
ELECTROMAGNETIC FLOW METER, LIQUID, SINGLE-CHANNEL

SECTION 407113 - ELECTROMAGNETIC FLOW METER, LIQUID, SINGLE-CHANNEL

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. This section describes the requirements for a flow sensor.
- B. Under this item, the contractor shall furnish and install the flow measurement equipment and accessories as indicated on the plans and as herein specified.

1.02 QUALITY ASSURANCE

- A. Referenced Standards and Guidelines - Complies with applicable portions of ANSI/AWWA Standards and NSF/ANSI/CAN Standard 61, Annex G. There are currently no AWWA standards that specifically address electromagnetic metering.

- 1. Flow measurement function complies with Industry Standards

- a. ANSI B16.5 Class 150 RF
 - b. AWWA Class B
 - c. NEMA 4X/6P (IP67/IP68)
 - d. CSA

1.03 SUBMITTALS

- A. The following information shall be included in the submittal for this section:
 - 1. Outline dimensions, conduit entry locations and weight
 - 2. Customer connection and power wiring diagrams
 - 3. Data sheets and catalog literature for microprocessor-based transmitter and sensor
 - 4. Interconnection drawings
 - 5. Installation and operations manual
 - 6. List of spare parts
 - 7. Complete technical product description including a complete list of options provided

1.04 DEFINITIONS

- A. Transmitter – Device used for increasing the power of a signal. It does this by taking energy from a power supply and controlling the output to match the input signal shape but with larger amplitude.

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- B. Sensor Coils – Also called an “induction loop”, an electromagnetic communication or detection system which generates a magnetic field to induce an electrical current in a nearby wire.

1.05 WARRANTY

- A. The manufacturer of the above specified equipment warrants the Product to be free from defects in materials and workmanship appearing within the earlier of either: One (1) year after installation; or one (1) year and six (6) months after shipment from manufacturer.

1.06 BUY AMERICAN REQUIREMENTS

- A. Provide certificates to show that all products meet the following requirements.
 - 1. American Iron and Steel (AIS)
 - 2. Build America, Buy America Act
- B. See Supplementary Conditions for details.

PART 2 – PRODUCTS

1.06 APPROVED MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - 1. Badger Meter
 - 2. Rosemount
 - 3. Or Equal

1.07 OPERATING CONDITIONS

- A. System Components
 - 1. Metering Tube (Sensor)
 - 2. Transmitter

PART 3 - EXECUTION

1.08 INSTALLATION

- A. Follow manufacturer’s recommendation for installation. Installation will conform to the guidelines provided by the Installation & Operation Manual.

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- B. Straight pipe requirement shall follow manufacturer's specifications.

1.09 CALIBRATION

- A. Each meter shall be hydraulically calibrated in an ISO 17025-certified testing facility, which utilizes a computerized gravimetric testing method with a measuring uncertainty of 0.1%.
- B. Each meter shall be provided with a calibration certificate indicating the measured error (percent deviation) at three different flows, respectively equivalent to 25%, 50% and 75% of the nominal flow rate for each size.

END OF SECTION

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