

RATE OF FLOW CONTROLLERS SHOULD NOT SIMPLY COME "OFF THE SHELF!"

Introduction

Flow rate control in municipal or industrial transmission and processing scenarios inevitably requires a high degree of precision, repeatability, and accuracy in order to assure the integrity of the process. Incorrect design and sizing of flow control elements can have far reaching effects that include needlessly incurring increased energy costs, improper process control, or damage or loss of costly filter beds, to name but a few.

It is rarely effective or appropriate to simply install a meter and a valve in series and expect properly optimized performance to result. The only way to obtain optimal accuracy and control performance is to properly study the entire flow loop, then select the proper meter valve combination.



8-20" HVT-FC Halmi Flow Rate Controllers at the *Siu Ho Wan WTP*, Hong Kong, providing potable water for the new Hong Kong International Airport complex.

Primary Flow Signal, Inc. has provided the HVT-FC Halmi Venturi Flow Rate Controller for decades, with thousands of successful installations worldwide.

The reason why the HVT-FC is the flow rate controller of choice for a great many of the major municipal WWTP and WTP control applications throughout the world is the proven expertise and experience of Primary Flow Signal, Inc. to analyze the unique flow conditions and design the correct flow control solution for the specific demands of any application.

General Information




Most experts experienced in flow metering will generally agree that differential pressure flow meters, specifically venturi type flow meters with true static pressure sensation, are the most desirable and widely used when high accuracy and reliability are required, coupled with low total energy loss, insensitivity to installation conditions, durability and long useful service life.

Among the contemporary Venturi flow elements available in the market place, the HVT-Halmi Venturi flow element design is widely regarded as technologically superior with tens of thousands of installations worldwide in line sizes ranging from 1.0" through 180.0". The HVT-Venturi design has become the design of choice among water and wastewater facilities design and specifying engineers as well as end user / operators.

For highly accurate and reliable flow rate control, Primary Flow Signal, Inc. offers the HVT-FC family of rate controllers. These designs offer the demonstrated performance advantages inherent to the HVT Halmi Venturi flow element, specially designed to be close coupled to properly sized and selected butterfly valves. A full range of valve operators and other secondary equipment can be provided to accommodate virtually any flow control application requirement.

Although there are a number of equipment suppliers that can provide a meter-valve combination, it is most important to recognize that Primary Flow Signal, Inc. is one of the few that has the engineering capability to thoroughly analyze unique application requirements, and specifically design the proper meter-valve and secondary system combination that will correctly deliver the performance envelope demanded by the application. Mistakes in flow rate controller design and application can be costly and result in operating failure.

Primary Flow Signal, Inc. offers the following advantages:

-  ***A single source responsibility***, PFS will supply the HVT meter, properly designed for the application; the correct valve size with a substantiated KV factor; the best operator/actuator solution for the application; the flow transmitter and set point controller.
-  ***The HVT-FC is designed to meet the specific demands of the actual application!*** Others will attempt to force the application to meet their standard controller's performance.
-  ***The complete HVT-FC is assembled and tested***

General Information (cont.)

prior to shipment. This eliminates the risks inherent in different parties assembling, testing and bearing ultimate responsibility for the success of the installation



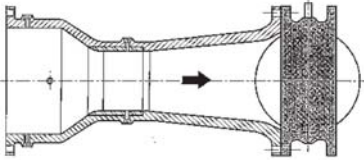
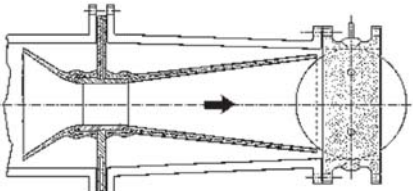
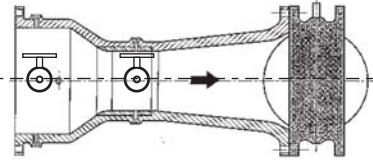
Full 5 year warranty on the complete controller with an additional 20 years on the HVT primary element.

security necessary to assure professional and successful results whether replacing failed or obsolete equipment, upgrading existing facilities or outfitting new capital projects.

Primary Flow Signal, Inc. maintains one of the largest engineering teams available to address your flow control needs. Full support is guaranteed from initial concept and design, through manufacturing, installation and beyond.

These fundamental features provide the reliability and

PRIMARY FLOW SIGNAL, INC. HAS AN EXTENSIVE SELECTION OF PRODUCTS WHICH, COUPLED WITH UNSURPASSED ENGINEERING EXPERTISE, WILL ASSURE THAT THE CORRECT RATE-OF-FLOW CONTROLLER IS SELECTED FOR YOUR SPECIFIC NEEDS.

<p>Model HVT-FC HVT FLOW CONTROLLER</p>	<p>Model HVT-IC HVT INSERT FLOW CONTROLLER</p>	<p>Model HVT-SC HVT FLOW CONTROLLER w/ SEALED METERING SYSTEM</p>
<p>THE INDUSTRY STANDARD Ideal for Clean Liquid, Gas, and Steam Flow Control Applications.</p>	<p>THE INSERT CONTROLLER Allows Maximum Flexibility to the Designing Engineer.</p>	<p>THE SEALED METERING SYSTEM The Most Accurate and Reliable Way to Meter Contaminated Liquid Flow.</p>
		
<p>LINE SIZE: 3" diameter and larger. BETA RATIO: A = 0.500 approx. B = 0.600 approx. C = 0.700 BODY: Cast Iron THROAT LINER: 304 Stainless Steel, Bronze or other materials. VALVE SIZE: As required by the application.</p>	<p>Controller laying length, beta ratio, head loss characteristics and valve sizing can all be tailored to assure optimal performance. LINE SIZE: Any diameter BETA RATIO: Any Beta Ratio as Required BODY: Fiberglass or Any as Required THROAT LINER: Any as Required VALVE SIZE: As required by the application.</p>	<p>LINE SIZE: 6" diameter and larger. BETA RATIO: A = 0.500 approx. B = 0.600 approx. C = 0.700 BODY: Cast Iron THROAT LINER: 304 SS, Bronze or Other. VALVE SIZE: As required by the application.</p>

The Product Range of HVT-FC Flow Rate Controllers

The wide range of configurations provided by the HVT Halmi Venturi flow meter product line affords a substantial variety of flow controller configurations, that, by their diversity, assures tremendous design and engineering flexibility to produce solutions for specific and unique application conditions.

Model HVT-FC standard flow controller is typically offered as a cast iron HVT Venturi flow element coupled to the properly sized butterfly valve. This version is widely prevalent in WTP and WWTP applications both because cast iron is overwhelmingly preferred

The Product Range of HVT-FC Flow Rate Controllers(cont.)

by specifying engineers and end users. Available in three standard beta ratios, line sizes from 3" to 96", and pressure ratings from 125# to 300# ANSI, this rugged and reliable workhorse comes in either cast iron or ductile iron.

Model HVT-IC Insert Controller is typically configured utilizing the popular insert style HVT-PI Halmi Venturi FRP Insert flow element, however can also be configured using any of the other insert styles incorporating plastic, carbon steel, stainless steel and or any other exotics demanded by the application conditions. This design offers total beta ratio flexibility, limitless line size capability, and laying length flexibility thus permitting the designing engineer to pursue optimal performance without constraints imposed by standardization.

Model HVT-SC Flow Controller with Sealed Metering System allows the superb performance envelope of the HVT to be applied to flow application conditions involving contaminated, highly viscous and/or particulate bearing liquids and gases to obtain accurate and reliable flow rate control. This model can be manufactured using castings with three standard beta ratios, or as fabricated flow elements, thereby having no constraints on materials of construction, beta ratio, laying length, line size, or pressure rating.

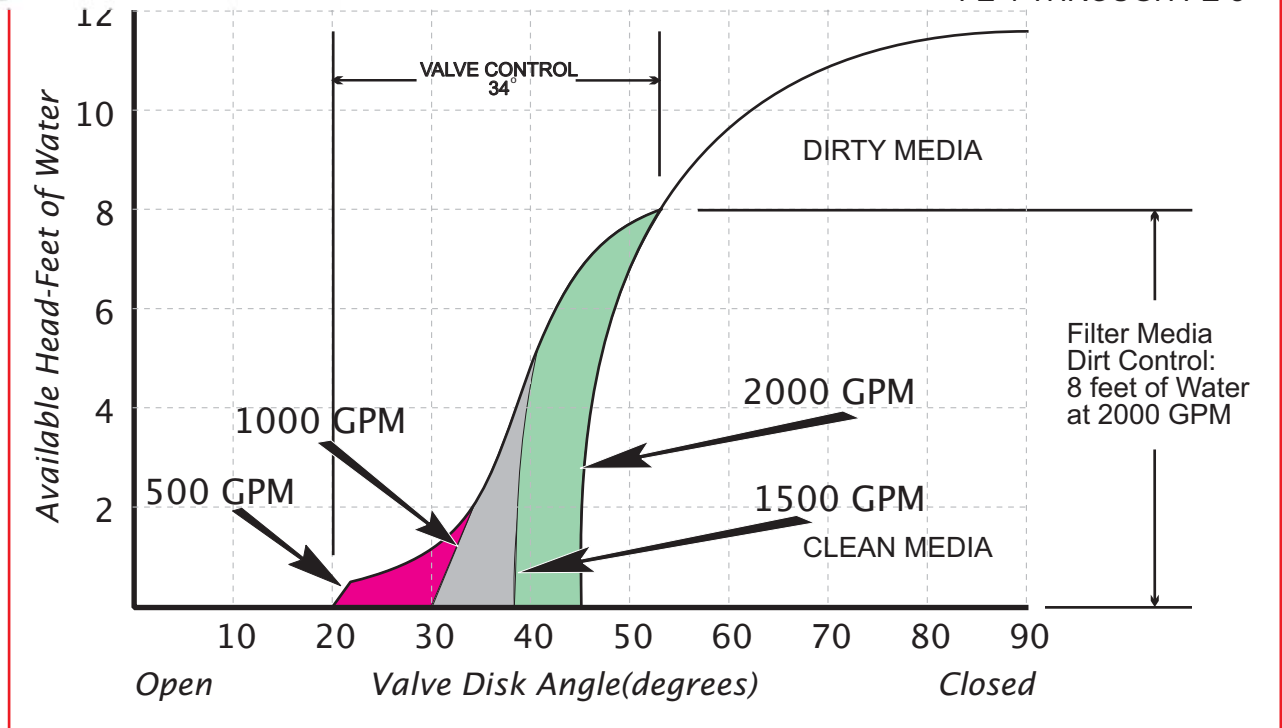
Beyond the foregoing brief categorization, Primary Flow Signal, Inc. offers many other flow rate controller versions, including rectangular, and is practically limited only by the imagination of its engineering staff and the diversity of application requirements.



A typical 30"-A HVT-FC.

Flow Control Performance Map

CAMDEN FILTER PLANT 12" X 12" HVT-FC
 FE-1 THROUGH FE-8



HVT-FC
THE HVT-FLOW RATE
CONTROLLER
PRODUCT BULLETIN



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HERE ARE SEVERAL APPLICATIONS DEMONSTRATING PFS SKILL!

ALVARADO

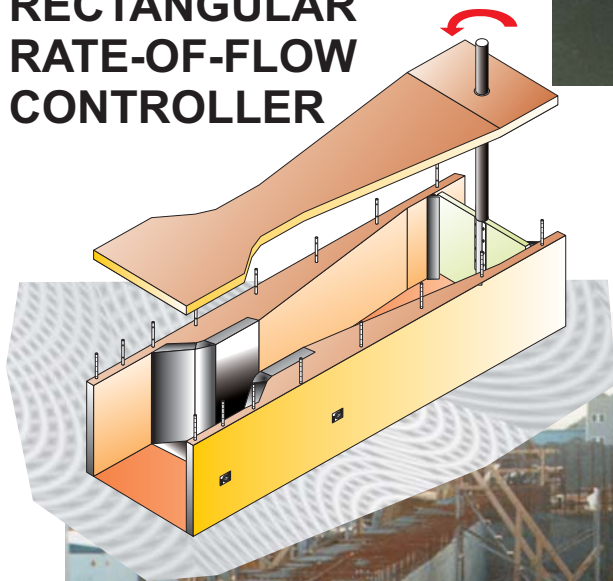
Vertically installed with downward flow, these filter effluent controllers are for modulating rate-of-flow control.

The function of this device is to provide maximum effluent flow rate control without excessive hunting or flow limiting.

Eight new PFS HVT-FC's replaced 1970's vintage non-functioning and limited capacity controllers which had been provided by competitors.



RECTANGULAR
RATE-OF-FLOW
CONTROLLER

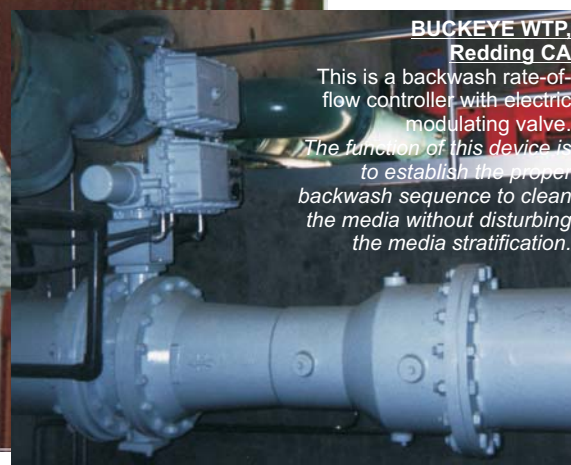


One of four influent rectangular rate-of-flow controllers for balancing flow to North System Headworks, Deer Island WPCE. Designed for 1.5 billion GPD capacity, this is all concrete construction with fabricated stainless steel metering surfaces and fabricated epoxy coated carbon steel valve elements.



BUCKEYE WTP,
Redding CA

This is a backwash rate-of-flow controller with electric modulating valve. *The function of this device is to establish the proper backwash sequence to clean the media without disturbing the media stratification.*



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