

# Specification Sheet

# C700 Meter with Inside RF Transmitter



## Description

**Operation.** The C700 is an oscillating piston type positive displacement water meter. Each piston revolution in the meter's measuring chamber is equivalent to a known volume of water. The piston movement is transferred by a magnetic drive to the Inside RF sealed register.

**Compliance to Standards.** The C700 fully complies with American Water Works Association Standard C700, latest revision and is California Department of Weights and Measures approved. The C700 EnviroBrass II and polymer case models are NSF-61 certified and comply with California Proposition 65 lead free requirements.

**Application.** The meter is for use in submetering installations with POTABLE COLD WATER up to 120° F (50° C) and working pressure up to 150 psi.

**Register.** Inside RF incorporates a 902-928 MHz, frequency hopping, spread spectrum radio transmitter within a sealed register. The polycarbonate register lens is roll sealed with a "L" shaped gasket to the 90% copper seamless cup. A replaceable battery is housed in a covered and sealed cavity at the register top. Large, clear odometer wheels allow visual reading when required. The applicable size, model, registration, part number and manufacturing date code are printed on the register dial face.

**Interrogation System.** Transmitted data is received and processed by the Inovonics Corporation TapWatch™ System. Hundreds of thousands of TapWatch System components are installed nationwide. TapWatch components include Repeaters, Receiver and DCC (Data Concentrator & Communicator), all FCC certified and operating in the 902-928 MHz range.

## Sizes 5/8" to 2"

Inside RF meters set a new standard for fixed network RF reading in multi-family submetering:

- FCC-certified equipment, unlicensed frequency
- Transmitting register factory tested as a single unit
- No transmitter wiring
- Transmitter environmentally protected
- Simplified installation with minimal resident disruption
- Error-free site set-up
- High accuracy positive displacement measurement
- Available in polymer (sizes 5/8" and 3/4"), waterworks bronze or low lead EnviroBrass™
- Electronic tamper detection/reporting
- On-site replaceable battery
- Compatible with systems for gas and electric metering

## Specifications

### Inside RF Transmitter

Operating Frequency Range	902-928 MHz
Modulation	Frequency Hopping, Spread Spectrum
Open Field Range	2500 Feet
Battery Type	2/3 A-size LiMnO2
Typical Battery Life	8 years average, operating at 70 to 90°F (20 to 30°C).
Transmission Interval	Hourly

### Register Materials

Register Lens	Polycarbonate
Register Cup	Copper Alloy

### Registration

#### 1 Rev of Sweep Hand

	5/8" & 3/4"	1"	1 1/2"	2"
US Gallons	10	10	100	100
Cubic Feet	1	1	10	10
M3 Cubic Metres	1/100	1/10	1/10	1/10

#### Capacity (millions)

US Gallons	10	10	100	100
Cubic Feet	1	1	10	10
M3 Cubic Metres	1/100	1/10	1/10	1/10

### RF Output Value

US Gallons	1	1	10	10
Cubic Feet	0.1	0.1	1	1



**Magnetic Drive.** The magnetic drive design facilitates coupling between the measuring chamber and the external register. The coupling is absolute.

**Construction.** The meter consists of a straight through-flow designed AWWA bronze, EnviroBrass or polymer main case, magnetically driven register/transmitter, dual inlet measuring chamber, vertically grooved oscillating piston, high capacity strainer, for bronze models, removable frost proof or standard bottom plate, full rubber liner, body bolts with integral washers, and for polymer models, removeable top plate and o-ring. The 2-piece snap-fit measuring chamber is of a top and bottom inlet, side outlet design and features a unique self-flushing sediment well. Other features include a removable contoured division plate, captive drive bar and high torque magnet complete with a nylon bushing. The flow stream balanced piston has a unique thrust bearing insert and features a Turbulence Seal™ system which passes debris while sustaining the most linear accuracy curve in the industry. Each register is secured to the main case with a TORX® screw to eliminate tampering.

**Connections.** 5/8" through 1" meters have external straight threads conforming to ANSI B2.1. Bronze or EnviroBrass coupling nuts and tailpieces are available. Both coupling nuts and tailpieces have external taper pipe threads conforming to

ANSI B2.1, and lengths and thread sizes as specified by applicable AWWA standards. 1 1/2" and 2" meters are available either with 2-bolt oval flanged or internal threaded end connections. Both bronze and cast iron oval companion flanges are available, faced, drilled and tapped with ANSI B2.1 internal taper pipe thread. For threaded end meters bronze coupling nuts and tailpieces are available, with external taper pipe threads conforming to ANSI B2.1 and lengths and thread sizes as specified by AWWA standards.

**Maintenance.** The measuring chamber assembly can be removed, repaired or replaced without removing the main case from the service line. Pre-tested measuring chamber assemblies are available for exchange or purchase. In addition, ABB Water Meters maintains a fully equipped and staffed repair facility in Ocala, FL.

**Installation.** Meter should be installed in a clean pipeline, free from any foreign materials. Install the meter in horizontal or inclined lines with the direction of flow as indicated by the arrow cast in the meter case.

### Performance & Dimensions

Size	-----BRONZE or ENVIROBRASS II-----					-----POLYMER-----	
	5/8"	3/4"	1"	1 1/2"	2"	5/8"	3/4"
95%-101% Accuracy (gpm)	1/8	1/4	1/2	1 1/2	2	1/4	1/2
98.5% -101.5% Accuracy (gpm)	1/4-20	1/2-30	3/4-50	5-100	8-160	1-20	2-30
Max Continuous Flow (gpm)	15	15	25	50	80	15	15
Max Flow (gpm)	20	30	50	100	160	20	30
Operating Pressure (psi)	150	150	150	150	150	150	150
Operating Temperature (°F)	120	120	120	120	120	120	120
Length (inches)	7 1/2	9	10 3/4	F: 13 T: 12 5/8	F: 17 T: 15 1/4	7 1/2	9
Width (inches)	4 1/4	3 7/8	6 15/16	F: 8 1/2 T: 7 1/2	F: 8 1/4 T: 8 3/4	4 3/4	5
Height (inches)	6 7/8	7 5/8	7 7/8	10 1/8	11 7/8	5 3/8	5 15/16
Height, bottom to center line (inches)	1 1/2	2 1/16	2 1/8	2 1/8	1 3/4	1 3/8	1 15/16



## ABB Water Meters

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The company's policy is one of continuous product improvement and the right is reserved to modify the specifications contained herein without notice. These products have been manufactured with current technology and in accordance with applicable AWWA Standards.

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