FiXINST
Fast · Accurate · Managing

Dual vortex sensor

High temperature steam measurement

1.5m/s

Very low gas lower limit of measurement

The Explosion-proof Certification applicable to various harsh working conditions

Dsa full spectrum signal processing

F231x-VS Series

Vortex Flow Meter

Promotion Steam Vortex Flow Meter

VORTEX FLOW METER

Product Overview

The F231x-VS vortex flow meter is based on the Karman vortex principle to measure gas, steam, or liquid volume flow. It is widely used for industrial measurement because of its anti-pollution ability, simplified structure, and high reliability.

F231x-VS integrated temperature and pressure sensor, automatically calculates the mass flow of the medium through the international standard density compensation algorithm.

Due to the built-in ultra-high sensitivity dual vortex sensor, the flowmeter can simultaneously detect the flow signal and interference signal, through the algorithm can automatically identify the flow signal and vibration, electromagnetic disturbance signal.

In comparison to the traditional vortex flow meter, the newly developed DSA (Digital Spectrum Analysis) technology greatly improves the low limit of measurement, turndown ratio, anti-vibration and anti-disturbance performance of flow meters, providing users with high accuracy and long-term stability.

Explosion-proof structure design, having certificate issued by the state:
Explosion-proof class: Ex db IIC T6 Gb / Ex tb IIIC T80˚C Db
Protection code: IP67

Product Advantages

High Sensitivity

The low measuring limit of gas flow rate can reach 1.5 m/s

Wide Measuring Range

The turndown range ratio is 1:53, which exceeds the traditional vortex flow meters

The Explosion-proof Certification

Ex db IIC T6 Gb
Ex tb IIIC T80˚C Db

Protection Code IP67

Anti-vibration

ultrasensitive dual vortex sensor for simultaneous detection of flow and vibration.

- Wide measuring range, the low measuring limit can reach 1.5m/s (Actual Flow)
- Suitable for measuring dirty and wet compressed air, oxygen, natural gas and other industrial gases, steam, and etc
- Utralsensitive dual vortex sensor, provides a wider range ratio
- The explosion-proof certification: Ex db IIC T6 Gb / Ex tb IIIC T80˚C Db Protection code: IP67
- Combining with DSA (digital full spectrum analysis technology), the flowmeter can accurately identify flow, vibration, and electromagnetic disturbance signals, greatly improving the anti-vibration ability of the flowmeter
- Integrates pressure and temperature sensors to monitor online gas pressure and temperature
- No moving parts, low pressure drop
- Standard Modbus RTU (RS485) interface, 4 to 20 mA current and pulse output
- Bluetooth function for wireless flowmeter configuration and data transmission
- The capacitive touch 2.0" IPS LCD with an ultra-wide viewing angle, user-friendly and multi-functional HMI
- The fully welded structure has better corrosion and high pressure and temperature resistance

UI Design

User-friendly and multi-functional HMI

◎ High-resolution 2.0" IPS-LCD

Clear and complete data presentation

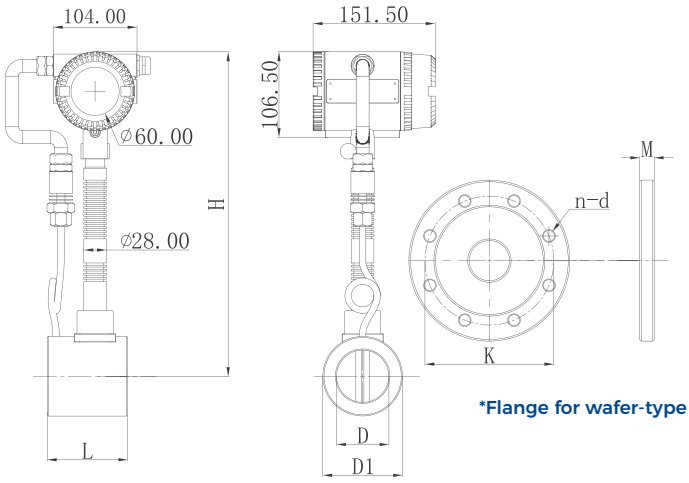
◎ Capacitive touch for operation

Excellent intuitive operation. What you see, what you get. Eliminate the complicated learning cost

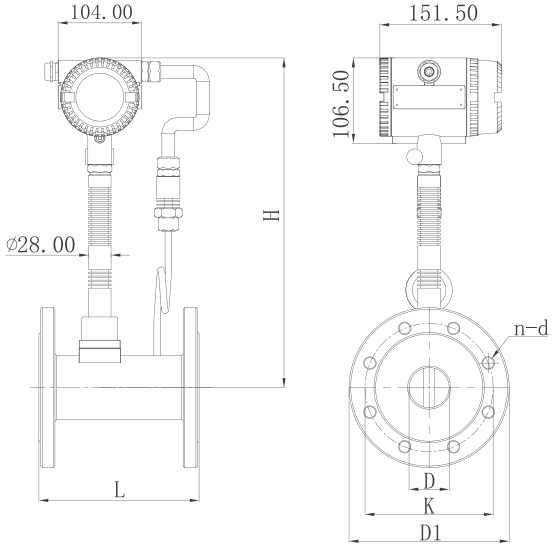
◎ IPS ultra-wide view

HD display, information is displayed in high definition from any angle

Product Dimensions



F231A-VS dimension schematic



F231B-VS dimension schematic

F231A-VS (Aluminum housing) detailed dimension of wafer-type

DN	(Inch)	D Pipe inner diameter (mm)	D1 Pipe outer diameter (mm)	H Pipe center to top of housing (mm)	L Total length (mm)	M Flange thickness (mm)	n Number of flange holes	K Screw hole center distance (mm)	d Screw hole diameter (mm)
32	1 1/4	32	63	375	100	18	4	100	18
40	1 1/2	40	78	380	100	18	4	110	18
50	2	50	81	380	100	19	4	125	18
65	2 1/2	65	97	390	100	20	4	145	18
80	3	80	113	395	100	20	8	160	18
100	4	100	131	405	101	22	8	180	18
125	5	125	158	420	103	22	8	210	18
150	6	150	184	430	103	24	8	240	22
200	8	200	232	455	135	26	12	295	22

F231B-VS (Aluminum housing) detailed dimension of flange-type

DN	(Inch)	D Pipe inner diameter (mm)	D1 Flange outer diameter (mm)	H Pipe center to top of housing (mm)	L Total length (mm)	M Flange thickness (mm)	n Number of flange holes	K Screw hole center distance (mm)	d Screw hole diameter (mm)
32	1 1/4	32	140	405	200	18	4	100	18
40	1 1/2	40	150	410	200	18	4	110	18
50	2	50	165	420	200	19	4	125	18
65	2 1/2	65	185	430	200	20	8	145	18
80	3	80	200	440	200	20	8	160	18
100	4	100	220	450	200	22	8	180	18
125	5	125	250	460	200	22	8	210	18
150	6	150	285	480	200	24	8	240	22
200	8	200	340	505	200	26	12	295	22

* For optional ANSI, JIS or other flange sizes, please consult sales

Technical Data

Measuring Medium

Medium	Gas / Steam / Liquid

Flow

Measuring Range	1.5 m/s ... 80 m/s (Gas/Steam, actual velocity) 0.15 m/s ... 8 m/s (Liquid)
Accuracy	Class 1.0
Repeatability	±0.2% RD
Reference Conditon	20 ˚C, 1 bar(a) - ISO 1217 (Configurable)

Pressure

Measuring Range	0 ...1.7 MPa(a) (6.3 MPa.a Option)
Accuracy	±0.5% FS

Temperature

Measuring Range	-40 ... +160 ˚C (Standard) -40 ... +280 ˚C (Mid temperature) -40 ... +350 ˚C (High temperature) -180 ... +40 ˚C (Low temperature)
Accuracy	±0.5 ˚C (±1.0 %FS @ >100 ˚C)

Power

Power	18 ... 30 VDC 10W @ 24VDC

Display

Display	2.0" IPS LCD with capacitive touch

Output

4~20 mA Output (Standard)	Flow rate / Temperature / Pressure (Configurable)
Frequency Output (Standard)	Actual flow rate
Pulse (Standard)	Consumption / Alarm
Digital Output	Modbus RTU (RS485) HART (Option)
Wireless Communication	Bluetooth Wi-SUN / IOT-4G (Option, choose one of two)
Connector	Wiring terminal

Operating Environment

Environment Temperature	-40 ... +85 ˚C
Environment Humidity	0 ... 95 %RH

Explosion-proof Class & Protection Code

Explosion-proof Class	Ex db IIC T6 Gb / Ex tb IIIC T80˚C Db
Protection Code	IP67

Other

Process Connection	Wafer-type/Flange-type
Product Material	Main Body: 304 / 316L Vortex Sensor: 316L Meter Housing: Aluminum / Stainless steel
EMC	Compliant with IEC 61326-1

Measuring Range

Inch	DN	ID (mm)	Flow Velocity (m/s)	Flow Rate (m^3/h)	Mass Flow Rate (kg/h)
1/2	15	15	5.5 ... 80	3.5 ... 50.9	16.1 ... 233.6
3/4	20	20	5.0 ... 80	5.7 ... 90.4	26.2 ... 414.9
1	25	25	4.0 ... 80	7.1 ... 141.3	32.6 ... 648.4
$1^{1/4}$	32	32	3.0 ... 80	8.7 ... 231.5	39.9 ... 1062.4
$1^{1/2}$	40	40	2.0 ... 80	9.0 ... 361.7	41.3 ... 1659.9
2	50	50	1.5 ... 80	10.6 ... 565.2	48.6 ... 2593.8
$2^{1/2}$	65	65	1.5 ... 80	17.9 ... 955.2	82.1 ... 4383.5
3	80	80	1.5 ... 80	27.1 ... 1446.9	124.4 ... 6640.0
4	100	100	1.5 ... 80	42.4 ... 2260.8	194.6 ... 10375.1
5	125	125	1.5 ... 80	66.2 ... 3532.5	303.8 ... 16211.1
6	150	150	1.5 ... 80	95.4 ... 5086.8	437.8 ... 23344.0
8	200	200	1.5 ... 80	169.6 ... 9043.2	778.3 ... 41500.4
10	250	250	1.5 ... 80	265.1 ... 14130.0	1216.6 ... 64844.3
12	300	300	1.5 ... 80	381.7 ... 20347.2	1751.7 ... 93375.8

* Mass flow rate is the saturated steam mass flow rate at a temperature of 180 ˚C, a pressure of 0.9 MPa(a), and a density of 4.5891 kg/m3

Order Information

Model	Diameter	Medium Pressure	Medium Temp.	Wireless Comm.	Extended Function	Monitor	Housing Material	Medium Type	Description
F231A-VS									Steam Vortex Flow Meter, with Temperature and Pressure Compensation, Modbus Output, Class 1.0 Accuracy, Wafer-type, with special flanges, Bolts, nuts, metal gaskets
F231B-VS									Steam Vortex Flow Meter, with Temperature and Pressure Compensation, Modbus Output, Class 1.0 Accuracy, Flange type
	DN15 ~ DN350								Nominal Diameter
		PN16							1.7 MPa(a)
		PN63							6.3 MPa(a)
			V0210 0001						Standard (-40 ... +160 ℃)
			V0210 0002						Mid temperature (-40 ... +280 ℃)
			V0210 0003						High temperature (-40 ... +350 ℃)
			V0210 0004						Low temperature (-180 ... +40 ℃)
				V0013 0001					None (Defalt)
				S1701 0010					IOT-4G Module
				S1701 0023					Built-in Wi-SUN Sub-module, 470 frequency band,mainly applicable to China
				S1701 0024					Built-in Wi-SUN Sub-module, 915 frequency band, mainly suitable for Asia, America and Australia
				S1701 0025					Built- in Wi-SUN Sub-module, 868 frequency band, mainly suitable for Europe and the Middle East
					V0013 0001				None (Default)
					S1701 0022				HART communication
					F0111 0001				FAD free air delivery measuring module (Temperature/ Atmospheric pressure/Humidity)
						S0105 0002			Integrated display. The capacitive touch 2.0"IPS LCD with an ultra-wide view
						S0105 0002A			Split display. The capacitive touch 2.0" IPS LCD with an ultra-wide view
							S0302 0050		Non-explosive aluminum housing
							S0302 0051		Explosion-proof aluminum housing
							S0302 0052		Non-explosion proof stainless steel housing
							S0302 0053		Explosion-proof stainless steel housing
								V0202 0011	Gas
								V0202 0012	Steam
								V0202 0013	Liquid

* Customized supporting special flanges, bolts, nuts, metal winding pads and other materials please consult the sales staff.
* Built-in 4G or Wi-SUN module, not compatible with explosion-proof function
* There are difference in regulations and standards between contuntries and regions. Please select according to the local Wi-SUN frequency band

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