

The
PFS-HP- High
Performance Transmitter
for measurement of differential pressure.

- +/- 0.075 % Accuracy (at 3 sigma)
- --- FIVE YEAR WARRANTY
- Up to 100:1 Range ability
- 316 Stainless Steel wetted Diaphragms and 316 Stainless Steel Process Flanges are standard.
- 4 to 20 mA DC Output Signal available to any host that conforms to HART protocol.
- User selectable for linear or square root output.
- Optional remote seal capability with a variety of fill fluids to meet application requirements.
- This product is manufactured under a private label agreement exclusively for **Primary Flow Signal, Inc.** By **Rosemount**®.



The PFS-High Performance Transmitter shown with the PFS standard 3-valve manifold.

Contact PFS, Inc. for an objective appraisal of your flow measurement requirements and our best professional recommendations!

The **Primary Flow Signal, Inc.** reputation for quality, reliability, and value is the result of more than a half century of unparalleled technical expertise in flow measurement, engineering and design knowledge, and manufacturing skill. **PFS** has always been focused on the single goal of furthering the art and science of flow measurement by consistently bringing the best flow metering solutions to the marketplace. **This tradition continues as PFS brings the PFS-HP-High Performance Transmitter to the marketplace.**

The **PFS-HP- High Performance Transmitter** offers exceptionally accurate and reliable measurement of differential pressure (others available for flow, gauge pressure, and absolute pressure.) Standard features include 316 Stainless Steel isolation diaphragms, 316 stainless steel process flanges, and full industry-standard HART compatibility.

All of this coupled with an unparalleled **Warranty of 5 Full Years**, makes the **PFS-HP** the logical choice to complement a **PFS** flow meter installation and the best selection for all of your flow and pressure measurement needs.

PFS, Inc. will provide a free competitive performance analysis and comparison between the PFS-HP and any competitor's transmitter.

Functional Specifications

SPAN AND RANGE LIMITS

Differential Pressure Transmitters.			
RANGE	Upper Range Limit(URL)	Lower Range Limit(LRL)	Minimum Span
	PFS-HP		
1	25" wc (6.22 kPaD)	-25" wc (-6.22 kPaG)	0.5" wc (0.12 kPaD)
2	250" wc (62.2 kPaD)	-250" wc (-62.2 kPaG)	2.5" wc (0.62 kPaD)
3	1000" wc (248 kPaD)	-1000" wc (-248 kPaG)	10" wc (2.48 kPaD)

SERVICE

Liquid, gas and vapor service.

ZERO SPAN AND ADJUSTMENTS

Zero can be set anywhere within the upper and lower range limits shown in the table above.

Span must be greater than or equal to the minimum span stated above.

OUTPUT

Two-wire 4 - 20 mA, user selectable for linear or square root output. Digital process variable superimposed on 4-20mA signal, available to any host that conforms to HART protocol. Use of hand-held HART communicator will permit access to on-board diagnostics and operating history.

AMBIENT TEMPERATURE

-40° to 185° F (-40° to 85°C)

PROCESS TEMPERATURE

-40° to 250° F (-40° to 121° C) with co-planar flanges.
 -40° to 300° F (-40° to 149° C) with traditional flanges.

AMBIENT HUMIDITY LIMITS

0 to 100% relative humidity.

OUTPUT DAMPENING

Adjustable up to 36 seconds.

POWER SUPPLY

External DC power supply required. Standard(4-20mA) transmitter operates on 10.5 - 55 V dc.

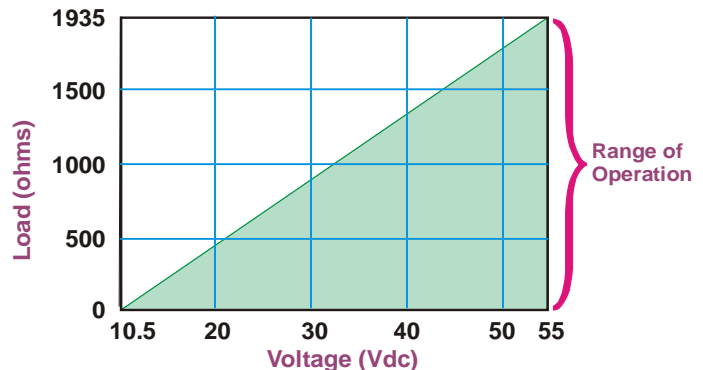
LOAD LIMITATIONS

Maximum loop load is determined by the voltage level of the external power supply, as described by the relation:

$$\text{Maximum Load} = 43.5 \times (\text{Supply Voltage} - 10.5)$$

LOAD LIMITATIONS(CONTINUED)

RELATIONSHIP BETWEEN POWER SUPPLY VOLTAGE AND EXTERNAL LOAD



ACCURACY

+/- 0.075 % of span.

+/- 0.100 % of span for Range 1.

For range downs greater than 10:1 of URL (15:1 of URL for Range 1 model), the accuracy is computed by:

$$\pm [0.025 + 0.005(\text{URL}/\text{Span})] \% \text{ of span.}$$

AMBIENT TEMPERATURE EFFECT PER 50°F(28°C)

+/- (0.0125% URL + 0.0625%span) spans from 1:1 to 10:1.

+/- (0.025% URL + 0.125%span) spans from 10:1 to 100:1.

Range 1: +/- (0.1% URL + 0.25% span)

STABILITY

+/- 0.25% of URL for 5 years for +/-50°F(28°C) temperature changes and up to 1000psi (6.9MPa) line pressure.

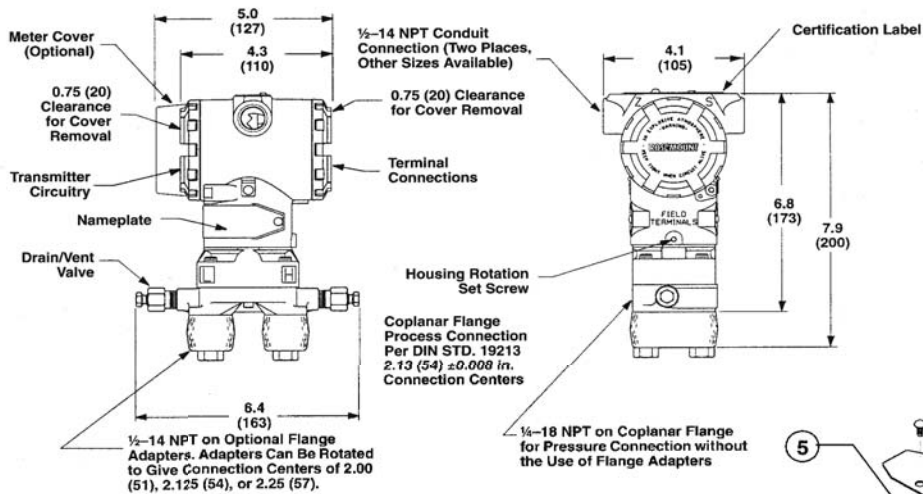
Range 1: +/-0.2% of URL for 1 year.

MOUNTING POSITION EFFECT

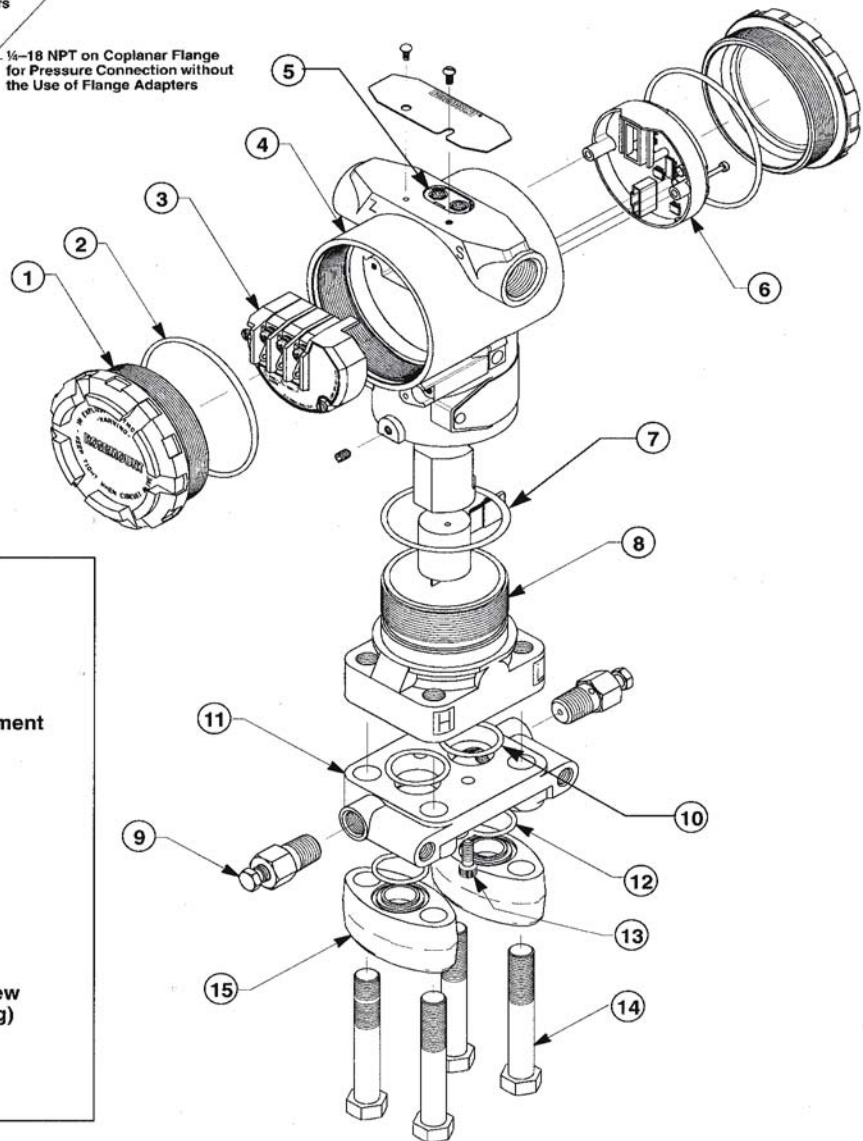
Zero shifts up to 2.5 in H₂O (0.62kPa), which can be calibrated out. No span effect.

Functional Specifications

BASIC DRAWINGS AND DIMENSIONS



General Exploded View Showing Transmitter with Co-Planar Flange



- 1 Cover
- 2 Cover O-ring
- 3 Terminal Block
- 4 Housing
- 5 Span and Zero Adjustment
- 6 Electronics Board
- 7 Module O-ring
- 8 Sensor Module
- 9 Drain/Vent Valve
- 10 Flange O-ring
- 11 Process Flange
- 12 Adapter O-ring
- 13 Flange Alignment Screw (Not pressure retaining)
- 14 Bolts
- 15 Flange Adapters



THE LEADER IN RELIABLE FLOW MEASUREMENT

PFS-HP HIGH PERFORMANCE TRANSMITTER

PRODUCT BULLETIN

DOCUMENT NUMBER: 1012-A/PFS-HP

OTHER PRODUCTS OF INTEREST

PFS-FM PRIMARY FLOW SIGNAL, INC.-Flow Master Secondary Instrument Group.

The FLOWMASTER by Primary Flow Signal, Inc. Because Primary Flow Signal, Inc. continuously endeavors to remain at the forefront of the flow measurement industry, it is important for us to anticipate the present and future needs of owners and engineers who are interested in accurate and reliable flow measurement. We do this by constant research and development which results in new equipment, services, technology and science that provides solutions for these emerging needs.



The PFS-FM FlowMaster is the result of our recognizing the needs associated with flow metering installations. Namely, a suitable primary flow element, in nearly all cases, requires the appropriate secondary group in order to properly interpret the flow indication signal and report this signal as meaningful data, or provide processed output for PLC/D or other control and processing functions within the plant or operating scheme.

Since accuracy of the flow reading is dependant upon all primary and secondary devices, PFS, Inc. is often provided the opportunity to provide a FLOW MEASUREMENT SYSTEM including a flow GUARANTEE a Total System Accuracy.

With the PFS-FM FlowMaster, Primary Flow Signal, Inc. has combined the critical elements of the typical secondary group in a sturdy NEMA-4X enclosure. These key elements generally include one or more PFS-HP high performance transmitter(s), three valve manifold(s), power supply, surge suppressor(s), totalizer/indicator, and may include signal discrimination, chart recorder, linearizer(s), or other customized equipment to meet the specific and unique requirements of the field application.

The PFS-FM is expertly constructed, includes all necessary internal wiring and plumbing along with all necessary external connectors for impulse piping, communication (up to 4-20mA signal output) and power source hook-up, and is fully calibrated and set at the factory for the precise application conditions.

The PFS-FM eliminates the need for owner or contractor to dedicate trained technical or skilled trades personnel assets for sourcing, purchasing, assembly, wiring, plumbing, calibration, troubleshooting, set-up and any of the myriad other additional responsibilities that are associated with providing an installation utilizing separate components.

Primary Flow Signal, Inc. thus provides the complete equipment package as a single source supplier, bearing full responsibility for getting the installation up and running according to the application requirements, AND WITH THE ACCURACY ASSURED BY PRIMARY FLOW SIGNAL, INC., THE LEADER IN RELIABLE FLOW MEASUREMENT.



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HEADQUARTERS LOCATION: 117 Peticossett Avenue Cranston, RI 02920, USA Toll Free: 1-877-737-3569 Ph: 401-461-6366 Fax: 401-461-4450 http://www.primaryflowsignal.com

PFS-IMS PRIMARY FLOW SIGNAL, INC.-The Intelligent Metering System™

Are You Ready for the Future of Flow Measurement? Primary Flow Signal, Inc. (PFS), the Leader in Reliable Flow Measurement, is pleased to introduce our new Intelligent Metering System™, advancing the science of flow measurement through the use of embedded microprocessors and touch screen Pentium™ computers, along with the Windows 95™ operating system, and using Primary Flow Signal's specialized software to enhance the function, utility and ease of use of our high-quality flow measurement products.

Now we put the power of modern information technology in your hands, with a reasonably priced package metering system providing the high accuracy and reliability for which PFS is internationally known.

Recently introduced, the PFS-FLOWMASTER combines the critical elements of the typical secondary group in a sturdy NEMA-4X enclosure. These key elements generally include one or more PFS-HP High performance transmitter(s), three valve manifold(s), power supply, surge suppressor(s), totalizer/indicator, and may include signal discrimination, chart recorder, linearizer(s), or other customized equipment to meet the specific and unique requirements of the field application.



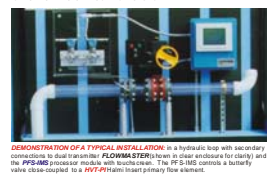
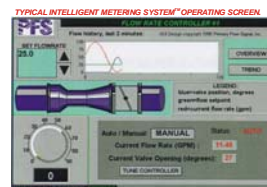
When coupled with the HVT primary flow element, PFS can guarantee a TOTAL SYSTEM ACCURACY for the complete flow measurement system.

With the Intelligent Metering System™, we have incorporated all of these features with the power and flexibility of software-based processing of flow meter data, telemetry, and a wide range of additional capabilities to suit your specific and possibly unique applications.

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SUITABLE FOR THESE USES: INDUSTRIAL APPLICATIONS MUNICIPAL APPLICATIONS



SOLIDS BEARING LINE FLUIDS SEALED METERING SYSTEM

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Call for Free Literature on Any of our Products

HVT-SM

PRIMARY FLOW SIGNAL, INC. EXCLUSIVE The HVT-SM Halmi Sealed Metering System

Look to PFS, Inc. for ALL of your Flow Measurement Needs.

- HVT-CI or HVT-FV Halmi Venturi type primary flow elements, pressure vessel.
- HVT-PI or HVT-FI Halmi Venturi type primary flow elements, insert type.
- HVT-FV-Mini Venturi for small line size applications.
- HVT-Rectangular primary flow elements, fabricated off site, as well as cast in place.
- HVT-BV or HVT-BI Halmi Venturi type primary flow elements for Bi-directional flow measurement.
- HVT-DG special Halmi Venturi type primary flow elements for Digester Gas flow applications.
- PFS-FM fully integrated secondary group.
- PFS-IMS PC based flow computer and programmable control center.
- PERMANENT STAFF OF FLOW METERING EXPERTS, ALWAYS AVAILABLE TO ASSIST WITH YOUR APPLICATION ENGINEERING, EQUIPMENT AND SERVICE NEEDS.