tasks

TDC-GP30 / TDC-GP30-F01

Intelligent Analog Frontend for Ultrasonic Flow Metering

In the family of ultrasonic flow meter IC the TDC-GP30 is the first smart analog frontend IC. Smart because it integrates on a monolithic IC a μ C together with the analog frontend for ultrasonic flow and volume measurements.

The TDC-GP30 drastically simplifies the design of ultrasonic heat and water meters and is the necessary step for compact energy-saving ultrasonic water meters. The GP30 is also perfect for industrial, agricultural and irrigation volume meters.

The ultra-low current capabilities allows the operation of a water meter for more than 10 years. The TDC-GP30 is a system-on-chip (SOC) approach that allows to perform all measurement tasks with one monolithic IC. TDC-GP30-F01 is a complete ultrasonic flow metering solution, including firm-ware for flow and volume calculation. The TDC-GP30-F01 algorithm does the linearization and temperature compensation based on spoolpiece specific calibration data and completes the SOC approach.

Applications

- Residential water meter
- Residential energy meter (heat meter)
- Industrial flow and volume meter
- Agracultural and irrigation water meter
- Smart water pumps
- Tankless water heater

Benefits

- Solution for lowest power at the high sample rates used for ultrasonic water meters
- On-chip firmware allows fastest time-to-market
- Best measurement performance for leakage detection
- Development support through evaluation kit, calibration and characterization tools

Features

- High update rates with very low power consumption of, for example, 8 μ A at 8 Hz
- High performance + ultra-low power 32-bit CPU with 4k NVRAM and 4k ROM
- Up to 31 multi-hits for flow measurement yield the highest accuracy
- Advanced high-precision analog part
- Transducers can be connected directly to GP30, no external components required
- Amplitude measurements of receiving signal for secure bubble, aging and empty spool piece detection
- The GP30 is part of a diverse flow meter family

Block Diagram

