

Turbo-Flo™

PVC Non-Metallic Probes

TF.25P

25 Series



Turbo-Flo™ probes offer the precision of turbine technology with rugged construction. The practical design of the probe includes a bluff bar which protects the turbine from foreign materials in the stream as well as from over insertion. Installation is simple and does not require special fittings. The Turbo-Flo™ probe may be installed in standard pipe tees, through pipe saddles, welding spuds and 1½" full opening ball or gate valves.

Features

- PVC non-metallic construction is ideal for installation in PVC or other non-metallic piping.
- PVC connector fittings.
- Excellent chemical resistance.
- Adjustable insertion length for 1½ to 10 inch pipe.
- Rugged construction for industrial environments.
- No external power required.
- Wide measuring range with 30:1 turndown.
- Low mass turbines offer improved sensitivity and long life.
- Use standard pipe fittings for installation.

Principle of Operation

The turbine is positioned in the mid-section of the pipe with its axis of rotation parallel with the flow stream. Fluid velocity causes the turbine, which has a ring magnet inside of its hub, to rotate in proportion to flow rate. As the turbine rotates, the magnetic field passes through a coil in the probe body, generating a pulse output in proportion to the turbine rotation speed. Flow volume is then determined from fluid velocity measurement and pipe diameter information.

Applications

- Water and other aqueous solutions
- Ideal for PVC piping systems
- Water treatment systems
- Groundwater monitoring
- Irrigation systems

Options

Probe with 15 feet or more of Cable for connection to Wall Mount transmitters/display.



LCD rate/total display only Does not require external power.
Probe Mount option: 15895-SP
Wall Mount: TF-15895-SP



Two wire 4-20 mA signal output with Rate/Total Display.
Probe Mount option: 15895-LP
Wall Mount: TF-15895-LP



Two wire 4-20 mA signal output, no display.
Probe Mount option: 15325
Wall Mount: TF-15385



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Sizing Data

Pipe Size (inch)	ID (inch)	GPM Range		Ft/Gallon	Pulse/Gallon
		Threshold	Max		
1.5	1.610	4	120	9.454	21.46
2	2.067	6	180	5.736	13.08
2.5	2.469	8	240	4.020	9.648
3	3.068	12	360	2.593	7.131
3.5	3.548	16	500	1.947	5.160
4	4.026	20	600	1.512	3.840
5	5.047	32	1000	0.962	2.60
6	6.065	46	1400	0.666	1.88
8	7.981	80	2400	0.384	1.00
10	10.020	125	3800	0.244	0.625

Specifications

Accuracy: ±1.0%
Repeatability: ±0.5%
Linearity: ±0.5%
Turndown: 30:1

Insertion Length: 02 = 2 inches
 06 = 6 inches
 12 = 12 inches

Threshold: 0.5 ft/s or
 $1.22 \times ID^2 = \text{GPM}$

Liquid Velocity: $\text{ft/s} = \frac{0.408 \times \text{GPM}}{\text{pipe ID}^2}$

Point Velocity = 2.625 pulses/ft/s

Pulse/gallon correction for uncharted pipe diameters =
 $\frac{ID^2 \text{ charted pipe}}{ID^2 \text{ uncharted pipe}} \times \text{Pulse/gallon charted pipe}$

Materials of Construction:

Probe: PVC
Connector: PVC
Turbine: Delrin® or Polypropylene
O-rings: Buna-n or Viton®
Temperature Limits: 140°F(60°C)
Pressure Limits: 145 psig(10bar)@ 75°F(24°C)

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Turbo-Flo™ part number construction

<u>25</u> Series	<u>4</u> Body Mat'l	<u>06</u> Size	<u>G</u> Connector	<u>3</u> Turbine	<u>2</u> Shaft	<u>7</u> O-ring	-	<u>1</u> Option	<u>5</u>	<u>3</u>	<u>2</u>	<u>5</u>
25-Non-Metallic	4-PVC	02-2" 06-6"	G-PVC 1¼"	3-Delrin® 5-Polypro	2-316ss 4-PVC	7-Buna 8-Viton®						

Electronics available:

15325 4-20 mA Transmitter, Probe Mount
15385 4-20 mA Transmitter, Wall Mount

15895-LP Flow Rate/Total Display, Probe Mount, 4-20mA Output, Loop Powered 4-20 mA– requires 24 VDC.

TF-15895-LP Flow Rate/Total Display, Wall Mount, 4-20mA Output, Loop Powered 4-20 mA– requires 24 VDC

15895-SP Self Powered Flow Rate/Total Display, Probe Mount, Does not require external power.

TF-15895-SP Self Powered Flow Rate/Total Display, Wall Mount, Does not require external power.

When probe mountable electronics are to be factory installed on the probe, a dash is added to the probe model number followed by five numeric digits for the accessory to be added. The example depicts an 6" PVC probe with 1¼" PVC connector, Delrin turbine, 316ss shaft, buna o-rings including a probe mounted 15325 4-20 mA transmitter.

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