

Certified according to DIN EN ISO 9001

## Technical Datasheet



# HM...F

## Turbine Flow Meters with Flange Connections

## Description

Turbine flow meters are used for the precise measurement of instantaneous flow rates and flow quantities of low-viscosity fluids.

HM...F turbines are equipped with flanges as per DIN or ANSI.

### Application:

- Tap and demineralised water
- Fuels
- Liquefied gases
- Pharmaceutical fluids
- Light fuel oil
- Solvents

## Advantages

### Fast response time and high resolution

The turbine wheel's low moment of inertia allows a fast acceleration from standstill up to full number of revolutions within 5 to 50 msec. For that reason dynamic measurements can be done. The resolution can amount to as much as 35,000 pulses per litre (cf. technical data, page 3).

### Wide temperature range from $-273$ up to $+350^{\circ}\text{C}$

Standard turbine flow meters:  $-20$  up to  $+120^{\circ}\text{C}$ .

Special models for cryogenic liquids:  $-273^{\circ}\text{C}$

Special models with high-temperature pickups: up to  $+350^{\circ}\text{C}$

### Low contamination risk

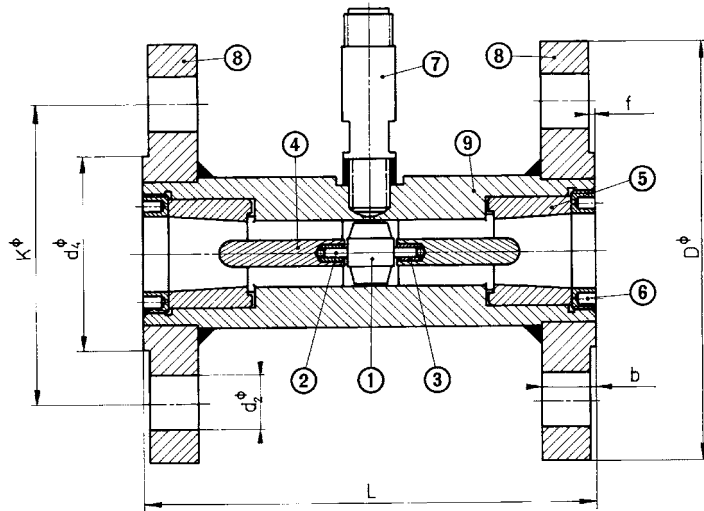
The spacing of the turbine wheel and bearing mount is wide enough to protect against particles in fluid jamming the turbine wheel. Furthermore the twist of flow in this area has a self-cleaning effect for the bearing.

### Technical Data

Type	Measuring Range, ltr./min	K-Factor*, pulses/ltr.	Frequency*, in Hz	Output Signal, mVss
HM 9 EP	0.03 bis 0.8	139,000	1,970	0.5 bis 5
HM 3/1,5	0.3 bis 1.5	32,000 32,500	1,000 1,000	0.5 bis 5
HM 3/4	0.5 bis 4	24,000 19,000	1,700 1,250	0.5 bis 5
HM 5/6	0.8 bis 6	17,800 17,800	1,740 1,780	1.0 bis 10
HM 5/10	1.2 bis 10	11,000 11,000	1,750 1,750	1.0 bis 10
HM 7	2.0 bis 20	5,200 5,200	1,800 1,800	1.5 bis 15
HM 9	3.3 bis 33	1,900 4,200	1,080 1,800	1.7 bis 17
HM 11	6.0 bis 60	1,300 2,730	1,080 2,600	2.0 bis 20
HM 13	8.5 bis 85	900 1,900	1,350 2,700	2.5 bis 25
HM 17	12 bis 120	380 840	1,300 2,600	2.7 bis 27
HM 19	15 bis 150	310 650	800 1,650	2.9 bis 30
HM 22	20 bis 200	217 450	800 1,600	3.1 bis 31
HM 24	25 bis 250	170 362	800 2,000	3.8 bis 40
HM 28	30 bis 360	155 320	960 2,000	4.0 bis 42
HM 30	35 bis 400	130 270	860 1,850	4.1 bis 45
HM 36	40 bis 500	60 135	600 1,200	4.3 bis 48
HM 40	50 bis 750	105 110	1320 1,400	4.5 bis 52
HM 50	70 bis 1,200	65	1,400	6.0 bis 64
HM 65	100 bis 2,000	25	850	10 bis 80
HM 80	160 bis 3,200	11	615	15 bis 100
HM 100	250 bis 5,000	7	560	20 bis 120
		<b>Imp/m<sup>3</sup></b>		
HM 125	300 bis 6,600	4,500	600 1,200	30 bis 125
HM 150	350 bis 10,000	3,400	600 1,200	35 bis 140
HM 200	430 bis 13,400	415	600 1,200	40 bis 150
HM 250	830 bis 25,000	266	600 1,200	45 bis 160

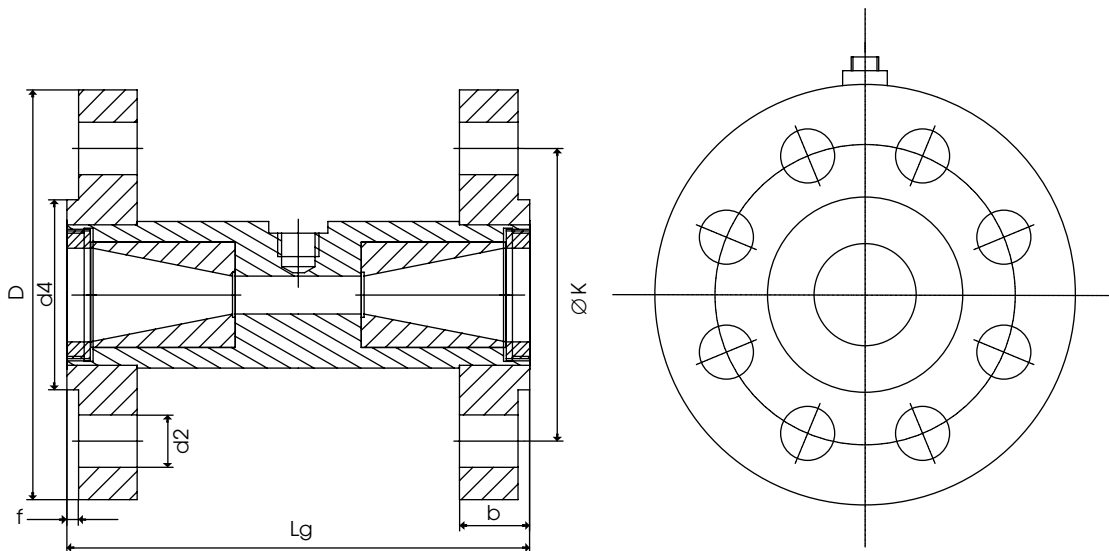
\* The wheel's axial pitch is halved for viscosities from 8 mm<sup>2</sup>/s onwards, therefore pulse rates will double.  
All K-factors and output signals are average values. Exact specifications can be taken from individual calibration records.  
Linearity: each  $\pm 0.5\%$  of actual flow at 1 mm<sup>2</sup>/s

Cut off drawing HM...F



- 1...4 = measuring kit
- 1 = turbine wheel
- 2 = shaft
- 3 = bearing bush
- 4 = flow rectifier
- 5 = inlet cone
- 6 = ring nut
- 7 = pickup
- 8 = flange
- 9 = body

Dimensional Drawings (mm)



Type	DN	PN	L	D	b	K	d <sub>4</sub>	f	d <sub>2</sub>	No. of holes
HM 3,5,7,9,11/15F	15	6	110	80	12	55	40	2	11	4
	15	16-40		95	16	65	45	2	14	4
	15	64-100		105	20	75	45	2	14	4
HM 3,5,7,9,11/1/2°F	1/2"	ANSI 150		88.9	11.2	60.5	35	1.6	15.7	4
	1/2"	ANSI 300		95.	14.2	66.5	35	1.6	15.7	4
	1/2"	ANSI 600		95.3	20.6	66.5	35	6.4	15.7	4
HM 9,11,13,17,19,22, 24/25 F	25	6	150	100	14	75	60	2	11	4
	25	16-40		115	18	85	68	2	14	4
	25	64-100		140	24	100	68	2	18	4
HM 9,11,13,17,19,22 24/1/2°F	1"	ANSI 150		108	14.2	79.2	50.8	1.6	15.7	4
	1"	ANSI 300		123.9	17.5	88.9	50.8	1.6	19	4
	1"	ANSI 600		124	23.9	88.9	50.8	6.4	19.1	4

Type	DN	PN	L	D	b	K	d <sub>4</sub>	f	d <sub>2</sub>	No. of holes
HM 11,17,19,22,24,28,30,36,40 F	40	6	174	130	14	100	80	3	14	4
	40	16-40		150	18	110	88	3	18	4
	40	64-100		170	26	125	88	3	22	4
HM 1,17,19,22,24,28,30,36/1½",40/1½" F	1 1/2"	ANSI 150		127	17.5	98.6	73.2	1.6	15.7	4
	1 1/2"	ANSI 300		155.4	20.6	114.3	73.1	1.6	22.3	4
	1 1/2"	ANSI 300		155.4	28.8	114.3	73.2	6.4	22.4	4
HM 17,19,22,24,28,30,36,40/50 F	50	6	210	140	14	110	90	3	14	4
	50	16,40		165	20	125	102	3	18	4
	50	64		180	26	135	102	3	22	4
	50	100		195	28	145	102	3	26	4
HM 17,19,22,24,28,30,36,40/2", 50/2" F	2"	ANSI 150		152.4	19.1	120.7	91.9	1.6	19.1	4
	2"	ANSI 300		165.1	22.3	127	91.9	1.6	19	8
	2"	ANSI 600		165.1	31.8	127	91.9	6.4	19.1	8
HM 36,40,50/65 F	65	6	258	160	14	130	110	3	14	4
	65	16/40		185	18/22	145	122	3	18	4/8
	65	64		205	26	160	122	3	22	8
	65	100		220	30	170	122	3	26	8
HM 36,40,50/2½", 65/2½" F	2 1/2"	ANSI 150		177.8	22.4	139.7	104.6	1.6	19	4
	2 1/2"	ANSI 300		190.5	25.4	149.3	104.6	1.6	22.3	8
	2 1/2"	ANSI 600		190.5	34.8	149.4	104.6	6.4	22.4	8
HM 40,50,65/80 F	80	6	316	190	16	150	128	3	18	4
	80	16-40		200	24	160	138	3	18	8
	80	64		215	28	170	138	3	26	8
	80	100		230	32	180	138	3	26	8
HM 40,50,65/3",80/3" F	3"	ANSI 150		190.5	23.9	152.4	127	1.6	19.1	4
	3"	ANSI 300		209.5	28.4	168.1	127	1.6	22.3	8
	3"	ANSI 600		209.6	38.2	168.1	127	6.4	22.4	8
HM 50,65,80/100 F	100	6	386	210	16	170	148	3	18	4
	100	16/40		220/235	20/24	180/190	158/162	3	18/22	8
	100	64		250	30	200	162	3	26	8
	100	100		265	36	210	162	3	30	8
HM 50,65,80/4",100/4" F	4"	ANSI 150		228.6	23.9	190.5	157.2	1.6	19.1	8
	4"	ANSI 300		254	31.7	200.1	157.2	1.6	22.3	8
	4"	ANSI 500		273.1	44.5	215.9	157.2	6.4	25.4	8
HM 125 F	125	6	400	240	18	200	178	3	18	8
	125	16/40		250/270	22/26	210/220	188	3	18/26	8
	125	64		295	34	240	188	3	30	8
	125	100		315	40	250	188	3	33	8
HM 125/5" F	5"	ANSI 150		254	23.9	215.9	185.7	1.6	22.4	8
	5"	ANSI 300		279.4	35	234.9	185.7	1.6	22.3	8
	5"	ANSI 500		330.2	50.9	266.7	185.7	6.4	28.4	8
HM 150 F	150	6	400	265	18	225	202	3	18	8
	150	16/40		285/300	22/28/	240/250	212/218	3	22/26	8
	150	64		345	36	280	218	3	33	8
	150	100		355	44	290	218	3	33	12
HM 150/6" F	6"	ANSI 150		279.4	25.4	241.3	215.9	1.6	22.4	8
	6"	ANSI 300		317.5	36.5	269.7	215.9	1.6	22.3	12
	6"	ANSI 500		355.6	54.2	292.1	215.9	6.4	28.4	12
HM 200 F	200	6	400	320	20	280	258	3	18	8
	200	16/40		340/375	24/34	295/320	268/285	3	22/30	12
	200	64		415	42	345	285	3	36	12
	200	100		430	52	360	285	3	36	12
HM 200/8" F	8"	ANSI 150		342.9	28.4	298.5	269.7	1.6	22.4	8
	8"	ANSI 300		381	41.1	330.2	269.7	1.6	25.4	12
	8"	ANSI 500		419.1	62	349.3	269.7	6.4	31.8	12
HM 250 F	250	6	500	375	22	335	312	3	18	12
	250	16/40		405/450	26/38	355/385	320/345	3	26/33	12
	250	64		470	46	400	345	3	36	12
	250	100		505	60	430	345	3	39	12
HM 250/10" F	10"	ANSI 150		406.4	30.2	362	323.9	1.6	25.4	12
	10"	ANSI 300		44.5	47.7	387.3	323.9	1.6	28.4	16
	10"	ANSI 500		508	69.9	431.8	323.9	6.4	35.1	16

Flange connections as per DIN PN 6 to PN 40 or ANSI B 16.5 from 150 to 2500 lbs and ANSI B 16.5 Ring Joint Facings 150 to 2500 lbs

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