



MODEL VM

**VM V-CONE FLOW METER
GENERAL SPECIFICATIONS**

MODELS

150 PSI Service
300 PSI Service

PART 1: GENERAL

1.1 SUMMARY

This section includes the McCrometer VM V-Cone flow metering system, complete with integral secondary instrumentation, indicator/totalizer with auxiliary alarm and 4-20mA dc outputs and display.

1.2 SUBMITTALS

- A. Drawings in accordance with General Provisions.
- B. Configuration Sheet, or equivalent, which consists of manufacturer's data and descriptive literature for the equipment.
- C. NIST traceable certified test report(s) as required for each flow meter.
- D. Installation and Operation Manual
- E. Warranty Statement

PART 2: PRODUCTS

2.1 GENERAL

The meters shall be of the innovative design as to deliver repeatable accuracy under the most difficult of flow conditions. The meter shall act as its own flow conditioner thereby virtually eliminating the need for upstream or downstream straight pipe runs or separate flow conditioners and be maintenance free.

2.2 MANUFACTURERS

The meter shall be manufactured by McCrometer, Inc. and shall be the VM V-Cone flow metering system, Model _____.
(See Configuration Sheet for more info)

2.3 CONSTRUCTION

- A. Body
 - 1. The meter tube shall be fusion-bonded epoxy coated carbon steel for nominal line diameters of 6-inch and larger. Nominal line diameters less than 6-inches shall be 304 stainless steel. The body shall be suitable to contain up to the full pressure rating of the flange.
 - 2. The end connections for nominal line diameters of 6-inch and larger shall be flanged carbon steel and meet the latest version of AWWA Class D Table 1 (for pressure rating up to 150 psi) or AWWA Class F (for pressure rating up to 300 psi) for plate flanges. Nominal line diameters of 3-inch and 4-inch shall be 304 stainless steel flanged to ANSI standard 150 or 300.



MODEL VM

B. Flow Indicator/Totalizer

1. The meter shall include a DP transmitter. The DP transmitter shall be mounted to the body of the primary element for most installations.
2. For installations where the DP transmitter is easily visible, the DP transmitter will be supplied with an LCD screen. The LCD screen will display the rate and total flow.
3. For installation where the DP transmitter is not easily visible, the meter will be supplied with a remote mounted flow indicator/totalizer display. The remote mounted display will have a NEMA 4x enclosure (IP66) as a minimum. A minimum of 25ft cable shall be included.
4. The units of measurement for the flow rate indicator shall be _____ (GPM, CFS, LPS, etc.) and the flow totalizer shall be _____ (gallons, cubic feet, cubic meters, etc.).
5. An auxiliary alarm and linear 4-20mA output shall be available from the flow indicator/totalizer.

2.4 PERFORMANCE

A. Upstream and downstream straight pipe run requirements

1. The flow metering system shall be so designed that it can be installed with only 0 to 3 nominal pipe diameters upstream and 0 to 1 nominal pipe diameters downstream without the use of separate flow conditioners and meet the flow accuracy and turndown requirements stated in these specifications.

B. The flow metering system shall be capable of accuracies up to $\pm 0.5\%$ of flowrate.

C. Turndown based on the flow rates for the application, shall be 10:1.

D. Maximum head loss at full scale shall not exceed 2 PSI.

PART 3: EXECUTION

3.1 INSTALLATION

A. Installation shall be based on manufacturer's recommendation. Typically a minimum of 0-3 pipe diameters of straight run upstream and 0-1 pipe diameters downstream (to be determined by actual application).

B. The manufacturer or authorized factory representative shall provide a minimum of one (1) day training and startup service to ensure installation and operation as required.