Itron

Knowledge to Shape Your Future

Flostar

Commercial and Industrial (C&I) Meter with Integrated 80W-i Endpoint

Introduction

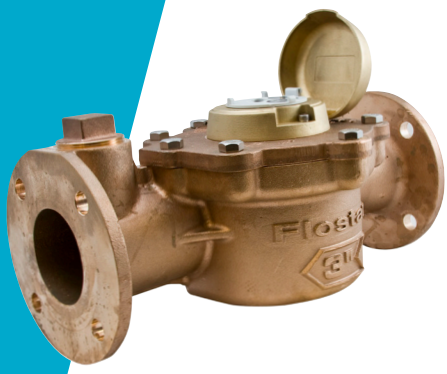
The Flostar commercial and industrial (C&I) water meter provides superior low-flow accuracy in any environment, yet it can still endure significant peak flows due to its rugged construction. Engineered for reliability and built upon almost 20 years of industry-leading design, Itron's Flostar meter has become the most popular single jet C&I water meter in the world. Add the wirelessly integrated 80W-i endpoint for an automated meter reading (AMR) solution that delivers measurement accuracy with Itron's proven module performance.

Flostar features & benefits

With the Flostar meter, precisely measuring consumption—at the wide range of flow rates typical of C&I customers—is possible. Designed from the ground up for reliability, the Flostar is a sound meter investment that typically requires little in terms of long-term maintenance. Certified under American Water Works Association (AWWA) C712 and NSF-61 approved, the Flostar C&I meter meets or exceeds stringent industry requirements for the utmost in deployment confidence.

With Flostar C&I 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 new integrated 80W-i endpoint, or with the Cyble module that works with other Itron water AMR products.
- Receive greater long-term reliability—few moving parts reduce the wear from water borne grit and particulates that can impact meter performance.
- Enable conservation efforts and programs by more accurately measuring water usage for your C&I customers.
- Easily install meters in a wide range of industry-standard lay and turbine lengths.
- Improve the efficiency of manual reading with a durable, easy-to-read register with impact resistant glass lens.
- Quickly repair meters in the field when necessary—a top loading design provides easy access to all components.
- Deploy products with that are compliant with industry regulations, including NSF-61 and American Water Works Association (AWWA) C712.
- Install the right meter for your C&I applications with meter sizes ranging from 1 1/2 inches through 6 inches.



> *Meter performance*

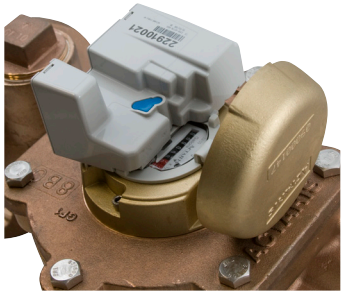
- *High accuracy at low flows*
- *Long-term reliability*
- *Ease of installation*
- *Meets AWWA standards*

> *Endpoint reliability*

- *Wireless integration*
- *Proven performance*
- *Leak and tamper alerts*
- *20 year battery*

> *80W-i endpoint*

> *Flostar 3" with the 80W-i*



> *Cyble AMR module*

Operating 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 alleviates the need for a straight pipe, calibration vane or a by-pass adjustment. As the impeller turns, a magnetic coupling on top of the shaft rotates the register gears. This direct magnetic coupling between the impeller and the register provides reliable measurement in any potable water environment. The register is protected from all outside elements by its hermetically-sealed, copper can and glass construction. Magnetic tampering is prevented by the placement of an anti-fraud ring in the register.

80W-i features & benefits

The new 80W-i AMR endpoint is used exclusively with Itron water meters such as the Flostar, MultiMag and Woltex meters and is an integral part of an end-to-end AMR system from Itron. Read by the various systems in our ChoiceConnect™ data collection suite, the 80W-i offers high-power capabilities, wireless integration and advanced leak, reverse flow and tamper detection and a 20-year battery life. The 80W-i is the ideal choice for easy AMR integration with the Itron Flostar C&I meters. With this endpoint, you can:

- Simplify installation procedures by mounting the 80W-i directly on meter register with its three locking tabs and mounting screw. A wireless connection to the register streamlines the process and eliminates traditional water intrusion points, making this device ideal for pit installations.
- Combine highly accurate meter consumption detection with proven AMR technology.
- Reliably gather AMR data with enhanced power output on every fourth bubble-up message; mobile reading performance improved when mounted in pit boxes with metal lids and fixed network coverage enhanced.
- Easily migrate your ChoiceConnect™ solution from handheld meter reading to mobile collection to fixed network technology as your business drivers warrant.
- Operate in the non-licensed 900 MHz RF band.
- Identify common tamper flags including cut cable, reverse flow and removal events.
- Actively detect in-home leaks to save water losses and reduce high bills
- Report up to seven register dials with resolution to 1/10th of a gallon.
- Ensure optimal performance in the field with a 20 year battery life.
- Rest easy with a 10/20 year product warranty.

Cyble

Cyble technology enables Flostar C&I 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 and the Cyble Sensor is a pulse output device, both suited for various remote reading applications. A Cyble module can be installed in the field without having to upgrade the register.

Made in the US.

Dimemsions

	Units	1 1/2 Std/TL	2" Std/TL*	3" Std/TL	4" Std/TL	6" Std/TL
A - Length	inch	13/10	15 1/4/10	17/12	20/14	24/18
	mm	330/254	387/254	432/305	508/356	610/457
B - Overall Height	inch	7	7 1/2	9	10 1/2	12
	mm	180	191	230	264	305
C - Centerline to left side	inch	4 1/4	4 1/4	6 1/2	7 1/4	9
	mm	106	106	165	186	226
D - Centerline to right side	inch	2 3/4	3 1/2	3 3/4	4 1/2	5 1/2
	mm	69	86	95	114	140
Weight	lb	25/23	27/24	62/54	94/87	156/140
	kg	1.4	1.7	28.1/24.5	42.6/39.5	70.8/63.5

**Also available in a 17"LL"*

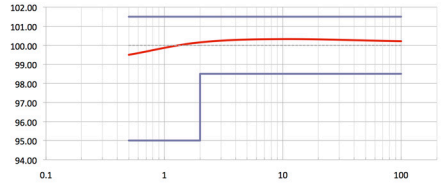
Flostar technical characteristics

	Units	1 1/2”	2	3”	4”	6
Normal flow range	gpm	1.5-100	2-160	2.5-320	3-500	4-1000
	m3/h	0.34-23	0.45-36	0.57-73	0.68-110	0.91-220
Low flow rate – Qmin	gpm	1/2	1/2	1/2	3/4	1 1/4
	L/h	114	114	114	170	284
Register capacity	USG	100 000 000			1 000 000 000	
	Cu Ft	10 000 000			100 000 000	
	m3		1 000 000 000			10 000 000 000
Sweep hand registration	USG	1	1	10	10	10
	Cu Ft	0.1	0.1	1	1	1
	m3	0.01	0.01	0.01	0.01	0.1
Maximum working pressure	psi	200	200	200	200	200
	bar	13.8	13.8	13.8	13.8	13.8
Maximum working temperature	o F	122	122	122	122	122
	o C	50	50	50	50	50
Flange size (ANSI 150)		1 1/2” oval	2” oval	3” round	4” round	6” round

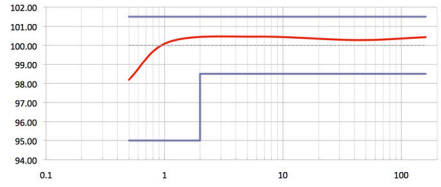
Flostar residential meter flow curves

Accuracy

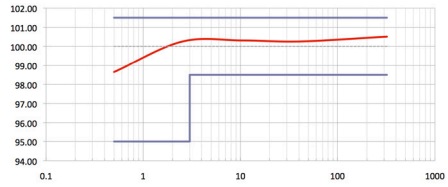
1 1/2” Flostar



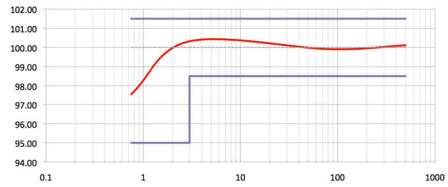
2” Flostar



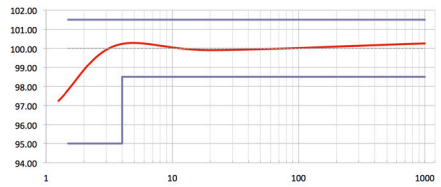
3” Flostar



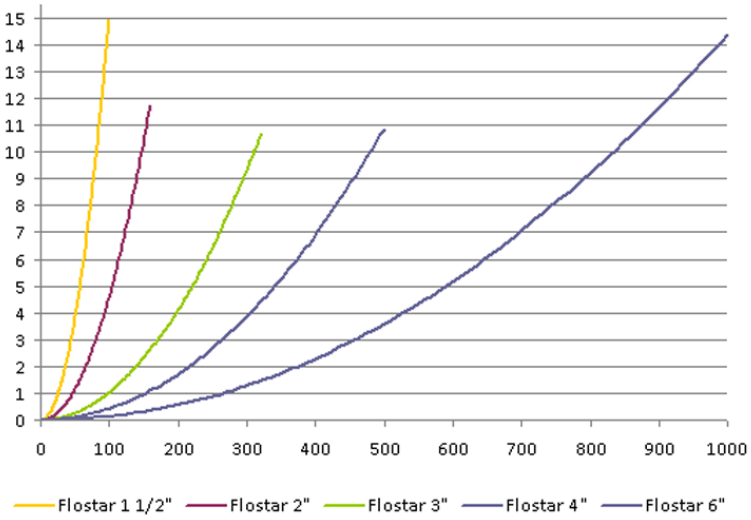
4” Flostar



6” Flostar



Pressure loss



80W-i specifications

Functional

> Power source: One “D” cell lithium battery rated for an average life of 20 years
> Operating temperatures: -4°F to +140°F (-20° C to +60°C)
> Storage temperatures: -40°F to +158° F (-40°C to +70°C)
> Humidity limits: 0 to 100% (submersible)
> Meter compatibility: Itron Flostar, Multimag and Woltex meters

Transmission parameters

> Data message: Multiple RF channel transmissions of meter register value, cut cable tamper, removal tamper, reverse-flow and system leak status messages broadcast every seven seconds
> Transmitter frequencies: 910 – 920 MHz
- Transmit Power: A repeating sequence of three transmit cycles at + 10 dBm (10 milliwatts) followed by one cycle at +24 dBm (1/4 watt). Each transmission is spaced at seven second intervals.

Approved reading devices

> Walk-by system: Itron G5, FC200 and FC300 radio equipped handheld computers
> Drive-by system: Itron Mobile Collection System and Mobile Collector Lite
> Network system: Fixed Network
> Minimum software versions:

MV-RS: v7.7
- v7.8 for MC Lite
- v7.8.6 for FC200SR

FCS : v1.6
- v1.8 for FC200SR

PremierPlus4: v3.2
Integrator: v5.2

Approved programming devices

> FC200SR and FC300 with Endpoint-Link or Endpoint-Link Pro: v5.3.1 or higher

Physical attributes

> Dimensions:
- Length 3”; Width 5 ¼”; Height 2 ½”

> Weight:
- 13 oz.

Mounting requirements

> Meter register housing must be the three tab design

Regulatory and standards

> FCC Part 15.247
> Industry Canada #210, Section 6.2.2(o)

About Itron Inc.

At Itron, we’re dedicated to delivering end-to-end smart grid and smart distribution solutions to electric, gas and water utilities around the globe. Our company is the world’s leading provider of smart metering, data collection and utility software systems, with nearly 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water. Our offerings include electricity, gas, water and heat meters; network communication technology; collection systems and related software applications; and professional services. To realize your smarter energy and water future, start here: www.itron.com

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