



F L O W M E T E R I N G E Q U I P M E N T

Model AR Ellipse® Annular Flow Meter

Preso's patented elliptical design outperforms and provides greater accuracy than traditional differential pressure flow measurement devices. This differential pressure flow meter is designed with a series of ports facing the upstream velocity pressures, as well as flow sensing ports strategically located ahead of the trailing edge flow separation.

Features

- Patented elliptical design outperforms traditional devices
- Single point pipe entry for DP, temperature and static pressure
- No dampening software required
- Lowest pressure loss in industry (typically 3% of DP in a 12" line) due to its patented aerodynamic profile
- NIST traceable calibration: Optional independent labs

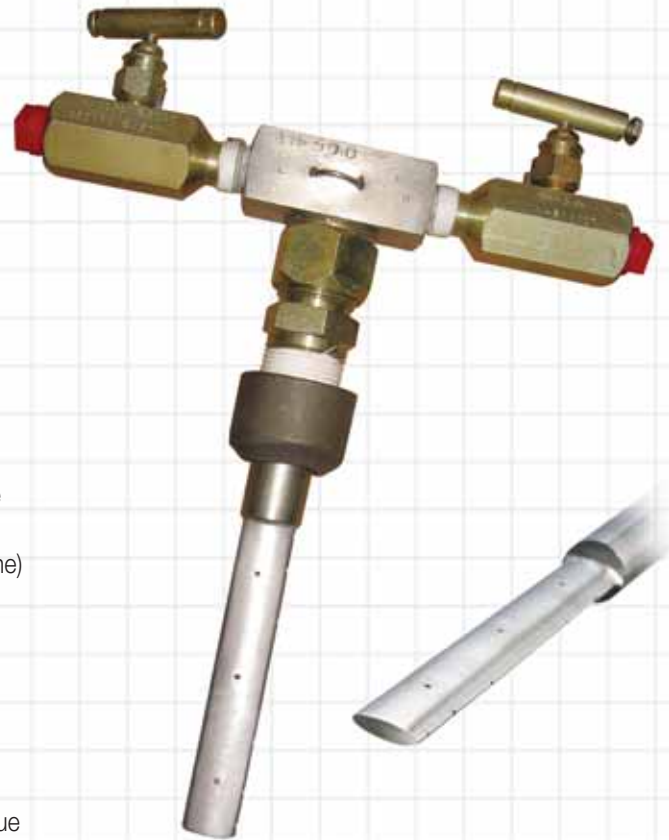
Benefits

- Accuracy: $\pm 0.75\%$ of reading, repeatability: $\pm 0.1\%$ of reading
- Turndown Ratio: 17:1; no vacuum effects
- No moving parts equals long, trouble-free service life
- True static pressure measurement rather than a calculated value
- Overcomes loss of accuracy caused by fluid separation at the sensor body

The multi-ported, self averaging flow element consists of an elliptical shape with two independent flow sensing chambers. The impact velocity sensing holes (high pressure) are located along the leading edge and the true static sensing holes (low pressure) are on the exterior probe side. Model AR comes with instrument shut-off valves with provisions to accept a transmitter or direct indicating meter.

True static sensing holes

Impact velocity sensing holes



Specifications

Applications:	Liquids and Gases
Pipe Sizes:	2 to 72 inches (50 to 1830 mm)
Pressure:	800 PSI (5515 kPa) max.
Temperature:	800 °F (426 °C) max.
Accuracy:	$\pm 0.75\%$ of reading
Turndown Ratio:	17:1 with no vacuum effect
Standard Components:	T-type head, 316 SS 1/4" or 1/2" FNPT connection CS compression fitting with SS ferrule CS 3000 lb. weld fitting – ASTM A105 316/316L SS Ellipse sensor Instrument valves (2 per sensor) – 1/4", CS 316 SS ID tag with wire
Reynolds Number:	Greater than 75,000 maintains most accurate flow measurements Less than 75,000 consult factory for estimated results
Resonance:	If greater than 0.8, use double support

1-800-632-7337

www.preso.com

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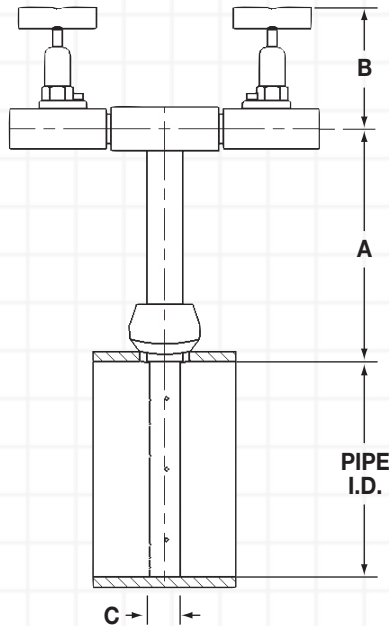
Part Number Construction: PAR0 (1/2") PAR (7/8") PAR1 (1-1/4")

<p>Pipe Size (PAR/PAR0)</p> <p>A) 2 inch B) 2-1/2 inch C) 3 inch D) 3-1/2 inch E) 4 inch F) 5 inch G) 6 inch H) 8 inch I) 10 inch J) 12 inch K) 14 inch L) 16 inch M) 18 inch N) 20 inch O) 24 inch P) 30 inch Q) 36 inch</p>	<p>Pipe Size (PAR1)</p> <p>A) 12 inch B) 14 inch C) 16 inch D) 18 inch E) 20 inch F) 24 inch G) 30 inch H) 36 inch I) 42 inch J) 48 inch K) 60 inch L) 72 inch</p>	<p>Schedule</p> <p>A) Std J) 160 B) 20 K) XH C) 30 L) XXH D) 40 M) 5S E) 60 N) 10S F) 80 O) 40S G) 100 P) 80S H) 120 I) 140</p>	<p>Pipe Orientation</p> <p>A) Horizontal B) Vertical</p>	<p>Probe Material</p> <p>1) 316/316L-SS 2) Monel 3) Inconel® 4) Hastelloy® X) Other (consult factory to review application)</p>	<p>Instrument Connection (PAR/PAR1)</p> <p>A) 1/2" NPT B) 1/2" Socket C) TT3 (Integral 3 Valve Trans-Mount) D) TT5 (Integral 5 Valve Trans-Mount) E) Transmitter Flange Connection</p> <p>Instrument Connection (PAR0)</p> <p>A) 1/4" NPT</p>	<p>Instrument Valve* (PAR/PAR1)</p> <p>A) 1/2" Needle CS B) 1/2" Needle SS Z) Not required</p> <p>Instrument Valve* (PAR0)</p> <p>A) 1/4" Needle CS B) 1/4" Needle SS Z) Not required</p> <p>*NOTE: Transmitter Flange Connection Options available when Option E under Instrument Connection is selected. (consult factory for information)</p>
<p>NOTE: PAR0 installs on pipe sizes 2" through 5" only (A through F options)</p>		<p>Connection (PAR/PAR1)</p> <p>A) CS Compression Fitting w/SS Ferrule B) SS Compression Fitting w/SS Ferrule</p> <p>Connection (PAR0)</p> <p>A) SS Compression Fitting w/SS Ferrule</p>	<p>Pipe Mounting</p> <p>1) A105 CS 3000# 2) 316/316L SS 150# 3) 316/316L SS 3000# 4) A105 CS 3000# w/Dbl Support (see below) 5) 316/316L SS 150# w/Dbl Support 6) 316/316L SS 3000# w/Dbl Support</p>	<p>RTD</p> <p>1) 100 Ohm RTD 3 wire w/ Explosion Proof Head 2) 100 Ohm RTD 3 wire, Integral w/Aluminum Head Z) Not required</p>		

Dimensions (inches)

Probe Length		
	A	B
AR0	4.188	2.250
AR	6.625	3.125
AR1	6.625	3.125

Probe Width	
	C
AR0	.5
AR	.875
AR1	1.25



Maximum Allowable DP (Inches of Water Column)

Pipe Size (inches)	Single Support Probe Size		Double Support Probe Size	
	7/8	1-1/4	7/8	1-1/4
2	880	—	2380	—
2-1/2	525	—	1568	—
3	396	—	1283	—
3-1/2	283	—	1117	—
4	197	—	980	—
5	153	—	757	—
6	126	—	689	—
8	114	360	512	—
10	100	240	315	960
12	87	175	250	700
14	53	147	195	585
16	—	113	—	450
18	—	90	—	360
20	—	74	—	295
24	—	68	—	270
26	—	50	—	215
30	—	34	—	155
32	—	—	—	—
36	—	—	—	—
42	—	—	—	—



FLOW METERING EQUIPMENT

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