

## V500 Single Support & V510 Double Support – Flanged Components

**The Most 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 VERIS Verabar® makes flow measurement leak resistant and precise. The unique sensor shape reduces drag and flow induced vibration. The location of the low-pressure ports significantly reduces the potential for clogging and improves signal stability.



V500



V510

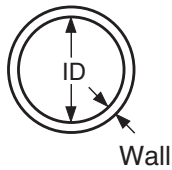
V500 Single Support & V510 Double Support	
<b>Pipe Connection</b>	Flanged
<b>Mounting Type</b>	Flanged up to ANSI Class 2500#
<b>Features and Benefits</b>	<ul style="list-style-type: none"> <li>• All welded mounting</li> <li>• Preferred mounting in power, petrochemical and refining industries</li> <li>• Can mount to existing flanges</li> </ul>
<b>Applications</b>	<ul style="list-style-type: none"> <li>• Air</li> <li>• Natural gas</li> <li>• Hydrocarbon liquids and gases</li> <li>• Water (raw, cooling, feedwater)</li> <li>• Hazardous fluids</li> <li>• Steam</li> <li>• Large pipes and ducts</li> </ul>
<b>Special Designs - Consult Factory</b>	<ul style="list-style-type: none"> <li>• Custom mounting, lengths, materials, instrument connections, etc.</li> <li>• Short straight run</li> </ul>

Temperature Pressure Limits (ANSI Class)*
<b>150#</b>
275 psig @ 100°F (19 bar @ 38°C)
80 psig @ 800°F (5.5 bar @ 426°C)
<b>300#</b>
720 psig @ 100°F (49.6 bar @ 38°C)
410 psig @ 800°F (28.3 bar @ 426°C)
<b>600#</b>
1440 psig @ 100°F (99.3 bar @ 38°C)
825 psig @ 800°F (56.9 bar @ 426°C)
<b>1500#</b>
3600 psig @ 100°F (248.2 bar @ 38°C)
190 psig @ 1500°F (13.1 bar @ 815°C)
<b>2500#</b>
6000 psig @ 100°F (413.7 bar @ 38°C)
315 psig @ 1500°F (21.7 bar @ 815°C)

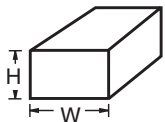
Model Specifications	V500 and V510		
<b>Sensor Code</b>	<b>05</b>	<b>10</b>	<b>15</b>
<b>Sensor Diameter</b>	7/16" (11mm)	7/8" (22mm)	1-3/8" (35mm)
<b>Accuracy</b>	±1% of flow rate; up to +/-0.5% if calibrated		
<b>ANSI Class*</b>	150#, 300#, 600#, 1500# and 2500#		
<b>Pipe Size</b>	2" - 6" (50mm-150mm)	6" - 48" (150mm-1200mm)	12" - 192" (300mm-5000mm)
<b>Instrument Connection</b>	1/2" NPT, Socket Weld or Direct Mount		
<b>Components Furnished</b>	Weld coupling, weldneck flange, gasket, studs & nuts V510 includes additional weld coupling and pipe cap		
<b>Flange Size</b>	1"	1-1/2"	2"

\* DIN and JIS flanges available. Consult factory.

## 1. Enter Pipe Dimensions or Duct Dimensions



Pipe Size \_\_\_\_\_ Sch \_\_\_\_\_  
 Pipe ID \_\_\_\_\_ and  
 Wall \_\_\_\_\_ Pipe Material \_\_\_\_\_



Height (H) \_\_\_\_\_  
 Width (W) \_\_\_\_\_  
 Wall \_\_\_\_\_  
 Duct Material \_\_\_\_\_

Dimension  
 Verabar® spans  
 (H) or (W)

## 2. Pipe or Duct Orientation (Check one box)

(H) Horizontal
  (V) Vertical
  Short  
 Straight Run  
 Consult Factory

## 3. Enter Flow Conditions

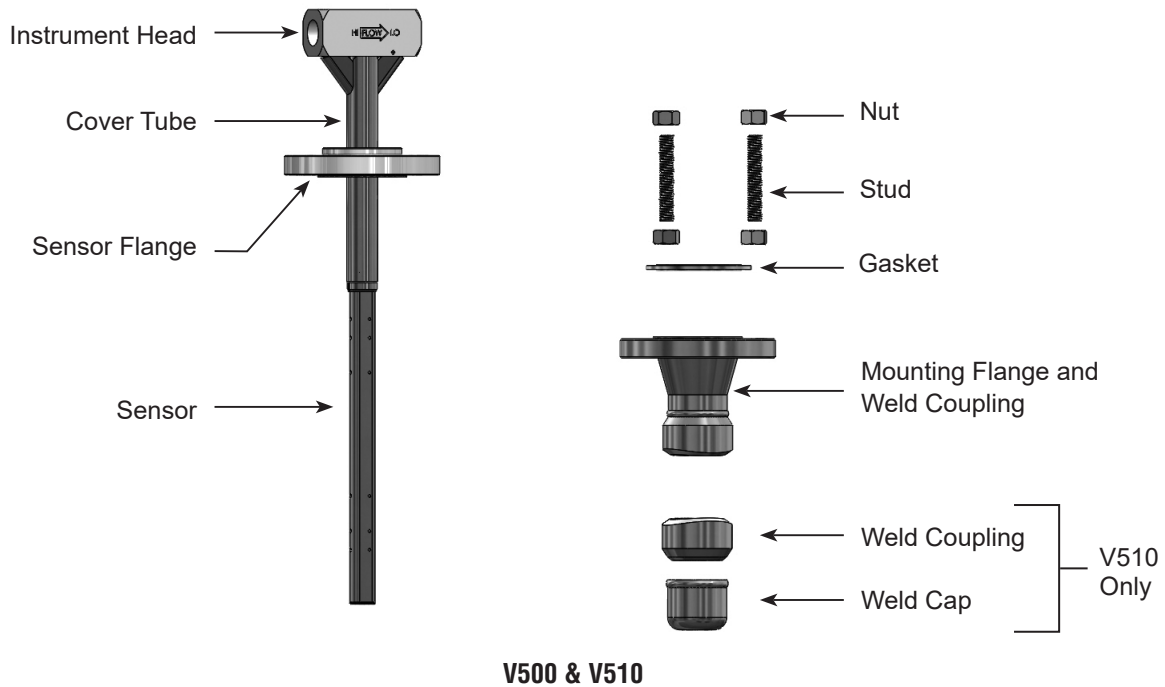
Fluid Name:		Maximum	Nominal	Minimum	Units
<b>Flow Rate</b>					
<b>All Fluids</b>	Pressure @ Flow				
	Temperature @ Flow				
<b>Gas</b>	Specific Gravity, or Molecular Weight				
<b>Liquid</b>	Specific Gravity				
<b>Steam</b>	VeraCalc Program can calculate Density from Temperature and Pressure				

## 4. Select Model from Page 3

Use the Ordering Information table on Page 3 to determine your model number.

## 5. Flow Calculation

All VERIS Verabar® applications require a flow calculation to verify the DP, pressure and temperature limits, structural limits and to size the transmitter. VeraCalc is for use by representatives and end users. It is easy to operate and includes steam tables.



## High Pressure and Temperature Head Option

### Unique Design Features

High Pressure Threaded (HPT) and High Pressure Socket (HPS) designs offer the highest possible pressure and temperature capabilities. When pressure containment and safety are primary concerns, the HPT/HPS has the strongest and safest design in the industry.

As with all VERIS designs, it meets ANSI/ASME B31.1 and can be supplied with code welding (ASME Section IX), hydrostatic testing, N.A.C.E. and material traceability.

### Applications

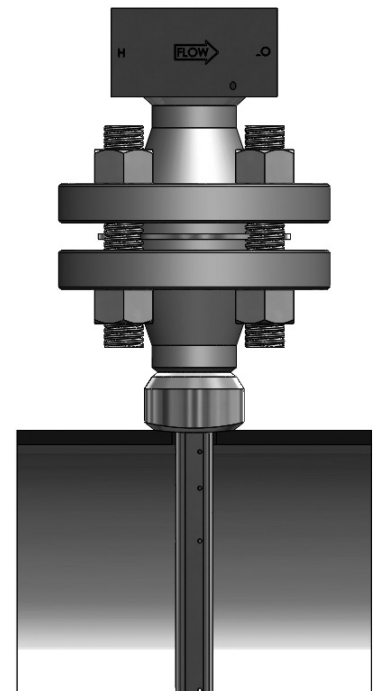
#### Main Header Steam Lines

Used for high pressure and temperature applications such as main header steam lines.

For these applications, pipe mounting assemblies are available in chrome-moly material (ASTM A182 F11, F22 & F91).

#### Other Applications

- High pressure and temperature gases and liquids
- Natural gas transmission lines
- Boiler feed water lines
- Oil well injection lines



**Applications up to ANSI Class 2500#**

<b>Model</b>	<b>Flanged</b>
<b>V500</b>	Single Support
<b>V510</b>	Double Support

**Pipe Size and Schedule or Exact ID and Wall Thickness**

**Code Sensor Pipe Size Range**

<b>05</b>	2" to 6" (50mm to 150mm)
<b>10</b>	6" to 48" (150mm to 1200mm)
<b>15</b>	12" to 192" (300mm to 5000mm)

**Code Pipe Orientation**

<b>H</b>	Horizontal
<b>V</b>	Vertical

**Instrument Connections (Select Remote or Direct Mount)  
(Transmitter sold separately)**

Remote Mount Transmitter (1/2" NPT)				Direct Mount Transmitter (Flanged 450°F/232°C Max.)†		
Parallel	Regular	RTD*	Valve	Transmount	Mass Transmount	Manifold
			Integral		Integral RTD	Integral
<b>P</b>	<b>R</b>	<b>D</b>	<b>T</b>	<b>F</b>	<b>G</b>	<b>M</b>

Instrument Valves (Opt.)		Manifolds (Optional)			
Remote Mount		Direct Mount			
Needle	Gate	3-Valve		5-Valve	
1/2" NPT	1/2" NPT	Soft Seat	Hard Seat	Soft Seat	Hard Seat
<b>C2NC (CS)</b> <b>C2NS (SS)</b>	<b>C2GC (CS)</b> <b>C2GS (SS)</b>	<b>F3SC (CS)</b> <b>F3SS (SS)</b>	<b>F3HC (CS)</b> <b>F3HS (SS)</b>	<b>F5SC (CS)</b> <b>F5SS (SS)</b>	<b>F5HC (CS)</b> <b>F5HS (SS)</b>

Optional

Mounting Assembly — Select Material & Rating (Includes SS sensor flange, WN flange, weld coupling, spiral-wound gaskets, studs & nuts)					
Sensor (Flange Size)			Mating Flange Material & ANSI Class		
05 (1")	10 (1-1/2")	15 (2")			
Code					
<b>F415C</b>	<b>F615C</b>	<b>F815C</b>	CS	#150	
<b>F415S</b>	<b>F615S</b>	<b>F815S</b>	SS	#150	
<b>F430C</b>	<b>F630C</b>	<b>F830C</b>	CS	#300	
<b>F430S</b>	<b>F630S</b>	<b>F830S</b>	SS	#300	
<b>F460C</b>	<b>F660C</b>	<b>F860C</b>	CS	#600	
<b>F460S</b>	<b>F660S</b>	<b>F860S</b>	SS	#600	

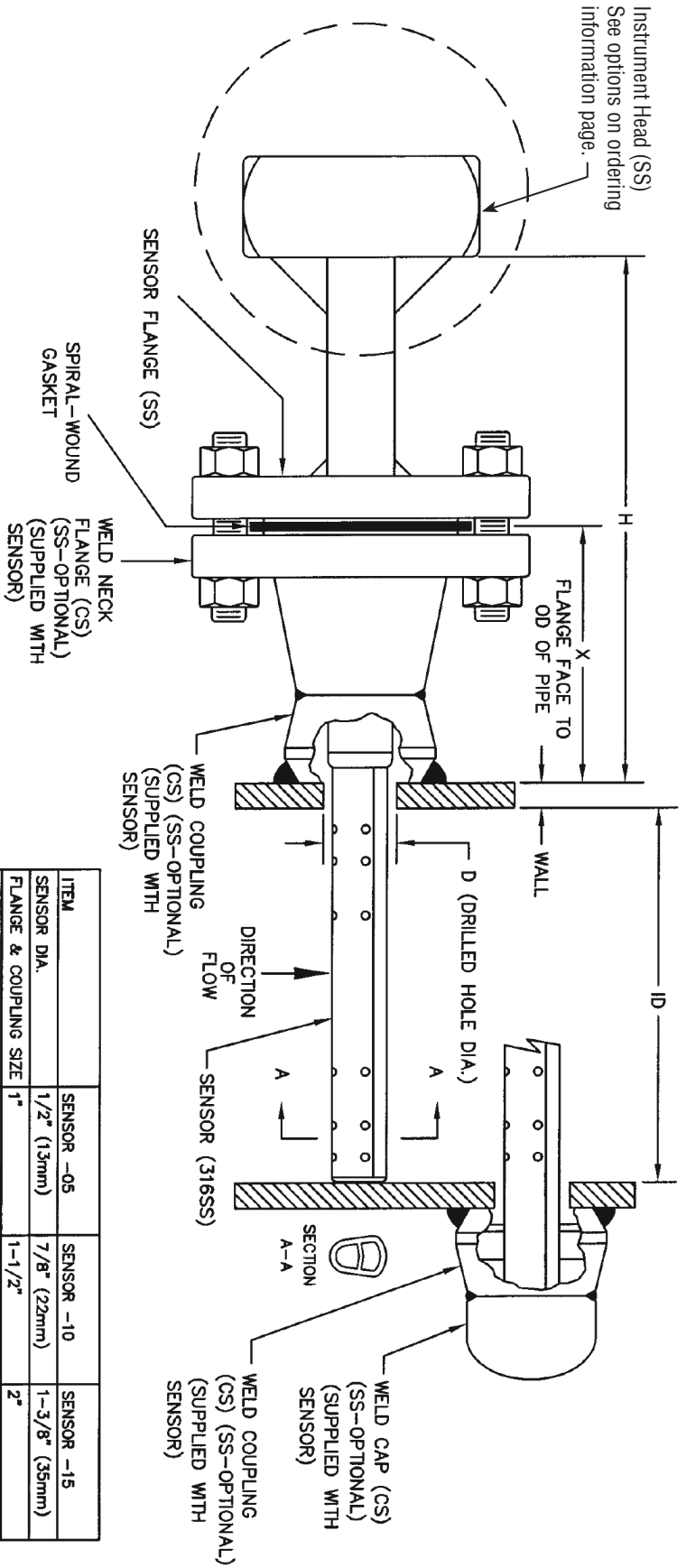
**High Pressure Instrument Head (ANSI Class 1500# & 2500#)**

<b>HPT</b>	1/2" NPT				
<b>HPS</b>	Socket Weld				
High Pressure Mounting Assy (HPT & HPS Connections)					
Sensor (Flange Size)			Mating Flange Material & ANSI Class		
05 (1")	10 (1-1/2")	15 (2.5" or 3")			
Code					
<b>F4150C</b>	<b>F6150C</b>	<b>F10150C</b>	CS	1500#	
<b>F4150S</b>	<b>F6150S</b>	<b>F10150S</b>	SS	1500#	
<b>F4150F11</b>	<b>F6150F11</b>	<b>F10150F11</b>	F11	1500#	
<b>F4150F22</b>	<b>F6150F22</b>	<b>F10150F22</b>	F22	1500#	
<b>F4250C</b>	<b>F6250C</b>	<b>F12250C</b>	CS	2500#	
<b>F4250S</b>	<b>F6250S</b>	<b>F12250S</b>	SS	2500#	
<b>F4250F11</b>	<b>F6250F11</b>	<b>F12250F11</b>		2500#	
<b>F4250F22</b>	<b>F6250F22</b>	<b>F12250F22</b>		2500#	

<b>V500</b>	<b>8"sch40</b>	<b>10</b>	<b>H</b>	<b>R</b>	<b>C2NC</b>	<b>F615C</b>	<b>Typical Model Number</b>
-------------	----------------	-----------	----------	----------	-------------	--------------	-----------------------------

\* For high pressure (>500psig) or high temperature (>500°F), remote mount RTD in a thermowell is preferred.

† Assuming adequate heat dissipation for transmitter.



NOTES:  
 1. CONTACT VERIS FOR DIMENSIONAL DRAWING FOR HIGH PRESSURE THREADED (HPT) & HIGH PRESSURE SOCKET (HPS)

ITEM	SENSOR -05	SENSOR -10	SENSOR -15
SENSOR DIA.	1/2" (13mm)	7/8" (22mm)	1-3/8" (35mm)
FLANGE & COUPLING SIZE	1"	1-1/2"	2"
DIM D* DRILLED HOLE DIA.	1/2" (13mm)	1" (26mm)	1-1/2" (39mm)
DIM H** ANSI CLASS 150#	6.7" (170mm)	7.9" (200mm)	9.3" (235mm)
DIM H** ANSI CLASS 300#	7.3" (186mm)	8.4" (214mm)	9.8" (249mm)
DIM H** ANSI CLASS 600#	7.8" (198mm)	9.1" (230mm)	10.6" (268mm)
DIM X** ANSI CLASS 150#	3.31" (84mm)	3.81" (97mm)	4.06" (103mm)
DIM X** ANSI CLASS 300#	3.56" (90mm)	4.06" (103mm)	4.31" (110mm)
DIM X** ANSI CLASS 600#	3.81" (97mm)	4.38" (111mm)	4.69" (119mm)

\* H\* & X\* DIMENSIONS ARE APPROXIMATE (FOR SIZING PURPOSES ONLY)

 <b>VERIS Flow Measurement Group</b> <a href="http://armstronginternational.com/veris">armstronginternational.com/veris</a>	<b>VERIS Verabar®</b> <b>V500 / V510</b> <b>Flanged Connection</b>
DATE: 09/20/01	DWG. No. <b>SUB-3941</b>
Scale: NTS	Rev: A
	Page 1 of 1



**Armstrong** VERIS Flow Measurement Group  
 6315 Monarch Park Pl, Niwot, CO 80503 - USA Phone: 303-652-8550 Fax: 303-652-8552  
[armstronginternational.com](http://armstronginternational.com)