Panametrics

Datasheet

PanaFlow™ MV84

In-line multivariable flow meters for mass, temperature and pressure

PanaFlow MV84 In-line Multivariable Mass Vortex flow meter is the next generation vortex meter. PanaFlow MV84's multivariable design consists of a vortex shedding velocity sensor, an RTD temperature sensor and a solid state pressure transducer that measures the mass flow rate of steam, gases and liquids. Other meter types use external process measurements to calculate mass flow. The temperature and pressure devices are typically not installed in the same location as the flowmeter. Process conditions can vary greatly between the two locations, causing inaccurate mass flow readings. PanaFlow MV84 measures velocity, temperature and pressure at the same location, which provides more accurate process measurement.

PANA030DS2 Rev. 8

Portfolio of flow meter solutions

Panametrics is committed to providing customers with the best technologies for their flow measurement needs. PanaFlow MV84 is the newest addition to the PanaFlow family of flow meters, providing effective solutions for smaller pipe sizes for a variety of applications. Panametrics offers the PanaFlow MV84 in a number of configurations to best suit your application measurement needs.

Field service solutions

Panametrics has a global field service team ready to assist in the start-up and commissioning of the PanaFlow MV84 flow meters. This service includes validating the proper installation and programming of the meter, and can include customized training for theory, operation and maintenance. Regularly scheduled preventative maintenance visits will provide peace of mind, ensuring that the meters work to specification and your expectation for years.

Mass flow measurement—true multivariable

The MV84 offers flow computer functionality in a compact field device. The VTP option incorporates temperature and pressure sensors to provide an instantaneous reading of compensated mass flow rate of gases, liquids and steam. In addition to outputs for totalized mass and alarm settings, the field configurable electronics deliver up to three analog 4-20 mA outputs of five process measurements, including volumetric flow rate, mass flow rate, pressure, temperature and density. Alternate configurations for mass flow include a temperature only compensation (VT), best used when in saturated steam applications, and an integrated RTD with an external pressure transmitter (VT-EP) when a full function pressure transmitter is desired.

Energy measurement in liquids and steam

The VT-EM energy monitoring option enables real time-of-flight diffraction calculation of energy consumption for a facility or process. The meter can be programmed to measure steam, hot water or chilled water. This option uses the MV84 flow meter to monitor one side of the process, either sent or return, and uses the input from a second separate temperature sensor on the opposite leg of the process to calculate the change in energy. Selectable energy units include BTU, joules, calories, Watt-hours, Megawatt-hours and Horsepower-hours. The local or remote electronics indicate two temperatures, delta T, mass total and energy total. For energy measurement in steam, the VTP-EM option adds a pressure transmitter to offer better accuracy.

Volumetric flow for most gases and liquids

The base model MV84 delivers a direct reading of volumetric flow rate—generally the most cost-effective solution for liquid flow monitoring—in applications ranging from general water flows to hydrocarbon fuel flow measurement.

Key benefits

- Multivariable vortex flow meter with built-in flow computer for measuring volumetric flow, temperature, pressure, density, energy, and mass flow using a single meter
- Measures most gases, liquids and steam without the need to recalibrate
- Advanced design and digital signal processing for vibration isolation
- Cost effective, accurate and reliable meter for volumetric and mass flow measurement
- Energy management through accurate measurement of both temperature and mass flow simultaneously
- Remote monitoring and integration to DCS using HART®, Modbus®, and BACnet® communication protocols
- Significant cost savings through reduced installation costs, wiring runs and services support using MV meter with no moving parts
- Reducing meter option for increasing the lower measurement range

Applications

- Ideal for high temperature and high velocity steam
- Power Generation—fuel and steam applications
- Industrial—HVAC, district energy management
- Commercial—building, campus and facility energy management
- Oil & Gas—allocation of natural gas
- Petrochemical—mass balancing, reaction processes heating

Model	Configuration	Volumetric flow	Mass flow	Integrated RTD	Integrated pressure	External temperature	External pressure	Typical application	Pipe size*
MV84-V	Volumetric flow for liquid and gas	X						Liquid volumetric flow	1/2″ to 12″ (15 to 300 mm)
MV84-VT	Mass flow with temperature and assumed saturated steam	X	X	X				Saturated steam and liquid mass flow	1/2″ to 12″ (15 to 300 mm)
MV84-VTP	Mass flow with integrated temperature and pressure in one device	X	X	X	X			Steam and gases mass flow	1/2″ to 12″ (15 to 300 mm)
MV84-VT-EP	Mass flow with integrated temperature and analog input for an external pressure transmitter	X	X	X			X	Steam and gases mass flow (special material, high pressure)	1/2″ to 12″ (15 to 300 mm)
MV84-VT-EM	Energy using integrated temperature and one input for an RTD transmitter	X		X		X		Saturated steam and liquid energy	1/2″ to 12″ (15 to 300 mm)
MV84-VTP-EM	Energy for steam with integrated pressure and temperature and one input for an RTD transmitter	X	X	X	X	X		Steam energy	1/2″ to 12″ (15 to 300 mm)

Technical Specifications

Performance

Accuracy Mass flow rate accuracy for gas and steam based on 50-100% of pressure range.

PanaFlow MV82 flow meter accuracy

Process variable	Liquids	Gas and steam
Volumetric flow rate	± 0.7% of rate	± 1% of rate
Mass flow rate	± 1% of rate	± 1.5% of rate
Temperature	± 2°F (± 1°C)	± 2°F (± 1°C)
Pressure	± 0.3% of full scale	± 0.3% of full scale
Density	± 0.3% of reading	±0 .5% of reading

Repeatability
- Mass flow rate: ±0.2% of rate
- Volumetric flow rate: ±0.1% of rate
- Temperature: ±0.2°F (± 0.1°C)
- Pressure: ±0.05% of full scale
- Density: ±0.1% of reading

Stability over 12 months
- Mass flow rate: ±0.2% of rate
- Volumetric flow rate: negligible
- Temperature: ±0.9°F (± 0.5°C)
- Pressure: ±0.1% of full scale
- Density: ±0.1% of reading

Response time Adjustable from 1 to 100 seconds

Operating

Process and ambient temperature
- Process standard temperature (code st): -40 to 500°F (-40 to 260°C)
- Process high temperature (code ht): up to 750°F (400°C)
- Ambient operating: -40 to 140°F (-40 to 60°C)
- Ambient storage: -40 to 185°F (-40 to 85°C)

Pressure transducer ratings

Full scale operating pressure		Max. over-range pressure	
psia	bara	psia	bara
30	2	60	4
100	7	200	14
300	20	600	40
500	35	1000	70
1500	100	2500	175

Power requirements
- DC2 option: 12-36 VDC loop powered, 25mA, 1W max, loop powered (single output)
- DC4 option: 12-36 VDC, 300 mA max, 9W max, (multiple outputs)
- DC4POE option: 12-28 VDC or power over Ethernet, 5W max, (multiple outputs)
- AC option: 100-240 VAC, 50/60 Hz, 5 Watt (multiple outputs)

Display Alphanumeric 2 line x 16 character LCD Digital Display: six pushbuttons for full field configuration. Pushbuttons can be operated with magnetic wand without removal of enclosure covers. Display can be mounted in 90° intervals for better viewing.

Output signals
- Analog: 4-20 mA, loop powered for volumetric meters
- Alarm: Solid state relay, 40 VDC
- Totalizer pulse: 50 millisecond, 40 VDC
- DC2 option: One analog, one totalizer pulse, HART
- DC4, DC4POE, and AC option: Up to three analog signals, three alarms, one totalizer pulse, HART, Modbus, BACnet

Physical

Wetted materials 316L stainless steel standard, plus:
- PTFE based thread sealant on models with pressure transducer
- PTFE packing on standard temperature models with packing gland
- Graphite-based packing on high temperature models with packing gland
- Carbon steel and Hastelloy C meter bodies optional

Certifications
- FM/FMC Class I, Division 1, Groups B, C and D, Class II, III, Division 1, Groups E, F & G
- Type 4x and IP66, T6, Ta = -40°C - +60°C
- ATEX II 2 G Ex d IIB + H2 T6, II 2 D Ex tD A21 IP66 T85°C, Ta = -40°C - +60°C
- IECEx Ex d IIB + H2 T6, Ex tD A21 IP66 T85°C, Ta = -40°C - +60°C

Sizing considerations

Piping conditions

Condition	Pipe diameters, D	
	Upstream	Downstream
One 90° elbow before meter	10D	5D
Two 90° elbows before meter	15D	5D
Two 90° elbows before meter, out of plane	25D	5D
Reduction before meter	10D	5D
Expansion before meter	20D	5D
Partially open valve	25D	5D

Velocity and flow rate ranges

Velocity range

- Maximum for liquids: 30 ft/s (9 m/s)
- Minimum for liquids: 1 ft/s (0.3 m/sec)
- Maximum for gases or steam: 300 ft/s (90 m/s)
- Minimum for gases or steam: see equations below

$$ft/s = \sqrt{\frac{5}{density\ (lb/ft^3)}} \qquad m/s = \sqrt{\frac{6.1}{density\ (kg/m^3)}}$$

Turndown ratio

The turndown ratio is application-dependent, and it can exceed 100:1. Consult the PanaFlow MV Sizing Program for exact values.

Flow rate ranges for water

Refer to the table below for minimum and maximum flow rate ranges, or use the PanaFlow MV Sizing Program to calculate your flow rate range.

Minimum and maximum flow rates for water

Rate	Nominal pipe size (in.)								
	0.5	0.75	1	1.5	2	3	4	6	8
GPM min.	0.9	1.4	2.2	5.5	9.2	21	36	81	142
GPM max.	22	40	67	166	276	618	1076	2437	4270
Rate	**Nominal pipe size (mm)**								
	15	20	25	40	50	80	100	150	200
m3/hr min.	0.2	0.3	0.5	1.3	2.3	4.7	8.1	18	32
m3/hr max.	5	9	15	38	63	140	244	554	970

Upon the recommendation of a Panametrics application engineer, a concentric reducer inline flow body may be requested.

Flow rate ranges for saturated steam

Refer to the tables below for minimum and maximum flow rate ranges, or use the PanaFlow MV Sizing Program to calculate your flow rate range.

Minimum and maximum flow rates for saturated steam (lb/hr)

Press. (psig)	Nominal pipe size (in.)										
	0.5	0.75	1	1.5	2	3	4	6	8	10	12
5	6.5 52	12 122	20 265	49 650	82 1087	183 2431	318 4231	722 9594	1264 16806	1988 26429	2813 37395
100	15 271	27 639	46 1386	112 3405	187 5690	419 12729	728 22156	1652 50233	2893 87998	4550 138386	6438 195803
200	20 493	37 1163	62 2525	151 6203	253 10365	565 23184	983 40354	2229 91494	3905 160279	6141 252055	8689 356635
300	24 716	45 1688	74 3664	182 9000	304 15040	680 33642	1184 58556	2685 132763	4704 232575	7397 365747	10466 517499
400	28 941	51 2220	85 4816	209 11831	349 19770	780 44222	1358 76971	3079 174516	5393 305717	8481 480771	12000 680247
500	31 1170	57 2760	95 5988	233 14711	389 24582	870 54987	1514 95710	3433 217001	6014 380148	9457 597812	13381 845850

Minimum and maximum flow rates for saturated steam (kg/hr)

Press. (barg)	Nominal pipe size (in.)										
	15	20	25	40	50	80	100	150	200	250	300
0	3 18	5 42	8 91	19 274	32 375	72 838	126 1459	286 3309	500 5797	786 9116	1113 12898
5	6 95	11 224	18 485	45 1192	75 1992	167 4455	290 7754	658 17581	1153 30799	1813 48434	2565 68530
10	8 168	15 397	24 862	59 2118	99 3539	222 7915	387 13777	877 31237	1537 54720	2417 86053	3419 121758
15	9 241	17 569	29 1236	71 3036	119 5073	266 11347	463 19750	1050 44779	1840 78444	2893 123360	4094 174543
20	11 314	20 742	33 1610	81 3956	136 6611	304 14787	529 25738	1199 58355	2100 102226	3303 160761	4673 227463
30	13 463	24 1092	40 2370	99 5822	165 9729	369 21763	642 37880	1455 85884	2548 150451	4007 236599	5669 334766

Flow rate ranges for air

Refer to the tables below for minimum and maximum flow rate ranges, or use the PanaFlow MV Sizing Program to calculate your flow rate range.

Minimum and maximum flow rates for air @70°F (SCFM)

Press. (psig)	Nominal pipe size (in.)										
	0.5	0.75	1	1.5	2	3	4	6	8	10	12
0	1.8 18	3 41	5 90	13 221	22 369	50 826	87 1437	198 3258	347 5708	546 8976	773 12701
100	5 138	9 325	15 704	38 1730	63 2890	141 6466	245 11254	555 25515	972 44698	1529 70292	2163 99456
200	7 258	13 609	21 1322	52 3248	86 5427	193 12140	335 21131	761 47911	1332 83931	2095 131895	2965 186752
300	8 380	15 896	25 1944	63 4775	104 7978	234 17847	407 31064	922 70431	1615 123375	2540 194025	3594 274529
400	10 502	18 1183	29 2568	72 6309	120 10542	269 23580	467 41043	1060 93057	1857 163000	2920 256358	4132 362724
500	1 624	20 1472	33 3195	80 7849	134 13115	300 28034	521 51063	1182 115775	2071 203000	3257 318941	4608 451272

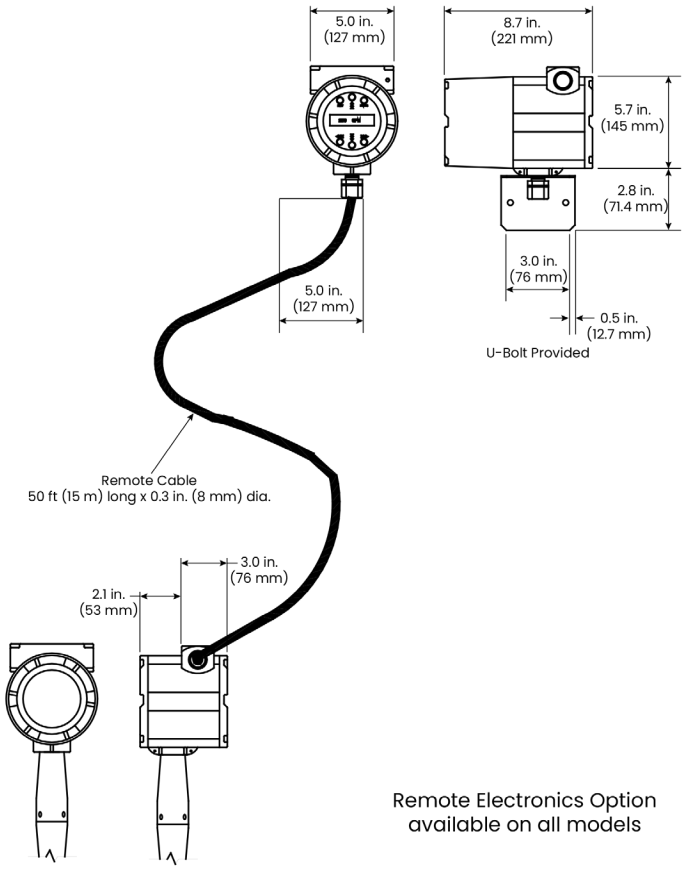
Minimum and maximum flow rates for air at 20°C (nm³/hr)

Press. (barg)	Nominal pipe size (in.)										
	15	20	25	40	50	80	100	150	200	250	300
0	3 28	5 66	9 142	21 350	36 584	79 1307	138 2275	313 5157	549 9034	863 14207	1221 20102
5	7 165	13 390	21 847	52 2080	87 3476	194 7775	337 13533	764 30682	1339 53749	2105 84525	2979 119596
10	9 304	17 716	29 1554	70 3819	117 6381	262 14273	457 24844	1035 56329	1914 98676	2853 155178	4036 219563
15	11 442	21 1044	34 2265	85 5565	142 9299	317 20801	551 36205	1250 82087	2190 143801	3444 297386	4873 319968
20	13 582	24 1373	40 2979	97 7318	162 12229	363 27354	632 47612	1434 107949	2511 189105	3949 297386	5588 420775
30	16 862	29 2034	48 4414	118 10843	198 18119	442 40529	770 70544	1745 159942	3057 280187	4807 440621	6801 623439

Dimensional outlines

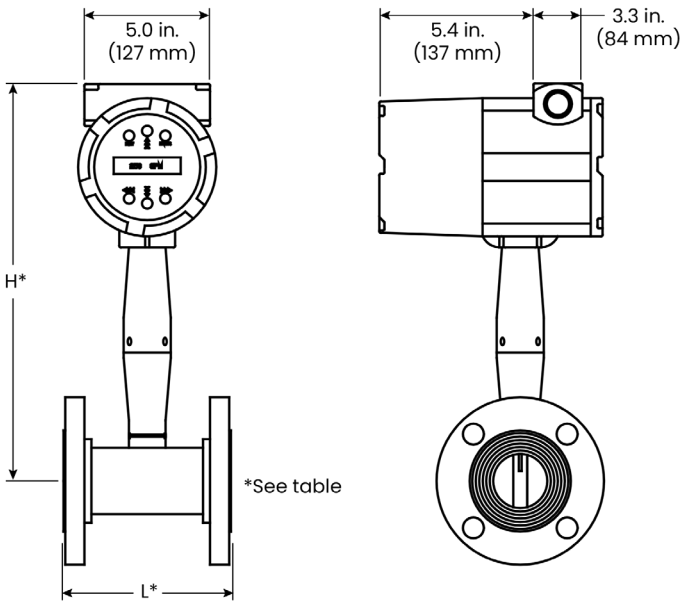
Remote electronics option - drawing

This option is available on all models. See the drawing below for the dimensions.



Remote Electronics Option available on all models

In-line flanged models - drawing



In-line flanged models - table

Flow meter (nominal size)	L	L (ANSI 900)	H	Weight* ANSI 150 (PN 16)	Weight* ANSI 300 (PN 40)	Weight* ANSI 600 (PN 63)	Weight* ANSI 900 (PN 160)
1/2 in. (15 mm)	7.9 in. (200 mm)	7.9 in. (201 mm)	13.5 in. (343 mm)	12.0 lb (5.5 kg)	12.5 lb (5.7 kg)	13.4 lb (6.1 kg)	17.6 lb (8 kg)
3/4 in. (20 mm)	7.9 in. (200 mm)	9.7 in. (247 mm)	13.5 in. (343 mm)	13.0 lb (5.9 kg)	14.6 lb (6.6 kg)	15.6 lb (7.1 kg)	21.0 lb (9.5 kg)
1.0 in. (25 mm)	7.9 in. (200 mm)	10.8 in. (274 mm)	13.5 in. (343 mm)	13.5 lb (6.1 kg)	16.3 lb (7.4 kg)	16.4 lb (7.5 kg)	26.3 lb (11.9 kg)
1.5 in. (40 mm)	7.9 in. (200 mm)	12.0 in. (305 mm)	13.8 in. (351 mm)	16.3 lb (7.4 kg)	23.3 lb (10.6 kg)	24.6 lb (11.2 kg)	37.2 lb (16.9 kg)
2.0 in. (50 mm)	7.9 in. (200 mm)	14.1 in. (357 mm)	14.0 in. (356 mm)	21.2 lb (9.6 kg)	26.8 lb (12.2 kg)	33.2 lb (15.1 kg)	60.5 lb (27.4 kg)
3.0 in. (80 mm)	7.9 in. (200 mm)	14.8 in. (375 mm)	14.6 in. (371 mm)	33 lb (15 kg)	41.0 lb (18.6 kg)	56.1 lb (25.5 kg)	76.5 lb (34.7 kg)
4.0 in. (100 mm)	9.84 in. (250 mm)	16.9 in. (429 mm)	15.1 in. (384 mm)	45.8 lb (20.8 kg)	66.8 lb (30.3 kg)	96.0 lb (43.6 kg)	121.2 lb (55 kg)
6.0 in. (150 mm)	11.81 in. (300 mm)	19.5 in. (495 mm)	16.2 in. (411 mm)	68.3 lb (31.0 kg)	106.3 lb (48.2 kg)	194.3 lb (88.2 kg)	254.4 lb (115.4 kg)
8.0 in. (200 mm)	11.81 in. (300 mm)	22.8 in. (579 mm)	17.2 in. (437 mm)	112.4 lb (51 kg)	168 lb (76.5 kg)	299 lb (136 kg)	433.0 lb (196.4 kg)
10.0 in. (250 mm)	15.0 in. (381 mm)	29.0 in. (737 mm)	18.2 in (462 mm)	188.3 Lb (85.5 Kg)	262.3 Lb (119.1 Kg)	462.3 Lb (209.9 Kg)	665.9 lb (302.0 kg)
12.0 in. (300 mm)	-	-	-	-	-	-	-

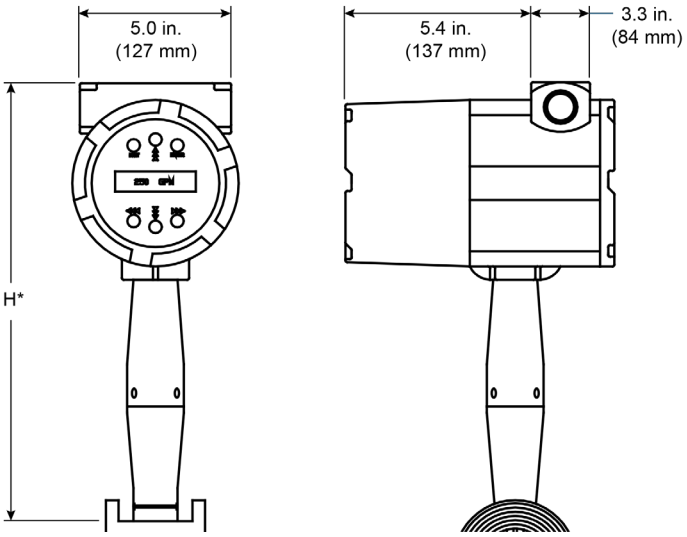
*Add 11 lb (5 kg) for remote electronics

In-line reducing flanged models - table

Flow meter (nominal size)	L	H	Weight* ANSI 150 (PN 16)	Weight* ANSI 300 (PN 40)	Weight* ANSI 600 (PN 64)
3/4 in. (20 mm) x 1/2 in. (15 mm)	7.9 in. (200 mm)	13.5 in. (343 mm)	12.0 lb (5.5 kg)	12.5 lb (5.7 kg)	13.4 lb (6.1 kg)
1 in. (25 mm) x 1/2 in (15 mm)	7.9 in. (200 mm)	13.5 in. (343 mm)	13.0 lb (5.9 kg)	16.3 lb (7.4 kg)	16.4 lb (7.5 kg)
1-1/2 in. (40 mm) x 1 in. (25 mm)	7.9 in. (200 mm)	13.0 in. (351 mm)	13.4 lb (6.1 kg)	23.3 lb (10.6 kg)	24.6 lb (11.2 kg)
2 in. (50 mm) x 1-1/2 (40 mm)	7.9 in. (200 mm)	14.0 in. (356 mm)	16.3 lb (7.4 kg)	26.8 lb (12.2 kg)	33.2 lb (15.1 kg)
3 in. (80 mm) x 2 in. (50 mm)	7.9 in. (200 mm)	14.6 in. (371 mm)	21.2 lb (9.6 kg)	41.0 lb (18.6 kg)	56.1 lb (25.5 kg)
4 in. (100 mm) x 3 in. (80 mm)	9.84 in. (250 mm)	15.1 in. (384 mm)	33 lb (15.0 kg)	66.8 lb (30.3 kg)	96.0 lb (43.6 kg)
6 in. (150 mm) x 4 in. (100 mm)	11.81 in. (300 mm)	16.2 in. (411 mm)	45.8 lb (20.8 kg)	106.3 lb (48.2 kg)	194.3 lb (88.2 kg)
8 in. (200 mm) x 6 in. (150 mm)	11.81 in. (300 mm)	17.2 in. (437 mm)	68.3 lb (31.0 kg)	168 lb (76.5 kg)	299 lb (136 kg)
10 in. (250 mm) x 8 in. (200 mm)	15.0 in. (381 mm)	18.2 in (462 mm)	188.3 Lb (85.5 Kg)	262.3 Lb (119.1 Kg)	462.3 Lb (209.9 Kg)
12 in. (300 mm) x 10 in. (250 mm)	17.7 in. (450 mm)	19.2 in. (488 mm)	298.6 Lb (135.6 Kg)	402.6 Lb (182.8 Kg)	606.6 Lb (275.4 Kg)

*Add 11 lb (5 kg) for remote electronics

Wafer models - drawing and table



In-line wafer model dimension - table

Flow meter (nominal size)	L	H	Diameter	Weight*
1/2 in. (15 mm)	2.56 in. (65 mm)	13.5 in. (343 mm)	1.38 in. (35 mm)	9.2 lb (4.2 kg)
3/4 in. (20 mm)	2.56 in. (65 mm)	13.5 in. (343 mm)	1.69 in. (43 mm)	9.5 lb (4.3 kg)
1 in. (25 mm)	2.56 in. (65 mm)	13.5 in. (343 mm)	2.0 in. (51 mm)	10.3 lb (4.7 kg)
1-1/2 in. (40 mm)	2.56 in. (65 mm)	13.8 in. (351 mm)	2.88 in. (73 mm)	12.1 lb (5.5 kg)
2 in. (50 mm)	2.56 in. (65 mm)	14 in. (356 mm)	3.62 in. (92 mm)	14.1 lb (6.4 kg)
3 in. (80 mm)	2.56 in. (65 mm)	14.6 in. (371 mm)	5.0 in. (127 mm)	18.7 lb (8.5 kg)
4 in. (100 mm)	2.56 in. (65 mm)	15.1 in. (384 mm)	6.19 in. (157 mm)	23.9 lb (8.5 kg)

*Add 11 lb (5 kg) for remote electronics

In-line reducing wafer model dimension - table

Flow meter (nominal size)	L	H	Diameter	Weight*
3/4 in. (20 mm) x 1 in. (25 mm)	2.56 in. (65 mm)	13.5 in. (343 mm)	1.38 in. (35 mm)	9.2 lb (4.2 kg)
1 in. (25 mm) x 3/4 in. (20 mm)	2.56 in. (65 mm)	13.5 in. (343 mm)	1.69 in. (43 mm)	9.5 lb (4.3 kg)
1-1/2 in. (40 mm) x 1 in. (25 mm)	2.56 in. (65 mm)	13.8 in. (343 mm)	2.0 in. (51 mm)	10.3 lb (4.7 kg)
2 in. (50 mm) x 1-1/2 in. (40 mm)	2.56 in. (65 mm)	13.8 in. (343 mm)	2.88 in. (73 mm)	12.1 lb (5.5 kg)
3 in. (80 mm) x 2 in. (50 mm)	3.9 in. (100 mm)	14.6 in. (371 mm)	5.0 in. (127 mm)	23.9 lb (8.5 kg)
4 in. (100 mm) x 3 in. (80 mm)	4.7 in. (120 mm)	15.1 in. (384 mm)	6.19 in. (157 mm)	35.2 lb (10.6 kg)

*Add 11 lb (5 kg) for remote electronics

PanaFlow MV84 ordering information

Parent Number Code:

MV84 In-line Multivariable Mass Vortex Flow Meter
MV84R In-Line Reducing Flange Multivariable Mass Vortex Flow Meter

Feature 1: Multivariable Options
V Volumetric flow meter for liquid, gas and steam
VT Velocity and temperature sensors
VTP Velocity, temperature and pressure sensors
VT-EM Energy output options
VTP-EM Energy options with pressure sensor
VT-EP Velocity and temperature sensors with analog input for pressure
VTEP-EM Energy option with external pressure sensor

Feature 2: Flow Body
04 1/2-inch Nominal Bore (15 mm)[1]
06 3/4-inch Nominal Bore (20 mm)[1]
08 1-inch Nominal Bore (25 mm) [1]
12 1.5-inch Nominal Bore (40 mm)
16 2-inch Nominal Bore (50 mm)
24 3-inch Nominal Bore (80 mm)
32 4-inch Nominal Bore (100 mm)
48 6-inch Nominal Bore (150 mm)
64 8-inch Nominal Bore (200 mm)
80 10-inch Nominal Bore (250mm)
96 12-inch Nominal Bore (300mm)

Feature 3: Meter Body Material
C Carbon Steel
S 316 Stainless Steel
H Hastelloy

Feature 4: Process Connection
150 ANSI 150# Flange
300 ANSI 300# Flange
600 ANSI 600# Flange
W Wafer ANSI 600#
16 PN 16
40 PN 40
63 PN 63
150R ANSI 150# Reducing Flange[2]
300R ANSI 300# Reducing Flange[2]
600R ANSI 600# Reducing Flange[2]

Feature 5: Electronics Enclosure
L Type 4X enclosure
R (25) Remote electronics Type 4X, 25 ft (8 m) cable
R (50) Remote electronics Type 4X, 50 ft (8 m) cable

Feature 6: Display Options
DD Digital Display and Programming Buttons

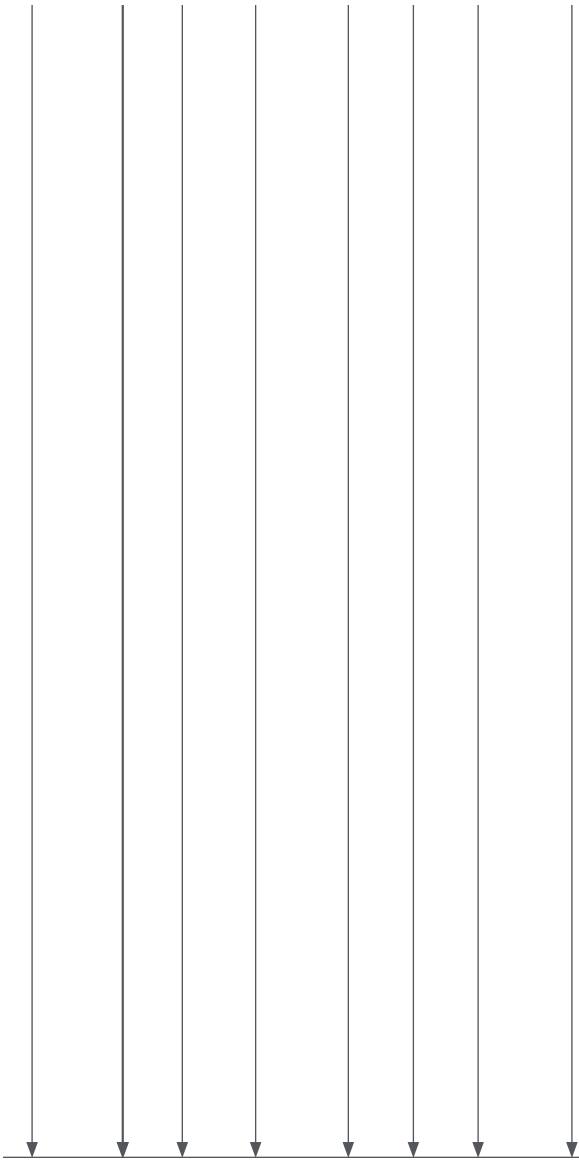
Feature 7: Input Power
DC2 12 to 36 VDC required on 2-wire (loop powered) meters with 1AHL only
DC4 12 to 36 VDC standard volumetric meter on 4-wire
AC 100-240 VAC, 50/60 Hz
DC4POE 12-28 VDC or Power over Ethernet (5 Watts maximum), Requires TCP/IP option

(continued on next page)

[1] 1/2", 3/4", and 1" vortex meters are only available in stainless steel

[2] reducing flanges are only available in stainless steel

*See on the next page



Feature 8: Output

1AHL	Loop powered option - one analog output (4-20mA), one pulse, one frequency, HART (DC2 option only)
1AH	1AH One analog output (4-20mA), one alarm, one pulse, one frequency, HART (DC4 or AC option only)
1AM	One analog output (4-20mA), one alarm, one pulse, one frequency, Modbus/RTU (DC4 or AC option only)
1AMIP	One analog output (4-20mA), one alarm, one pulse, one frequency, Modbus TCP/IP (DC4POE option only)
1AB	One analog output (4-20mA), one alarm, one pulse, one frequency, BACnet/MSTP (DC4 or AC option only)
1ABIP	One analog output (4-20mA), one alarm, one pulse, one frequency, BACnet TCP/IP (DC4POE option only)
3AH	Three analog output (4-20mA), three alarm, one pulse, one frequency, HART (DC4 or AC option only)
3AM	Three analog output (4-20mA), three alarm, one pulse, one frequency, Modbus RTU (DC4 or AC option only)
3AMIP	Three analog output (4-20mA), three alarms, one pulse, one frequency, Modbus TCP/IP (DC4POE option only)
3AB	Three analog output (4-20mA), three alarm, one pulse, one frequency, BACnet/MSTP (DC4 or AC option only)
3ABIP	Three analog output (4-20mA), three alarms, one pulse, one frequency, BACnet TCP/IP (DC4POE option only)

Feature 9: Process Temperature Options

ST	Standard Process Temperature -40° to 500°F (-40° to 260°C)
HT	High Process Temperature up to 750°F (400°C)

Feature 10: Process Pressure

P0	No pressure sensor
P1	Maximum 30 psia (2 bara), Proof 60 psia (4 bara)
P2	Maximum 100 psia (7 bara), Proof 200 psia (14 bara)
P3	Maximum 300 psia (20 bara), Proof 600 psia (41 bara)
P4	Maximum 500 psia (34 bara), Proof 1000 psia (64 bara)
P5	Maximum 1500 psia (100 bara), Proof 2500 psia (175 bara)

MV84 - V - 08 - C - 150 - L - DD - DC2 - 1AHL - ST - P0 (example part number string)

Accessories

The following accessories are available for the PanaFlow MV84 and may be ordered by adding the suffix listed in the table to the order string.

Suffix	Description
PED	PED compliant system (available in stainless steel only)
MC	Material Certifications, US Mil certs on all wetted parts
PT	Pressure Test certificate
CC	Certificate of Conformance
NC	NACE Certification
O2	Oxygen cleaning
ARM25V	Armored remote 25 ft cable (V meter, R25 selected)
ARM50V	Armored remote 50 ft cable (V meter, R50 selected)
ARM25VTP	Armored remote 25 ft cable (VTP meter, R25 selected)
ARM50VTP	Armored remote 50 ft cable (VTP meter, R50 selected)

Per avere più informazioni
CONTATTACI

EP srl
41124 Modena
Via S. Faustino, 155/P

Tel. +39 059 35 76 00
www.epsas.it
ep.ma@epsas.it

Join the conversation and follow us on LinkedIn
linkedin.com/company/panametricscompany

Copyright 2023 by Panametrics LLC. All rights reserved.

PANA030DS2_R8 (07/2023)

Panametrics

panametrics.com