

4", 6", 8" and 10" Sizes (UL Listed and FM Approved)

SCOPE

These specifications set forth the minimum acceptable design criteria and performance requirements for cold water meters - Fire Service type consisting of a Class II turbine type meter, and a ductile iron strainer assembly. This meter assembly is intended where an extremely wide flow range is required and where measurement of both domestic and fire service water usage is desired.

CONFORMANCE TO STANDARDS

The meter package shall meet or exceed all requirements of AWWA Standard C703 for Class II. The measuring shall be so configured to capture all flows as specified, without the requirement of an automatic valve. Each meter assembly shall be performance tested to ensure compliance.

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

MAINCASES

The meter maincase shall be of an epoxy coated iron composition. The epoxy coating shall be provided as standard fusion-bonded and adhere to NSF for non-lead 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. The meter assembly shall also provide a 25% flow capacity in excess of the maximum flows listed for intermittent flow demands. 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%)	Intermittent Flows (98.5 - 101.5%)	Pressure Loss (Not to Exceed)
4"	0.75 GPM	1.5 to 1000 GPM	1250 GPM	6.4 PSI @ 1000 GPM
6"	1.5 GPM	3.0 to 2000 GPM	2500 GPM	6.7 PSI @ 2000 GPM
8"	2.5 GPM	4 to 3500 GPM	4700 GPM	5 PSI @ 3500 GPM
10"	3.5 GPM	5 to 5500 GPM	7000 GPM	7 PSI @ 5500 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 titanium 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, without the requirement of an automatic valve.

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. 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
- Pulse output frequency fully programmable
- Integral data logging capability
- Integral resettable accuracy testing feature
- 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 175 pounds per square inch (psig).

STRAINERS

Each meter assembly shall have a separate UL (Underwriters Laboratories) Listed and FM (Factory Mutual) approved external fire service strainer as a part of the meter package. The strainer's screen shall have a minimum net open area of at least four (4) times the pipe opening and be a V-shaped stainless steel screen for the purpose of obtaining a full unobstructed flow pattern. The strainer body shall be coated iron with stainless steel fasteners capable of maintaining the following static pressure ratings and physical dimensions:

Meter Size	Maximum Working Pressure	Centerline to Strainer Base	Compact Overall Length (Not to Exceed)	Standard Overall Length (Not to Exceed)
4"	175 PSIG	4-3/4 INCHES	33 INCHES	51-7/8 INCHES
6"	175 PSIG	5-3/4 INCHES	45 INCHES	67-5/8 INCHES
8"	175 PSIG	6-3/4 INCHES	53 INCHES	77 INCHES
10"	175 PSIG	8-1/2 INCHES	68 INCHES	90 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

The meter assemblies shall have flanges of the Class 125 round type, flat faced and shall conform to ANSI B16.1 for specified diameter, drilling and thickness.

CERTIFICATIONS AND MARKINGS

All sizes of meter packages shall be UL (Underwriters Laboratories) Listed and FM (Factory Mutual) approved as being accepted for use on fire service lines and domestic water use. For such applications, the meter shall have a UL/FM listed and approved strainer immediately upstream of the inlet flange. The meter shall have an identification tag affixed indicating such acceptance and the strainer shall also bear such acceptance symbols and markings on the casting.

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 should not be compromised.

RECOMMENDATION

Sensus OMNI F² Meter.

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