



COLD-WATER METERS/ SOLID STATE METERS

SIZES: $\frac{5}{8}$ " - 2"

GENERAL

All cold water meters (solid state type $\frac{5}{8}$ " - 2") furnished shall be produced from an ISO 9001C manufacturing facility and shall meet or exceed the accuracy requirements specified in the "Standard Specifications for Cold Water Meters" C715 latest revision issued by AWWA.

LEAD FREE LEGISLATION

The utility requires that all water meters submitted in this proposal be compliant with NSF/ANSI 61, which exceeds the requirements of NSF/ANSI 372 that became effective January 2014:

- > The utility wishes to ensure the safety of its drinking water.
- > The utility wishes to safeguard its investment in metering infrastructure.
- > Meters shall be made of "lead free" high-copper alloy as defined by NSF/ANSI 61.

TYPE

Only meters featuring solid state metrology will be accepted because of enhanced low-flow accuracy performance and extended accuracy over meter life.

MEASUREMENT TECHNOLOGY

The measurement technology shall be based on ultrasonic sensing featuring no moving parts.

SIZE, CAPACITY, LENGTH

The meter's size, capacity, and length shall be as specified in AWWA Standard C715 (latest revision).

MAINCASE

The meter maincase shall be cast from NSF/ANSI 61 certified lead free alloy containing a minimum of 85% copper. Plastic maincases or flow tubes are not acceptable as the spuds are susceptible to cross-threading or breaking during installation, or from pipe stress over time. The serial number should be displayed in a permanent location on the register. Meter markings shall indicate size, model, direction of flow, and NSF 61 certification.

All lead free maincases shall be guaranteed free from manufacturing defects in workmanship and material for the life of the meter.

All maincase screws or bolts shall be of 300 series non-magnetic stainless steel to prevent corrosion.



ELECTRONIC REGISTER

The solid state meter electronic enclosure shall be constructed of a durable engineered composite designed to last the life of the meter. The meter shall provide a fully potted wire connection for use with AMR/AMI devices.

ENVIRONMENTAL

The solid state meter must feature fully potted electronics and battery as well as carry an IP68 rating for submersion in flooded meter pits.

REGISTRATION

The register shall provide at least a 9-digit visual registration at the meter.

The register shall provide an 8-digit meter reading for transmission through the RF AMR/AMI MIU.

The register shall employ a visual LCD leak detection indicator as well as provide remote leak detection through an ASCII format to the RF AMR/AMI MIU.

The register shall provide reverse flow detection, communicated as ASCII format data to the RF AMR/AMI MIU.

The register shall provide an indication of days of zero consumption, communicated as ASCII format data to the RF AMR/AMI MIU.

The register should accumulate and register consumption without connecting to a receptacle or RF AMR/AMI MIU.

The register shall display flow rate information (interleaved with the current meter reading).

The register shall subtract reverse flow from the total registration.

STRAINERS

Solid state meters shall not require a strainer for accurate operation.

PERFORMANCE

Meter manufacturer's solid state meters shall exceed AWWA C715 accuracy standards and warrant their published accuracy levels for the life of their meters. Each meter shipment must be accompanied by factory test data showing the accuracy of the meter as tested at their factory.

MANUFACTURER

Solid state meters shall be assembled and tested within the United States. Manufacturers may be required to provide proof of where and what percentage of the meter is manufactured in the United States.

Manufacturers shall be a member of AWWA with a minimum of twenty-five (25) years of field and production experience in water measurement technologies and serving water utilities in the United States.

SYSTEMS GUARANTEE

All solid state meters shall be guaranteed compatible to the following Neptune AMR/AMI systems – R900®, R450™, and cellular MIU (CMIU™) – without special programming of the meter.

TECHNOLOGY PREFERENCE

It is the utility's preference that the solid state meter technology provided be ultrasonic-based technology featuring continuous measurements (> 4x per second) to ensure desired accuracy at low-end flows and during typical start/stop conditions.

Acceptable meters shall be Neptune MACH 10® or approved equal.



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