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Flow Meters
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HM...F
Turbine Flow Meters

Application

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

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

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

Advantages

Fast response time and high resolution
The turbinewheel'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 2)

Wide temperature range from –273 up to +350°C
Standard turbine flow meters:
–20 up to +120°C.
Special models for cryogenic liquids:
–273°C
Special models with high-temperature pickups:
up to +350°C

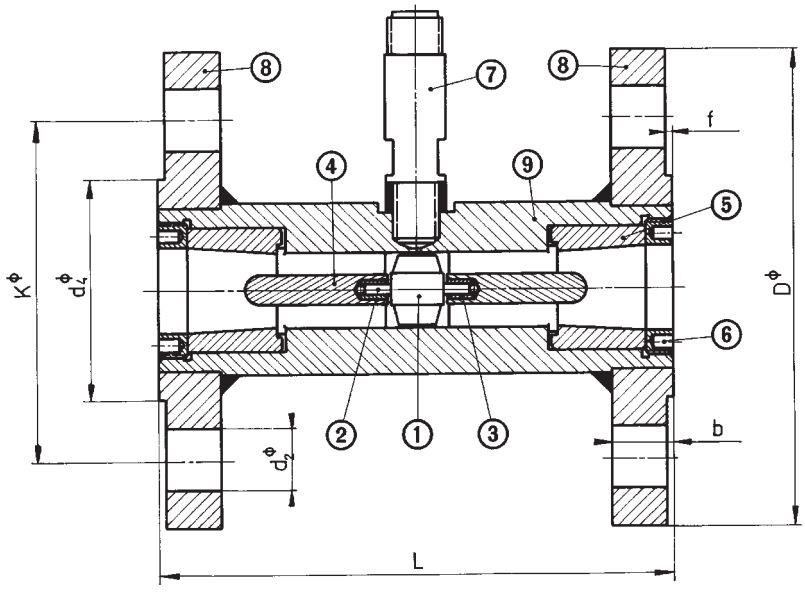
Low contamination risk
The spacing of the turbinewheel and bearing mount is wide enough to protect against particles in fluid jamming the turbinewheel. Furthermore the twist of flow in this area has a self-cleaning effect for the bearing.

Technical Data

Type dia	Measuring range ltr./min	Average K-factor* pulses/ltr.	Frequency* in Hz. 0 up to max	Output signal mVss
HM 9 EP	0.03 to 0.8	139,000	1,970	0.5 to 5
HM 3/1.5	0.3 to 1.5	32,000 32,500	1,000 1,000	0.5 to 5
HM 3/4	0.5 to 4	24,000 19,000	1,700 1,250	0.5 to 5
HM 5/6	0.8 to 6	17,800 17,800	1,740 1,780	1.0 to 10
HM 5/10	1.2 to 10	11,000 11,000	1,750 1,750	1.0 to 10
HM 7	2.0 to 20	5,200 5,200	1,800 1,800	1.5 to 15
HM 9	3.3 to 33	1,900 4,200	1,080 2,200	1.7 to 17
HM 11	6.0 to 60	1,300 2,730	1,350 2,700	2.0 to 20
HM 13	8.5 to 85	900 1,900	1,300 2,600	2.5 to 25
HM 17	12 to 120	380 840	800 1,650	2.7 to 27
HM 19	15 to 150	310 650	800 1,600	2.9 to 30
HM 22	20 to 200	217 450	800 1,600	3.1 to 31
HM 24	25 to 250	170 362	800 2,000	3.8 to 40
HM 28	30 to 360	155 320	960 2,000	4.0 to 42
HM 30	35 to 400	130 270	860 1,850	4.1 to 45
HM 36	40 to 500	60 135	600 1,200	4.3 to 48
HM 40	50 to 750	105 110	1320 1,400	4.5 to 52
HM 50	70 to 1,200	65	1400	6.0 to 64
HM 65	100 to 2,000	25	850	10 to 80
HM 80	160 to 3,200	11	615	15 to 100
HM 100	250 to 5,000	7	560	20 to 120
		pulses/m³		
HM 125	300 to 6,600	4,500	495	30 to 125
HM 150	350 to 10,000	3,400	420	35 to 140
HM 200	430 to 13,400	415	134	40 to 150
HM 250	830 to 25,000	266	150	45 to 160

* The wheel's axial pitch is halved for viscosities from 8 mm²/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 ±0.5% of actual flow at 1 cSt

Cut off drawing HM...F



1...4 = measuring kit
1 = turbine wheel
2 = shaft
3 = bearing bush
4 = flow rectifier

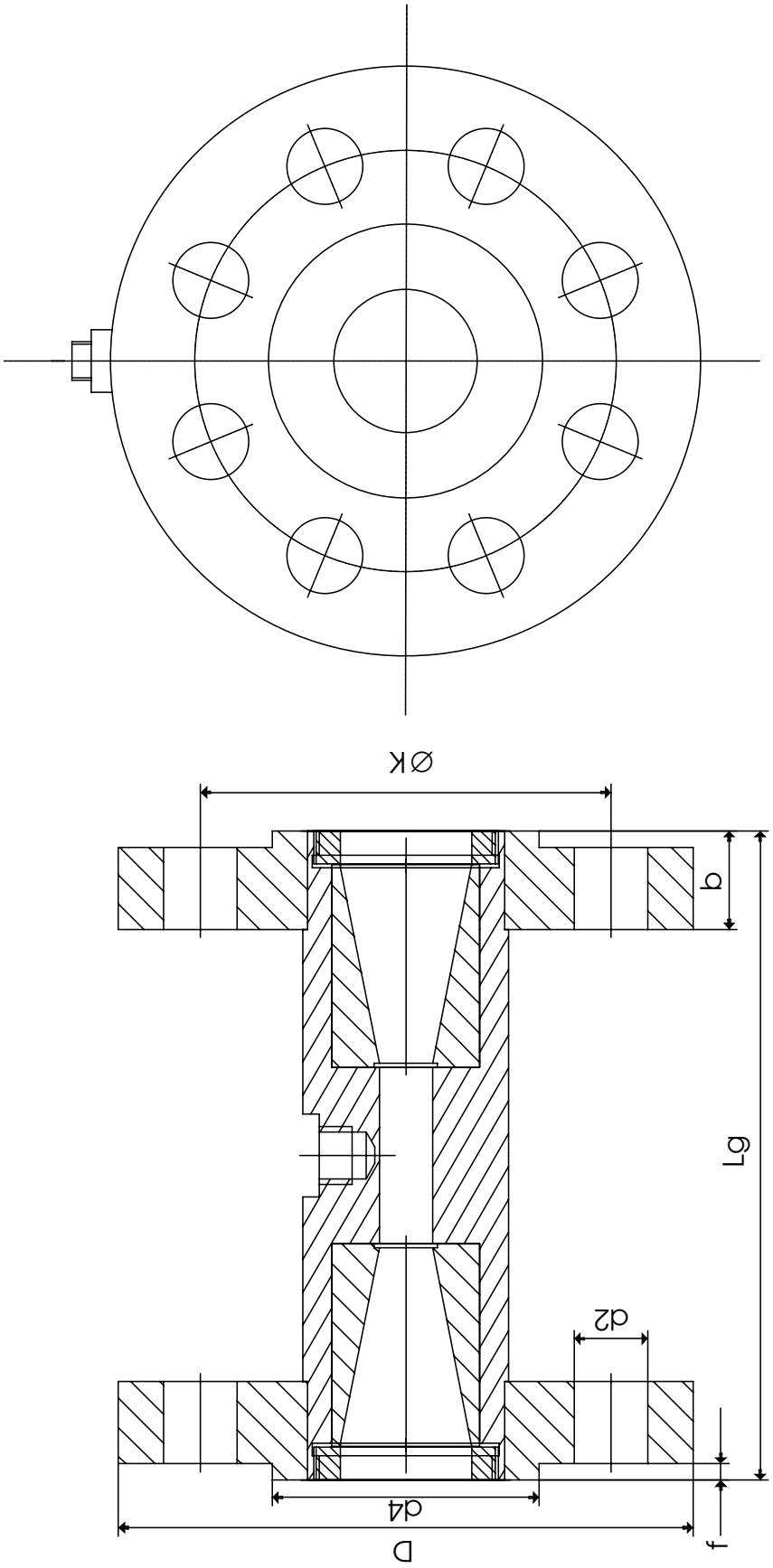
5 = inlet cone
6 = ring nut
7 = pickup
8 = flange
9 = body

Page 4 features an enlarged drawing where you may include individual dimensions listed on page 3.

Dimensions (mm)

DN	PN	L	D	b	K	d_4	f	d_2	No. of holes	Types
15	6	110	80.0	12.0	55.0	40.0	2.0	11.0	4	
15	16-40		95.0	16.0	65.0	45.0	2.0	14.0	4	HM 3, 5, 7, 9, 11/15 F
15	64-100		105.0	20.0	75.0	45.0	2.0	14.0	4	
½"	ANSI 150		88.9	11.2	60.5	35.0	1.6	15.7	4	
½"	ANSI 300		95.2	14.2	66.5	35.0	1.6	15.7	4	HM 3, 5, 7, 9, 11/½" F
½"	ANSI 600		95.3	20.6	66.5	35.0	6.4	15.7	4	
25	6	150	100.0	14.0	75.0	60.0	2.0	11.0	4	HM 9, 11, 13, 17, 19, 22,
25	16-40		115.0	18.0	85.0	68.0	2.0	14.0	4	24/25 F
25	64-100		140.0	24.0	100.0	68.0	2.0	18.0	4	
1"	ANSI 150		108.0	14.2	79.2	50.8	1.6	15.7	4	HM 9, 11, 13, 17, 19, 22,
1"	ANSI 300		123.9	17.5	88.9	50.8	1.6	19.0	4	24/1" F
1"	ANSI 600		124.0	23.9	88.9	50.8	6.4	19.1	4	
40	6	174	130.0	14.0	100.0	80.0	3.0	14.0	4	HM 11, 17, 19, 22,
40	16-40		150.0	18.0	110.0	88.0	3.0	18.0	4	24, 28, 30, 36/40 F
40	64-100		170.0	26.0	125.0	88.0	3.0	22.0	4	HM 40 F
1½"	ANSI 150		127.0	17.5	98.6	73.2	1.6	15.7	4	HM 11, 17, 19, 22,
1½"	ANSI 300		155.4	20.6	114.3	73.1	1.6	22.3	4	24, 28, 30, 36/1½"
1½"	ANSI 600		155.4	28.8	114.3	73.2	6.4	22.4	4	HM 40/1½" F
50	6	210	140.0	14.0	110.0	90.0	3.0	14.0	4	HM 17, 19, 22, 24,
50	16-40		165.0	20.0	125.0	102.0	3.0	18.0	4	28, 30, 36, 40/50 F
50	64		180.0	26.0	135.0	102.0	3.0	22.0	4	HM 50 F
50	100		195.0	28.0	145.0	102.0	3.0	26.0	4	
2"	ANSI 150		152.4	19.1	120.7	91.9.0	1.6	19.1	4	HM 17, 19, 22, 24,
2"	ANSI 300		165.1	22.3	127.0	91.9.0	1.6	19.0	8	28, 30, 36, 40/2" F
2"	ANSI 600		165.1	31.8	127.0	91.9.0	6.4	19.1	8	HM 50/2" F
65	6	258	160.0	14.0	130.0	110.0	3.0	14.0	4	
65	16/40		185.0	18/22	145.0	122.0	3.0	18.0	4/8	HM 36, 40, 50/65 F
65	64		205.0	26.0	160.0	122.0	3.0	22.0	8	HM 65 F
65	100		220.0	30.0	170.0	122.0	3.0	26.0	8	
2½"	ANSI 150		177.8	22.4	139.7	104.6	1.6	19.0	4	HM 36, 40, 50/2½" F
2½"	ANSI 300		190.5	25.4	149.3	104.6	1.6	22.3	8	HM 65/2½" F
2½"	ANSI 600		190.5	34.8	149.4	104.6	6.4	22.4	8	
80	6	316	190	16.0	150.0	128.0	3.0	18.0	4	
80	16-40		200	24.0	160.0	138.0	3.0	18.0	8	HM 40, 50, 65/80 F
80	64		215	28.0	170.0	138.0	3.0	22.0	8	HM 80 F
80	100		230	32.0	180.0	138.0	3.0	26.0	8	
3"	ANSI 150		190.5	23.9	152.4	127.0	1.6	19.1	4	HM 40, 50, 65/3" F
3"	ANSI 300		209.5	28.4	168.1	127.0	1.6	22.3	8	HM 80/3" F
3"	ANSI 600		209.6	38.2	168.1	127.0	6.4	22.4	8	
100	6	386	210.0	16.0	170.0	148.0	3.0	18.0	4	HM 50, 65, 80/100 F
100	16/40		220/235	20/24	180/190	158/162	3.0	18/22	8	HM 100 F
100	64		250.0	30.0	200.0	162.0	3.0	26.0	8	
100	100		265.0	36.0	210.0	162.0	3.0	30.0	8	
4"	ANSI 150		228.6	23.9	190.5	157.2	1.6	19.1	8	HM 50, 65, 80/4" F
4"	ANSI 300		254.0	31.7	200.1	157.2	1.6	22.3	8	HM 100/4" F
4"	ANSI 600		273.1	44.5	215.9	157.2	6.4	25.4	8	
125	6	400	240.0	18.0	200.0	178.0	3.0	18.0	8	
125	16/40		250/270	22/26	210/220	188.0	3.0	18/26	8	HM 125 F
125	64		295.0	34.0	240.0	188.0	3.0	30.0	8	
125	100		315.0	40.0	250.0	188.0	3.0	33.0	8	
5"	ANSI 150		254.0	23.9	215.9	185.7	1.6	22.4	8	
5"	ANSI 300		279.4	35.0	234.9	185.6	1.6	22.3	8	HM 125/5" F
5"	ANSI 600		330.2	50.9	266.7	185.7	6.4	28.4	8	
150	6	400	265.0	18.0	225	202.0	3.0	18.0	8	
150	16/40		285/300	22/28	240/250	212/218	3.0	22/26	8	HM 150 F
150	64		345.0	36.0	280.0	218.0	3.0	33.0	8	
150	100		355.0	44.0	290.0	218.0	3.0	33.0	12	
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	HM 150/6" F
6"	ANSI 600		355.6	54.2	292.1	215.9	6.4	28.4	12	
200	6	400	320.0	20.0	280.0	258.0	3.0	18.0	8	
200	16/40		340/375	24/34	295/320	268/285	3.0	22/30	12	HM 200 F
200	64		415.0	42.0	345.0	285.0	3.0	36.0	12	
200	100		430.0	52.0	360.0	285.0	3.0	36.0	12	
8"	ANSI 150		342.9	28.4	298.5	269.7	1.6	22.4	8	
8"	ANSI 300		381.0	41.1	330.2	269.7	1.6	25.4	12	HM 200/8" F
8"	ANSI 600		419.1	62.0	349.3	269.7	6.4	31.8	12	
250	6	500	375.0	22.0	335.0	312.0	3.0	18.0	12	
250	16/40		405/450	26/38	355/385	320/345	3.0	26/33	12	HM 250 F
250	64		470.0	46.0	400.0	345.0	3.0	36.0	12	
250	100		505.0	60.0	430.0	345.0	3.0	39.0	12	
10"	ANSI 150		406.4	30.2	362.0	323.9	1.6	25.4	12	
10"	ANSI 300		444.5.	47.7	387.3	323.9	1.6	28.4	16	HM 250/10" F
10"	ANSI 600		508.0	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



Turbine Flow Meter	Dimensions (mm)
	Lg
KEM-Type	b
	K
Measuring Range	D
	d4
Tag No.	f
	d2

Internet
http://www.kem-kueppers.com