Badger Meter Europa

*Preso® is a registered trademark of Badger Meter, Inc.

Custom–engineered differential pressure meters

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Preso®
Differential Pressure Flow Meters

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 % of reading, repeatability of ±0.1 % 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.

AR - Annular regulator

Features

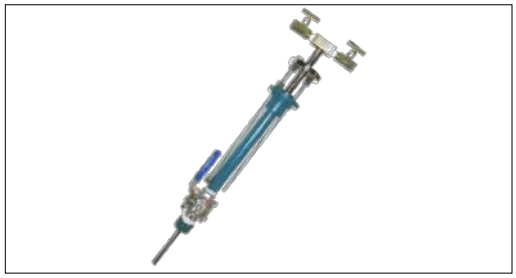
- Pipe sizes: DN50 – DN1800 (2" to 72")
- Pressure: Max. 55 bar (800 psi)
- Temperature: Max. 425 °C (800 °F)
- Integral manifold valve option available
- Air, gas and liquid

AF - Annular flanged

Features

- Pipe sizes: DN50 – DN1800 (2" to 72")
- Pressure: Vary per flange rating
- Temperature: Vary per flange rating
- Integral manifold valve option available
- Air, gas and liquid

AHL – Annular hot tap



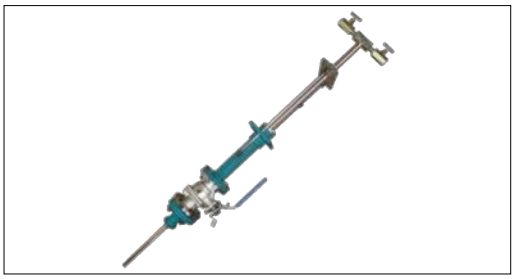
Features

- Pipe sizes: DN50 – DN1800 (2" to 72")
- Pressure: Max. 55 bar (800 psi)
- Temperature: Max. 425 °C (800 °F)
- Gear drive option available
- Integral manifold valve option available
- No process shutdown
- Air, gas and liquid

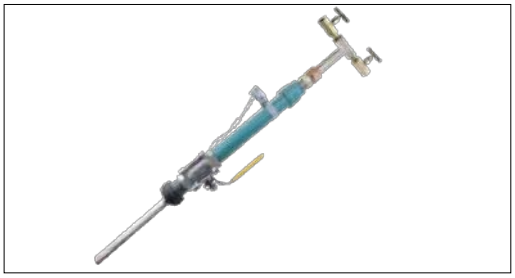
Features

- Pipe sizes: DN50 – DN1800 (2" to 72")
- 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

AHF – Annular flanged hot tap



AHR – Annular low pressure wet tap



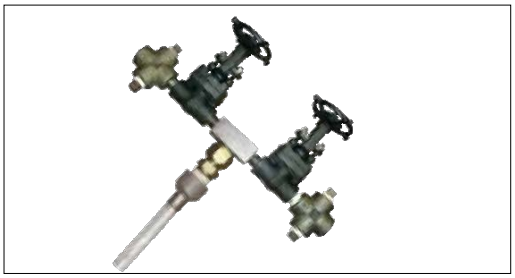
Features

- Pipe sizes: DN50 – DN1800 (2" to 72")
- Insertion pressure: Max. 5 bar (75 psi)
- Insertion temperature: Max. 50 °C (120 °F)
- Pressure: Max. 10 bar (150 psi)
- Temperature: Max. 90 °C (200° F)
- Integral manifold valve option available
- Air, gas and liquid

Features

- Pipe sizes: DN50 – DN1200 (2" to 48")
- Pressure: Max. 40 bar (600 psi)
- Temperature: Max. 250 °C (480 °F)
- Integral manifold valve option available
- Steam

AS – Annular steam



ASF – Annular steam flanged

Features

- Pipe sizes: DN50 – DN1200 (2" to 48")
- Pressure: Vary per flange rating
- Temperature: Vary per flange rating
- Integral manifold valve option available
- Steam

Features

- Pipe sizes: DN50 – DN600 (2" to 24")
- Pressure: Max. 55 bar (800 psi)
- Temperature: Max. 425 °C (800 °F)
- Gear drive option available
- Integral manifold valve option available
- Saturated and superheated steam

AHS – Annular hot tap steam

NZ - Annular flanged hot tap steam

Features

- Pipe sizes: DN50 – DN1800 (2" to 72")
- 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 % off the shelf, ±1 % factory calibrated, or ±0.5 % independent lab calibrated and repeatability of ±0.2 % 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 process es, 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 is 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.

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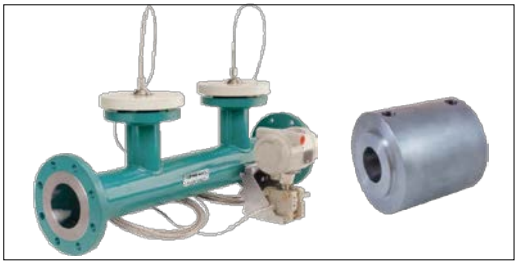
COIN® segmented wedge

Process connections

Flanged & butt weld	• Instrument connection: NPT, socket weld, flange or chem tee • Pipe sizes: DN10 – DN1200 (1/2" to 48") • Materials: Carbon steel, stainless steel or other
Wafer style	• Instrument connection: NPT • Pipe sizes: DN10 – DN100 (1/2" to 4") • Materials: Stainless steel

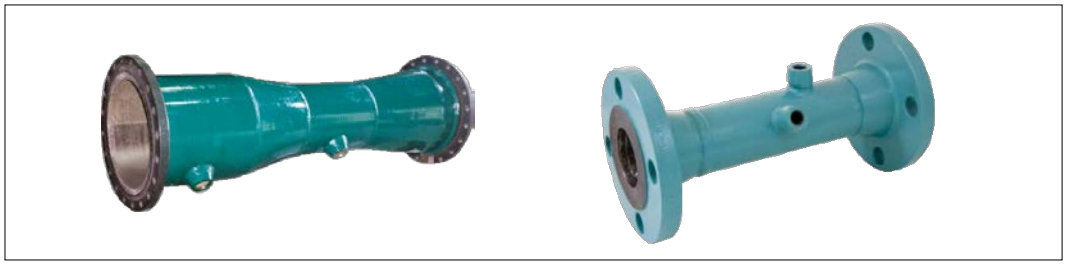


COIN® segmented wedge flanged and wafer

Venturi

Preso® Venturi flow meters are differential pressure flow devices providing highly accurate (up to ±1 % of reading uncalibrated, ±0.5 % calibrated) and repeatable (±0.1 % 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 and SSM designs

SSL – Classical (Herschel) design	• Process connections: NPT, flanged, butt weld, socket weld, grooved • Instrument connection: NPT, socket weld, flanged • Accuracy: ±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)	• Process connections: NPT, flanged, butt weld, socket weld, grooved • Instrument connection: NPT, socket weld, flanged • Accuracy: ±1% to 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)	• Process connections: NPT, flanged, butt weld, socket weld, grooved • Instrument connection: NPT, socket weld • Accuracy: ±3% to 5% of reading uncalibrated • Available as an insert design; model VILP • Reduced operating and installation costs