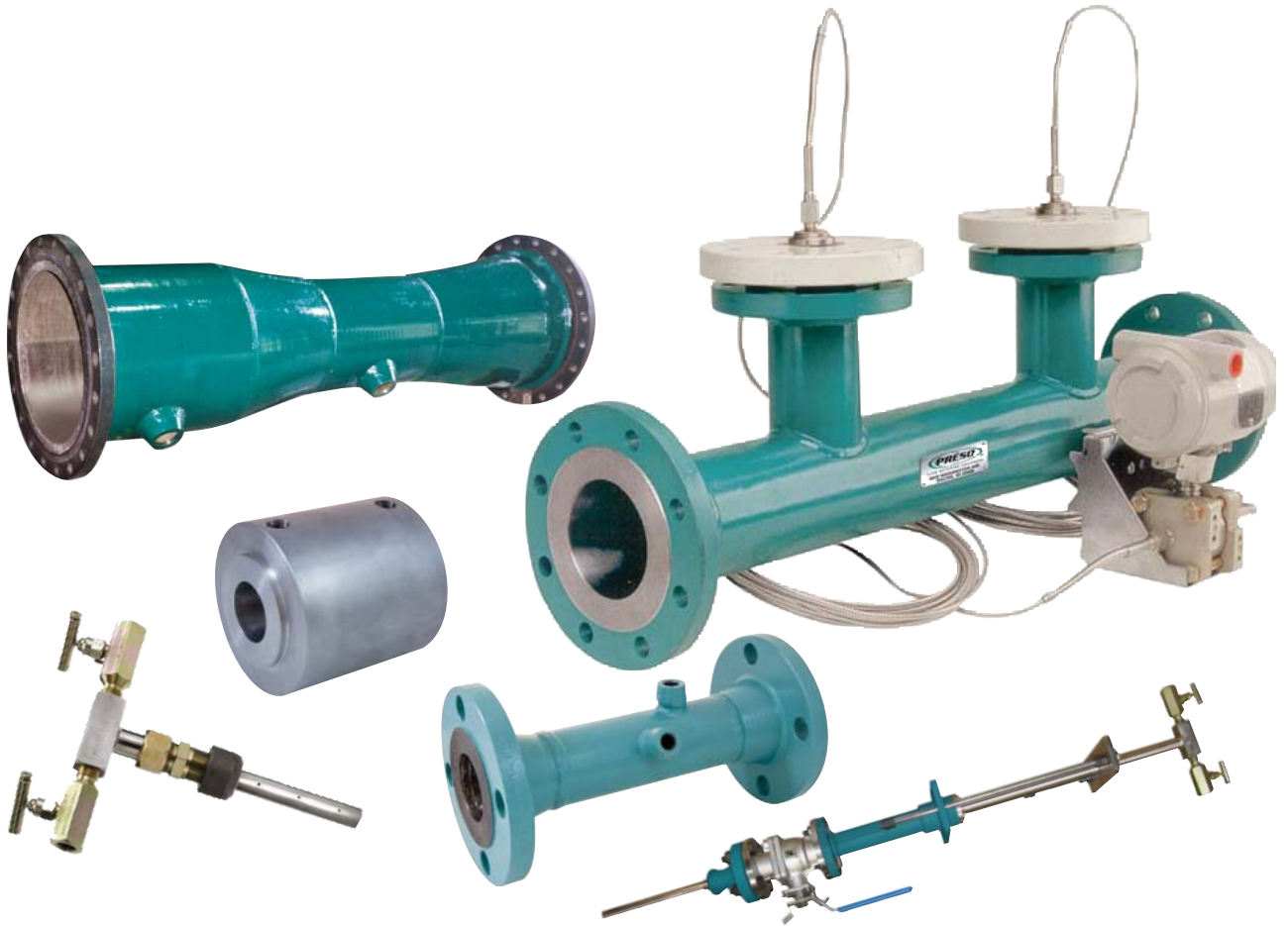







Custom – Engineered
Flow Meters



Differential Pressure Products

Ellipse® Pitot Tube

The Ellipse annular flow device is a primary flow meter designed to produce a differential pressure that is proportional to flow. Its innovative elliptical shape provides the lowest permanent pressure loss in the industry. The Ellipse flow meter is designed with a series of ports facing the upstream velocity pressures and flow sensing ports strategically located ahead of the trailing edge flow separation. As a result of this innovative design, the Ellipse provides a true static pressure measurement rather than a calculated value producing accuracies of ± 0.75 percent of reading, repeatability of ± 0.1 percent of reading, and a 17:1 turndown ratio with no vacuum effect. All Preso® Differential Pressure Flow Meters can be customized and built to meet the highest pressure and temperature specifications. All models can also be supplied with RTDs and transmitters to provide an economical mass flow measurement solution.

	<p>AR - Annular Regular</p>	<ul style="list-style-type: none"> • Pipe Sizes: 2...72" (50...1830 mm) • Pressure: 800 psi (5515 kPa) max. • Temperature: 800° F (426° C) max. • Integral manifold valve option available • Air, gas and liquid
	<p>AF - Annular Flanged</p>	<ul style="list-style-type: none"> • Pipe Sizes: 2...72" (50...1830 mm) • Pressure: Vary per flange rating • Temperature: Vary per flange rating • Integral manifold valve option available • Air, gas and liquid
	<p>AHL - Annular Hot Tap</p>	<ul style="list-style-type: none"> • Pipe Sizes: 2...72" (50...1830 mm) • Pressure: 800 psi (5515 kPa) max. • Temperature: 800° F (426° C) max. • Gear drive option available • Integral manifold valve option available • No process shutdown • Air, gas and liquid

Ellipse Pitot Tube

Ellipse Pitot Tube

	<p>AHF - Annular Flanged Hot Tap</p>	<ul style="list-style-type: none"> • Pipe Sizes: 2...72" (50...1830 mm) • Pressure: Vary per flange rating • Temperature: Vary per flange rating • Gear drive option available • Integral manifold valve option available • No process shutdown • Air, gas and liquid
	<p>AHR - Annular Low Pressure Wet Tap</p>	<ul style="list-style-type: none"> • Pipe Sizes: 2...72" (50...1830 mm) • Insertion Pressure: 75 psi (517 kPa) max. • Insertion Temperature: 120° F (49° C) max. • Pressure: 150 PSI (1034 kPa) max. • Temperature: 200° F (93° C) max. • Integral manifold valve option available • Air, gas and liquid
	<p>AS - Annular Steam</p>	<ul style="list-style-type: none"> • Pipe Sizes: 2...48" (50...1220 mm) • Pressure: 600 psi (4100 kPa) max. • Temperature: 480° F (250° C) max. • Integral manifold valve option available • Steam
	<p>ASF - Annular Steam Flanged</p>	<ul style="list-style-type: none"> • Pipe Sizes: 2...48" (50...1220 mm) • Pressure: Vary per flange rating • Temperature: Vary per flange rating • Integral manifold valve option available • Steam
	<p>AHS - Annular Hot Tap Steam</p>	<ul style="list-style-type: none"> • Pipe Sizes: 2...24" (50...610 mm) • Pressure: 800 psi (5515 kPa) max. • Temperature: 800° F (426° C) max. • Gear drive option available • Integral manifold valve option available • Saturated and superheated steam
	<p>AHZ - Annular Flanged Hot Tap Steam</p>	<ul style="list-style-type: none"> • Pipe Sizes: 2...72" (50...1830 mm) • Pressure: Vary per flange rating • Temperature: Vary per flange rating • Gear drive option available • Integral manifold valve option available • Saturated and superheated steam

COIN® Segmented Wedge

The Preso COIN flow meter accommodates most flows, even the most abrasive fluids. Accuracies of ± 3 -5 percent off the shelf, ± 1 percent factory calibrated, or ± 0.5 percent independent lab calibrated and repeatability of ± 0.2 percent of reading are achieved by its rugged construction, practical design, and simple principle of operation. The COIN meter can be customized and built to meet the highest temperature and pressure specifications. All models can also be supplied with transmitters and RTDs to provide an economical mass flow measurement solution. It stands alone in its ability to maintain the necessary square root relationship between flow rate and differential pressure for almost any type of flow such as clean liquids, high viscosity fluids, steam, slurries, corrosive processes, and gas/air. Even fluid viscosity up to 3,000 centipoise does not affect the accuracy of the COIN flow meter. The flow coefficient stays highly predictable down to the remarkably low Reynolds number of 500. This makes the COIN series flow meter ideal for such traditionally difficult-to-meter applications as fuel oil, waste water, coal tar, iron ores, black liquor, and others.

Principle of Operation

The basic flow equation for the COIN series is derived from Bernoulli's Theorem (energy balance and the continuity equation). An engineered restriction creates a differential pressure that equates to a mass or volumetric rate of flow. Different height (H) over diameter (D) ratios are specified to handle different flow ranges. The COIN meter has a proven record of providing reliable and accurate flow measurement in the most abrasive and difficult applications.

COIN Segmented Wedge

Process Connections

Flanged & Butt Weld

- Instrument Connection: NPT, Socket Weld, Flange, or Chem Tee
- Pipe Sizes: 1/2...48" (13...1219 mm)
- Materials: Carbon Steel, Stainless Steel or other

Wafer Style

- Instrument Connection: NPT
- Pipe Sizes: 1/2...4" (13...102 mm)
- Materials: Stainless Steel

COIN Segmented
Wedge Flanged
and Wafer



Venturi

Preso Venturi flow meters are differential pressure flow devices providing highly accurate (up to ± 1 percent of reading uncalibrated, ± 0.5 percent calibrated) and repeatable (± 0.1 percent of reading) measurements of liquids, gases, and steam. The Venturi restricts the flow at its throat and measures the pressure difference of the unrestricted flow and restricted flow. The Venturi's throat can be designed to meet the flow measurement application optimizing the Venturi's accuracy and permanent pressure loss. The Preso Venturi's design provides longer lasting accuracy and lower permanent pressure loss than orifice type meters, reducing maintenance and operating costs. The Preso Venturi can be built to meet the highest pressure and temperature specifications often limited in other flow meter technologies. All models can also be supplied with RTDs and transmitters to provide an economical mass flow measurement solution.

Venturi

SSL – Classical (Herschel) Design	<ul style="list-style-type: none">• Process Connections: NPT, Flanged, Butt Weld, Socket Weld, Grooved• Instrument Connection: NPT, Socket Weld, Flanged• Accuracy: $\pm 1\%$ of reading uncalibrated• Available as an insert design; model VISSL• Standard beta ratios: 0.35, 0.49, 0.63 and 0.70; exact sizing available to provide custom beta ratios• Utilizes ASME-MFC-3M and ISO 5167 standard
SSM – Hydraulic Shape Design (Nozzle Type)	<ul style="list-style-type: none">• Process Connections: NPT, Flanged, Butt Weld, Socket Weld, Grooved• Instrument Connection: NPT, Socket Weld, Flanged• Accuracy: $\pm 1 \dots 2\%$ of reading uncalibrated• Available as an insert design; model VISSM• Standard beta ratios: 0.35, 0.49, 0.63 and 0.70; exact sizing available to provide custom beta ratios• Utilizes ASME-MFC-3M and ISO 5167 standard
LPL – Low-Loss Design (Short Form)	<ul style="list-style-type: none">• Process Connections: NPT, Flanged, Butt Weld, Socket Weld, Grooved• Instrument Connection: NPT, Socket Weld• Accuracy: $\pm 3 \dots 5\%$ of reading uncalibrated• Available as an insert design; model VILP• Reduced operating and installation costs

Venturi SSL and SSM Designs



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