FiXINST
Fast · Accurate · Managing

0.5 级
High Accuracy Measurement

Strong Anti-Interference Capability

Intelligent Low-Power Cuicuit

Protection code IP65

F233x Series

Turbine Flowmeter

Turbine Liquid Flow Meter

TURBINE FLOWMETER

Product Overview

The F233x series liquid turbine flowmeter achieves high precision measurement by using the kinetic energy of the liquid to drive the internal turbine. The flow sensor is connected to a converter to provide pulse output, current output, on-site display and other functions. The flowmeter features high accuracy, a wide measurement range, long lifespan, and simple operation and maintenance.

It is widely applicable in industries such as food, pharmaceuticals, petrochemicals, metallurgy, and papermaking, making it an ideal instrument for flow measurement.

The flowmeter is suitable for liquids that do not corrode stainless steel 304 SS, 2Cr13 SS, alumina (Al2O3), hard alloys, and that contain no fibers or particulate impurities

Product Advantages

0.5级

High Accuracy Measurement

Class 0.5 high accuracy measurement

Strong Anti-Interference Capability

Excellent anti–interference capability, virtually unaffected by external disturbances

Intelligent Low-Power Cuicuit

Power supply current as low as 20 mA, which is 1/5 of conventional operational amplifier circuit

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- Signal conversion efficiency is twice of conventional circuits, enabling efficient filtering and rapid measurement
- Precision micro power reference and 1.8 V low-power single-supply operational amplifier, with a power supply current as low as 20 mA, which is 1/5 of conventional op-amp circuits
- Supports switching among six international standard units
- Quick response and low-power stable measurement
- Standard Modbus RTU (RS485) interface and 4 ... 20 mA current / pulse output
- Can be equipped with threaded, clamp or flanged connections based on actual working conditions
- Compact structure with high reliability
- Suitable for pipe diameters ranging from DN4 to DN200

Product Application

Turbine flowmeters, known for their simple structure, high accuracy, and ease of installation and maintenance, have been widely applied across various industrial fields such as petroleum, chemical, metallurgy, water supply, paper-making, environmental protection, food processing, and pharmaceuticals.

Metering of liquid raw materials in the food industry

Chemical industry measurement

Laboratory Chemical Liquid Metering

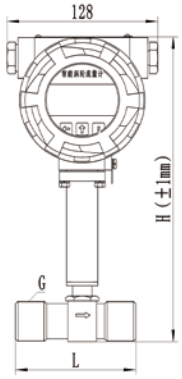
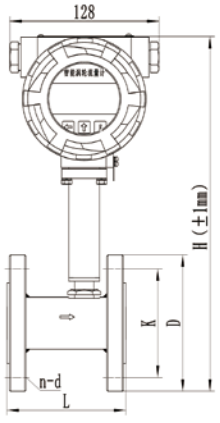
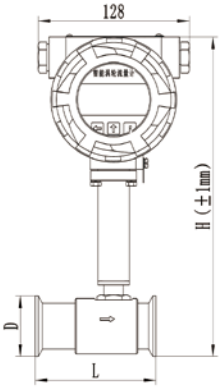
Monitor water flow and total volume

Measuring Range

Norminal Diameter (mm)	Standard Flow Range (m^3/h)	Extended Flow Range (m^3/h)	Pressure Rating with Thread Connection (MPa)	Pressure Rating with Flange Connection (MPa)	Pressure Rating with Clamp Connection (MPa)
DN4	0.04 ... 0.24	——	6.3、25、32	——	——
DN6	0.1 ... 0.6	——	6.3、25、32	——	——
DN10	0.2 ... 1.2	——	6.3、25、32	——	——
DN15	0.6 ... 6	0.3 ... 6	6.3、32	——	1.6
DN20	0.8 ... 8	0.4 ... 8	6.3	——	——
DN25	1.0 ... 10	0.5 ... 10	6.3、32	1.6、2.5、4.0	1.6
DN32	1.5 ... 15	1 ... 14	6.3	1.6、2.5、4.0	——
DN40	2.0 ... 20	1 ... 20	6.3	1.6、2.5、4.0	1.6
DN50	4.0 ... 40	2 ... 40	——	1.6、2.5、4.0	1.6
DN65	7.0 ... 70	——	——	1.6、2.5、4.0	1.6
DN80	10 ... 100	5 ... 100	——	1.6、2.5、4.0	1.6
DN100	20 ... 200	10 ... 200	——	1.6、2.5	1.6
DN150	30 ... 300	15 ... 300	——	1.6、2.5	——
DN200	80 ... 800	40 ... 800	——	1.6	——

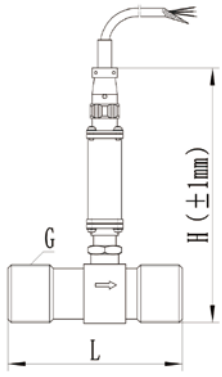
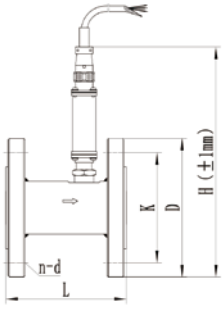
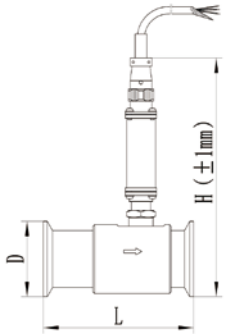
Product Dimensions

F233x Integrated Display Turbine Flow Meter Dimensions

Product Diagram	DN	Connection	L (mm)	H (mm)	G	L' (mm)	D (mm)	K (mm)	n-d (mm)	Weight (Kg)
 Thread Type	4	Thread	425	208	R3/8	225				2.34
	4	Flang	225	236			Ø90	Ø60	4-Ø14	2.83
	4	Card Hoop	225	217			Ø50.5			3.04
	6	Thread	425	209	R3/8	225				2.35
	6	Flang	225	237			Ø90	Ø60	4-Ø14	2.84
	6	Card Hoop	225	218			Ø50.5			3.04
	10	Thread	545	210	R3/8	345				2.41
	10	Flang	345	238			Ø90	Ø60	4-Ø14	2.89
	10	Card Hoop	345	219			Ø50.5			3.04
	15	Thread	75	214	G1					2.02
	15	Flang	75	243			Ø95	Ø65	4-Ø14	3.14
	15	Card Hoop	75	221			Ø50.5			3.59
 Flang Type	20	Thread	85	217	G1					2.02
	20	Flang	85	251			Ø105	Ø75	4-Ø14	3.72
	20	Card Hoop	85	223			Ø50.5			3.68
	25	Thread	100	222	G1 1/4					2.34
	25	Flang	100	258			Ø115	Ø85	4-Ø14	4.54
	25	Card Hoop	100	226			Ø50.5			3.78
	32	Thread	120	230	G1 1/2					2.66
	32	Flang	120	274			Ø140	Ø100	4-Ø18	6.09
	32	Card Hoop	120	231			Ø50.5			4.64
	40	Thread	140	238	G2					3.5
	40	Flang	140	283			Ø150	Ø110	4-Ø18	7.29
	40	Card Hoop	140	241			Ø64			5.44
	50	Thread	150	252	G2 1/2					4.5
	50	Flang	150	295			Ø165	Ø125	4-Ø18	9.02
	50	Card Hoop	150	251			Ø78			6.64
	65	Thread	175	269	G3					5.83
	65	Flang	175	312			Ø185	Ø145	8-Ø18	11.49
	65	Card Hoop	175	266			Ø91			8.04
 Card hoop Type	80	Thread	200	279	G3 1/2					7.52
	80	Flang	200	329			Ø200	Ø160	8-Ø18	12.94
	80	Card Hoop	200	282			Ø106			9.59
	100	Flang	220	350			Ø220	Ø180	8-Ø18	16.04
	100	Card Hoop	220	298			Ø119			11.19
	150	Flang	300	405			Ø285	Ø240	8-Ø22	28.54
	200	Flang	360	458			Ø340	Ø295	12-Ø22	44.14

Product Dimensions

F233x Pulse Type (No Display) Turbine Flowmeter Dimensions

Product Diagram	DN	Connection	L (mm)	H (mm)	G	L' (mm)	D (mm)	K (mm)	n-d (mm)	Weight (Kg)
 Thread Type	4	Thread	425	140	R3/8	225				1.02
	4	Flang	225	168			Ø90	Ø60	4-Ø14	1.51
	4	Card Hoop	225	149			Ø50.5			1.72
	6	Thread	425	141	R3/8	225				1.03
	6	Flang	225	169			Ø90	Ø60	4-Ø14	1.52
	6	Card Hoop	225	150			Ø50.5			1.72
	10	Thread	545	142	R3/8	345				1.09
	10	Flang	345	173			Ø90	Ø60	4-Ø14	1.57
	10	Card Hoop	345	151			Ø50.5			1.72
	15	Thread	75	145	G1					0.7
	15	Flang	75	175			Ø95	Ø65	4-Ø14	1.82
	15	Card Hoop	75	153			Ø50.5			2.27
	20	Thread	85	149	G1					0.7
	20	Flang	85	183			Ø105	Ø75	4-Ø14	2.4
	20	Card Hoop	85	155			Ø50.5			2.36
 Flang Type	25	Thread	100	155	G1 1/4					1.02
	25	Flang	100	190			Ø115	Ø85	4-Ø14	3.22
	25	Card Hoop	100	159			Ø50.5			2.46
	32	Thread	120	162	G1 1/2					1.34
	32	Flang	120	206			Ø140	Ø100	4-Ø18	4.77
	32	Card Hoop	120	163			Ø50.5			3.32
	40	Thread	140	170	G2					2.18
	40	Flang	140	215			Ø150	Ø110	4-Ø18	5.97
	40	Card Hoop	140	173			Ø64			4.12
	50	Thread	150	184	G2 1/2					3.18
	50	Flang	150	227			Ø165	Ø125	4-Ø18	7.7
	50	Card Hoop	150	184			Ø78			5.32
	65	Thread	175	201	G3					4.51
	65	Flang	175	245			Ø185	Ø145	8-Ø18	10.17
	65	Card Hoop	175	198			Ø91			6.72
 Card hoop Type	80	Thread	200	211	G3 1/2					6.2
	80	Flang	200	261			Ø200	Ø160	8-Ø18	11.60
	80	Card Hoop	200	215			Ø106			8.72
	100	Flang	220	280			Ø220	Ø180	8-Ø18	14.72
	100	Card Hoop	220	230			Ø119			9.87
	150	Flang	300	337			Ø285	Ø240	8-Ø22	27.22
	200	Flang	360	391			Ø340	Ø295	12-Ø22	42.82

Technical Data

Measuring Medium

Medium	Liquids (water, organic liquids, inorganic liquids and etc., without fiber or particle impurities
Viscosity	< 5×10-6 m^2/s (for liquids ≥ 5×10-6 m^2/s, the flow meter must be calibrated with actual liquid before use

Output

Analog	Output type: 4 ... 20 mA Output accuracy: 0.02% Output load: 0 ... 750 Ω
Pulse	Pulse width: auto or 10 ms Pulse frequency: 1 ... 2000 Hz Pulse coefficient: 1 ... 20000 P/L
Digital	Modbus RTU (RS485)
Connector	M20 × 1.5

Flow

Measuring Range	Please refer to "Measuring Range"
Accuracy	Class 1 (optional Class 0.5)
Repeatability	±0.15% RD
Response time	20 ms

Operating Environment

Operating Temperature	-20 ... +60 ˚C
Medium Temperature	-20 ... +80 ˚C (standard temperature version) -20 ... +120 ˚C (medium temperature version)
Operating Pressure	Please refer to "Measuring Range"

Power

Measuring Stage	24 VDC 0.5W @ 24VDC

Protection Code

Protection Code	IP65 (IP67 and IP68 customizable)

Order Information

Model	Diameter	Display & Output	Body Material	Impeller Material	Flow Range	Temperature Range	Accuracy	Description
F233A-PN16								Turbine liquid flow meter, 24VDC, with display, Flange type HG/T20592 (PN16,DN10-DN250)
F233B-PN63								Turbine liquid flow meter, 24VDC, with display, Thread connection, G thread (PN63, DN4-DN100)
F233C-PN16								Turbine liquid flow meter, 24VDC, without display, Card hoop connection 50.5, ISO 2852-1993 (PN16, DN10-DN100)
	DN4 - DN250							Norminal Diameter
		V0208 0001						2 wire 4 ... 20 mA output (can be selected with a display version)
		V0208 0002						Modbus RTU (RS485) output (can be selected with a display version)
		V0208 0003						Hart output (can be selected with a display version)
			V0212 0001					Stainless steel, SUS304
			V0212 0002					Stainless steel, SUS316
				V0212 0003				2Cr13 SS
				V0212 0004				Duplex stainless steel 2205,DN10
					V0205 0002			Standard range, refer to "Measuring Range"
					V0205 0003			Extended range, refer to "Measuring Range"
						V0210 0005		Temperature (-20 ... +80 ˚C)
						V0210 0006		Temperature (-20 ... +120 ˚C)
							V0204 0003	Standard accuracy class 1.0
							V0204 0004	Standard accuracy class 0.5

* For more selection parameters, please consult sales