Preso®
Differential Pressure Flow Meters

Coin® Segmented Wedge

Wafer Flow Meter

DESCRIPTION

The Preso® Coin Wafer Wedge Flow Meter is a wedge meter with rugged construction. Wedge meters were originally developed for the mining industry to measure slurry flows and were quickly adopted for use where other contaminants caused either wear or plugging of ports and geometry on other DP devices. The Wedge meter also benefits from a partial redirection of the flow that protects the edge of the restriction to some degree. When coupled with a hard facing compound on the wedge portion of the meter, it is extremely resistant to wear.

The flow meter accommodates most flows, even the most abrasive. This type of differential technology is a proven, consistent measuring technology for media in the upstream, midstream and downstream applications. Accuracy and reliability are achieved by its rugged construction, practical design, and simple principle of operation. 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.

FEATURES

- Narrow face-to-face creates low installed cost
- Turndown ratio: 10:1
- Mass flow output with multivariable transmitter (accuracy ± 0.5% calibrated)
- Repeatability: ± 0.2% of readings
- Reynolds number measurement down to 300
- High viscosity measurement to 3000 and higher
- Sizes 0.5…4 in.
- Bi-directional flow measurement
- ISO-9001 certified design and fabrication

OPTIONS

- RTD

DIFFERENTIATOR

The wedge meter functions similarly to a segmental orifice. A segmental orifice still has a small restriction in the line around the opening. The wedge design allows solids and particulates to be swept through the opening. It also enables measurements with Reynolds Numbers down in the laminar range to 500 as a minimum. Wedge meters generally have a higher turndown ratio than segmental orifice plates.

APPLICATIONS

Typical core applications for Wedge meters include high-viscosity fluids, slurries, corrosive fluids, contaminated air/gas and more.

BENEFITS

- Reduced pumping costs
- Abrasive and Erosive Slurries, Viscous and Dirty Fluids, Clean Fluids, Steam or Gasses
- Easily installed in any position with minimal straight pipe requirements
- Resists wear, no moving parts
- Bi-Directional flow measurement

CONFIGURATION

The inlet section is the same diameter as the incoming pipe section and followed by a precise, segmented, angled section equal on both sides for bidirectional flow measurement. The H/ID ratio is determined by the manufacturer according to recognized standards and formulas. The discharge coefficient (Cd) is linear and stable in the operating flow range.

ACCURACY AND REPEATABILITY

The accuracy of the flow meter is within ± 3.0% (uncalibrated) and ± 0.5% (calibrated) with a repeatability of ± 0.2% and turndown ratio of 10:1 in the corresponding range of Reynolds' Numbers. For custody transfer applications the flow meter is flow tested by an independent NIST certified laboratory under the design operating conditions and piping configurations.

Badger Meter

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Product Data Sheet

SPECIFICATIONS

Applications	High-viscosity fluids, slurries, corrosive fluids, contaminated air/gas, multiphase flow, and more
Pipe Sizes	0.5…4 in. (12.70…101.60 mm)
Temperature Range	Up to 800° F (26.67° C)
Pressure Range	Dependant of flange rating
Accuracy	±3.0% uncalibrated; up to 0.5% calibrated
Repeatability	±0.2%
Turndown Ratio	10:1

PART NUMBERING CONSTRUCTION

COIN® Segmented Wedge
WAFER - NPT STAINLESS STEEL

PCOW - [ ][ ][ ][ ][ ][ ]

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PIPE SIZE / FLANGE RATING							
1/2" / 150#	A	1					
1/2" / 300#	A	2					
1/2" / 600#	A	3					
1/2" / 900/1500#	A	4					
3/4" / 150#	B	1					
3/4" / 300#	B	2					
3/4" / 600#	B	3					
3/4" / 900/1500#	B	4					
1" / 150#	C	1					
1" / 300#	C	2					
1" / 600#	C	3					
1" / 900#	C	4					
1-1/4" / 150#	D	1					
1-1/4" / 300#	D	2					
1-1/4" / 600#	D	3					
1-1/4" / 900#	D	4					
1-1/2" 150#	E	1					
1-1/2" 300#	E	2					
1-1/2" 600#	E	3					
1-1/2" 900#	E	4					
2" / 150#	F	1					
2" / 300#	F	2					
2" / 600#	F	3					
2" / 900/1500#	F	4					
3" / 150#	G	1					
3" / 300#	G	2					
3" / 600#	G	3					
3" / 900#	G	4					
3" / 1500#	G	5					
4" / 150#	H	1					
4" / 300#	H	2					
4" / 600#	H	3					
4" / 900#	H	4					
4" / 1500#	H	5					
SCHEDULE							
STD			A				
BODY / WEDGE MATERIAL							
All 316/316L				2			
All 316/316L w/Coplanar Transmitter Bracket				3			
Other				X			
INSTRUMENT CONNECTION							
1/4" NPT[1]					A		
1/2" NPT[2]					B		
COIN RATIO							
(0.2) Low Flow						1	
(0.3) Med/Low Flow						2	
(0.4) Normal Flow						3	
(0.5) High Flow						4	

[1]For sizes 1/2" 150# & 3/4" 150#, 1/8" NPT taps with 1/4" adapters will be provided.
[2]Available for the following sizes:

150#	4" and larger
300#	3" and larger
600#	2" and larger
900/1500#	2" and larger

NOTE: Applications requiring piping to conform to ASME B31.1, B31.3, or require non-destructive examination please contact Preso for pricing.

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INSTRUMENT VALVE

Not Required	Z
1/4" Needle CS	A
1/2" Needle CS	B
1/4" Needle SS	C
1/2" Needle SS	D
1/2" Gate w/Cross CS (Steam)	E
1/2" Gate w/Cross SS (Steam)	F

CALIBRATION

Not Required	Z
Factory Calibration (6 point)	1
Special Factory Calibration	2
External Calibration	3

TRANSMITTER MOUNTING

Remote Mount	Z
Mounting Bracket Tee (only)	2
Manifold Mounting Plate- Meter Mount (Does not include manifold)	3

CERTIFICATIONS

None	Z
Tracable Material Certifications	1
NACE MR0-103	2
NACE MR0-175	3
Items 1 and 2	4
Items 1 and 3	5
Other	X

STANDARD NDE TESTING

None	Z
Hydrostatic Test Only (1/2…12" NPS 150# to 900# flange - Others CF)	1
5% Radiography of Butt Welds	2
100% Radiography of Butt Welds	3
5% Magnetic particle/dye penetrant	4
100% magnetic particle/dye penetrant	5
Items 2 and 4 (1/2…12" NPS - Others CF)	6
Items 3 and 4 (1/2…12" NPS - Others CF)	7
Items 3 and 5 (1/2…12" NPS - Others CF)	8
Other	X

Note: Items 2-8 also include hydrostatic testing

OTHER NDE TESTING

None	Z
100% Visual Inspection with Report	1
PMI (Positive Material Identification)	2
Post-Weld Harness Testing	3
Items 1 and 2	4
Items 3 and 4	5
Items 1, 2 and 3	6

HARDCOATING

None	Z
Tungsten Carbide (WC) on wedge	1
Tungsten Carbide (WC) on center 1/3 of meter	2
Chromium Carbode (CrC) on wedge	3
Chromium Carbode (CrC) on center 1/3 of meter	4
Other	X

TERTIARY TAP

None	Z
3/4" Standard RTD Temperature with Thermowell (-200… 450° F)	A
3/4" High Temperature RTD Temperature (-200…1000° F)	B
1/2" Pressure Tap w/o transmitter	C
1/2" Pressure Absolute with transmitter	D
1/2" Pressure Gauge with transmitter	E

Control. Manage. Optimize.

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