

# PFS Compact Venturi

## Shortened Venturi Meter

### Overview

The PFS Model HVT is a shortened, high-performance Venturi-based Rate of Flow Controller (ROFC) designed to deliver exceptional accuracy, reliability, and longevity—especially in installations with space constraints. The HVT combines the proven accuracy of proprietary and industry-unique Venturi design technology, validated by the most current, continuous, and exhaustive calibration protocols and documentation in the industry, with the durability of a flanged AWWA C504-compliant butterfly valve. The result is a robust solution tailored for modern water and wastewater applications.

For over 40 years, Primary Flow Signal (PFS) has been a leader in supplying shortened HVT Modified Venturi Meters and ROFC systems. The shortened HVT is specifically engineered for challenging piping layouts and difficult installation requirements, while maintaining high accuracy and long service life. Our commitment is further supported by the knowledge, experience, and expertise of the largest dedicated team of applications professionals and engineers globally.

The HVT can be installed in virtually any orientation—vertical (up or down), horizontal, or at any angle—providing complete flexibility for system designers and operators.

**High Accuracy:**  $\pm 0.5\%$  of actual flow rate ( $\pm 0.25\%$  with lab calibration) ensuring reliable measurement

**Wide Line Size Range:** Available in sizes from 1" to 180"+, adaptable to a variety of system requirements

**Flexible Installation:** Shortened flange-to-flange lengths to fit tight spaces without requiring major piping changes. Ideal for retrofits and replacements of older ROFC systems

**Flow-Conditioning Venturi Profile:** Proprietary hydraulic design stabilizes the flow profile, producing a consistent and predictable differential pressure signal without the need for annular chambers. Eliminates sediment accumulation, reducing maintenance

**Enhanced Durability:** Includes AWWA C504-compliant butterfly valves, isolation valves, and modulating control valves (available as butterfly, plug-type, or as specified) for long-lasting, precise control

**Self-Scouring, Low Maintenance:** Manual tap cleanout rods at high and low pressure tap locations and inspection ports with stainless steel covers minimize downtime and simplify maintenance

**Custom Valve Sizing:** PFS can provide system K analysis to recommend optimized valve sizing, including discharge flanges sized as needed for ideal control performance

### Typical Applications

- Raw Water Systems
- Filter Effluent Flow Control
- Backwash and Washwater Flow Control
- Difficult or Limited-Space Piping Installations

### Engineering Specifications

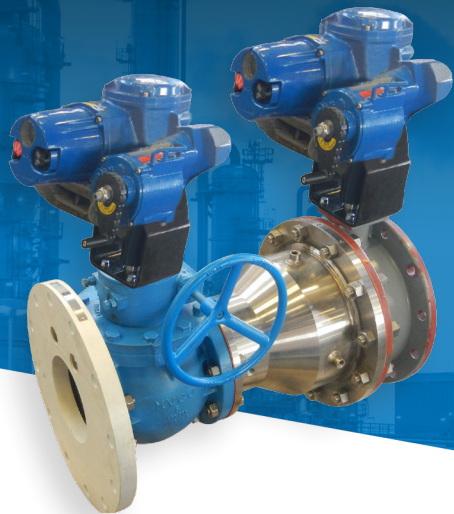
- Differential pressure-based design utilizing static pressure sensed at inlet and throat
- No in-line calibration required
- Vent and drain ports included at entrance section
- High-pressure taps located in cylindrical entrance section, same diameter as inlet piping
- Constant discharge coefficient ensures wide, stable flow ranges



**Shorty Daytona Beach Brennan WTP**

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This example (photo to the right) highlights a specially shortened HVT-ROFC that replaced a 1950s vintage direct-acting ROFC. After 60 years of reliable service, the original meter needed to be replaced because the filter media had been upgraded, increasing the flow rate beyond the capacity of the older meter. The new HVT-ROFC is equipped with the following features:

1. Manual tap cleanout rods at the high and low-pressure tap locations.
2. Inspection port with stainless steel cover.
3. Discharge flange sized one line size smaller than the inlet flange, based on system K analysis to determine the ideal butterfly valve size provided by PFS.
4. Modulating butterfly valve also sized one line size smaller for optimal control.
5. On the discharge side of the butterfly valve, an adapter plate was included to return the smaller valve size to the full downstream flange connection leading to the elbow.



This HVT-ROFC (photo to the right) has been specifically shortened to fit into the available space without requiring any piping modifications. In this particular case, the ideal butterfly control valve size matches the inlet line size and is directly coupled to the HVT discharge, maintaining the installed accuracy of  $\pm 0.5\%$ .

The complete ROFC system, including the modulating butterfly valve, is backed by a five-year warranty, with an additional twenty-year warranty covering the HVT-Venturi meter portion of the system.

**CONTACT PFS FOR A FREE EVALUATION OF YOUR PRESENT ROFC INCLUDING A PFS VALVE SIZING RECOMMENDATION.**

**CALL 401-461-6366 OR VISIT OUR WEBSITE [WWW.PRIMARYFLOWSIGNAL.COM](http://WWW.PRIMARYFLOWSIGNAL.COM)**

