

Flostar

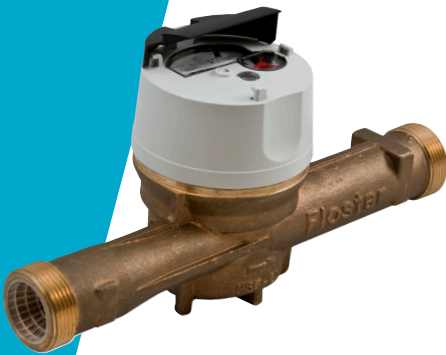
Residential Meter

Introduction

In today's water market, accurate measurement is the key to managing finite supplies and capturing revenue for actual consumption. Built upon almost 20 years of industry-leading design and field-proven performance, Itron's Flostar meter has become the most popular single jet residential water meter in the world. The Flostar meter offers unsurpassed accuracy to ensure water used is water measured.

Flostar features & benefits

The Flostar meter is highly accurate over a wide range of flow rates, ensuring proper measurement of actual consumption, especially at low flows down to 1/16 gallons per minute. Its design and rugged construction ensure long term service and reliability to protect your meter investment. NSF-61 approved, the Flostar residential meter meets stringent industry requirements for the utmost in deployment confidence.



> Meter performance

- High accuracy at low flows
- Long-term reliability
- Ease of installation

With Flostar residential meters, you can:

- > Realize revenue cycle enhancements with low-flow accuracy, low start-up torque and a wide measuring range.
- > Reduce costs to implement AMR systems with the available Cyble module that works with other Itron water AMR products.
- > Enable conservation efforts and programs by more accurately measuring water usage.
- > Receive greater long-term reliability—few moving parts reduce the wear from water-borne grit and particulates that can impact meter performance. A hydro-dynamically balanced impeller and magnetically-coupled register further reduce maintenance efforts.
- > Simplify installation with the availability of meters in a range of industry-standard lay-length models for new and retrofit applications. No upstream or downstream straight pipe is required for the Flostar, further simplifying the installation process.
- > Install the right meter for your application with meter sizes ranging from 1/2 through 1 inch.
- > Improve the efficiency of manual reading with a durable, easy-to-read register with impact resistant glass lens.
- > Deploy products with that are compliant with industry standards. Flostar meters meet or exceed NSF-61 regulations.

> *Flostar 1"*



> *Cyble AMR module*



Working Principle

Flostar's tapered inlet straightens the flow profile, creating a single jet of water that is projected into the measuring chamber, where it strikes the blades of the impeller. The design of the inlet and measuring chamber allows for extremely accurate low flow capabilities. As the impeller turns, a magnetic coupling on top of the shaft rotates the register gears. Coupling the impeller and register magnetically provides reliable measurement in any potable water environment. The register is protected from all outside elements by its hermetically sealed, copper can and glass design. Magnetic tampering is prevented by the placement of an anti-fraud plate in the register.

Cyble

Cyble technology enables Flostar residential meters to be read with AMR module technologies like the 60 Series and the Water SaveSource endpoint. There are two Cyble module choices: the Cyble Coder and the Cyble Sensor. The Cyble Coder can be configured for a two or three wire application, making it compatible with all major touch pad and AMR systems. The Cyble Sensor is a pulse output device to suit various remote reading applications. A Cyble module can be installed on any meter in the field without having to upgrade the register.

Made in the US.

Dimensions

| | Units | 5/8" | 5/8 x 3/4" | 3/4" SL* | 3/4" | 1" |
|-------------------------------------|-------|-------|------------|----------|-------|--------|
| A - Length | inch | 7 1/2 | 7 1/2 | 7 1/2 | 9 | 10 3/4 |
| | mm | 190 | 190 | 190 | 229 | 273 |
| B - Overall Height | inch | 5 | 5 | 5 | 5 | 5 |
| | mm | 128 | 128 | 128 | 128 | 128 |
| C - Centerline to left side | inch | 2 1/2 | 2 1/2 | 2 1/2 | 2 1/2 | 2 1/2 |
| | mm | 64 | 64 | 64 | 64 | 64 |
| D - Centerline to right side | inch | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 |
| | mm | 28 | 28 | 28 | 28 | 28 |
| Weight | lb | 3.8 | 3.8 | 3.8 | 4.4 | 5.6 |
| | kg | 1.7 | 1.7 | 1.7 | 2 | 2.6 |

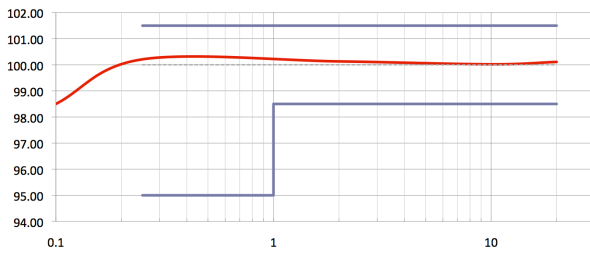
Flostar technical characteristics

| | Units | 5/8" | 5/8" x 3/4" | 3/4" | 1" |
|-----------------------------|-------|-----------|-------------|-----------|-------------|
| Normal flow range | gpm | 1/4-20 | 1/4-20 | 1/2-30 | 3/4-50 |
| | m3/h | 0.06-4.55 | 0.06-4.55 | 0.12-6.82 | 0.17-11.36 |
| Low flow rate – Qmin | gpm | 1/16 | 1/16 | 1/8 | 1/4 |
| | L/h | 15 | 15 | 29 | 57 |
| Register capacity | USG | | 10 000 000 | | 100 000 000 |
| | Cu Ft | | 1 000 000 | | 10 000 000 |
| | m3 | | 100 000 | | 100 000 |
| Sweep hand registration | USG | 0.1 | 0.1 | 0.1 | 1 |
| | Cu Ft | 0.01 | 0.01 | 0.01 | 0.1 |
| | L/h | 1 | 1 | 1 | 1 |
| Maximum working pressure | psi | 200 | 200 | 200 | 200 |
| | bar | 13.8 | 13.8 | 13.8 | 13.8 |
| Maximum working temperature | o F | 122 | 122 | 122 | 122 |
| | o C | 50 | 50 | 50 | 50 |

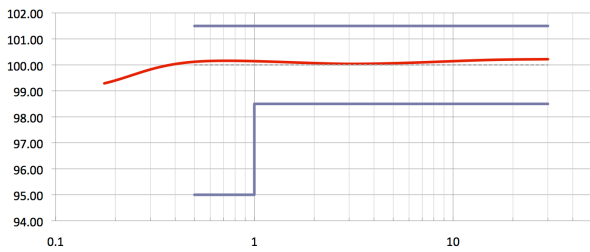
Flostar residential meter flow curves

Accuracy

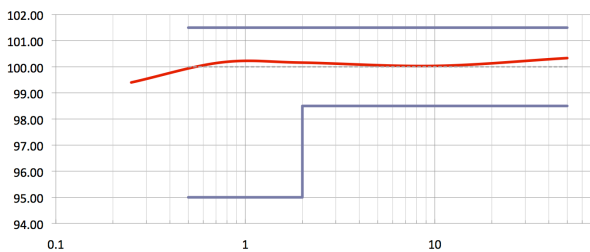
5/8" Flostar



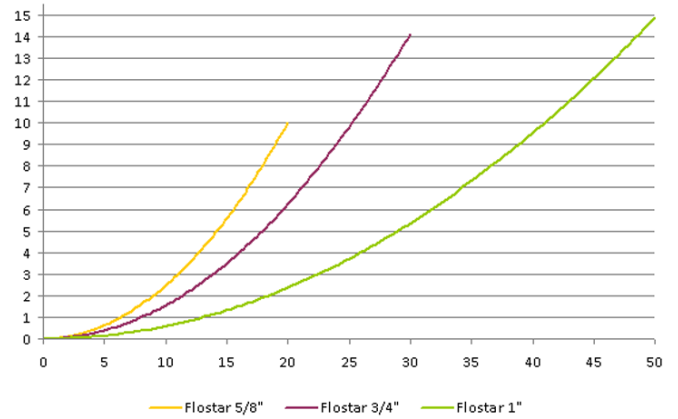
3/4" Flostar



1" Flostar



Pressure loss



Cyble Coder specifications

Cyble Coder

- > Industry standard ASCII protocol (Cyble Coder)
- > Can operate in either 2 wire or 3 wire mode
- > Compatible with all major touch pad readers and RF systems
- > Pulse Output (Cyble Sensor) optionally available
- > Solid state electronics immune to vibration and radio-magnetic interference
- > Guaranteed match of the register read with Cyble Coder
- > Patented technology field proven with over ten years experience
- > NEMA 4X rated either unlicensed or licensed

About Itron Inc.

Itron Inc. is a leading technology provider to the global energy and water industries. Our company is the world's leading provider of intelligent metering, data collection and utility software solutions, with nearly 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water. Our products include electricity, gas, water and heat meters; data collection and communication systems, including automated meter reading (AMR) and advanced metering infrastructure (AMI); meter data management and related software applications; as well as project management, installation, and consulting services. To know more, start here: www.itron.com



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