



Specification Sheet

C700 Meter with Insider™ 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 InsiderR 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 low-lead bronze 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. InsiderR 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"

InsiderR 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", 3/4"B, 3/4"), waterworks or low lead bronze
- Electronic tamper detection/reporting
- On-site replaceable battery
- Compatible with systems for gas and electric metering

Specifications

InsiderR 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°F to 90°F (20°C 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
Cubic Meters	1/100	1/10	1/10	1/10

Capacity (millions)

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

RF Output Value

Pulse Output per US Gallons	1	1	10	10
Pulse Output per 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 waterworks or low-lead bronze or polymer main case, magnetically driven register/transmitter, dual inlet measuring chamber, oscillating piston, high capacity strainer, for bronze models, removable frost proof or standard bottom plate, full rubber liner, body bolts with integral washers. The polymer models have a removable top plate and o-ring. The 2-piece snap-fit measuring chamber has 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 Turbulance Seal™ system which passes debris while sustaining the most linear accuracy curve in the industry.

Connections. 5/8" through 1" meters have external straight threads conforming to ANSI B2.1. Waterworks or low-lead (3/4" and 1" only) bronze 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 or replaced without removing the main case from the service line. Pre-tested measuring chamber assemblies are available for exchange or purchase. In addition, AMCO WMS 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	-----WATERWORKS or LOW-LEAD BRONZE -----					-----POLYMER-----	
	5/8"	3/4"	1"	1 1/2"	2"	5/8", 3/4" B	3/4"
95%-101% Accuracy (gpm)	1/8	1/4	3/4	1 1/2	2	1/4	1/2
98.5% -101.5% Accuracy (gpm)	1-20	2-30	3-50	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 1/2	4 1/2	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