



A Low-Cost Solution for Simple Applications

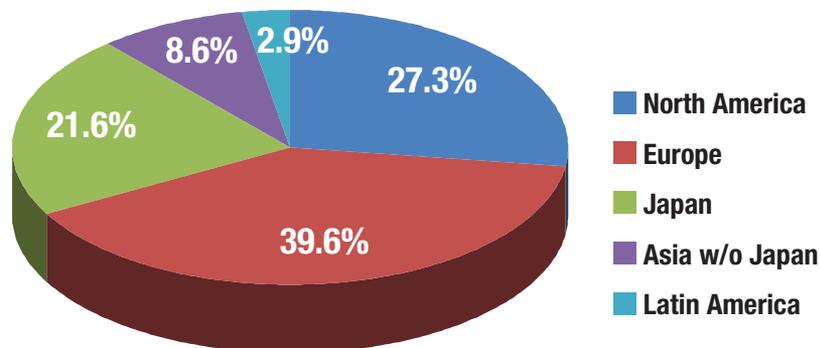
Low cost is probably the most important advantage of variable-area (VA) flowmeters. The average selling price of VA meters for steam flow measurement is \$396, compared to most other types of flowmeters whose average cost ranges from \$1,500 to well over \$5,000. While VA flowmeters are limited in their functionality, they cost far less than most other types of flowmeters. When users are looking for a low-cost solution, they will continue to consider VA meters.

The cost of VA meters varies with materials of construction. Plastic meters are generally lowest in cost, followed by glass flowmeters. Metal-tube meters are typically highest in cost, and are used for high-temperature and high-pressure applications. Some metal tube meters range in price between

\$1,000 and \$2,000, though many are available for much less.

Users who simply want to determine a flow or no-flow situation, who need to set an alarm, or who want to check the performance of

→ Shipments of Variable-Area Flowmeters by Geographic Region in 2009 (Percent of Dollars)



Source: Volume X: The World Market for Flowmeters, 3rd Edition

another flowmeter, may select a VA meter to do the job. While many are read manually, some are now available with transmitters that have a 4–20 mA output. Expect end-users to continue to buy these flowmeters when they need a simple, low-cost flow measurement.

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- No moving parts
- 4-20 mA, set point or pulse out
- Total and rate
- LED readout
- Inexpensive industrial grade



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One important development for variable-area flowmeters is the development of meters with a transmitter output. The HART protocol is available on some meters, and this turns the VA meter into more than a visual indicator, making it possible to do control and recording.

While VA flowmeters are used in the process industries, they are also widely used in research and laboratory environments. They are used in these environments to measure the flow of air and gases at low flowrates, when a visual indication is sufficient, to check on the performance of other meters, and when a low-cost measurement is desired. VA meters, including plastic meters, will also continue to be used for OEM applications.

One important development for variable-area flowmeters is the development of meters with a transmitter output. The HART protocol is available on some meters, and this turns the VA meter into more than a visual indicator, making it possible to do control and recording. A class of VA meters, called purgemeters, has been developed to handle a variety of low flow applications. Other areas of research include float design and materials of tube construction, especially metal.

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