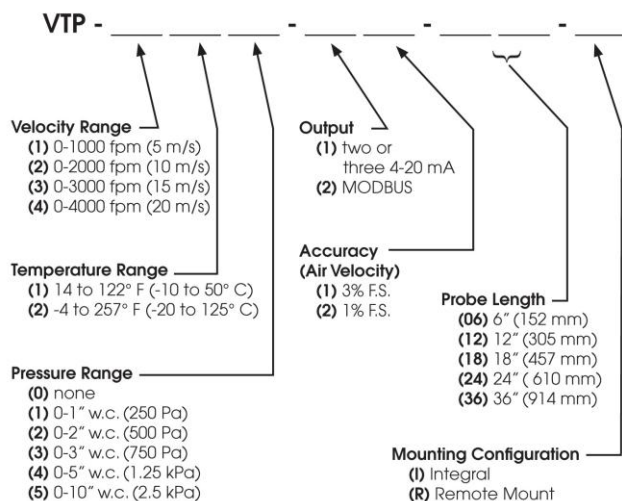


Series VTP – Installation and Operation Manual

1. INTRODUCTION

The Series VTP Multi Range Air Velocity Transmitter can display and output air velocity, temperature, and pressure (optional). The VTP utilizes an industrial 316 stainless steel armored RTD sensor as the thermal air velocity measuring component. Using a fully protected 316 SS sensor drastically extends the life of the air velocity sensor and also makes it insensitive to water, dust or corrosion

1.1 Model Numbers


*Pressure Option not available with Remote Mounting

1.2 Specifications

Media: Air and compatible, non combustible gases

Range:

Velocity: Min. 0 to 200 fpm (0-1 m/s) Max 0 to 4000 fpm (0-20 m/s)

Pressure: Min 0 to 1" w.c. (0-25 Pa) Max 0 to 10" w.c. (0-3 kPa)

Temperature: 14 to 122°F (-10 to 50°C) or optional -4 to 257°F (-20 to 125°C)

Accuracy:

Air Velocity: 3% F.S.; optional 1% F.S.

Pressure: 1% F.S.

Temperature: +/- 1.8°F (1°C)

Output Signal: Independent 4-20 mA for velocity, temperature, and optional pressure

Power Supply: 24 VDC +/-20%

Response Time: 3 seconds

Dampening: adjustable 3 to 30 seconds

Enclosure Rating: NEMA 4 (IP 65)

Material:

Sensor: 316 SS

Probe: 316 SS

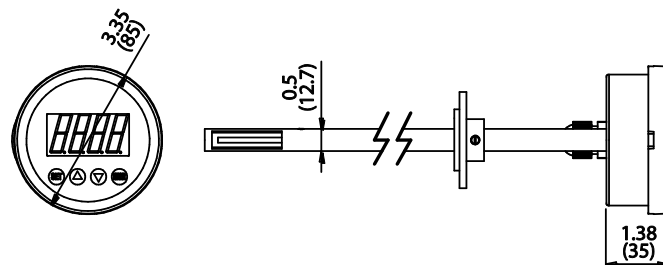
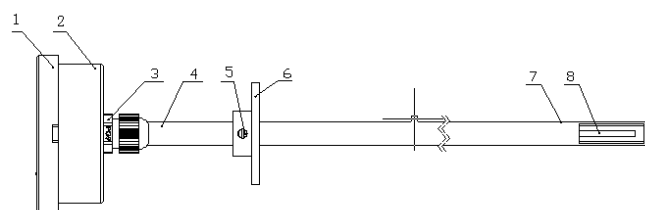
Housing: 304 SS

Max Pressure: 14.5 PSI (100 kPa)

Electrical Connection: 48" multiconductor cable

Remote Mount Option: Includes transmitter, probe, mounting bracket and 9 foot remote mount cable.

Agency Approvals: RoHS

1.3 Dimensional Drawings

2. INSTALLATION
2.1 Mounting


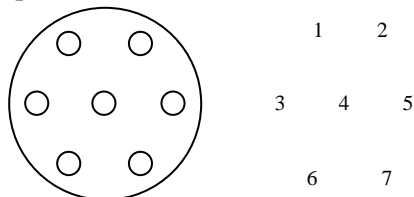
1. Gauge Cover
2. Housing
3. Cable Connector
4. Probe
5. Mounting Screw
6. Flange
7. Velocity Sensor Screw
8. Velocity Sensor

The Series VTP should be mounted in a location free from excess vibration that stays within the temperature ratings of the transmitter.

The probe should be installed so that the velocity sensor is at the point that best represents the air velocity to be measured. The insertion depth of the probe can be adjusted by loosening the mounting screw on the flange and then tightening it once the desired mounting depth is achieved.

2.2 Electrical Connections

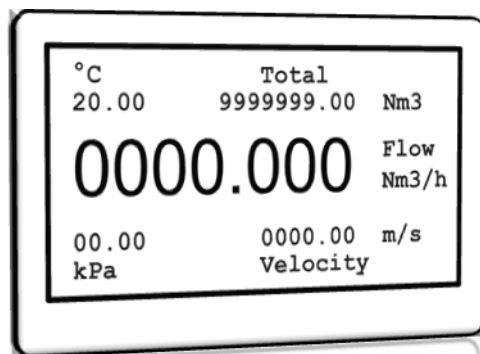
The VTP is provided with a cable with a quick connect fitting. The below table shows the color codes for the provided cable and pins:



Pin	Color	
1	Red	+ 24 VDC
2	Black	GND
3		
4		
5	Yellow	Temperature 4-20 mA
6	Green	Velocity 4-20 mA
7	Blue	Pressure 4-20 mA

3. Operation

3.1 Display



The VTP display will show up to 5 variables at once and includes, Flow, Velocity, Temperature, Total, and Pressure (optional). The middle display can be changed to show either Velocity or Flow by pushing the up or down arrow.

There are five buttons on the front of the transmitter that are used to make adjustments to settings and variables. Below are the functions of each button:

- Adjust parameter value, change display
- Adjust parameter value, change display
- Adjust parameter value, serves as “Yes” button, backs out of the current menu parameter
- Adjust parameter value, serves as “No” button, enters a menu parameter

MENU/OK – Enters menu level

4. Programming

1	Unit		
	1.1	Vel Units	SFPM, NMPS
	1.2	Temp Units	Deg F, Deg C
	1.3	Pres Units	In wc, Pa, kPa, mm wc
	1.4	Flow Units	SCFM, Nm3/h
	1.5	Total Units	Sft3, Nm3
2	User Range		
	2.1	Vel Low	<i>Value</i>
	2.2	Vel High	<i>Value</i>
	2.3	Vel Cutoff	<i>Value</i>
	2.4	Temp Low	<i>Value</i>
	2.5	Temp High	<i>Value</i>
	2.6	Pres Low	<i>Value</i>
	2.7	Pres High	<i>Value</i>
	2.8	Pres Cutoff	<i>Value</i>
3	Zero Offset		
	3.1	Set VZero	Y or N
	3.2	Clear VZero	Y or N
	3.3	Set PZero	Y or N
	3.4	Clear PZero	Y or N
4	Flow Config		
	4.1	Start/Stop	Y or N
	4.2	Reset Total	Y or N
	4.3	Flow Cutoff	<i>Value</i>
	4.4	Coefficient	<i>Value</i>
	4.5	Area	<i>Value</i>
5	Loop Test		
	5.1	LoopTst 04mA	
	5.2	LoopTst 08mA	
	5.3	LoopTst 12mA	
	5.4	LoopTst 16mA	
	5.5	LoopTst 20mA	

6	Set Damping		
	6.1	Vel Damp	Value
	6.2	Temp Damp	Value
	6.3	Pres Damp	Value
7	System		
	7.1	BackUp	
	7.2	Load Factory	Y or N
	7.3	Mfg Date	
	7.4	Mfg Time	
	7.5	Version	

- **Units** – The engineering units can be selected for velocity, temperature, pressure, flow, and total flow and will be shown on the LCD.
- **User Range** – These variables allow the user to scale the 4-20 mA output for velocity, temperature, and pressure. The “low” setting sets the value that corresponds to 4mA and the “high” sets the value that corresponds to 20 mA. For Velocity and Pressure, the “cutoff” variable sets the minimum value displayed on the LCD, anything below this value will appear as 0.
- **Zero Offset** – this is a calibration parameter that allows for minor adjustment of velocity and pressure.
- **Flow Config** – Flow variables include starting, stopping, and resetting flow totalization. You can also enter a flow coefficient that is applied to both velocity and flow for correcting the readings to your specific system. The Area variable is required to accurately calculate the flow in the system.
- **Loop Test** – loop test temporarily sets the 4-20 mA signal to the selected value.
- **Set Damping** – The velocity, temperature, and pressure variables can be dampened to smooth the 4-20 mA output signal.
- **System** – These parameters include a factory reset option along with manufacturing data.

4. LIMITED WARRANTY

LIMITED WARRANTY

SENSOCO warrants its products to be free from defects in materials and workmanship for a period of one (1) year from the date of shipment, subject to the following terms and conditions: Without charge, SENSOCO will repair, replace, or refund the purchase price at SENSOCO's option products found to be defective in materials or workmanship within the warranty period; provided that:

- i. the product has not been subjected to abuse, neglect, accident, incorrect wiring not our own, improper installation or servicing, or use in violation of labels or instructions provided by SENSOCO;
- ii. the product has not been repaired or altered by anyone except SENSOCO;
- iii. the maximum ratings label and serial number or date code have not been removed, defaced, or otherwise changed;
- iv. examination discloses, in the judgment of SENSOCO, the defect in materials or workmanship developed under normal installation, use and service; and
- v. SENSOCO is notified in advance of and the product is returned to SENSOCO transportation prepaid before expiration of the warranty period.

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