

VERIS FLOW MEASUREMENT GROUP

TRUE PERFORMANCE IN FLOW MEASUREMENT



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For the best flow measurement solution in any application, turn to Armstrong.

Our state-of-the-art flow measurement technology includes a full line of differential pressure flow elements and vortex meters, as well as VERIS Accelabar[®]—our proprietary meter that does not require any straight pipe lengths for installation.

Armstrong's flow meters are designed to provide accuracy in measurement, even with the most challenging gases and liquids, to meet the demands of virtually any application in any industry.

With more than a century of in-depth, steam system expertise, Armstrong also provides the most advanced steam flow measurement technology available today.



The Unique VERIS Accelabar® Flow Meter

The VERIS Accelabar[®] is a unique flow meter that produces performance never before attainable in a single flow meter.

The Accelabar[®] is capable of measuring gases, liquids, or steam at previously unattainable flow rate turndowns—**with no straight run requirements**.

How the Accelabar® Works

The Accelabar[®] combines a unique toroidal nozzle design with the VERIS Verabar[®] averaging Pitot tube.

The nozzle's patented "settling distance" design accelerates, linearizes, and stabilizes the fluid's velocity profile. The Verabar[®] located within the nozzle then accurately measures that velocity profile.

The nozzle also significantly increases the differential pressure output, thus increasing the operating range (turndown) of the Accelabar.

The Accelabar has a linear flow coefficient with an accuracy of up to $\pm 0.50\%.$

VERIS Verabar® Provides the Accuracy



The proven technology of the Verabar® delivers the accurate measurement within the Accelabar®. The Verabar®'s unique bullet shape, linear flow coefficient, solid one-piece construction, non-clog design, and signal stability make it the only design capable of producing superior performance.



Absolutely No Straight Run Required

The Accelabar[®] can be used in extremely limited straight run piping configurations. All necessary straight run is integral to the meter. The stabilization and linearization of the velocity profile within the throat of the nozzle eliminates the need for any upstream or downstream pipe runs.



VERIS Accelabar®



Engineering Specifications

- Liquids, gases, and steam service
- \bullet Accuracy up to \pm 0.50% of rate over entire flow range
- Repeatability: ±0.050% over entire flow range
- Verified flow coefficients
- Capable of extended turndowns in flowrate
- No straight piping run requirements
- Mass or volumetric flow
- 316SS meter body and sensing element
- 1" 12" (25.4mm 304.8mm) in-line body sizes
- Up to ANSI600 standard & ANSI2500 upon request

Ready to Install

The Accelabar[®] can be furnished as a ready to install flow meter system complete with the primary element, configured transmitter, RTD, and other secondary equipment such as a flow computer or data logger.

An optional RTD can be supplied in a thermowell for density compensation of mass flow rates.



The Accelabar® Advantage vs. Other Flow Meters

The Accelabar[®] is able to overcome the limitations of other flow meters in applications that:

• Do not have sufficient fluid velocity to produce a readable signal or generate adequate turndown

- Require $\pm 0.5\%$ accuracy over a large range of flow rates
- Have limited or no straight piping runs before the meter's installation point

Typical performance characteristics of the Accelabar[®] exceed those of traditional differential pressure, vortex, and other flow meter technologies.

Meter	Face to Face Dimension							
Size	Class 150#	Class 300#	Class 600#	PN10	PN16	PN40	PN63	PN100
1" (DN25)	7.50" (190.5mm)	8.25" (209.6mm)	8.75" (222.3mm)	N/A	N/A	10.15" (257.8mm)	N/A	11.57" (293.9mm)
2"	8.75"	9.38"	10.13"	11.54"	11.54"	11.78"	12.88"	13.35"
(DN50)	(222.3mm)	(238.2mm)	(257.1mm)	(293.2mm)	(293.2mm)	(299.2mm)	(327.2mm)	(339.2mm)
3"	13.78"	14.53"	15.28"	12.31"	12.31"	12.94"	14.04"	14.52"
(DN80)	(350.0mm)	(369.0mm)	(388.1mm)	(312.8mm)	(312.8mm)	(328.8mm)	(356.8mm)	(368.8mm)
4"	15.15"	15.90"	17.65"	13.34"	13.34"	14.36"	15.39"	16.34"
(DN100)	(384.8mm)	(403.9mm)	(448.3mm)	(338.9mm)	(338.9mm)	(364.9mm)	(390.9mm)	(414.9mm)
6"	19.15"	19.90"	21.90"	16.58"	16.58"	18.15"	19.73"	21.30"
(DN150)	(486.4mm)	(505.5mm)	(556.3mm)	(421.1mm)	(421.1mm)	(461.1mm)	(501.1mm)	(541.1mm)
8"	21.40"	22.15"	24.40"	18.38"	18.38"	20.42"	22.16"	23.74"
(DN200)	(543.6mm)	(562.6mm)	(619.7mm)	(466.9mm)	(466.9mm)	(518.9mm)	(562.9mm)	(602.9mm)
10"	23.15"	24.40"	27.65"	20.76"	20.76"	23.51"	25.09"	27.61"
(DN250)	(588.0mm)	(619.8mm)	(702.3mm)	(527.3mm)	(527.3mm)	(597.3mm)	(637.3mm)	(701.3mm)
12"	26.22"	27.47"	29.97"	23.41"	23.41"	26.32"	28.29"	30.65"
(DN300)	(665.9mm)	(697.7mm)	(761.2mm)	(594.6mm)	(594.6mm)	(668.6mm)	(718.6mm)	(778.6mm)

Designs, materials, weights and performance ratings are approximate and subject to change without notice. Visit armstronginternational.com/veris for up-to-date information.

Accelabar[®] Face to Face Dimensions



Accurate and Reliable Technology for Measuring Gas, Liquid, and Steam

Developed from aerospace technology, the VERIS Verabar® averaging pitot flow sensor provides unsurpassed accuracy and reliability. With its solid one-piece construction and bullet shape, the clogresistant Verabar® makes flow measurement reliable and precise.

Superior Signal Stability and Greater Resistance to Clogging



Clogging can occur in low pressure ports located in or near the partial vacuum at the rear of the sensor. The Verabar[®] design locates the low pressure ports on the sides of the sensor, forward of the fluid separation point and turbulent wake area. This virtually eliminates clogging and produces an extremely stable signal.



Engineering Specifications

- Liquids, gases, and steam service
- Accuracy up to \pm 1.0% of rate over entire flow range ($\pm 0.75\%$ if pipe ID is measured)
- Repeatability: ±0.10% over entire flow range
- Verified flow coefficients
- Mass or volumetric flow output
- 316SS standard sensing element
- Solid one-piece, bullet shaped design
- Pipe sizes 1.5" (38.1mm) and above
- Up to ANSI2500 upon request
- 5 year performance warranty from date of shipment



Lower Drag and Extended Turndown

The unique sensor shape reduces drag and flow induced vibration while the roughness of the Verabar®'s front surface extends its accuracy and rangeability to lower velocities.

Quality Assurance

Armstrong manufactures its own leak-proof, solid one-piece sensor. The primary goal is to provide the highest quality and most accurate sensor in the industry.

VERIS Verabar[®] is designed to meet or exceed applicable ANSI and ASME codes. The Verabar is available to meet B31.1, B31.3, B31.8, NACE MR-01-75, etc.

Additional QA capabilities include code welding, hydrostatic and other non-destructive testing.



The Proof of Verabar® Accuracy

Accurate Flow Coefficients

The true test of a flow measurement device is its ability to repeat its published flow coefficient within its accuracy band. Verabar[®] has been thoroughly tested at independent flow laboratories using multiple sensor sizes and multiple pipe sizes in both gas and liquid service.





Flanged Models — (Flanged Components)			
Model Number	Type of Mounting		
V500 📕 V510 📕 V550 🚆	Flanged V500 (Single Support) V510 (Double Support)		
	Flanged Spring-Lock V550 (No opposite support required)		

No Calibration Necessary

The development of a verified theoretical model allows the prediction of the Verabar®'s flow coefficients. **This eliminates the need for calibration tests to characterize the flow coefficients.** The derivation of the theoretical model and test data is published in the Verabar® Flow Test Report.

= Verabar[®] Applications =

The Verabar[®] offers the widest application range of any flow sensor. It accurately measures gas, liquid and steam.

Gas	Liquid	Steam
Natural Gas	Cooling/Chilled water	Saturated
Compressed Air	Boiler Feed Water	Superheated
Combustion Air	De-Mineralized Water	Main Header
Hydrocarbon Gas	Hydrocarbon Liquids	Custody Transfer
Hot Air	Cryogenic	Distribution
Blast Furnace Gas	Thermal Transfer Fluids	Energy Studies

Extended Range Applications

The Verabar's versatile design lends itself to a wide range of applications. Contact VERIS application engineering for your special requirements.





Armstrong International is pleased to offer vortex technology for measurement of steam, liquid, and gas flows. All AVF in-line models provide multivariable measurement and mass flow output for applications in industrial and institutional environments.

The flow meter is available from $\frac{1}{2}$ " (15 mm) (DN 15) to 12" (300 mm) (DN 300) meter sizes handling process temps from -330°F (-200°C) to 750°F (400°C) and process connections up to ANSI Class 600 (PN 64).

Multivariable options include temperature, pressure, and velocity measurements for a fully compensated mass flow rate. Output communication is available via analog 4-20ma, HART[™] protocol, Modbus, and BACnet[™].



Features

- Volumetric or mass flow
- Velocity, temperature, pressure measurements integral to meter body
- Energy calculation and output available
- 1.5% of rate accuracy or better
- Turndown up to 100:1
- Push button digital display
- Remote electronics available
- FM, FMC, ATEX, IECEx Approvals Pending
- Analog, HART[™] , Modbus, BACnet[™] communication



Performance Specifications

Accuracy			
Variable	Liquids	Gas & Steam	
Volumetric Flow Rate	±0.7% of rate	±1.0% of rate	
Mass Flow Rate	±1.0 % of rate	±1.5% of rate	
Temperature	±2.0°F (±1°C)	±2.0°F (±1°C)	
Pressure	±0.3% of full scale	±0.3% of full scale	
Density	±0.3% of reading	±0.5% of reading	
*Mass flow rate accuracy of gas and steam is based on 50-100% of pressure range			

Repeatability		
Mass Flow Rate	±0.2% of rate	
Volumetric Flow Rate	±0.1% of rate	
Temperature	±0.2°F (±0.1°C)	
Pressure	±0.05% of full scale	
Density	±0.1% of reading	
Stability Over 12 Months		
Mass Flow Rate	±0.2% of rate	
Volumetric Flow Rate	Negligible	
Temperature	±0.9°F (±0.5°C)	
Pressure	±0.1% of full scale	
Density	±0.1% of reading	
Response Time		
Adjustable from 1 to 100 seconds		

Physical Specifications

Wetted Materials			
Standard	316L Stainless Steel		
Optional	Carbon Steel or Hastelloy C		
	Approvals (Pending)		
FM, FMC	CLASS I, DIV. 1, GROUPS B, C, D CLASS II/III, DIV. 1, GROUPS E, F, G Type 4X and IP66, T6, Ta = -40°C to 60°C		
ATEX	II 2 G Ex d IIB + H2 T6 II 2 D EX tD A21 IP66 T85°C, Ta = -40°C to 60°C		
IECEx	Ex d IIB + H2 T6 Ex tD A21 IP66 T85°C, Ta = -40°C to 60°C		

Power Requirements			
LP Option	12-36 VDC, 25mA, 1W max		
DC Option	12-36 VDC, 300mA, 9W max		
AC Option	100-240 VAC, 50/60Hz line power, 5W		
	Output Signals		
Analog	4-20 mA		
Alarm	Solid state relay, 40 VDC		
Totalizer Pulse	50 millisecond pulse, 40 VDC		
Volumetric or LP Mass	One analog, one totalizer pulse, HART [™]		
Multivariable	Up to three analog signals, three alarms, one totalizer pulse, HART™		
Multivariable	Modbus or BACnet [™] process monitoring		
Display			
Alphanumeric 2 line x 16 character LCD digital display			
Six pushbuttons for full field configuration			
Pushbuttons can be operated with magnetic wand without removal of enclosure covers			
Display can be mounted in 90° intervals for better viewing			



Introducing the Insertion Vortex Flow Meter

The AVI insertion models provide all the same multivariable measurement and mass flow output features as the AVF in-line model in a robust, welded design.

The AVI is available for pipe sizes 2" (50 mm) (DN 50) and above with either flanged or NPT process connections up to ANSI Class 600 (PN64). Optional retractor tool provides easy hot-tap installation and removal.



Features

- · Compensated mass flow and energy calculations for gases, liquids, and steam
- Hop tap installation does not require shut down or process interruption
- Up to $\pm 1.5\%$ accuracy over a wide turndown in flow rates
- Reliable construction no moving parts
- Analog, HART[™], Modbus, and BACnet[™] communication
- FM, FMC, ATEX, IECEx Approvals Pending



Performance Specifications

Accuracy			
Variable	Liquids	Gas & Steam	
Volumetric Flow Rate	±1.2% of rate	±1.5% of rate	
Mass Flow Rate	±1.5 % of rate	±2.0% of rate	
Temperature	±2.0°F (±1°C)	±2.0°F (±1°C)	
Pressure	±0.3% of full scale	±0.3% of full scale	
Density	±0.3% of reading	±0.5% of reading	
*Mass flow rate accuracy of gas and steam is based on 50-100% of pressure range			

Repeatability		
Mass Flow Rate	±0.2% of rate	
Volumetric Flow Rate	±0.1% of rate	
Temperature	±0.2°F (±0.1°C)	
Pressure	±0.05% of full scale	
Density	±0.1% of reading	
Stability Over 12 Months		
Mass Flow Rate	±0.2% of rate	
Volumetric Flow Rate	Negligible	
Temperature	±0.9°F (±0.5°C)	
Pressure	±0.1% of full scale	
Density	±0.1% of reading	
Response Time		
Adjustable from 1 to 100 seconds		

Pressure Ratings				
Style Connection Process Rating Code Or			Ordering	
	2" (50 mm) MNPT	ANSI 600#	CT8	
Comprossion Fitting	2" (50 mm) 150# flange	ANSI 150#	CF8150	
Compression Fitting	2" (50 mm) 300# flange	ANSI 300#	CF8300	
	2" (50 mm) 600# flange	ANSI 600#	CF8600	
Packing Gland	2"(50 mm) MNPT	50 psig (3.5 barg)	PT8	
	2" (50 mm) 150# flange	50 psig (3.5 barg)	PF8150	
	2" (50 mm) 300# flange	50 psig (3.5 barg)	PF8300	
Packing Gland & Removable Retractor	2" (50 mm) MNPT	ANSI 300#	PT8RR	
	2" (50 mm) 150# flange	ANSI 150#	PF8150RR	
	2" (50 mm) 300# flange	ANSI 300#	PF8300RR	
	2" (50 mm) MNPT	ANSI 600#	PT8R	
Packing Gland & Permanent Retractor	2" (50 mm) 150# flange	ANSI 150#	PF8150R	
	2" (50 mm) 300# flange	ANSI 300#	PF8300R	
	2" (50 mm) 600# flange	ANSI 600#	PF8600R	

Operating Specifications



Orifice Plate for Flow Measurement

Orifice Plates are the most commonly used differential pressure measurement device and are applicable for measurements in gases, clean liquids, and low velocity steam. Orifice plates allow for relatively easy installation and replacement if necessitated by changes in process parameters or life cycle deterioration.

Armstrong supplies components for a typical orifice meter installation including flange unions, gaskets, orifice plate, and appropriate pressure tap sets.

Design and Manufacturing Standards

- Manufactured under strict control with high quality in observation with ASME and ISO 9001 certification standards
- AGA, ISA, ANSI, and API applicable codes
- · Nondestructive testing and special service options available



Product Specifications		
Accuracy	±1.0% to ±5.0%	
Turndown	Up to 10:1 turndown in flow	
Operating Temperature	-400°F to 1250°F (-240°C to 677°C)	
Operating Pressure	Dependent on material of construction	
Line Size	$\frac{1}{2}$ " and above (12.7mm and above)	
Beta Ratio	0.30 to 0.75	



Square Edge Concentric

Standard bore specification for clean liquid, gas, and steam.

Quadrant Edged

Used in high viscosity, low Reynolds number applications.



Allows for passage of entrained gas or solids through the bore.

Segmental Bore

For fluids containing large and heavy sediments or solids.

Orifice Plates & Flanges



Orifice Meter Runs

Orifice meter runs are available in accordance with AGA 3 code or any other desired specification for material, size, and capacity. General configuration of orifice meter runs includes:

Instrument Connection $-\frac{1}{2}$ " (12.7mm) pipe coupling and plug are supplied on downstream tube. Additional couplings are available upon request.

End Connection – Ends are supplied beveled for field welding. Threaded, flanged, and mechanical connections are available upon request.

Alignment – Meter runs are provided with alignment holes and studs.

Packing/Crating – Meter runs are crated and shipped fully assembled, ready for installation.



	Orifice Plate and Meter Offerings - Model Numbers					
AOP	Universal Orifice Plate					
AOU	Orifice Flange Union, Hardware Optional, Gaskets, No Plate					
AOUP	Orifice Flange Union, Hardware Optional, Gaskets, Plate					
AOUPFR	Orifice Meter Run, Plate, Flanged In-Line, Union					
AOUPWR	Orifice Meter Run, Plate, Welded In-Line, Union					
AOPTR	Orifice Meter Run, Plate, Threaded, Welded In-Line, No Flange Union					
AOPWR	Orifice Meter Run, Plate, Welded, Welded In-Line, No Flange Union					



Armstrong Venturi Tube Flow Meter

Venturi Tube Flow Meter

Venturi tubes have long been specified and used in a multitude of flow measurement applications. The versatility of measurable fluids, line sizes, and material of construction available to a Venturi tube flow meter has made it a highly recognized differential pressure flow element.

Armstrong offers classical style Venturi tubes – short form and long form – manufactured in accordance with applicable ASME codes. Also available is the Halmi Venturi tube which features superior performance and design with shorter laying lengths and reduced cost.

General Venturi Specifications				
Accuracy	$\pm 0.5\%$ up to $\pm 0.25\%$ with calibration			
Beta Ratio	Customizable between 0.30 through 0.75			
Permanent Pressure Loss	anent Pressure Loss 5% to 20% dependent on Beta Ratio			
Line Size	3/8" through 144" (9.525mm through 3657.6mm)			
End Connection Flange, weld, plain end, mechanical joint, or other				
Material of Construction	CS, SS, Duplex SS, Chrome Moly, Aluminum, Hastelloy, Monel, Inconel, Zirconium, Titanium, Tantalum, Cast and Ductile Iron			
Operating Pressure and Temperature	As limited by the materials of construction			

Common Applications

- Clean gases and liquids
- Potable water
- High pressure steam
- Combustion air
- Compressor surge control
- Process measurement (alcohol, ethylene, chlorine, etc.)
- Gas oxygenation
- Storm sewage
- Solids-bearing fluids
- Higher viscosity liquids

Available Models and Configurations

Classical Venturi

- In-line, insert, and eccentric designs
- Flanged, weld-in, socket weld, butt weld connections
- Meter runs

Bi-Directional Venturi

- Classical and Halmi designs
- Cast, fabricated, plastic
- In-line, insert
- Flanged, weld-in, butt weld

Halmi Venturi

- Fabricated
- In-line, insert
- Flanged, weld-in, socket weld, butt weld, threaded, grout-in, wafer
- Meter runs, static tap, low flow, elbow mount

Plastic Venturi

- Insert
- Flanged, weld-in, grout-in
- Meter runs, static tap





The ASME flow nozzle is a high performance, reliable measurement device, that can be installed in various design and material configurations with conformance to ASME MFC-3M, ASME PTC-6, and ASME PTC 19.5 codes.

General Features						
Line Size	Discharge Coefficient	ASME Design Standards				
2" to 24" (50.8mm to	±2.0% wall tapped nozzle (ASME MFC standard)	ASME PTC-6				
609.6mm)	±1.0% wall tapped nozzle (ASME PTC 19.5 standard)	ASME PTC 19.5				
Beta Ratio	+0.25% throat tapped nozzle (ASME PTC 6 standard)	ASME MEC-3M				
0.20 to 0.80						
Nozzle Material	End Connections	150-5167				
300 series stainless steel	Flanged or Welded	ASME Fabrication Standards				
Other materials available	Pressure Taps	ASME Section 1				
Piping Requirements	Wall Tap – 1D upstream, 0.5D downstream	ASME B31.1 – power piping				
ASME specified	Throat Tap – 1D upstream, code spec'd downstream	ASME B31.3 – process piping				



ANZF – Nozzle Flanged

Nozzle designed to be mounted between two flanges. ANZW model available to be welded-in between upstream and downstream pipe sections.



ANZFFR – Flanged Nozzle, Flanged Meter Run

Flow nozzle machined with a holding flange. The nozzle is mounted concentrically with the process flange of two pipe sections.



ANZWFR – Welded Nozzle, Welded Meter Run

Flow nozzle installed within a meter run by welding. Used regularly in high pressure and temperature feedwater and steam applications within power plants where flanged mounting is precluded.

Armstrong PTC-6 ASME Flow Nozzle



PTC-6 ASME Flow Nozzle

This flow nozzle provides high accuracy and precision required by ASME PTC-6 in steam turbine testing applications. The assembly consists of a flow conditioner for added accuracy, a diffuser cone for reduced pressure loss, and either a flanged or weld-in flow nozzle. Available in line sizes 4" to 24" with perforated plate or tube bundle flow conditioner, flanged-in or weld-in end connections, and four integrally machined throat pressure taps that are precision-machined and polished. Design standard ASME PTC-6 or ASME PTC 19.5.



Model APTFFR – PTC-6 flanged nozzle in a flanged meter run



Model APTWWR – PTC-6 welded nozzle in a welded meter run



Model APTWWR – PTC-6 welded nozzle in a welded meter run with inspection port

Flow Nozzle Meter Offerings - Model Numbers					
AHN	Halmi Nozzle				
ANZF	Nozzle Flanged				
ANZFFR	Nozzle Flanged, Flanged, Meter Run				
ANZFWR	ZFWR Nozzle Flanged, Welded, Meter Run				
ANZW	Nozzle Weld-In				
ANZWFR Nozzle Weld-In, Flanged, Meter Run					
ANZWWR Nozzle Weld-In, Welded, Meter Run					
APTFFR	PTC-6 Flanged Nozzle, Flanged, Meter Run				
APTFWR	PTC-6 Flanged Nozzle, Welded, Meter Run				
APTWFR	PTC-6 Welded Nozzle, Flanged, Meter Run				
APTWWR	PTC-6 Welded Nozzle, Welded, Meter Run				



Accurate Measurement for Challenging Fluids

Armstrong's Wedge Meter imparts all the benefits of differential pressure measurement in difficult fluid applications. The meter can be used with high viscosity fluids, slurries, asphalt, tar-sands, fracking fluids, spent water, sludge, bottoms flow, cement, or other contaminated or abrasive fluids.

Within the cylindrical meter body, an embedded wedge constricts flow and produces a differential pressure. The subsequent measurement from the meter can be accurate to $\pm 0.5\%$ and $\pm 0.2\%$ repeatability. This includes measurements throughout the operating range and low Reynolds numbers.

Wedge & WedgeX Key Features

- ±0.5% accuracy, ±0.2% repeatability
- Available in virtually any line size
- Numerous materials of construction including: 316SS, 304SS, CS, Hastelloy, Monel, and PVC
- Flanged ends, threaded ends, weld ends, mechanical joint, and other connection types available
- Working pressure limitations per ANSI B16.5

Straight Dup Dequirements	Pref	erred	Minimum		
Straight Run Requirements	Up	Down	Up	Down	
Concentric expander/reducer	10D	5D	5D	3D	
One elbow	10D	5D	5D	3D	
Two elbows in-plane	10D	5D	5D	3D	
Two elbows out-of-plane	10D	5D	10D	3D	
Partially open gate valve	10D	5D	10D	3D	



AWMF Wedge Meter

Typical Meter Configuration



Armstrong WedgeX Flow Meter



Wedge Meter Benefits in a Compact Design

The Armstrong WedgeX meter utilizes the same technology and benefits inherent with a traditional wedge meter all within a compact, cost effective unit. The direct coupling of the transmitter to the pressure taps virtually eliminates measurement errors caused by the gauge line or plugged taps.

The WedgeX holds the same advantages in accuracy, performance, construction, and fluid capabilities as the standard wedge meter.

	Wedge Meter Model Codes					
AWMF	Wedge Meter, Flanged					
AWMT	Wedge Meter, Threaded					
AWMWFR	Wedge Meter, Wafer					
AWMV	Wedge Meter, Victaulic					
AWMW	Wedge Meter, Butt Weld					
AWX	WedgeX, Studs & O-Rings					
AWXT	WedgeX, Threaded					
AWXT3V	WedgeX, Threaded, 3-Valve Manifold					
AWXTT3V	WedgeX, Threaded, Transmitter, 3-Valve Manifold					
AWXTT	WedgeX, Threaded, Transmitter					
AWXTHTT	WedgeX, Threaded, High Temp, Transmitter					
AWXF	WedgeX, Flanged					
AWXF3V	WedgeX, Flanged, 3-Valve Manifold					
AWXFT3V	WedgeX, Flanged, Transmitter, 3-Valve Manifold					
AWXFT	WedgeX, Flanged, Transmitter					
AWXFHTT	WedgeX, Flanged, High Temp, Transmitter					
AWXW	WedgeX, Wafer					
AWXW3V	WedgeX, Wafer, 3-Valve Manifold					
AWXWT3V	WedgeX, Wafer, Transmitter, 3-Valve Manifold					
AWXWT	WedgeX, Wafer, Transmitter					
AWXWHTT	WedgeX, Wafer, High Temp, Transmitter					
AWXV	WedgeX, Victaulic					
AWXV3V	WedgeX, Victaulic, 3-Valve Manifold					
AWXVT3V	WedgeX, Victaulic, Transmitter, 3-Valve Manifold					
AWXVT	WedgeX, Victaulir, Transmitter					
AWXVHTT	WedgeX, Victaulic, High Temp, Transmitter					



AWXTT WedgeX Meter

VERIS Accelabar®

Quick Model Selection · RFQ

Fill in the f	form belov	v, comple	ete sections 1	through 7 an	d email t	t o: veris-s	ales@ armstron	g internatio	onal.	com		
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	Gas	Specific	Gravity, or									
	Liquid	Specific	Gravity						_			
	Steam	VeraCal	c Program car	n calculate De	nsity from	Tempera	ature and Press	Ire	_			
4. Sel (Check	ect Mod ck one box i ed (ANSI):	del Acc in each cat	celabar 31 tegory)	6SS		5. Se Instrum (Select Re	ent Head Conn	ections	lea	d (C Sold Se	heck	one box)
□ 150# □ 600# □ ATS M	☐ 300# ☐ ABS B NPT Threa	evel for V ded Ends	Veld			Contemporation of the second sec		₽ 21	Remote Mount Transmitter (1/2" NPT)		nt	
(1" and	d 2" meter	only)				Manifol	d Transmount	Valve		Regul	ar	Parallel
Specify Ac 1" (DN 2" (DN 3" (DN	ccelabar M 25)	eter Size: 6" (DN150 8" (DN200 10" (DN25	0) 0) 50)			Integral		Integral	me∏			
🗌 4" (DN	100)	12" (DN30	00)			M	F	T				□ P
b. Sel	ect			Manifold	IS (Optional))		Ins	strum	Pomo	alves	; (Optional)
Valves	or		3-Valve	- Direc		5-Va	lve	Ne	edle			Gate
Manifol	d,									a	8.mm	
RTD &	Cable									8	₿~14H	
(Optional)		Soft	Seat	Hard Seat	Soft :	Seat	Hard Seat	1/2"	NPT		1	/2" NPT
			$\mathbf{S}(SS) \square$	F3HC (CS) F3HS (SS)		S (SS)	F5HC (CS) F5HS (SS)		NC (C NS (S	55) SS)		22GC (CS) 22GS (SS)
		Code	RTD in The	rmowell						7 . •	Trar	ısmitter
		□H1 □HT	Standard Te High Tempe	emperature, 5 erature, 900*F	00*F (260 (482*C))*C) Max., Max., Moi	Explosion Resisture and Dust F	stant Resistant		S	Suppli	ied By
Code C			Code Co	onnection Cable to Transmitter (Direct Mount Only)				□ Veris □ Others				

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Explosion Resistant Moisture and Dust Resistant

□ XP □ N4

VERIS Verabar®

Quick Model Selection · RFQ

Fill in the form t	pelow, con	nplete sections1 t	hrough 7 and ema	il to: veris-sales@	armstronginternation	onal.com	
Requested By:		Tag#:	-	E	mail		
Phone [.]		lag# Fax:		L	-mail		
Company:		Address:	c	ity, State, Zip:			
End Lloor:					· · · · · · · · · · · · · · · · · · ·		
Company Name:			Citv:		State, Zir	0:	
1. Enter P	ipe Dim	ensions or	Duct Dimen	sions 2	Pipe or Duc	ct Orien	tation
Pipe	Size	Sch	Heigh	it (H)	(Check one box	()	
	e ID	and H	Width	(W)			
Wall	Pip	e Mat'l	└──W── Wall	() <u> </u>	{ ◄ ► }	•	Chart
Wall	· · ·P	•	Dimension Verabar spans Duct	 Mat'l	(H) Horizontal ((V) Vertical	Short Straight Run
			(H) or (Ŵ)				Consult Factory
3.	Fluid Na	me:	Maximum	n Normal	Minimum	Units	Special
Enter	Flow Rat	te					
Flow	All	Pressure @ Flow					
Conditions	Fiulus	Temperature @ H	-low				
	Gas	Specific Gravity,	or •				
	Liquid	Specific Gravity					-
	Steam	VeraCalc Program	n can calculate De	nsitv from Tempera	ture and Pressure		
(Check one	box)	V150 Spring Loc lar			V500 V510 Regular		
5 Salaat	\sum	ont Hood					
)	
₽™∎ R	ns Remote Mo	unt Transmitter (1)	/2" NPT)	Direct Mount. Iran	Nount Transmitter	y.) (Flanged 450	°F/232°C Max.)
Parallel	Regula	r RTD	Valve	Transmount	Mass Transmo	ount	Manifold
□ P			ПТ	□ F	□ G		М
	कित्र क		Lee of Term			7	
			Integral		Integral III		Integral
6.		Remote Mount		Direct Mount)	7. Tr	ansmitter
Select	Need	le Gate	3-Valve	•	5-Valve	Su	pplied By
Valves or		$(CS) \square C2GC(CS)$				🗌 Veri	s Others
Manifold (Optional)							
	1/2 INF	I/A INFI		1414 OCUL OUL 30	naiu Seal		

Vortex Meter

Fill in the form below, complete sections 1 through 5 and email to: veris-sales@armstronginternational.com

Requested I	Зу:	· •	_			5	
Date:		Tag#:			E-mail:		
Phone:	Fax:						
Company: _		Address: _			City, State,	Zip:	
End User:							
Company Na	ame:		_ City:			_ State, Zip: _	
1. Ent	er Pipe Pipe Size	Dimensions	— Pine Mat'l	2	2. Pipe Or (Check one	ientation	
	Vall	•••••	_ 1 100 Mat 1		(H) Hori	zontal [(V) Vertical
3.	Fluid Nar	ne:	Maximum	Normal	Minimum	Units	Special Instructions
Enter	Flow Bat	8		lionia			
Enter		Pressure @ Flow					
Condi-	Fluids	Temperature @ Flow					
tions		Specific Gravity or					
	Gas	Molecular Weight					
	Liquid	Specific Gravity					
	Steam	Vortex Sizing Program	can calculate De	nsitv from Ten	perature and Pr	essure	
 150# Fla 600# Fla PN16 PN64 Electronics NEMA 4 Remote Remote Multivariab Volumet Velocity Velocity Energy Energy, Output: 	inge	300# Flange 600# Wafer PN40 re Enclosure, 50 ft cable Enclosure, 25 ft cable s: ture ture, Pressure ture, External Pressure		 Compre Packing Connection 150# Fla 600# Fla PN16 PN64 Electronic: NEMA 4 Remote Remote Multivarial Volume Velocity Velocity Velocity 	ssion Fitting Gland n Type (2 inch, ange 3004 ange NPT PN4 s: X Enclosure NEMA 4X Encl NEMA 4X Encl ble Options: tric y, Temperature y, Temperature, y, Temperature,	Perma Remo DN50): Flange 0 osure, 50 ft osure, 25 ft Pressure External Pre	anent Retractor oveable Retractor cable cable
 One analog One analog One analog One analog Three analog Three analog Three analog Three analog Three analog Input Powee 12-36VDC, 12-36VDC, 10-240VAC, Designs, subject to 	, frequency, or , frequency, or , frequency, or og, frequency, or og, frequency, or og, frequency, og, frequency, og, frequency, er: 25mA, 1W max 300mA, 9W max , 5W max, outp materials, weig o change withou	te pulse, HART, LP power only te alarm, one pulse, HART, DC o te alarm, one pulse, Modbus, D te alarm, one pulse, BACnet [™] , D three alarms, one pulse, HART, three alarms, one pulse, Modbu three alarms, one pulse, BACnet c, loop powered, output option 1 ax, output options 2, 3, 4, 5, 6, 7 that and performance ratings are applit t notice. Visit armstrong internatio	or AC power C or AC power DC or AC power DC or AC power s, DC or AC power " [™] , DC or AC power only 7	 Energy Energy, Output: One analog One analog One analog One analog One analog Three analog	, Pressure g, frequency, one puls g, frequency, one alar g, frequency, one alar g, frequency, one alar log, frequency, three log, frequency, three cer: , 25mA, 1W max, loop , 300mA, 9W max, out	se, HART, LP pow rm, one pulse, HA rm, one pulse, Mi rm, one pulse, BA alarms, one pulse alarms, one pulse alarms, one pulse alarms, one pulse powered, output tput options 2, 3, ions 2, 3, 4, 5, 6	ver only ART, DC or AC power odbus, DC or AC power ACnet™, DC or AC power e, HART, DC or AC power e, Modbus, DC or AC power e, BACnet™, DC or AC power coption 1 only 4, 5, 6, 7 , 7

22

Differential Pressure Flow Element

Fill in the form below, complete sections 1 through 4 and email to: veris-sales@armstronginternational.com Deguasted Du

	·	
End User: Company Name:	City:	State, Zip:
Company:	Address:	City, State, Zip:
Phone:	Fax:	
Date:	Tag#:	E-mail:
nequested by		

1. Enter Pipe Dimensions

(Pipe
$\left(\left(\right) \right)$	Pipe
	Vall

3.

Pipe Size _	Sch	_
Pipe ID	Wall	Pipe Mat'l
14/-11		

2. Pipe Orientation (Check one box)

• -(H) Horizontal

(V) Vertical

•

Fluid Name:		Maximum	Normal	Minimum	Units	Special Instructions
Flow Rate						
All	Pressure @ Flow					
Fluids	Temperature @ Flow					
Gas	Specific Gravity, or					
	Molecular Weight					
Liquid	Specific Gravity					
Steam	Flow Element Sizing Program can calculate Density from Temperature and Pressure					
	Fluid Nat Flow Rat All Fluids Gas Liquid Steam	Fluid Name: Flow Rate All Fluids Pressure @ Flow Gas Specific Gravity, or Molecular Weight Liquid Specific Gravity Steam Flow Element Sizing P	Fluid Name: Maximum Flow Rate Pressure @ Flow All Fluids Pressure @ Flow Gas Specific Gravity, or Molecular Weight Molecular Weight Liquid Specific Gravity Steam Flow Element Sizing Program can calcometee	Fluid Name: Maximum Normal Flow Rate All Fluids Pressure @ Flow Fluids Temperature @ Flow Gas Specific Gravity, or Molecular Weight Liquid Specific Gravity Steam Flow Element Sizing Program can calculate Density from the state of t	Fluid Name: Maximum Normal Minimum Flow Rate All Fluids Pressure @ Flow Gas Specific Gravity, or Liquid Specific Gravity Steam Flow Element Sizing Program can calculate Density from Temperature	Fluid Name:MaximumNormalMinimumUnitsFlow Rate </td

4. Primary Element

Orifice Plate Venturi Venturi	Orifice Plate:	Venturi/Flow Nozzle:
	☐ Quadrant Edged ☐ Segmented Bore Tap Type: ☐ Flange ☐ Radius ☐ Vena Contracta ☐ Pipe Flange Rating (if applicable):	☐ Insert
Desired Differential Pressure at Max Flow:		☐ Flange Rating (if applicable): ☐ 150# ☐ 300# ⊆ 600#
Desired Beta Ratio (if applicable):		☐ 600# ☐ Other Material of Construction: Throat
Meter Run:	□ 500#	Body
☐ Yes ☐ No		
Notes:		



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