

V-CONE PRIMARY ELEMENT SPECIFICATION

A differential pressure producing primary flow element of constant area shall be installed in the _____ inch piping as shown on the plans and in the specifications and in accordance with the manufacturers recommendations. The primary element will be inline design to reprofile and condition the flow. Primary elements with rotating and/or moving parts in the flow stream are not acceptable. The flow element shall be of the conical, annular opening V-Cone® type as manufactured by McCrometer.

The primary element design should minimize differential pressure, permanent head loss and upstream and downstream straight piping requirements. Those items must be listed in the proposal and will be evaluated by the engineer as part of the bid review process. In addition, the following performance characteristics will be evaluated:

1. Rangeability - minimum flow turndown of _____ :1.
2. (Corrosion resistance) Long term accuracy of _____
3. (Erosion resistance) the primary element _____
4. Accuracy as % of actual flow-rate.
5. Installation / meter run requirements shall be no more than a total of 7 diameters, including the meter.

The flow element shall consist of the cone, the support member(s) and the flanged tube.

The cone shall be constructed of _____ and shall produce the required differential by being symmetrically oriented along the centerline of the tube. The cone shall be calibrated to produce a differential of _____ inches of water column at a flow rate of _____, with very low permanent head loss. Accuracy shall be within \pm _____% of actual flow rate. The meter shall be wet tested for accuracy in an NBS traceable flow test facility capable of a $\pm 0.25\%$ calibration. Documentation of tests shall be provided by the manufacturer with the meter. Tests will be open for witness by the engineer.

The support member(s) shall be constructed of _____ and must be capable of maintaining the cone's orientation in flows up to _____ feet per second.

The tube shall be constructed of _____, sch _____ pipe. Flanges shall be constructed of _____, _____ class _____ rated for _____ pounds per square inch. Flanges shall be _____ faced and tube length shall be _____ inches face to face. Pressure taps shall be 1/2 inch female NPT. Downstream pressure tap shall sense pressure at the centerline of the flow stream.

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