

## 1-1/2" and 2" Sizes

### SCOPE

These specifications set forth the minimum acceptable design criteria and performance requirements for Turbine-type cold water meters used in residential settings, including the following potential service applications and general considerations:

- Intended where a moderately wide flow range is anticipated
- Measurement of water usage for typical billing applications
- Measurement intended for typical commercial, residential and industrial applications
- Measurement of constant low to extended high flow usage

### CONFORMANCE TO STANDARDS

The meter package shall meet or exceed all requirements of AWWA Standard C701 for Class II turbine meter assemblies and exceeds AWWA C700 Residential Standard using Sensus Turbo technology. Each meter assembly shall be performance tested to ensure compliance.

The meter package shall meet or exceed all requirements of NSF/ANSI Standard 61, Annex F and G.

### MAINCASES

The meter maincase shall be of epoxy coated ductile iron composition. The epoxy coating shall be provided as standard fusion-bonded and adhere to NSF for nonlead regulation compliance.

### PERFORMANCE

The meter assembly shall have performance capability of continuous operation up to the rated maximum flows as listed below without affecting long-term accuracy or causing any undue component wear. Maximum headloss through the meter / strainer assembly shall not exceed those listed in the following table per meter size..

### OPERATING CHARACTERISTICS

Meter Size	Low Flow (95% Min.)	Operating Range (98.5 - 101.5%)	Pressure Loss (Not to Exceed)
1-1/2"	.75 GPM	2 to 150 GPM	6.7 PSI @ 150 GPM
2"	1.0 GPM	2.5 to 200 GPM	7.0 PSI @ 200 GPM
2" without Strainer	1.0 GPM	2.5 to 200 GPM	4.4 PSI @ 200 GPM

### MEASURING CHAMBER

The measuring chamber shall consist of a measuring element, removable housing, and all-electronic register. The measuring element shall be mounted on a horizontal, stationary stainless steel shaft with sleeve bearings and be essentially weightless in water. The measuring element comes integrated with the advanced Floating Ball Technology design. The measuring chamber shall be capable of operating within the above listed accuracy limits without calibration when transferred from one maincase to another of the same size. The measuring shall be so configured to capture all flows as specified above.

### DIRECT MAGNETIC DRIVE SYSTEM

The direct magnetic drive shall occur between the motion of the measuring element blade position and the electronic register. The OMNI direct drive system with Floating Ball Technology is designed to extend service life, enhance low flow sensitivity and provide extended flow capacity and overall accuracy of the meter assembly. Any and all additional intermediate, magnetic or mechanical, drive couplings are not acceptable.

### ELECTRONIC REGISTER

The meter's register is all-electronic and does not contain any mechanical gearing to display flow and accurate totalization. The electronic register includes the following partial list of features:

- AMR resolution units fully programmable
- Large, easy-to-read LCD display
- 10-year battery life guarantee

### MAXIMUM OPERATING PRESSURE

The meter assembly shall operate properly without leakage, damage, or malfunction up to a maximum working pressure of 200 pounds per square inch (psig).

## STRAINERS

The meter strainer shall be integral and cast as part of the meter's maincase. The strainer's screen shall have a minimum net open area of at least two (2) times the pipe opening and be a V-shaped configuration for the purpose of maintaining a full unobstructed flow pattern. The strainer body shall be a coated ductile iron fusion-bonded epoxy identical to that of the meter's maincase. All fasteners shall be stainless steel capable of maintaining the following static pressure ratings and physical dimensions:

Meter Size	Maximum Operating Pressure	Centerline to Strainer Base	Overall Length (Not to Exceed)
1-1/2"	200 PSIG	2-5/16 INCHES	13 INCHES
2"	200 PSIG	2-5/16 INCHES	17 INCHES
2" without strainer	200 PSIG	2-5/16 INCHES	10 INCHES

## STRAIGHTENING VANES

A straightening vane assembly is mandatory and shall be positioned directly upstream of the measuring element. The straightening vane assembly shall be an integral component of the measuring chamber.

## CONNECTIONS

Flanges for the 1-1/2" and 2" size meter assemblies shall be of the 2-bolt oval flange configuration.

## CERTIFICATIONS AND MARKINGS

All sizes of meter packages shall display the sizes, model, manufacturer name, and direction of flow. Such display shall be cast on the side of the meter maincase.

## GUARANTEE AND MAINTENANCE PROGRAM

Meters shall be guaranteed against defects in material and workmanship for a period of one (1) year from date of shipment. In addition, the meter supplier shall submit nationally published literature clearly outlining its factory maintenance program and current price schedule covering complete measuring chamber exchange.

## INTENT

Subject meter specifications are designed to establish minimum guidelines for selecting an extremely critical metering device. Areas of concern to be evaluated in the selection process include, but are not limited to, ease of installation, operational features and benefits, readability and future system maintenance expense. A design, which reflects longevity of proper operation in all elements and high degree of sustained accuracy within the entire range of the meter assembly, is to be considered mandatory. Enhanced accuracy levels and performance are desired and will not be compromised.

## RECOMMENDATION

Sensus

OMNI R<sup>2</sup> Meter