FMV100 SERIES

VORTEX FLOW METER

FEATURES

◎ Measures steam, gas, and liquid media with wide compatibility.
◎ Automatically compensates for temperature and pressure to maintain accuracy.
◎ Withstands high temperatures up to 350° C for demanding applications.
◎ Features a no-moving-parts design for long-term reliability and minimal maintenance.
◎ Supports long-distance signal transmission and network connectivity.
◎ Built with stainless steel for durability in harsh environments.

INTRODUCTION

The FMV100 vortex flow meter is a versatile and reliable instrument designed to measure a wide range of media, including liquids, gases, and steam. It excels in applications where precise flow measurement is crucial, particularly in the measurement of saturated and superheated steam.

SPECIFICATIONS

Nominal diameter(mm)	DN15~DN300
Nominal pressure (MPa)	DN15-DN200 4.0(>4.0 supply agreement), DN250-DN300 1.6(>1.6 supply agreement)
Medium temperature (℃)	Piezoelectric type:-40~150,-40~250,-40~350, Capacitive type:-40~400(supply agreement)
Allowable vibration acceleration	Piezoelectric type: 0.2g Capacitive type:1.0~2.0g
Accuracy	±1%R,±1.5%R
Ratio range	1:8~1:30
Power supply	Sensor:+12VDC,+24VDC ,Transmitter:+12VDC,+24VDC Battery-powered:3.6V battery
Output signal	Square wave pulse (excluding battery-powered) ,high level ≥ 5V, low level ≤ 1V, Current: 4 ~ 20mA
Pressure loss coefficient	Comply with JB/T9249 standard Cd ≤ 2.4
Explosion-proof	Intrinsically safe type:Exd II ia CT2-T6, Flameproof type: Exd II CT2-T6
Protection	Standard type: IP65 , Diving type: IP68

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Environmental conditions	Temperature:-20 ℃ ~55 ℃ , Relative humidity: 5%~90%, Atmospheric pressure: 86~106kPa
Medium	Gas, liquid, steam
Transmission distance	Three-wire pulse output type: ≤ 300m Two-wire current output type (4~20mA) ≤ 1500m, Load resistance ≤ 750Ω, RS485/HART ≤ 1200m

WORKING FLOW RANGE OF VORTEX FLOW SENSOR UNDER STANDARD CONDITIONS

Type	Diameter (mm)	Liquid	Gas
		Measuring range (m3/h)	Measuring range (m3/h)
Pipeline type	15	0.5～5	3～20
	20	0.6～8	5～40
	25	1～10	8～60
	32	1.8～18	20～120
	40	5～30	25～180
	50	6～50	35～350
	65	7～70	65～650
	80	10～100	90～900
	100	18～180	150～1500
	125	20～200	220～2200
	150	35～350	350～3500
	200	60～600	600～6000
	250	10～1000	800～8000
	300	110～1500	1200～12000

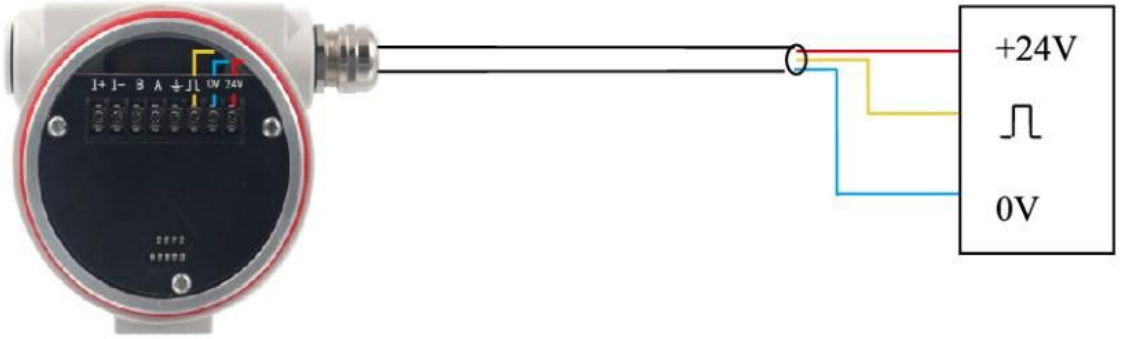
STANDARD STATE DENSITIES OF COMMONLY USED GASEOUS MEDIA (0° C, P = 0.1 MPA)

Gas name	Density （kg/m3）	Gas name	Density （kg/m3）
Air (dry)	1.2928	Acetylene	1.1717
Nitrogen	1.2506	Ethylene	1.2604
Oxygen	1.4289	Propylene	1.9140
Argon	1.7840	Methane	0.7167
Neon	0.9000	Ethane	1.3567
Ammonia	0.7710	Propane	2.0050
Hydrogen	0.08988	Butane	2.7030
Carbon monoxide	1.97704	Natrual gas	0.8280
Carbon dioxide	1.3401	Coal to gas	0.8020

WIRING

FREQUENCY OUTPUT(THREE-WIRE)

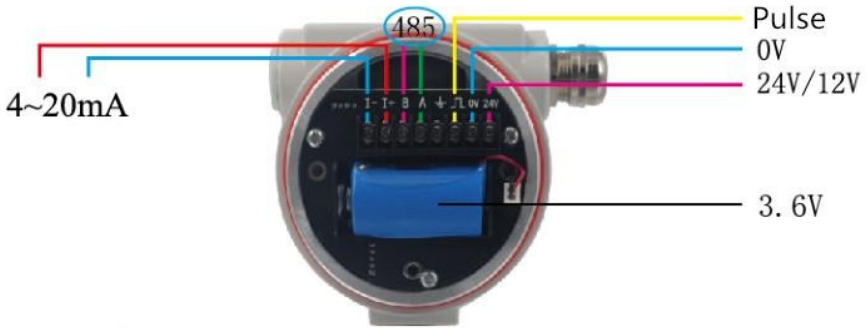
The sensor uses a DC24V or DC12V power supply and connects via a three-core shielded cable (RWP3x0.5mm) to a display or computer. Ensure the cable's shielding is grounded to the amplifier housing. Keep shielded cables away from high-power lines and avoid parallel routing. Terminal wiring is shown below.



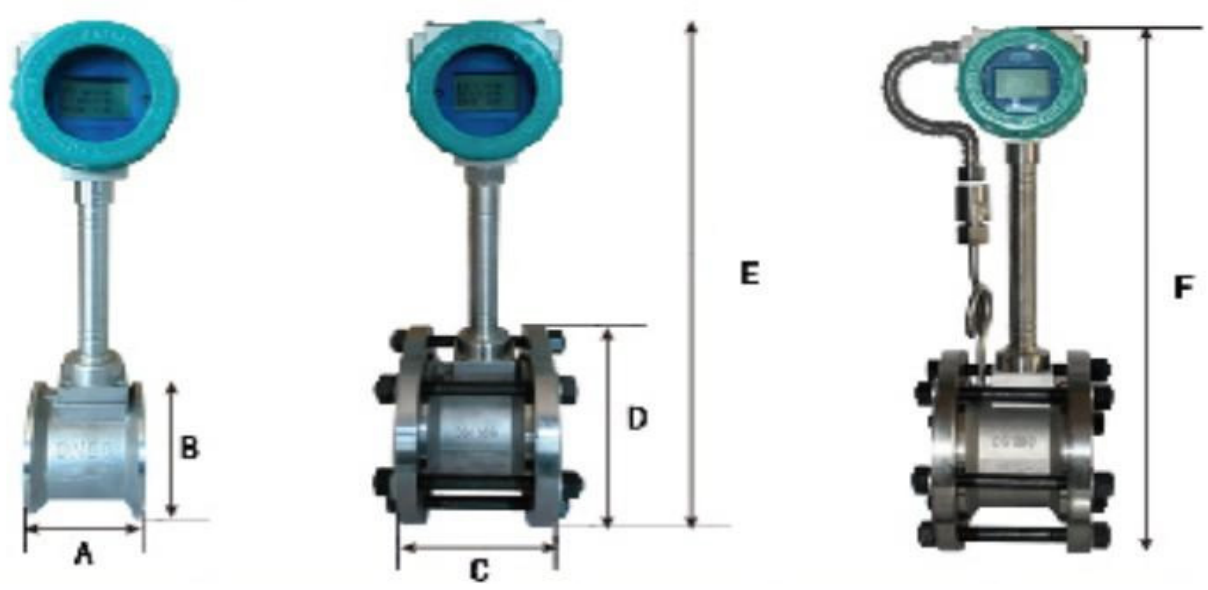
4~20MA OUTPUT(TWO-WIRE)

Powered by DC24V, the two-wire transmitter connects via a two-core shielded cable (RWP2x0.5mm) to the display or controller. The shield must be grounded to the amplifier housing, and cables should be kept away from high-power lines and not routed in parallel. Terminal wiring is shown below.

RS485/4-20MA/PULSE/12-24VDC/3.6V BATTERY

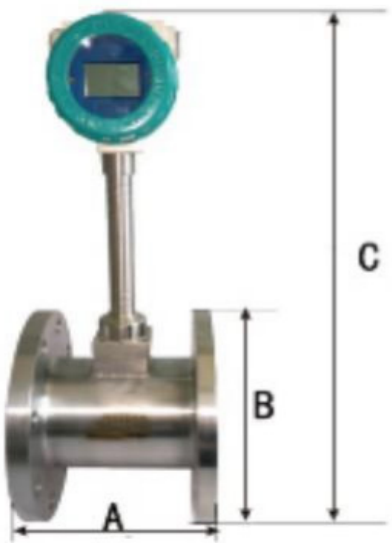


DIMENSION



WAFER TYPE FLOW METER

diameter（mm）	A	B	C	D	E	F
15、20、25、32	68	54	96	100	440	470
40	82	78	110	140	460	490
50	85	87	110	145	490	520
65	84	105	112	165	510	540
80	88	120	116	176	540	570
100	91	140	120	200	560	590
125	92	168	126	230	580	610
150	96	194	130	265	600	630
200	101	248	140	320	630	660
250	114	300	160	370	660	690
300	128	350	170	445	690	720



FLANGE TYPE FLOW METER

diameter（mm）	A	B	C	D
15	170	95	430	460
20	170	105	430	460
25	170	115	440	470
32	170	132	450	480
40	160	150	480	510
50	160	160	480	510
65	160	180	530	560
80	180	195	530	560
100	180	215	550	580
125	180	245	560	590
150	180	280	590	620
200	200	340	620	680
250	200	405	710	740
300	350	400	750	780

ORDER FORMAT

FMV100 - F50SP16BCDEX

Connection	Code
Flange	F
Clamp	C
Thread	T
Hygienic	H

Nominal diameter	Code
DN15mm	15
...	...
DN300mm	300

Medium	Code
Liquid	L
Gas	G
Steam	S

Nominal pressure	Code
4.0MPa	P40
2.5MPa	P15
1.6MPa	P16

Code	Special requirement
Null	Non Explosion-proof
EX	Explosion-proof

Code	Power supply
D	24VDC/12VDC
B	3.6V Lithium battery

Code	Output signal
C	4~20mA
P	Pulse
H	HART
R	RS485

Code	Compensation
0	No compensation
T	Temperature compensation
P	Pressure compensation
B	Pressure+Temperature

Example:

FMV100-F50SP16BCDEX, FMV100 series vortex flow meter, DN50mm flange installation, measuring medium steam, pressure 1.6MPa, pressure and temperature compensation, 4~20mA output, power supply 12/24VDC,explosion proof type.