

All-Plastic Variable Area Flowmeters



Introduction

Over the last ten years many thousands of DFM units have been supplied to practically every industry in the UK. All units are available on quick delivery from our extensive stock.

Advantages

- 3-50,000 litres/hour liquid in 13 ranges each with 10:1 operating span
- 6 different overall lengths from 165-350mm
- Choice of tube materials depending upon operating temperature and pressure up to 100°C and 10 Bar
- Positive pipe O-ring sealing requiring less tightening effort when installing
- Standard or magnetic floats (where alarms required) of identical mass ensure identical flow ranges when changing
- Optional bi-stable adjustable alarm on rear slide
- Optional 4-20 mA transmitter

Materials

Tube Material:	PVC, Polamide, Polysulphon
End Fittings:	Rigid PVC socket connections for adhesive pipe coupling. BSP threads available. Special stainless steel inserts available. Cast iron end caps for higher temperature
Float:	Fully encapsulated PVDF. Stabilising ring fitted to larger sizes ensuring steady flow indication without wobble
Float Stops:	PVDF
O-Rings:	Standard EPDM, Special Viton, etc. available

Technical data

Accuracy:	±2.5% full scale
Max Pressure:	10 Bar operating (at 20°C - see chart for operating pressures versus temperature)
Temperature:	PVC 60°C, PA 75°C, PSU 100°C (see chart) for operating pressures versus temperature)
Scaling:	L/Hour H ₂ O standard plus 0-100% max flow. Special product scales available
Flow Ranges:	See table on page 23 and quote model number

Installation and use

Pipework

Mainly for use with rigid PVC imperial pipe. Alternative screwed BSF female inserts available. See table on page 2 and note dimension 'd' (socket dia) which is also imperial pipe O.D. to be used. See note re. pipe coupling dimension on page 14.

Installation

Vertical - flow upwards. For best results ensure pipework vertical to within 2/3°.

Valves

For liquids may be installed upstream or downstream. For gases install valves downstream only.

Optional equipment

Up to 3 in number bi-stable or mono-stable switches, comprising volt free contacts to handle 240V 5 amp max current. A 4-20mA transmitter is also available.





Dimensions and parts list

Series DFM 335-350

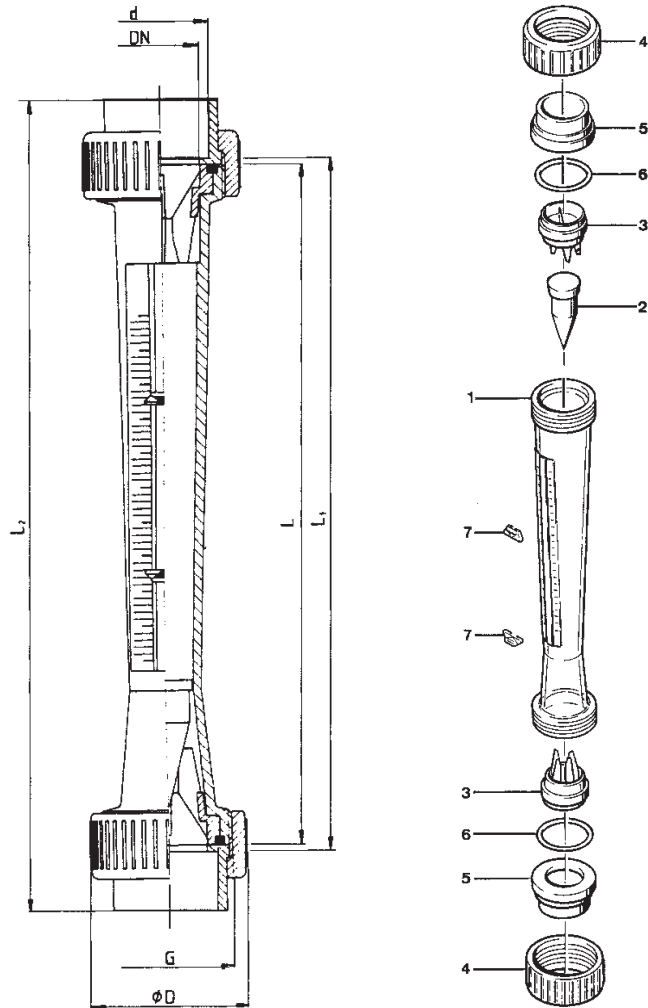
Part	No.	Description
1	1	Measuring tube
2	1	Float
3	2	Float trap
4	2	Union nut
5	2	Insert
6	2	O-rings
7	2	Set-point indicator

Series DFM 165-170-185-200

Part	No.	Description
1	1	Measuring tube
2	1	Float
3	1	Float trap
4	2	Union nut
5	2	Insert
6	2	O-rings
7	2	Set-point indicator

Materials of Construction

	Standard	Options
Tube	PVC	Polyamide, Polysulphon
Float	PVDF	
Float trap	PVDF	
Union nut	PVC	Cast Iron, St/steel
Insert	PVC	St/steel
O-Rings	EPDM	Viton Teflon



Series	Dimensional mm		BSPF					p(1)	Weight	
DFM	DN	d	DN inches	G	D	L	L1	L2	m bar	in grams (2)
165	10	16	3/8"	3/4"	35	165	171	199	4.6	78
170	15	20	1/2"	1"	43	170	176	208	4.5	96
185	20	25	3/4"	1 1/4"	53	185	191	229	6.1	125
200	25	32	1"	1 1/2"	60	200	206	250	8.3	250
335	25	32	1"	1 1/2"	60	335	341	385	16.2	435
335	40	50	1 1/2"	2 1/4"	83	335	341	403	16.2	1.005
335	50	63	2"	2 3/4"	103	335	341	417	27.6	1.470
335	65	75	2 1/2"	3 1/2"	122	335	341	329	40.7	1.900
350	25	32	1"	1 1/2"	60	350	356	400	16.2	475
350	32	40	1 1/4"	2"	72	350	356	408	16.2	710
350	40	50	1 1/2"	2 1/4"	83	350	356	418	16.2	1.050
350	50	63	2"	2 3/4"	103	350	356	432	27.6	1.530
350	65	75	2 1/2"	3 1/2"	122	350	356	444	40.7	2.100

(1) Pressure loss with water at 20°C

(2) PVDF version approx. +40%

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Sizing table

Nominal Size DN ins BSP	Socket Bore 'd' mm	Air Range NM3/Hr 1 Bar Abs 20°C	Water Range L/Hr 20°C	PVC Tube		Polyamide Tube		Polysulphon Tube	
				Std Float	Mag Float	Std Float	Mag Float	Std Float	Mag Float

Series DFM 165

Range

Model Number

3/8"	17.1	0.2-1.0	3-22	47500	47683	47516	47699	47532	47715
3/8"	17.1	0.2-2.5	5-50	47501	47684	47517	47700	47533	47716
3/8"	17.1	0.6-3.6	10-90	47502	47685	47518	47701	47534	47717
3/8"	17.1	0.5-9.0	25-250	47503	47686	47519	47702	47535	47718

Series DFM 170

1/2"	21.4	0.4-2.8	5-50	47504	47687	47520	47703	47536	47719
1/2"	21.4	0.8-6.2	15-150	47505	47688	47521	47704	47537	47720
1/2"	21.4	0.9-9.5	25-250	47506	47689	47522	47705	47538	47721
1/2"	21.4	2.0-15.0	40-400	47507	47690	47523	47706	47539	47722

Series DFM 185

3/4"	26.5	0.5-5.0	15-150	47508	47691	47524	47707	47540	47723
3/4"	26.5	2.0-14	40-400	47509	47692	47525	47708	47541	47724
3/4"	26.5	2.5-22	60-600	47510	47693	475126	47709	47542	47725
3/4"	26.5	4-34	100-1000	47511	47694	47527	47710	47543	47726

Series DFM 200

1"	33.6	1.0-8.0	25-250	47512	47695	47528	47711	47544	47727
1"	33.6	2.0-14	40-400	47513	47696	47529	47712	47545	47728
1"	33.6	4-34	100-1000	47514	47697	47530	47713	47546	47729
1"	33.6	5-50	150-1500	47515	47698	47531	47714	47547	47730

Series DFM 335

1"	33.6	0.7-5.5	15-150	46271	47575	46298	47602	46325	47629
1"	33.6	2.5-20	60-600	46272	47576	46299	47603	46326	47630
1"	33.6	4-34	100-1000	46273	47577	46300	47604	46327	47631
1 1/2"	48.3	8-70	200-2000	46282	47586	46309	47613	46336	47640
1 1/2"	48.3	10-90	300-3000	46283	47587	46310	47614	46337	47641
2"	60.3	22-190	600-6000	46287	47591	46314	47618	46341	47645
2"	60.3	35-300	1000-10000	46288	47592	46315	47619	46342	47646
2 1/2"	75.2	80-720	2500-25000	46293	47597	46320	47624	46347	47651
2 1/2"	75.2	400-1500	10000-50000	46294	47598	46321	47625	46348	47652

Series DFM 350

1"	33.6	0.7-5.5	15-150	46274	47578	46301	47605	46328	47632
1"	33.6	1.0-10.0	30-300	46275	47579	46302	47606	46329	47633
1"	33.6	2.5-20	60-600	46276	47580	46303	47607	46330	47634
1"	33.6	4-34	100-1000	46277	47581	46304	47608	46331	47635
1 1/4"	42.2	5-50	150-1500	46279	47583	46306	47610	46333	47637
1 1/4"	42.2	8.5-76	250-2500	46280	47584	46307	47611	46334	47638
1 1/2"	48.3	8-70	200-2000	46284	47588	46311	47615	46338	47642
1 1/2"	48.3	10-90	300-3000	46285	47589	46312	47616	46339	47643
2"	60.3	14-125	400-4000	46289	47593	46316	47620	46343	47647
2"	60.3	22-190	600-6000	46290	47594	46317	47621	46344	47648
2"	60.3	35-300	1000-10000	46291	47595	46318	47622	46345	47649
2 1/2"	75.2	50-500	1500-15000	46295	47599	46322	47626	46349	47653
2 1/2"	75.2	80-720	2500-25000	46296	47600	46323	47627	46350	47654
2 1/2"	75.2	400-1500	10000-50000	46297	47601	46324	47628	46351	47655

Note: For air or gas flows model number may vary and will be advised at order stage.

Ex Stock Flowmeters

.....Precision Counts



Density / Viscosity Effects

All DFM flowmeters are calibrated and scaled in Litre/Hour Water, density 1 Kg/litre at 20°C or Air at 1 bar A at 20°C. Variation in viscosity and density from that of water 1 mPas will affect the scaling range, but guidance on such an operation has to be obtained from our computer programme.

Temperature Effects

Variation in liquid temperature above 20°C will cause a small additional error in reading of less than 0.1% per °C.

Special Scales

Computer calculated and plotted scales are available which incorporate all these variables and also for gas flow measurement at varying temperatures, pressures, densities and viscosities.

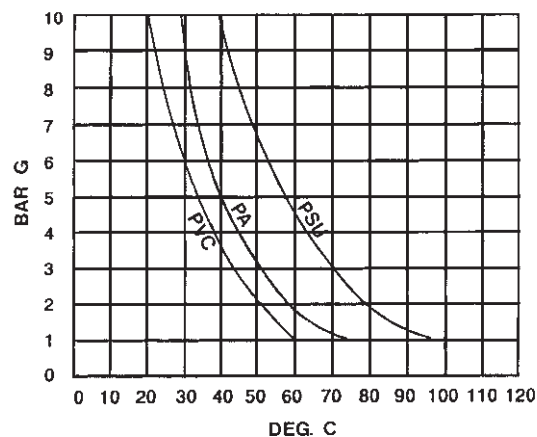
Temperature vs. Pressure Rating

Care should be taken to observe the maximum operating temperature for various tube materials, the curve illustrates the maximum operating pressure for temperatures above 20°C.

Special Note re Pipe Coupling Dimension

Whilst the UK has generally accepted metric standards over many years, for some reason we find that 95% of users of uPVC pipes and fittings prefer the older imperial or inch standards.

Contrary to metrication policy therefore, we have reverted to inch or imperial standard as stock items and retain a small quantity of metric PVC fittings for the small group of users who may specify this standard.



Calibration facility