

DESCRIPTION

The Ellipse[®] Model AHF Annular Flanged Hot-tap Flow Meter is a multi-ported, self-averaging differential pressure flow element for saturated and superheated steam. 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.

COMPONENTS

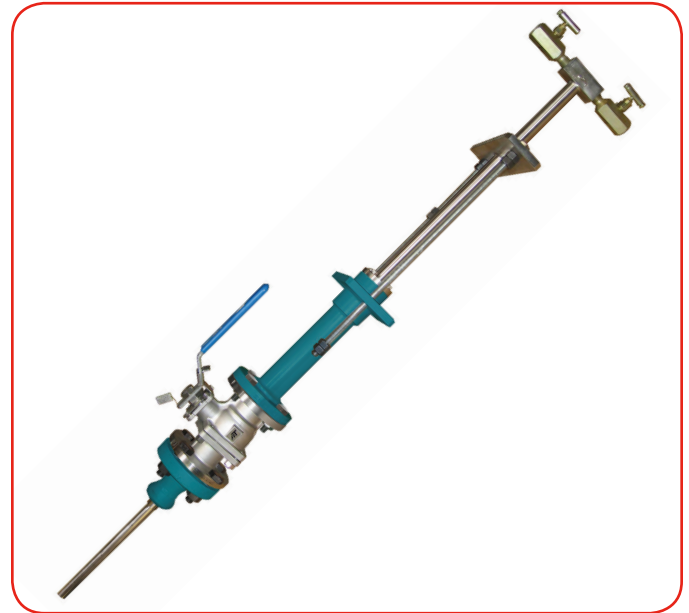
All sensors are furnished with 1/2 in. instrument valves, flanged mounting hardware (with the proper rating), flanged ball valve (with the proper rating), insert/retract mechanism with rods, and ID tag as standard equipment. Available options include integral 3-valve or 5-valve transmitter mount manifold and integral RTD temperature sensor.

CONFIGURATION

The flow element has a two-piece construction: an elliptical shape and two 100% independent flow sensing chambers. This construction prevents signal degradation and mixing, and does not require dampening hardware or software. 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. This does not generate any vortices or vacuum effects that impinge on the static pressure measurement sensing area and has a drag coefficient of 0.32 or less. Each flow sensor is complete with instrument shut off valves with provisions to accept a transmitter or direct indicating meter. An identification tag is supplied with specific flow station measurement information as required.

FEATURES

- Patented elliptical design
- Single point pipe entry for DP, temperature and static pressure
- No dampening software required
- Low pressure loss (typically 3% of DP in a 12 in. (304 mm) line)
- Accuracy: $\pm 0.75\%$ of reading, repeatability: $\pm 0.1\%$ of reading
- Turndown Ratio: 17:1; no vacuum effects
- No moving part construction provides 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



SPECIFICATIONS

Applications	Saturated and superheated steam
Pipe Size	2...48 in. (50...1219 mm)
Pressure	Pressure and temperature depend on flange ratings, ANSI B16.5 standards
Temperature	800° F (427° C) Maximum
Flow Range	2.6...21,130 GPM
Gear Drive	Option available
Accuracy	$\pm 0.75\%$ of reading
Repeatability	$\pm 0.1\%$
Turndown Ratio	17:1 with no vacuum effect
Reynolds Number	>75,000: Maintains most accurate flow measurements <75,000: Consult factory for estimated results

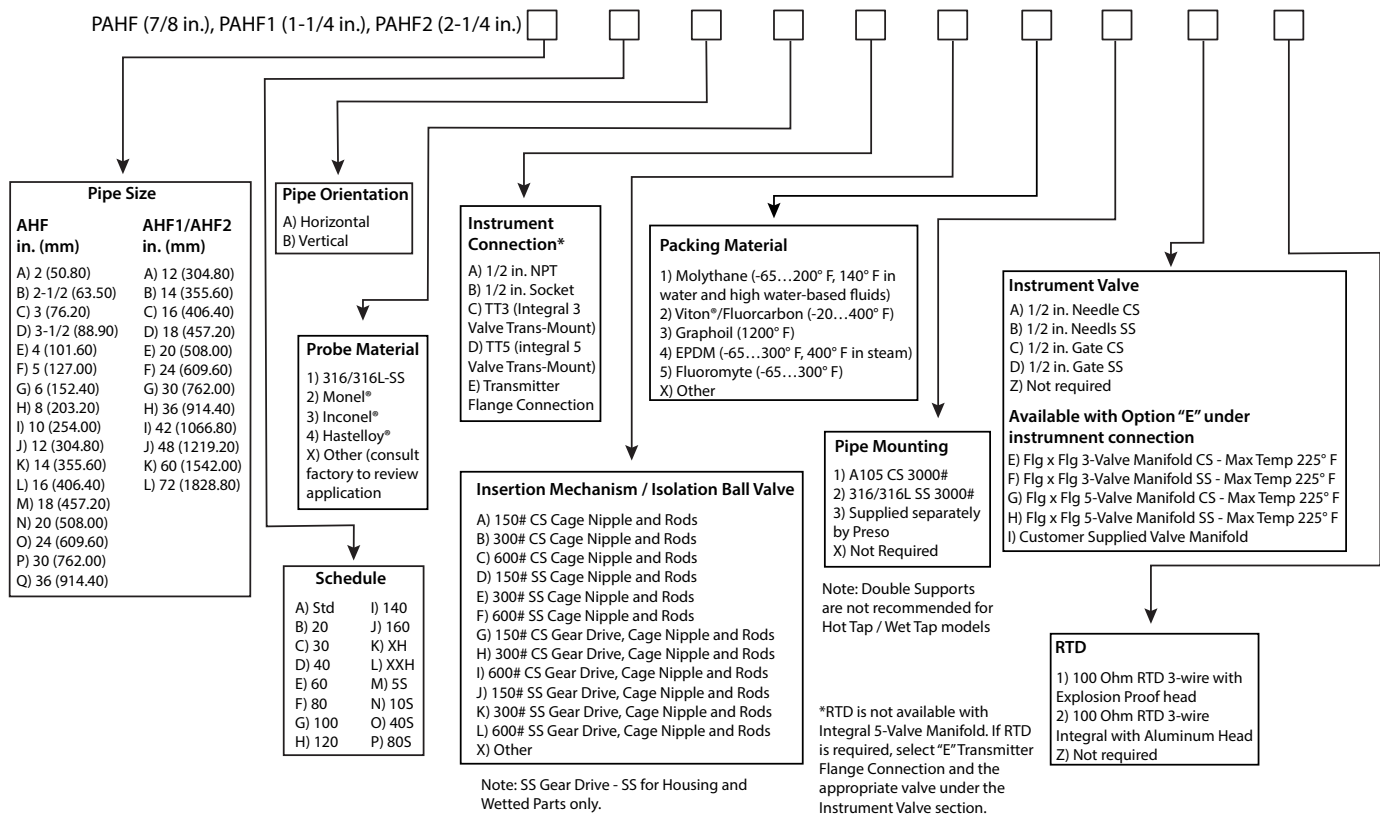
STANDARD COMPONENTS

Component	Specifications
Head	T-type
Connection	316 SS 1/4 in. or 1/2 in. FNPT
Fitting	CS 3000 lb weld - ASTM A105
Instrument Valves	2 per sensor , 316/316L SS Ellipse
ID Tag	316 SS with wire
Sensor Flange	150 lb 316/316L SS
Packing Chamber	CS with molythane or graphite packing gland
Packing Chamber Flange	CS 150 lb with SS cap
Isolation Ball Valve	316 SS, NPT threaded
Nuts and Bolts	CS threaded
Nipples	CS, schedule 40
Diameter	7/8 in., 1-1/4 in. or 2-1/4 in. diameters

OPTIONAL COMPONENTS

Component	Specifications
Rods, Bolts and Nuts	316 SS
Packing Chamber and Flange	316 SS
Spiral Wound Gasket	316 SS
300 lb., 600 lb. or Higher Flange Rating	CS or 316 SS ANSI B16.5
Temperature Port with RTD Output	—
Static Pressure Port	With SS plug

PART NUMBER MATRIX



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www.badgermeter.com

The Americas | Badger Meter | 4545 West Brown Deer Rd | PO Box 245036 | Milwaukee, WI 53224-9536 | 800-876-3837 | 414-355-0400
 México | Badger Meter de las Americas, S.A. de C.V. | Pedro Luis Ogazón N°32 | Esq. Angelina N°24 | Colonia Guadalupe Inn | CP 01050 | México, DF | México | +52-55-5662-0882
 Europe, Eastern Europe Branch Office (for Poland, Latvia, Lithuania, Estonia, Ukraine, Belarus) | Badger Meter Europe | ul. Korfantego 6 | 44-193 Knurów | Poland | +48-32-236-8787
 Europe, Middle East and Africa | Badger Meter Europa GmbH | Nurtlinger Str 76 | 72639 Neuffen | Germany | +49-7025-9208-0
 Europe, Middle East Branch Office | Badger Meter Europe | PO Box 341442 | Dubai Silicon Oasis, Head Quarter Building, Wing C, Office #C209 | Dubai / UAE | +971-4-371 2503
 Slovakia | Badger Meter Slovakia s.r.o. | Racianska 109/B | 831 02 Bratislava, Slovakia | +421-2-44 63 83 01
 Asia Pacific | Badger Meter | 80 Marine Parade Rd | 21-06 Parkway Parade | Singapore 449269 | +65-63464836
 China | Badger Meter | 7-1202 | 99 Hangzhong Road | Minhang District | Shanghai | China 201101 | +86-21-5763 5412
 Switzerland | Badger Meter Swiss AG | Mittelholzerstrasse 8 | 3006 Bern | Switzerland | +41-31-932 01 11