



wH2O™ Series

USW-3C&I



COMMERCIAL & INDUSTRIAL
ULTRASONIC WATER METER

- *Hot/Cold water metering*
- *No moving components*
- *Low pressure drops*
- *High temperature range*
- *Entirely waterproof and weatherproof*
- *Insensitive to sand, sediment or other particles*
- *Multi-path technology tackles large pipes with High accuracy.*



USW-3C&I represents the latest innovation of USonic metering's wH2O ultrasonic inline series.

This smart meter, in accordance with OIML R49, is designed specifically to capture water consumption in residential and commercial applications while integrating into an AMR/AMI network and billing solution.

**EACH AND EVERY
DROP COUNTS**

- **AMR/AMI**
- **RESIDENTIAL/COMMERCIAL**
- **LEAKAGE DETECTION**
- **BILLING**

FEATURES AND BENEFITS

Manufactured to be rugged, the USW-3C&I has sensor body constructed from high quality steel. With no moving components, once installed the meter remains accurate and maintenance free. The non-obstructive sensor design leads to no blockage and miniscule pressure drops. This robust design is ideal for challenging environments such as those in desert applications.



With USonic Metering's USW-3C&I, **you can:**

- Remain proactive and identify leakage in order to capture lost revenue by detecting leaks as low as a few drops per second.
- Reliably integrate into AMR/AMI networking solutions using M-Bus, MODBUS, radio, pulse, and more.
- Reliably operate the unit with excellent long-term stability backed by a 5 year warranty, as accuracy does not degrade over time.
- Combat environmental elements with the sand-proof and submersible IP68 enclosure.
- Reduce operational costs over the long run.
- Meter cold water and also hot water, up to 65°C/130°C (149°F/266°F).
- Capture precise readings with robust ultrasonic transit time technology.
- Ensure optimal field performance with a 15 year battery life.
- Register accurate readings as air is not measured.
- Guarantee enduring meter performance as the unit is insensitive to sand, sedimentation and other particles.
- Detect reverse flow.
- Automatically switch to power over M-Bus when available to conserve battery.
- Remain Confident with a tamperproof design.
- Remain insensitive to orientation as the separable calculator enclosure optimizes user convenience.



High-accuracy calibration platform

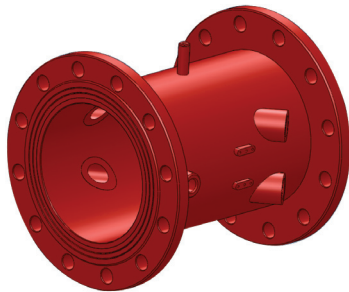
EACH AND EVERY
DROP COUNTS

OPERATING PRINCIPLE

Using the ultrasonic transit-time measuring technology, emitted ultrasound beams are sent back and forth between two ultrasonic transducers. The liquid velocity is determined by the difference in measured transit-times between beams sent into (downstream) and against (upstream) the direction of liquid flow.

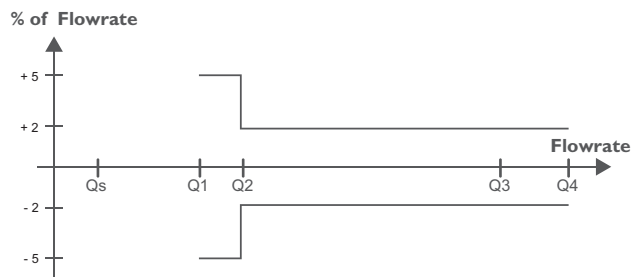
Unique Multi-path Technology

For large size meters, it is not easy to install the flow sensor perfectly in line with the pipe line. A small misalignment could cause flow profile distortion inside the flow sensor, thus, causing significant measurement errors. USonic Metering developed a unique multi-path technology to solve this problem. Two/four pairs of ultrasonic transducers are mounted on the flow sensor body to interrogate the flow from two/four different paths. A flow calculation algorithm based on fluid dynamic theory is then used to derive an average flow reading with high accuracy.



Maximum Permissible Flow Meter Indication Error

OIML R 49-1 Class 2



• USW-3C&I Provides Better Accuracy Than R49 Standard.

TECHNICAL SPECIFICATIONS

| Size | | Nominal Flowrate Q3 | | Overload Flowrate Q4 | | Transitional Flowrate Q2 | | Minimum Flowrate Q1 | | Pipe Joint | Pressure Loss ΔP @ Q3 |
|------|------|---------------------|-------|----------------------|-------|--------------------------|-------|---------------------|-------|-------------------|-----------------------|
| (mm) | (in) | (m³/h) | (gpm) | (m³/h) | (gpm) | (l/h) | (gph) | (l/h) | (gph) | (BSP/DIN) | (Bar) |
| 50 | 2 | 800 | 110 | 31.25 | 138 | 800 | 211.2 | 500 | 132 | Flange-Nut 4-M16 | <0.2 |
| 65 | 2 ½ | 1280 | 176 | 50 | 220 | 1280 | 338.4 | 800 | 211.2 | Flange-Nut 4-M16 | <0.2 |
| 80 | 3 | 2016 | 277 | 78.75 | 347 | 2016 | 532.8 | 1260 | 333 | Flange-Nut 8-M16 | <0.2 |
| 100 | 4 | 3200 | 440 | 125 | 550 | 3200 | 846 | 2000 | 528.6 | Flange-Nut 8-M16 | <0.2 |
| 125 | 5 | 5120 | 705 | 200 | 881 | 5120 | 1350 | 3200 | 846 | Flange-Nut 8-M16 | <0.2 |
| 150 | 6 | 8000 | 1101 | 312.5 | 1376 | 8000 | 2112 | 5000 | 1320 | Flange-Nut 8-M20 | <0.2 |
| 200 | 8 | 12800 | 1761 | 500 | 2202 | 12800 | 3384 | 8000 | 2112 | Flange-Nut 12-M20 | <0.2 |
| 250 | 10 | 20160 | 2774 | 787.5 | 3468 | 20160 | 5328 | 12600 | 3330 | Flange-Nut 12-M24 | <0.2 |
| 300 | 12 | 32000 | 4403 | 1250 | 5504 | 32000 | 8460 | 20000 | 5268 | Flange-Nut 12-M24 | <0.2 |

Note: Bigger sizes available upon request.

TECHNICAL SPECIFICATIONS

Rated Operating Conditions

| | |
|--|---|
| Maximum Admissible Pressure, Operating (MAP) : | 16 bar (1.6 MPa) |
| Static Current : | <10uA |
| Battery Life : | 15 years at $t_{BAT}<30^{\circ}C$ (86°F) |
| Network Power Supply : | Automatically switch to M-Bus or RS485 if available |
| Back Flow Detection : | Yes |
| Operating Water Temperature : | |
| Continuous operation : | 0.1°C to 65°C/130°C (32°F to 149°F/266°F) |
| Upper safety limit : | 95°C/130°C (203°F/266°F) |
| Ambient Class : | Class B/C |
| Calculator Protection : | IP68 waterproof, submersible |
| Flow Sensor Protection : | IP68 waterproof, submersible |
| Display Protection : | lid |
| Flow Sensor to Calculator Cable : | 1.2 m (up to 5m upon request) |
| Pipe Joint Options : | BSP/NPT or ANSI/DIN Flange |
| AMR Connectivity : | M-Bus, MODBUS, Pulse, Radio, and MORE |



About USonic Metering

USonic Metering is a global leader in flow and energy management solutions. Through continuous innovation, we transform complex ultrasonic technology into affordable, reliable solutions for accurate flow and energy measurement. USonic Metering offers water, heat, electricity and gas meters as well as AMR/AMI solutions. To find out how we can help today, please tell us about your application.