Vortex Flow Meter
Model: MDVF2

Applications

- Working principle:
  MDVF2 is a powerful flow meter utilizing “Karman vortex” theory, which can meet the requirement of measuring the flow rate of various fluids such as gas, steam and liquid.
  Universal measuring principle for liquids and gases
- Measurement of (non-)conductive liquids, gases, saturated and superheated steam Gross/net heat metering of steam and hot water
- Measurement of consumption of industrial gases (natural gas, nitrogen etc.)
  Measurement of consumption in compressed air systems
  Chemical and other process industries
  Food and beverage industry
  Cooling circuits, Compressed air, Inert gases, Oxygen
  Natural gas, Steam
  Hydrocarbons, thermal oils etc. Solvents, Desalinated water, Gases, welding gases, steam, Petrochemical products (benzene, ethylene, etc.)

Special features

- Super low flow measurement down to 2m/s
- Unique dual sensor technology excellent in anti-vibration
- Multi-variable flow meter, measures flow rate, temperature , pressure, FAD measurement available
- Bluetooth function optional, can read and set on MADECO APP with and smart phone or Pad
- Self-diagnose function plus remote diagnose function, ensure easier trouble-shooting.

No mechanical wear part

Description

Process Fluids	Used in liquid, gas, and steam applications. Fluids must be homogeneous and single-phase.
Line Sizes	The wafer and flanged type cover line sizes as below. 0.5", 0.75",1", 1.5", 2", 2.5", 3", 4", 5", 6", 8",10" ,12",14",16" (DN15, DN20, DN25, DN40, DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250, DN300, DN350, DN400), The insertion type covers DN300~1000.
Process Connection	Flange, wafer, insertion, ANSI, JIS, DIN standard flanges are optional for flanged connection
Displayer	Integral or remote.3 buttons control. 2 lines LCD displayer. 1st line has 5 digits to display mass flow or volume flow or frequency or temperature or pressure 2nd line has 8 digits to displayer total flow A small extra line above 1st line will indicate what parameter being displayed in 1st line.
Measurable Parameter	Standard version: Volume flow rate in pipe. Multi-variable version: Mass flow rate, volume flow rate in standard condition, temperature, pressure, volume flow rate in pipe, velocity.
Output Signal	Pulse, high level ≥ 5V, low level < 1V , 50% duty ratio 4~20mA (HART@4~20mA) ModBus-RTU RS485
Pressure Allowance	1.6MPa (232 psiG)、2.5MPa (362 psiG)、4.0MPa (580 psiG)、6.3Mpa (913 psiG) for option

Measurement range

Medium	Min Velocity	Max Velocity
Gas/Steam	6m/s for DN15、DN20 (19.7 ft/s) for 0.5" and 0.75" 4m/s , DN25、DN32 (13.1 ft/s) for 1" and 1.25" 2m/s , DN40 ~ DN300 (6.7 ft/s) for 1.5" ~ 12"	60m/s (196.9 ft/s)
Liquid	0.3m/s (1 ft/s)	6m/s (19.69 ft/s)

MDVF20 Standard type vortex meter without temperature & pressure compensation

Specification

Process connection	Flange Wafer	DN15~DN400 or 0.5 inch to 16 inch DN15~DN300 or 0.5 inch to 12 inch
Medium temperature	Standard Medium High	-40 ~ 150 °C or -40 ~ 302 °F -40 ~ 250 °C or -40 ~ 482 °F -40 ~ 350 °C or -40 ~ 662 °F
Power supply	4~20mA 2 wire system VFM60MV with 4~20mA(2 wire) Modbus RTU	13.5 ~ 42V 15.5 ~ 42V Current Iq < 9mA 13.4 ~ 42V
Reynolds and accuracy	Actual flow	±1.0% RD
	Mass flow/ Standard flow	+1.0% RD
	Pressure	+0.5%FS
	Temperature	+1.0°C
Turndown ratio	Gas/Steam Liquid	1:30 1:20
Repeatability	Volume flow Mass flow Temperature Pressure	±0.3% ±0.3% ±0.05 °C ±0.05%FS

MDVF21MV Multi-variable Vortex Meter standard type support up to 150 °C

Upstream/Downstream requires	15 x D / 5 x D Details please check in manual
Viscosity allowance	DN15 or 0.5 inch ≤ 4mPas DN25 or 1 inch ≤ 5mPas DN40~DN300 or 1.5~12 inch ≤ 7mPas 0.5g
Anti-vibration (both punch and fixed freq)	LCD displayer Support Support
Display	HART(V5、V7)/ Modbus-RTU/ Pulse Ex
Saturated /superheated steam measurement	db ia IIC T1...T6 Ga/Gb
Natural gas/Biogas, ect Communication Explosive proof	

MDVF22 Multi-variable Vortex Meter high temperature support up to 250°C/350°C

Actual flow measuring range

Pipe size		liquid actual flow				Steam/gas actual flow			
		Min flow m³/hr	Max flow m³/hr	Min flow cu.ft/min	Max flow cu.ft/min	Min flow m³/hr	Max flow m³/hr	Min flow GPM	Max flow GPM
15mm	0.5 inch	3.8	38.1	2.2	22.4	0.2	3.8	0.8	16.8
20mm	0.75 inch	6.8	67.8	4	39.9	0.3	6.8	1.5	29.8
25mm	1 inch	7.1	105.9	4.2	62.3	0.5	10.6	2.3	46.6
32mm	1.25 inch	11.6	173.6	6.8	102.2	0.9	17.4	3.8	76.4
40mm	1.5 inch	9	271.2	5.3	159.6	1.4	27.1	6.0	119.4
50mm	2 inch	14.1	423.7	8.3	249.4	2.1	42.4	9.3	186.6
65mm	2.5 inch	23.9	716.1	14	421.5	3.6	71.6	15.8	315.3
80mm	3 inch	36.2	1084.7	21.3	638.5	5.4	108.5	23.9	477.6
100mm	4 inch	56.5	1694.9	33.3	997.6	8.5	169.5	37.3	746.2
125mm	5 inch	88.3	2648.3	52	1558.7	13.2	264.8	58.3	1166.0
150mm	6 inch	127.1	3813.6	74.8	2244.6	19.1	381.4	84.0	1679.1
200mm	8 inch	226	6779.7	133	3990.4	33.9	678.0	149.3	2985.0
250mm	10 inch	353.1	10593.2	207.8	6234.9	53.0	1059.3	233.2	4664.1
300mm	12 inch	508.5	15254.2	299.3	8978.3	76.3	1525.4	335.8	6716.2

Saturated steam measuring range——Metric unit flow rate in kg/hr

Pipe size		T=121 dgrC P=1 barG D=1.155 kg/m³		T=144 dgrC P=3 barG D=2.185 kg/m³		T=159 dgrC P=5 barG D=3.182 kg/m³		T=165 dgrC P=6 barG D=3.671 kg/m³		T=171 dgrC P=7 barG D=4.218 kg/m³	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
15mm	0.5 inch	4.4	44.0	8.3	83.3	12.1	121.3	14	140.0	16.1	160.9
20mm	0.75 inch	7.8	78.3	14.8	148.1	21.6	215.7	24.9	248.9	28.6	286.0
25mm	1 inch	8.2	122.4	15.4	231.5	22.5	337.1	25.9	388.9	29.8	446.8
32mm	1.25 inch	13.4	200.5	25.3	379.2	36.8	552.3	42.5	637.1	48.8	732.1
40mm	1.5 inch	10.4	313.2	19.8	592.5	28.8	862.9	33.2	995.5	38.1	1143.9
50mm	2 inch	16.3	489.4	30.9	925.8	44.9	1348.3	51.9	1555.5	59.6	1787.3
65mm	2.5 inch	27.6	827.1	52.2	1564.7	76	2278.6	87.6	2628.8	100.7	3020.5
80mm	3 inch	41.8	1252.9	79	2370.2	115.1	3451.7	132.7	3982.1	152.5	4575.5
100mm	4 inch	65.3	1957.6	123.4	3703.4	179.8	5393.2	207.4	6222.0	238.3	7149.2
125mm	5 inch	102	3058.8	192.9	5786.5	280.9	8426.9	324.1	9721.9	372.4	11170.6
150mm	6 inch	146.8	4404.7	277.8	8332.6	404.5	12134.7	466.7	13999.6	536.2	16085.6
200mm	8 inch	261	7830.5	493.8	14813.6	719.1	21572.9	829.6	24888.1	953.2	28596.6
250mm	10 inch	407.8	12235.2	771.5	23146.2	1123.6	33707.6	1296.3	38887.7	1489.4	44682.2
300mm	12 inch	587.3	17618.6	1111	33330.5	1618	48539.0	1866.6	55998.3	2144.7	64342.4

Pipe size		T=176 dgrC P=8 barG D=4.723 kg/m³		T=185 dgrC P=10 barG D=5.752 kg/m³		T=192 dgrC P=12 barG D=6.671 kg/m³		T=199 dgrC P=14 barG D=7.706 kg/m³		T=215 dgrC P=20 barG D=10.57 kg/m³	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
15mm	0.5 inch	18	180.1	21.9	219.4	25.4	254.4	29.4	293.9	40.3	403.1
20mm	0.75 inch	32	320.2	39	390.0	45.2	452.3	52.2	522.4	71.7	716.6
25mm	1 inch	33.4	500.3	40.6	609.3	47.1	706.7	54.4	816.3	74.6	1119.7
32mm	1.25 inch	54.6	819.7	66.6	998.3	77.2	1157.8	89.2	1337.4	122.3	1834.5
40mm	1.5 inch	42.7	1280.8	52	1559.9	60.3	1809.1	69.7	2089.8	95.5	2866.4
50mm	2 inch	66.7	2001.3	81.2	2437.3	94.2	2826.7	108.8	3265.3	149.3	4478.8
65mm	2.5 inch	112.7	3382.1	137.3	4119.0	159.2	4777.1	183.9	5518.3	252.3	7569.2
80mm	3 inch	170.8	5123.3	208	6239.5	241.2	7236.3	278.6	8359.1	382.2	11465.8
100mm	4 inch	266.8	8005.1	325	9749.2	376.9	11306.8	435.4	13061.0	597.2	17915.3
125mm	5 inch	416.9	12507.9	507.8	15233.1	588.9	17666.8	680.3	20407.8	933.1	27992.6
150mm	6 inch	600.4	18011.4	731.2	21935.6	848	25440.3	979.6	29387.3	1343.6	40309.3
200mm	8 inch	1067.3	32020.3	1299.9	38996.6	1507.6	45227.1	1741.5	52244.1	2388.7	71661.0
250mm	10 inch	1667.75	0031.8	2031.1	60932.2	2355.6	70667.4	2721	81631.4	3732.3	111970.3
300mm	12 inch	2401.5	72045.8	2924.7	87742.4	3392	101761.0	3918.3	117549.2	5374.6	161237.3

saturated steam measuring range——Imperial unit flow rate in lb/hr

Pipe size	T=249.8 dgrF P=14.5 pisG D=0.0721 lb/ft³		T=291.2 dgrF P=43.5 pisG D=0.1364 lb/ft³		T=318.2 dgrF P=72.5 pisG D=0.1986 lb/ft³		T=329 dgrF P=87 pisG D=0.2292 lb/ft³		T=339.8 dgrF P=101.5 pisG D=0.2633 lb/ft³	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
15mm 0.5 inch	9.7	97.1	18.4	183.7	26.8	267.5	30.9	308.6	35.5	354.6
20mm0.75 inch	17.3	172.6	32.7	326.6	47.6	475.6	54.9	548.7	63	630.4
25mm 1 inch	18	269.7	34	510.3	49.5	743.1	57.2	857.3	65.7	985.1
32mm1.25 inch	29.5	441.9	55.7	836.1	81.2	1217.5	93.6	1404.6	107.6	1613.9
40mm 1.5 inch	23	690.5	43.5	1306.3	63.4	1902.4	73.2	2194.8	84.1	2521.8
50mm 2 inch	36	1079.0	68	2041.1	99.1	2972.5	114.3	3429.3	131.3	3940.3
65mm 2.5 inch	60.8	1823.4	115	3449.5	167.5	5023.5	193.2	5795.5	222	6659.1
80mm 3 inch	92.1	2762.1	174.2	5225.3	253.7	7609.6	292.6	8779.0	336.2	10087.2
100mm 4 inch	143.9	4315.8	272.2	8164.6	396.3	11890.0	457.2	13717.2	525.4	15761.2
125mm 5 inch	224.8	6743.5	425.2	12757.2	619.3	18578.1	714.4	21433.2	820.9	24626.8
150mm 6 inch	323.7	9710.6	612.3	18370.3	891.8	26752.5	1028.8	30863.8	1182.1	35462.7
200mm 8 inch	575.4	17263.3	1088.6	32658.3	1585.3	47560.1	1829	54868.9	2101.5	63044.7
250mm10 inch	899.1	26973.9	1701	51028.6	2477.1	74312.6	2857.8	85732.7	3283.6	98507.4
300mm12 inch	1294.7	38842.5	2449.4	73481.2	3567	107010.1	4115.2	123455.1	4728.4	141850.6

Pipe size	T=348.8 dgrF P=116 pisG D=0.2948 lb/ft³		T=365 dgrF P=145 pisG D=0.3591 lb/ft³		T=377.6 dgrF P=174 pisG D=0.4165 lb/ft³		T=390.2 dgrF P=203 pisG D=0.4811 lb/ft³		T=419 dgrF P=290 pisG D=0.6599 lb/ft³	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
15mm 0.5 inch	39.7	397.1	48.4	483.6	56.1	560.9	64.8	647.9	88.9	888.7
20mm0.75 inch	70.6	705.9	86	859.7	99.7	997.1	115.2	1151.8	158	1579.9
25mm 1 inch	73.5	1103.0	89.6	1343.3	103.9	1557.9	120	1799.7	164.6	2468.5
32mm1.25 inch	120.5	1807.2	146.7	2200.9	170.2	2552.5	196.6	2948.6	269.6	4044.4
40mm 1.5 inch	94.1	2823.7	114.6	3438.9	132.9	3988.3	153.6	4607.1	210.6	6319.4
50mm 2 inch	147.1	4412.0	179.1	5373.3	207.7	6231.8	240	7198.7	329.1	9874.1
65mm 2.5 inch	248.5	7456.4	302.7	9080.9	351.1	10531.7	405.5	12165.7	556.2	16687.2
80mm 3 inch	376.5	11294.8	458.5	13755.6	531.8	15953.4	614.3	18428.6	842.6	25277.7
100mm 4 inch	588.3	17648.2	716.4	21493.2	830.9	24927.2	959.8	28794.6	1316.5	39496.4
125mm 5 inch	919.2	27575.3	1119.4	33583.1	1298.3	38948.7	1499.7	44991.6	2057.1	61713.1
150mm 6 inch	1323.6	39708.4	1612	48359.7	1869.5	56086.2	2159.6	64787.9	2962.2	88866.8
200mm 8 inch	2353.1	70592.8	2865.8	85972.8	3323.6	99708.7	3839.3	115178.5	5266.2	157985.5
250mm10 inch	3676.7	110301.2	4477.8	134332.5	5193.2	155794.9	5998.9	179966.3	8228.4	246852.3
300mm12 inch	5294.5	158833.7	6448	193438.8	7478.2	224344.6	8638.4	259151.5	11848.9	355467.4

MDVF 2 Vortex Flow meter

ORDERING CODE Example: **MDVF 2**	M2	S	B	O	W	01	D	M	1	M2	M
Nominal Diameter please see the diameter selection table											
Please specify	M2										
Flow Range											
S - Standard		S									
E - Extended											
C - Customer											
Process Connection											
A - Wafer with stainless steel flanges up to 16 barG (232 psiG) (DN15 ~ DN300)											
B - Wafer with carbon steel flanges up to 16 barG (232 psiG) (DN15 ~ DN300)			B								
C - Flanged DIN PN16 up to 16 barG (232 psiG) (DN15 ~ DN400)											
D - Flanged DIN PN40 up to 40 barG (580 psiG) (DN15 ~ DN400)											
E - Flanged DIN PN63 up to 63 barG (913 psiG) (DN15 ~ DN400)											
F - Flanged ANSI CL150 up to 16 barG (232 psiG) (0.5 inch ~ 16 inch)											
G - Flanged ANSI CL300 up to 40 barG (580 psiG) (0.5 inch ~ 16 inch)											
H - JIS 10K up to 16 barG (232 psiG) (DN15 ~ DN400)											
I - JIS 20K up to 40 barG (580 psiG) (DN15 ~ DN400)											
Wetted part material											
O - OCr18Ni9 (304)				O							
B - 316											
Degreased											
Other											
W - Wet part not degreased					W						
J - Wet part degreased for Oxygen measurement											
Medium Temperature											
01 - T≤150°C						01					
02 - T≤250°C (wafer or flanged)											
03 - T≤350°C (wafer or flanged)											
04 - Flanged DIN PN25 up to 25 barG (362 psiG) (DN15 ~ DN400)											
Flang Type											
D - DIN Please specify PN							D				
A - ASME Please specify class											
C - Customer											
Fluid type											
M - Gas								M			
F - Steam											
Pipe size											
1- 015DN15 or 0.5 inch											
2 - 020DN20 or 0.75 inch									1		
3 - 025DN25 or 1 inch											
4 - 032DN32 or 1.25 inch											
040DN40 or 1.5 inch											
5 - 050DN50 or 2 inch											
6 - 065DN65 or 2.5 inch											
7 - 080DN80 or 3 inch											
8 - 100DN100 or 4 inch											
9 - 125DN125 or 5 inch											
10 - 150DN150 or 6 inch											
11 - 200DN200 or 8 inch											
12 - 250DN250 or 10 inch											
13 - 300DN300 or 12 inch											
14 - 350DN350 or 14 inch											
15 - 400DN400 or 16 inch											
Transmitter											
M1 - Integral transmitter, multi-variable, bluetooth, RS485, pulse,											
M2 - Integral transmitter, multi-variable, bluetooth, RS485, pulse, 4 wire 4~20mA										M2	
M3 - Integral transmitter, multi-variable, bluetooth, pulse, 4 wire HART@4~20mA											
M4 - Integral transmitter, multi-variable, pulse, 2 wire HART@4~20mA											
Cable grinder											
M - M20x1.5											M
C - NPT 1/2											

ORDERING CODE	Example:	MDVF1	T1	N	L
Temperature Rating					
T1 - (-20...100˚C)			T1		
T2 - (-20...250˚C)					
T3 - (-20...350˚C)					
Temperature & Pressure Compensation					
N - Non				N	
W - with					
Fluid					
L - Liquid					L
G - Gas					
S - Steam					

Address: 7191 Yonge street, Toronto, Canada

Tel: +16472221281(5 line)

Web: www.madecotech.com

Email: Info@madecotech.com