Sample Specification

Water Meters: 5/8" X 1/2" and 5/8" X ¾" Low Lead Positive Displacement Meters

Scope:

This Specification covers low lead body cold-water positive displacement meters compatible with open architecture radio read equipment, in 5/8" size and the materials employed in their fabrication. These meters shall offer a low lead alternative that encourages conservation, recycling, water purity and green lifestyles.

AWWA Standards:

- All Meters shall meet or exceed the latest version of the American Water Works Association Standard C700 for Cold Water Meters - Displacement Type, Bronze Main Case.
- All Meters equipped with encoder registers shall meet or exceed the American Water Works Association Standard C707 for Encoder-Type Remote-Registration systems for Cold Water Meters equipped with an open architecture radio MIU or similar device.

NSF-61 Standards:

- All Meters shall comply with the latest NSF-61 requirements

State No Lead and Low Lead Initiatives Standards:

- All Meters shall comply with the latest state low lead initiatives due to their unique design, which incorporates low lead bronze for all wetted surfaces in the meter.

Main Case:

- Main cases shall be composed of low lead bronze that meets the latest NSF requirements.
- All materials used in the construction of the main cases shall have sufficient dimensional stability to retain operating clearances at working temperature up to 105

degrees F.

- The main case must incorporate the measuring element inside the standard 7-1/2" laying length specified by the AWWA C-700 standard.
- The manufacturer shall warranty the main case for a period of 25 years from the date of shipment.
- The meter serial number shall be stamped on the main case of the meter.

Bottom Plate:

- Bottom plates shall be made of cast iron or a suitable engineered plastic or bronze as required by the utility.
- The bottom plate shall utilize a gasket seal.
- The bottom plate shall utilize stainless steel bolts as a means of securing the bottom plate to the main case.

Measuring Chamber:

- Measuring chambers shall be made of a suitable engineered polymer as described in AWWA C-700.
- Chamber shall be of the Nutating Disc style.
- The measuring chamber shall incorporate a locating device that aligns to the main case of the meter to ensure proper chamber orientation and alignment.
- The measuring chamber shall be locked into place with a single unit strainer/chamber retainer.
- The chamber shall be designed for long life, to reduce wear and must not exceed the following nutations per gallon.

Size	5/8 "
Nutations Per Gallon	58

Headloss:

- Meters shall not exceed seven PSI pressure loss at AWWA safe maximum operating capacity.

Accuracy:

- Meters shall be 100% factory tested for accuracy and have the factory test results provided with each meter.
- Meters shall be pressure tested to ensure against leakage.
- Meters shall comply with the latest AWWA C700 accuracy requirements as specified in the standard for a period of five years from the date of installation.
- Additionally, the manufacturer shall warranty the meter to meet or exceed AWWA repaired meter accuracy standards per the following:

Size of Meter	Years of Warranty or	Millions of Gallons Registered
5/8"	15	1.75

Strainers:

- All meters shall be provided with strainer screens installed in the meter.
- Strainers shall be rigid, fit snugly, be easy to remove, and have an effective straining area at least twice that of the inlet opening.

Register Assembly:

- Registers shall be magnetic driven, straight reading, and permanently sealed by the manufacturer.
- The register shall provide for visual registration at the meter.

Register Assembly:

- The numerals on the number wheels of the register shall not be less then 1/4" in height and should be legible at a 45-degree angle.
- Registers shall incorporate a center sweep test hand and a low flow/leak indicator.
- The register shall be secured to the meter main case by a tamper resistant bayonet-style locking mechanism protecting against unauthorized removal of the register.
- No special tools shall be required to remove the register.

Encoder Register Technology:

- The register shall be a true absolute encoder register that provides direct electronic transfer of meter reading information to any number of AMR/AMI device options.

Minimally, a Radio MIU device shall read the encoder register.

- The encoder register shall send data in ASCII format (American Standard code for Information Interchange) to the interrogation device.

- The encoder register shall transmit the complete odometer wheel reading, 6 digits and all 10 positions. An 8-digit register identification number that has been factory set and never duplicated shall be sent to the reading device.

- A Locating Clip shall be affixed to each of the odometer wheels in close proximity to the Segment Pads located on the encoders printed circuit board. When an AMR device interrogates the encoder register, the microprocessor shall determine the true position of each number wheel, encode the reading and send it to the AMR device. The Locating Clip shall not make physical contact with the Segment Pad in order to prevent wear of the clip and pads.

- For installations where moisture is not a concern, the encoder register shall be field installed to the AMR/AMI interrogation device. The register shall employ screws for ease of wire assembly and a dust cover equipped with seal wire holes for security.
- For pit set installations, the encoder register shall be permanently factory sealed with an epoxy coating of all terminal connections. Encoder registers requiring field sealing of the wire connection or oil-filled will not be allowed.
- All wiring for radio MIU's shall be installed and potted by the manufacturer.
- In line waterproof connections are permitted during installation for pit set encoder registers with Radio MIU's to facilitate installation.