

Vortex Flow Meter VM300



Features

- Small pressure loss, wide range, high accuracy
- It is hardly affected by fluid density, pressure, temperature and viscosity when measuring volume flow under working status
- No moving mechanical parts, thus high reliability and low maintenance.
- Vortex flowmeter can be used in a temperature range of -40...+400°C
- It has both analog standard signals and digital pulse signal output to match with computers and other digital systems

Technical Data

Flow range : According to Flow rate table

Fluid type : Liquid, Gas, Steam

Accuracy: ±1 % of reading (Liquid), ±1.5 % of reading (Gas,Stream)

Repeatability : ±0.2 %

Pipe diameter : DN 15-300

Housing material : 304 Stainless Steel

Process connection : Flange

Nominal pressure : DN15 to DN200 PN40, DN250 to DN300 PN16

Ambient temperature : -20...+55 °C

Ambient pressure : 86...106 kPa

Relative humidity : 5...90 %RH

Protection type : IP65

Medium temperature : -40...+280 °C (Optional -40...350 °C)

Power supply : 24 Vdc

Output : Pulse, 4-20 mA (Optional RS485, HART)

Application



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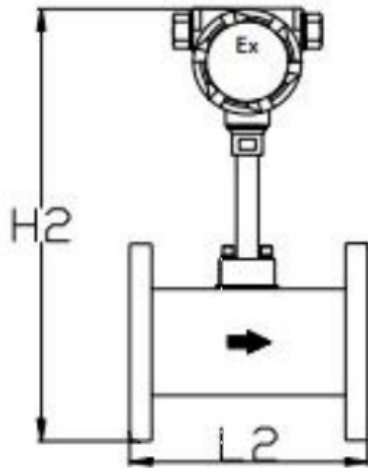
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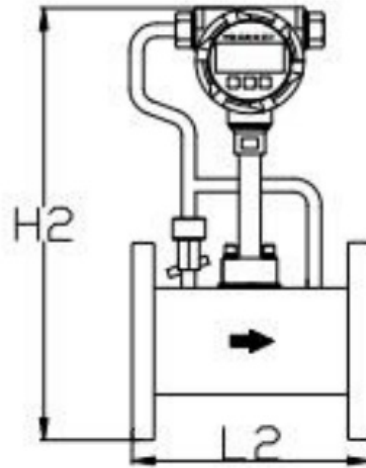
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Classification dimensions



Flange connection type



P&T compensation compact version

Diameter (mm)	H2 (mm)	L2 (mm)
15	530	170
20	535	170
25	540	250
32	553	250
40	558	250
50	570	250
65	592	250
80	605	280
100	623	300
125	653	350
150	680	350
200	736	400
250	790	450
300	840	500

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Measurement liquid of different density condition

Flange	500 kg/m ³	600 kg/m ³	700 kg/m ³	800 kg/m ³	900 kg/m ³	1000 kg/m ³	1200 kg/m ³	1400 kg/m ³	1600 kg/m ³	1800 kg/m ³	Q-max (unit: m ³ /hr)
	Different density of liquid matching its measurable lower limit flow Q-max (unit: m ³ /hr)										
DN15	0.60	0.50	0.47	0.37	0.36	0.35	0.30	0.28	0.26	0.24	4.5
DN20	1.15	1.00	0.98	0.90	0.80	0.60	0.58	0.56	0.54	0.52	8.0
DN25	1.30	1.20	1.10	1.05	1.00	0.90	0.82	0.76	0.71	0.68	12
DN32	1.90	1.80	1.70	1.62	1.56	1.50	1.45	1.35	1.20	1.00	20
DN40	3.50	3.20	3.00	2.80	2.60	2.28	2.20	2.10	2.00	1.90	32
DN50	4.70	4.30	3.90	3.70	3.60	3.50	3.00	2.80	2.60	2.50	50
DN65	7.10	6.50	6.30	6.20	6.10	6.00	5.00	4.50	4.20	4.00	84
DN80	11	10	9.60	9.20	9.10	9.00	8.00	7.60	7.00	6.00	127
DN100	20	18	17	16	15	14	13	12	10	9.00	198
DN125	28	26	25	24	23	22	21	20	18	14	310
DN150	52	50	45	42	36	32	30	28	26	20	445
DN200	99	88	78	70	62	57	53	50	43	35	791

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Measurement gas of different density condition

Flange	0.5 kg/m ³	0.80 kg/m ³	1.20 kg/m ³	2.40 kg/m ³	3.60 kg/m ³	4.80 kg/m ³	6.00 kg/m ³	7.20 kg/m ³	8.40 kg/m ³	9.60 kg/m ³	12.0 kg/m ³	20.0 kg/m ³	Q-max (unit: m ³ /hr)
	Different density of gas matching its measurable lower limit flow Q-max (unit: m ³ /hr)												
DN15	4.8	3.5	3.2	2.8	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.0	38
DN20	8.2	6.6	5.0	4.8	4.7	4.5	4.3	4.0	3.9	3.8	3.7	3.0	67
DN25	10	9	7.9	7.6	7.2	6.9	6.6	6.2	5.9	5.4	5.0	4.5	100
DN32	26	18	14	13.2	12.8	12.2	12	11.7	11.2	10.9	10.1	9	170
DN40	38	25	20	19	18	17	16	15	14	13	12	10	300
DN50	48	40	31	29	28	26	23	22	21	20	18	12	500
DN65	80	66	53	45	44	42	40	38	35	30	26	18	780
DN80	130	100	80	76	70	66	62	58	50	46	38	28	1200
DN100	180	160	120	110	100	90	80	70	62	56	48	35	2000
DN125	280	250	190	170	156	145	135	120	100	90	76	55	2900
DN150	380	310	280	260	240	220	200	180	160	140	110	85	4100
DN200	800	600	500	480	430	400	380	360	330	300	270	200	7500
DN250	1000	880	790	730	680	620	590	520	480	420	400	300	12500
DN300	1300	1190	1140	1060	980	900	820	760	700	620	580	400	16500

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Measurement steam of different density condition

MPa	0.10	0.20	0.30	0.40	0.50	0.60	0.80	0.90	1.00	1.20	1.60	2.00		
°C	120	134	144	152	159	165	175	180	184	192	204	215		
kg/m ³	1.12	1.67	2.19	2.68	3.18	3.67	4.62	5.16	5.63	6.67	8.52	10.52		
Flange	Range	Different steam density corresponding with its measurable flow range												
DN15	Qmin	3.50	5.15	6.74	8.29	10.0	11.4	14.5	16.3	17.6	20.5	26.7	32.9	Unit Kg/h
	Qmax	35.0	51.5	67.4	82.9	100	115	146	163	176	205	268	329	
DN20	Qmin	6.22	9.15	11.9	14.7	17.8	20.4	25.9	29.1	31.3	36.4	47.5	58.5	
	Qmax	62.2	91.6	120	147	178	204	259	291	313	365	476	586	
DN25	Qmin	9.71	14.3	18.6	23.0	27.9	31.8	40.5	45.4	48.9	56.9	74.3	91.4	
	Qmax	97.1	143	187	230	279	318	405	454	489	569	743	914	
DN32	Qmin	15.9	23.3	30.6	37.7	45.7	52.2	66.3	74.5	80.1	93.3	121	149	
	Qmax	159	234	306	378	457	522	664	745	802	933	1218	1499	
DN40	Qmin	23	33	43	53	64	73	93	100	110	130	170	210	
	Qmax	300	440	575	710	860	980	1250	1400	1500	1750	2280	2810	
DN50	Qmin	35	35	52	63	76	88	111	125	130	150	200	250	
	Qmax	550	460	680	845	1020	1170	1480	1670	1800	2100	2730	3360	
DN65	Qmin	59	87	114	137	166	190	240	276	297	345	450	550	
	Qmax	790	1160	1520	1835	2222	2540	3230	3620	3970	4620	6030	7422	
DN80	Qmin	89.5	131	172	212	257	290	370	410	450	520	680	840	
	Qmax	1195	1760	2300	2800	3400	3900	4900	5580	6000	6999	9100	11000	
DN100	Qmin	0.14	0.20	0.27	0.33	0.40	0.46	0.58	0.65	0.70	0.82	1.00	1.30	
	Qmax	1.87	2.75	3.60	4.43	5.36	6.12	7.78	8.73	9.40	11	14.3	17.6	
DN125	Qmin	0.22	0.32	0.42	0.51	0.62	0.71	0.91	1.00	1.10	1.28	1.67	2.00	
	Qmax	2.91	4.29	5.62	6.91	8.37	9.56	12	13.6	14.7	17	22.3	27.4	
DN150	Qmin	0.32	0.46	0.60	0.74	0.90	1.03	1.31	1.47	1.58	1.84	2.40	2.96	
	Qmax	4.20	5.62	8.09	9.96	12	13.8	17.5	19.6	21.1	24.6	32.1	39.5	
DN200	Qmin	0.56	0.82	1.08	1.32	1.60	1.83	2.33	2.61	2.81	3.28	4.28	5.27	
	Qmax	7.50	11	14.4	17.7	21.4	24.5	31.1	35	37.6	43.7	57.1	70.3	
DN250	Qmin	0.87	1.28	1.68	2.0	2.51	2.87	3.64	4.09	4.40	5.10	6.69	8.20	
	Qmax	11.6	17	22	27.6	33	38	48	54	58.7	68	89	110	
DN300	Qmin	1.25	1.85	2.42	2.98	3.61	4.13	5.25	5.89	6.34	7.38	9.60	11.8	
	Qmax	16.7	24.7	32	39	48	55	70	78	84	98	128	158	

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Ordering code

Series : VM300-Ax-DNxx-Bx-Cx-Dx-Ex-Fx			
Fluid type			
A1 : Liquid			
A2 : Gas			
A3 : Steam			
Pipe diameter			
DNxx : DN15-300			
Medium temperature			
B1 : -40...280 °C			
B2 : -40...350 °C			
Compensation			
C1 : No compensation			
C2 : Temperature compensation			
C3 : Pressure compensation			
C4 : Temp & pressure compensation			
RS-485			
D1 : Without RS-485			
D2 : With RS-485			
HART protocol			
E1 : Without HART Protocol			
E2 : With HART Protocol			
Display			
F1 : Without display			
F2 : With display			

Example

VM300-A2-DN100-B1-C1-D1-E1-F2 : Vortex flow meter, gas type, medium temperature -40...280 °C no compensation, without RS-485, without HART Protocol, with display

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