

Hydrant Meter Specification

Scope

This specification covers the cold-water hydrant meter in the 3” size. These specifications are in compliance with AWWA C701 standard with certain additions as noted below. All specifications meet or exceed the latest revision of AWWA C701

The intended use for these meters is in the measurement of potable water for applications where flow is consistently moderate to high. Meters must be designed for applications where accuracy is an essential part of maintaining revenue.

Operation

Meter shall have a design that allows water to flow straight through the measuring element where it turns a rotor at a rate in direct proportion to the quantity of water flowing through the meter. The straight-through design shall allow high volumes to flow with a minimum of head loss.

During low flow, a tungsten carbide bearing shall float against a stainless steel shaft; during high flows, a tungsten carbide bearing shall gently move back against a second stainless steel shaft. During medium flows, the rotor shall float between both tungsten carbide bearings floating in the water on sapphire bushings.

Operating Characteristics

Meter Size	Low Flow (GPM) (95% Minimum)	Normal Range (GPM) ± 1.5%	Intermittent High Flow (GPM) ± 1.5%
3”	5	8 – 500	625

Meters shall have performance capabilities of continuous operation up to the rated maximum flows as outlined above without affecting long-term meter accuracy caused by undue wear. Meter shall also be rated for a 25% flow capacity in excess of the maximum flow listed above. This would be for intermittent high flow capacity only.

Main Case

Main case shall be epoxy coated aluminum for light weight. Size and direction of the flow shall be cast, in raise characters, on both sides of main case.

Measuring Element

The measuring element shall be of unitized construction. The complete measuring element shall consist of three basic parts: rotor assembly; calibration vane and unitized straightening vanes.

To simplify maintenance, the meter shall be designed to allow quick, easy, in-line exchange of the measuring element without removing the main case from the installation.

The measuring element shall utilize tungsten carbide bearings and sapphire bushings to minimize wear and increase accuracy life.

Registers

Registers shall be magnetic driven straight reading, permanently sealed by the manufacturer. This seal shall provide three sealing surfaces for the register glass to ensure complete protection from moisture. The register assembly shall have a red triangle hand on the face to indicate low flow usage and a large red sweep hand for testing. The glass shall be heat treated for superior impact resistance.

The register shall be attached to the main case by a unique bayonet locking mechanism secured by a tamper resistant pin protecting it from unauthorized removal.

All meters shall be compatible and upgradeable to Visual Remote Read LCD Devices, Non-Contact Scan Read devices and Radio Read modules without removal from service. All systems will be comprised of "Solid State" electronic components and meet AWWA C707.

Register box and lids

Boxes and lids shall be made from a durable thermoplastic construction or bronze and as an option allow the register to be locked.

Pressure Test

Meters shall be guaranteed to operate successfully at a working pressure of 175 PSI without leakage or damage to any part.

Calibration vane

The measuring element shall be designed to allow accuracy calibration without changing gears. The calibration change shall be a minimum of 6%. The adjusting vane shall be located under the register assembly that provides a locking mechanism that secures it from unauthorized tampering.

Meter Serial Number

The meter serial number shall be imprinted on the meter top case and on the register box lid. The first two numbers of the serial number shall denote the year of manufacture. No numbers shall be duplicated.

Dimensions

Meter laying length for 3" size: 16"

Weight

Meter shall not weight more than 15 lbs

Connections

2-1/2" National Standard for fire hose coupling thread, female and male couplings.

External Bolts

All external bolts and washers shall be of a stainless material.

Guarantee

The meter manufacturer must have manufactured turbine meters of similar design concepts for a minimum of five (5) years. Meters shall be guaranteed against defects in material and workmanship for a period of one (1) year from the date of shipment.

Maintenance Program

The meter manufacturer shall offer a maintenance exchange program for exchanging top case assemblies.