

# Smart Multivariable Transmitter Flow Systems for Accutubes, Orifice Plates

Smart Multivariable Transmitters (SMVs) are excellent for users who want to reduce the price of traditional head type flow meter installations. Head or differential pressure-type primary elements produce differential pressures (DPs) that are proportional to actual flow volume. This is fine for most liquid flow measurement but the measurement of gas or vapor flow becomes more involved if standard volume flow or mass flow is required. Inlet pressure and temperature need to be measured in addition to the DP. Traditional electronic flow meters for gas or vapor require a DP transmitter, a Pressure transmitter, RTD or thermocouple, and flow computer. Purchase price for all these components is relatively high since four secondary devices must be purchased in addition to the primary element. Installation costs are relatively high as well since the transmitters, temperature device and flow computer need to be mounted, piped to the primary element and wired together. SMVs measure both the DP and the inlet pressure with one device. And that is not all of the advantages they offer...



SMVs reduce the total installed cost of gas or vapor flow meters by:

- 1) reducing the number of secondary instruments needed for gas or vapor flow from four to two
- 2) directly mounting to primary elements designed for flange mounting, eliminating high and low pressure piping
- 3) eliminating the need for mounting brackets
- 4) eliminating or reducing to a minimum the wiring between transducers and the flow computer (temperature wiring still needed)
- 5) integrating the flow computer within the SMV

To take full advantage of the strengths that SMVs offer, Meriam Instrument has two head - type primary elements to choose from. Traditional orifice plates and flanges are described earlier in this catalog and SMV programming includes all common orifice plate calculation models. Accutubes are also prime candidates for SMVs. Meriam has designed a new style of Accutube averaging pitot tube that will be of great interest to customers needing accurate and convenient flow measurement of steam, gas or liquid flow through a process pipe. Models 40H, 41H, 42H, 43H, 70H and 72H are presented earlier in this catalog. These Accutubes have integral 3-valve manifold heads that allow DP or Multivariable transmitters to be bolted directly to the Accutube head. This feature eliminates mounting brackets, connecting tubing and tube fittings. O-rings provide the seal to the transmitter and temperatures and pressures in excess of most transmitter limits are supported. Models 40H (single support) and 41H (double support) are for DP transmitters and have 316LSS probes and 3-valve instrument heads. Models 42H (single) and 43H (double) are for the SMV transmitter since they include an integral 100-ohm RTD temperature device. The RTD is serviceable without shutting off the flow stream and without removing the transmitter from the Accutube. For wet - tap style Accutube applications, Meriam offers the 70H model for DP transmitters and the 72H model for SMV transmitters. In combination, the new Accutubes and SMV transmitters represent a convenient and cost effective way to add measurement points to existing process areas or to equip a new plant or expansion.

Meriam Instrument offers complete technical assistance and product lines for all of your pressure and flow measurement needs. Please call Meriam or your local Meriam Representative for application assistance, price quotes and delivery information today.