

espro V-xx Series Vortex style Flowmeters

The esPRO flow meters are designed for contact-free precision flow measurement of high purity fluids. The ultra-pure PFA body contains no moving parts, eliminating any possibility for particle generation.

The esPRO flowmeter uses a non-contact ultrasonic sensor method, that detects the Karman vortex in your fluid. Light weight and compact, the esPRO flow meters compact design allows fitting on closely-spaced parallel piping.

D-series are equipped with a small monitor and provide analog output, pulse output as well as high & low boundary output.

KEY FEATURES

- Because PFA Flowmeters measure Karman Vortices using a non contact ultrasonic sensor method, they contain no moving parts such as flippers & floats, thus eliminating particle generation.
- High and Low alarm boundaries can be set to any level using selector keys.
- Light weight and compact, esPRO flowmeters are simple to install.
- Monitor attached series (V-xxD) and monitor unattached series (V-xx) are available depending on application.



NOTE: These flowmeters are complete flowmeters with tubes, and have to be installed by cutting out existing tube section and the installing the tube/flowmeter assembly.

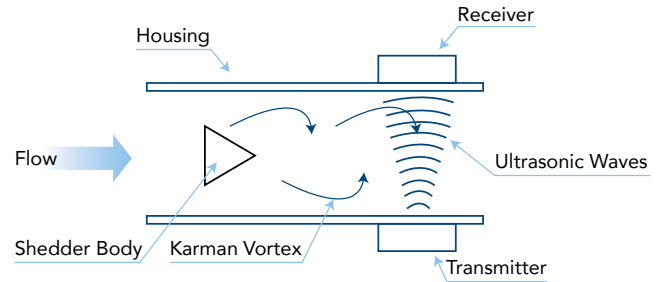
		V-10 - V-10D*	V-15 - V-15D*
Available fluid		Fluids not corrosive or permeable against fluorocarbon resin. (Please contact us for your operating fluids.)	
Flowmeter Range		0.5 - 3.5 l/min	1 - 16.0 l/min
Indicating Flow Rate		0.0 - 4.0 l/min	0.0 - 18.0 l/min
Measurement Accuracy		±5% F.S	±2.5% F.S
Operating Environmental Temperature		5 - 60°C	5 - 60°C
Operating Fluid Temperature		5 - 85°C	5 - 85°C
Fluid Pressure		Max.800kPa (25°C)	
Tube Diameter		Ø9.53xØ6.35 mm 3/8 inch	Ø12.7xØ9.53 mm 1/2 inch
Wetted Parts mm/inch		PFA	
Mounting Positions		Horizontal, Vertical or Diagonal (Not vertical in drop position)	
Analog Output	Output	DC4 - 20mA	
	Load Resistance	500Ω or Less	
Pulse Output	Output	NPN Open collector	
	Excitation Voltage/Current	Max.DC30V/80mA	
	Pulse Unit	10ml/P	
	Pulse Range	5mS	
High&Low boundary Output	Output	NPN Open collector	
	Excitation Voltage/Current	Max.DC30V/80mA	
	LED indication	LO turns off: less than Low boundary * HI, LO turns on : within High & Low boundary * HI turns off: more than High boundary	
Power Supply		DC24V ±10%	
Current Consumption		120mA or Less	
Cable		2m	
CE marking approval		o	o

* D-series are equipped with a small monitor and provide analog output, pulse output as well as high & low boundary output.

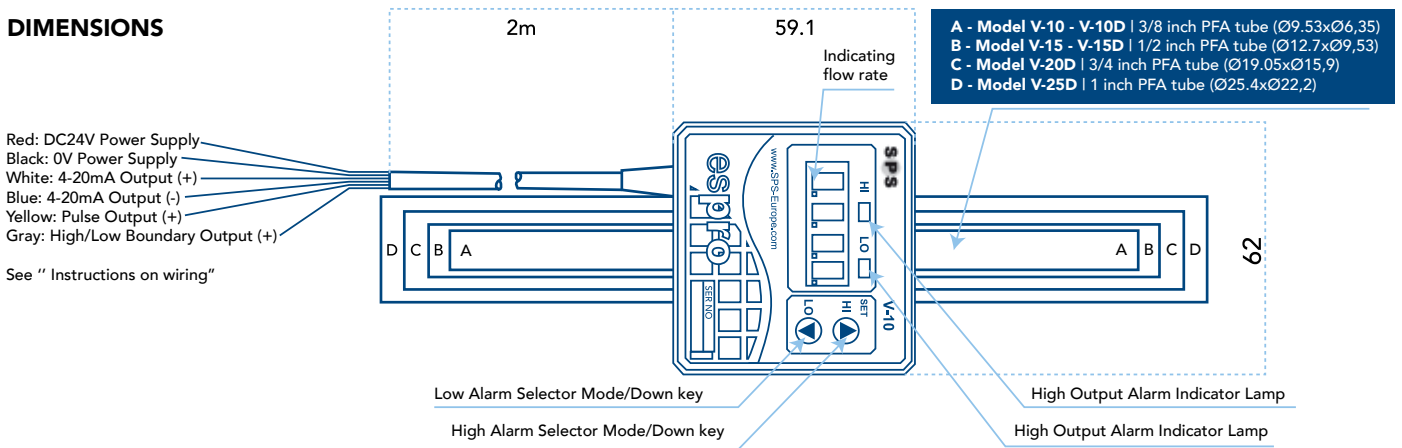
PRINCIPLE OF OPERATION

If a fluid flows past a shedder body, a regular pattern of vortices called Karman Vortex street alternately trails aft in the wake. The ultrasonic wave oscillating time varies proportional to the vortex shedding frequency. We can obtain the measured flow by detecting any changes in ultrasonic wave oscillating time.

The number of generated vortices is depending on the flow speed only and independent on other parameters as viscosity or specific gravity of the fluid.



DIMENSIONS



		V-20D*	V-25D*
Available fluid		Fluids not corrosive or permeable against fluorocarbon resin. (Please contact us for your operating fluids.)	
Flowmeter Range		2.0 - 40.0 l/min	5.0 - 130.0 l/min
Indicating Flow Rate		0.0 - 44.0 l/min	0.0 - 145.0 l/min
Measurement Accuracy		±1.5% F.S (at 25°C)	±2.5% F.S (at 25°C)
Operating Environmental Temperature		5 - 60°C	5 - 60°C
Operating Fluid Temperature		5 - 85°C	5 - 85°C
Fluid Pressure		Max.600kPa (25°C)	Max.450kPa (25°C)
Tube Diameter mm/inch		Ø19.05xØ15.9 mm 3/4 inch	Ø25.4xØ22.2 mm 1 inch
Wetted Parts		PFA	
Mounting Positions		Horizontal, Vertical or Diagonal (Not vertical in drop position)	
Analog Output	Output	DC4 - 20mA	
	Load Resistance	500Ω or Less	
Pulse Output	Output	NPN Open collector	
	Excitation Voltage/Current	Max.DC30V/80mA	
	Pulse Unit	10mr/P	100mr/P
	Pulse Range	5mS	
High&Low boundary Output	Output	NPN Open collector	
	Excitation Voltage/Current	Max.DC30V/80mA	
	LED indication	LO turns off: less than Low boundary * HI, LO turns on : within High & Low boundary * HI turns off: more than High boundary	
Power Supply		DC24V ±10%	
Current Consumption		120mA or Less	
Cable		2m	
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