

## DFM Low Cost Variable Area Flowmeter

The Flowquip DFM Plastic Tube Variable Area Flowmeter is available in six lengths and is designed to offer a low cost solution for the measurement of liquids or gases in vertical pipework installations.

- ◆ Measures flows from 3 to 50000 l/hr
- ◆ Economically priced
- ◆ Choice of tube materials and end fittings
- ◆ Positive pipe “O” ring sealing
- ◆ Working pressure up to 10 barg
- ◆ ATEX approvals for optional 4-20mA and alarm switch for use in hazardous areas

### Introduction

The Flowquip DFM plastic tube variable area flowmeter is ergonomically styled for today's modern flow installations and is available in six different overall lengths. The DFM is suitable for liquid or gas measurement and customised scales can be provided to indicate flow rate in any desired engineering units. Several tube materials are available depending on operating pressure and temperature and positive “O” ring pipe sealing requires less tightening effort during installation. There is a choice of standard or magnetic floats (where alarms are required) with identical mass to ensure no flow range deviation when changing.

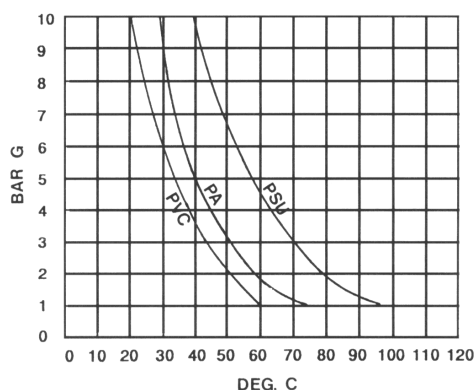
### Operating Principle

Fluid flowing vertically through a tapered tube exerts an upward force on the float such that the float takes up a point of equilibrium where the downward weight is balanced by the upward thrust of the fluid. This point then represents a specific flowrate. An increase in fluid velocity will cause the float to rise again until the next equilibrium point is reached and this represents a higher specific flowrate. The tube may thus be scaled in terms of flowrate in an almost linear manner.



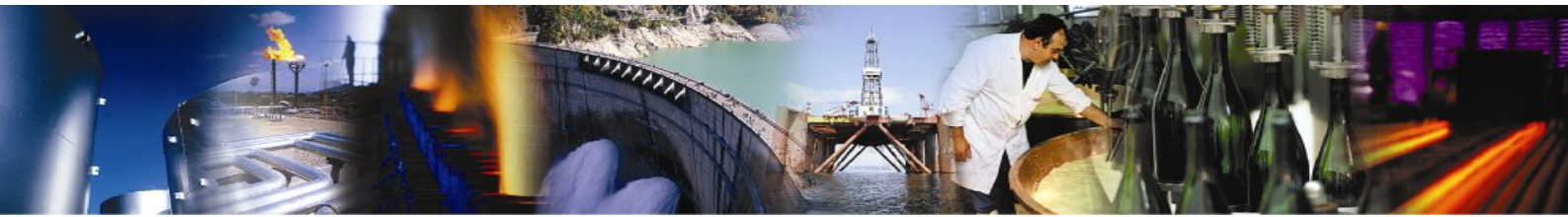
### Temperature Effect

Care should be taken to observe the maximum operating temperature for the various tube materials. The curves illustrate maximum operating pressures for temperatures above 20° C.



PSU=Polysulphon PA=Polyamide PVC=Polyvinyl Chloride





### Air Flow Ranges in Nm<sup>3</sup>/h, 1 BarA, 20° C.

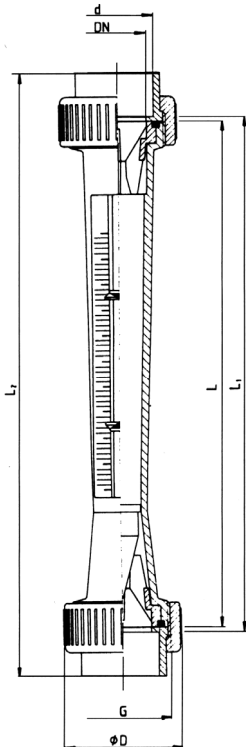
	DFM-165 3/8"	DFM-170 1/2"	DFM-185 3/4"	DFM-200 1"
Range 1	0.2-1	0.4-2.8	0.5-5	1-8
Range 2	0.2-2.5	0.8-6.2	2-14	2-14
Range 3	0.6-3.6	0.9-9.5	2.5-22	4-34
Range 4	0.5-9	2-15	4-34	5-50

### Water Flow Ranges in l/hr, 20° C.

	DFM-165 3/8"	DFM-170 1/2"	DFM-185 3/4"	DFM-200 1"
Range 1	3-22	5-50	15-150	25-250
Range 2	5-50	15-150	40-400	40-400
Range 3	10-90	25-250	60-600	100-1000
Range 4	25-250	50-500	100-1000	150-1500

	Conns.	Air in Nm <sup>3</sup> /h, 1 BarA		Water in l/hr	
		DFM-335	DFM-350	DFM-335	DFM-350
Range 5	1"	0.7-5.5	0.7-5.5	15-150	15-150
Range 6	1"	---	1-10	---	30-300
Range 7	1"	2.5-20	2.5-20	60-600	60-600
Range 8	1"	4-34	4-34	100-1000	100-1000
Range 9	1 1/4"	---	5-50	---	150-1500
Range 10	1 1/4"	---	8.5-76	---	250-2500
Range 11	1 1/2"	8-70	8-70	200-2000	200-2000
Range 12	1 1/2"	10-90	10-90	300-3000	300-3000
Range 13	2"	---	14-125	---	400-4000
Range 14	2"	22-190	22-190	600-6000	600-6000
Range 15	2"	35-300	35-300	1000-10000	1000-10000
Range 16	2 1/2"	---	50-500	---	1500-15000
Range 17	2 1/2"	80-720	80-720	2500-25000	2500-25000
Range 18	2 1/2"	400-1500	400-1500	10000-50000	10000-50000

## Specification



Tube Material:	PVC, Polyamide, Polysulphon
End Fittings:	Rigid PVC socket connections for adhesive pipe coupling or BSPF threaded
Float:	Fully encapsulated PVDF
Float Stops:	PVDF
"O" Rings:	EPDM as standard (Viton as special)
Accuracy:	Better than ±2.5% of full scale
Max. Pressure:	See chart for operating pressures / temp.)
Max. Temperature:	PVC = 60° C., PA = 75° C., PSU = 100° C.
Scaling:	0-100% or l/hr water as standard. Special scales as option.

## Dimensions

Model	BSPF	G	D	L	L1	L2
165	3/8"	3/4"	35	165	171	199
170	1/2"	1"	43	170	176	208
185	3/4"	1 1/4"	53	185	191	229
200	1"	1 1/2"	60	200	206	250
335	1"	1 1/2"	60	335	341	385
335	1 1/2"	2 1/4"	83	335	341	403
335	2"	2 3/4"	103	335	341	417
335	2 1/2"	3 1/2"	122	335	341	429
350	1"	1 1/2"	60	350	356	400
350	1 1/4"	2"	72	350	356	408
350	1 1/2"	2 1/4"	83	350	356	418
350	2"	2 3/4"	103	350	356	432
350	2 1/2"	3 1/2"	122	350	356	444

Specification subject to change without prior notice.



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