VF-2200 Vortex Flow Sensor

DESCRIPTION

The VF-2200 Flow Sensor is an improved version of well-received VF-2000 and has wider flow range than VF-2000. The VF-2200 Flow Sensor offers a cost-effective instrument for the measurement of liquid flow.

A simple and compact design makes the VF-2200 a good choice for the measurement of water, pure water, cooling water.

Current output model, Pulse output model and Display model with current / alarm outputs are available. Fitting is selectable from various types according to use.





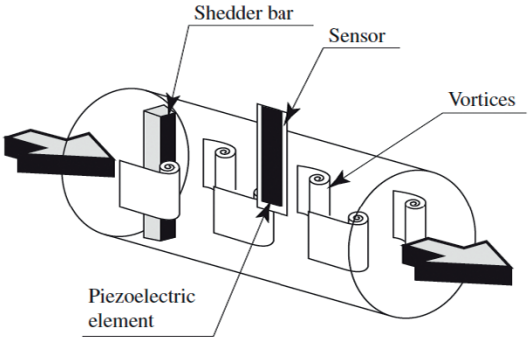


KEY FEATURES

- **Simple and compact design**
  The VF-2200 Flow Sensor is assembled with a few pieces of components. The sensor body and Shedder bar (vortex generator) are molded as one component. This design approach has reduced the cost as well as the size and weight of the flowmeter. Sensor body is made of PPS (Polyphenylene sulfide) and is designed to eliminate deposits.
- **No maintenance cost**
  Since the VF-2200 has no moving parts, no maintenance is needed.
- **Low pressure loss**
  A combination of straight flow path and Shedder bar gives a lower pressure loss compared with other types of flowmeters.
- **Linear Output**
  Output signal is proportional to a volumetric flow rate.
- **Display model with current and alarm output**
  3-digit LED display for flow rate, current output and alarm outputs (2-point) are provided in compact design.
- **CE Marking**
  The VF-2200 meets the EC directive for CE mark.

OPERATING PRINCIPLE

A bluff body or Shedder bar in the flow generates a street of vortices downstream. The VF-2000 Flow Sensor measures the flow rate by counting the number of vortices with a piezoelectric sensor.



www.sps-international.com | sales@sps-international.com
www.sps-polos.com | sales@sps-polos.com
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STANDARD SPECIFICATIONS

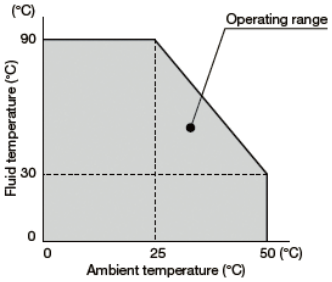
Specifications		Model		
		Current Output Model	Pulse Output Model	Display and Current Output Model
		VF-2215-F□1	VF-2225-F□1	VF-223□-F□1
Measurable Fluid		Pure water, Water		
Flow Range *1		10 to 150 L/min		10 to 100 L/min or 10 to 150 L/min
Accuracy (Additinal Error for LED display) *1		±3%F.S.		±3%F.S. (1digit)
Repeatability		±0.5%F.S		
Fluid Pressure		0 to 0.98MPa [Refer to "Fluid Pressure and Temperature"] *2		
Fluid Temperature		0 to 50°C (Fitting Material : PVC) 0 to 90°C (Fitting Material : HT-PVC) [Refer to "Fluid Pressure and Temperature"] *2		
Ambient Temperature		0 to 50°C		0 to 50°C (Refer to "Fluid and Ambient Temperature")
Ambient Humidity		5 to 90%RH		
Operating Voltage		10.8 to 26.4V DC		
Rated Power		1W	0.5W	2W
Display	Flow	—		3-digit LED
	Alarm	—		2 LED
Display Resolution	VF-223□	—		0.01 L/min
Output		●Current output 4 to 20mA DC (3-wire) (0 to maximum flow) Load: 0 to 250 ohms at 12V DC 250 to 600 ohms at 24 VDC (Refer to "Load Resistance Range") Damping Time Constant 1 sec (63% response)	●Unscaled pulse output Open collector, Max. 10mA/30V DC Pulse duty factor; approx. 50% Output frequency at 100% flow *1 900Hz	●Current output 4 to 20mA (3-wire) (0 to maximum flow) Load: 0 to 250 ohms at 12V DC 250 to 600 ohms at 24V DC (Refer to "Load Resistance Range") Damping Time Constant 1 sec (63% response) ●Alarm output (2-point) Open collector, Max. 80mA/30V DC Hysterisis ; equal to display resolution
Cable		0.2mm² × 3C (AWG24), 3m, Outside diameter 3.5mm (Soldered end finish)		0.2mm² × 5C (AWG24), 3m, Outside diameter 4.5mm (Soldered end finish)
Mass	Body	335 to 860g (Mass changes depending on type of fitting)		370 to 900g (Mass changes depending on type of fitting)
	Cable	75g		90g
Enclosure Classification		IP64		
Min. Straight Pipe Run		Upstream 10D, Downstream 5D (D: Normal Pipe Size)		
Process Connection	Nominal size	25mm (1")		
	Fitting	TS Socket, JIS10K FF Flange, Taper Pipe Threads (Rc1)		
Body Materials	Body	PPS (Polyphenylene sulfide)		
	Sensor	Piezoelectric element molded with PPS		
	O-ring	Fluorine rubber (FKM)		
	Cover	Poly-butylene trephthalate (PBT)		
	Cable sheath	Heat-resistant PVC		
Fitting Materials	Fitting	PVC or HT-PVC		
	O-ring	Fluorine rubber (FKM)		

*1 Conditions for calibration
Fluid: Water, Fluid temperature: 20°C, Ambient temperature: 23°C, Supply voltage: 24V DC
*2 Specifications of pressure and temperature may change depending on specification of fitting.

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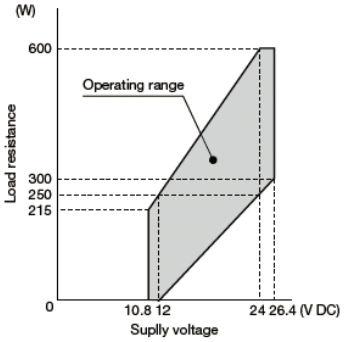
Fluid and Ambient Temperature

(only for Display type VF-223□)



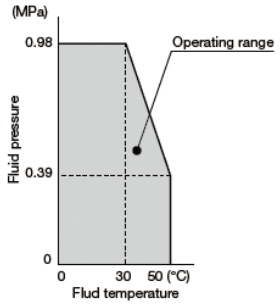
Load Resistance Range

(VF-2215, VF-223□)

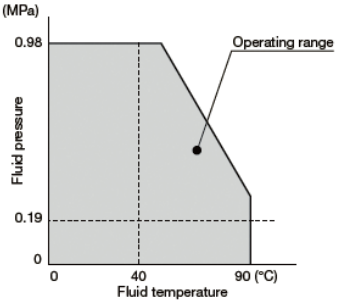


Fluid Pressure and Temperature

● Fitting material : PVC

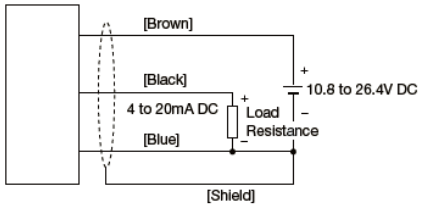


● Fitting material : HT-PVC

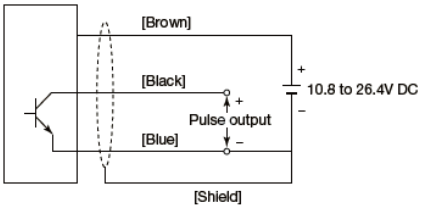


WIRING DIAGRAM

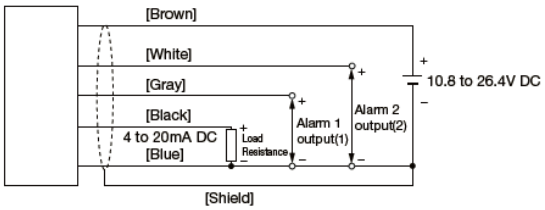
● Current Output Model (VF-2215)



● Pulse Output Model (VF-2225)



● Display / Current Output Model (VF-223□)



MODEL CODE

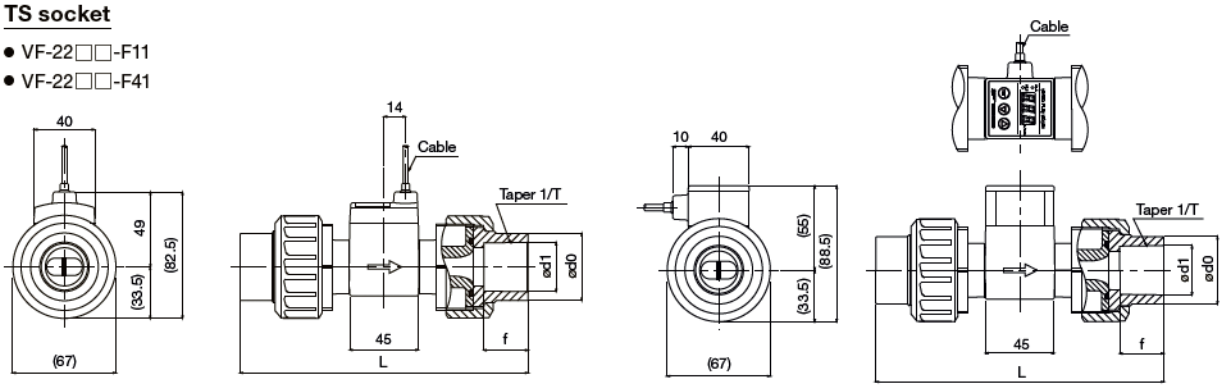
Model code							Description
VF - 22	□	□	-□	□	□	/□	
Type/Output	1						Current output : 4 to 20mA DC (3-wire)
	2						Pulse output : Open collector (Unscaled)
	3						Display : Flow rate (3-digit LED), Alarm (2 LED) Current output : 4 to 20mA DC (3-wire) Alerm output : Open collector (2 points)
Flow Range		4					10 to 100 L/min (VF-2234 : only for Display model)
		5					10 to 150 L/min
O-ring Material			-F				Fluorine rubber (FKM)
Process Connection				1			PVC / 25mm (1") TS Socket
				2			PVC / 25mm (1") JIS10K FF Flange
				3			PVC / Rc1 Taper Pipe Threads
				4			HT-PVC / 25mm (1") TS Socket
				5			HT-PVC / 25mm (1") JIS10K FF Flange
Flow Unit					1		L/min
Option						/□	Option Code

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OUTLINE DIMENSIONS

TS socket

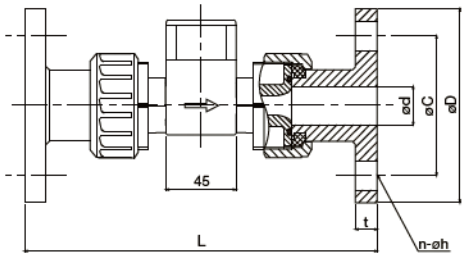
- VF-22□□-F11
- VF-22□□-F41



TS socket type				
L	1/T	f	d1	d0
182	1/43	29	32.3	44

JIS10K Flange type

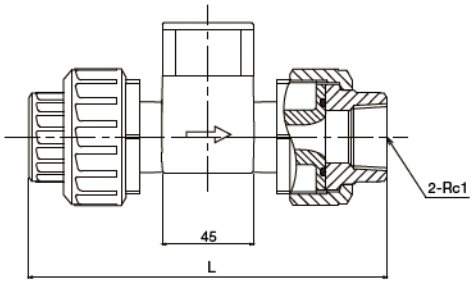
- VF-22□□-F21
- VF-22□□-F51



JIS 10K Flange type					
L	D	C	d	n-øh	t
227	125	90	25	4-19	14

Taper pipe thrad type (Rc)

- VF-22□□-F31



Taper pipe thread (Rc) type	
Nominal size	L
Rc1	177

ORDERING INSTRUCTION

Specify the following when ordering:

1. Model code
2. Fluid name

*Specification is subject to change without notice.

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