

Certified according to DIN EN ISO 9001

## Technical Datasheet



# HM...E

**Turbine Flow Meters**  
with Ermeto Fittings

## Application

Turbine flowmeters serve to accurate measurement of continuous and discontinuous flow rate values. This turbine flowmeter is most suited for liquids with low and middle viscosity, such as for example water, emulsions, mixtures containing glycol and light oils.

The large range of different pipe connections and structural sizes allows using these flowmeters in various applications and in various industrial sectors.

### Applications

- Tap and demineralised water
- Fuels
- Liquefied gases
- Pharmaceutical liquids
- Fuel oil
- Solvents
- Hydraulic oil

## Principle and Design

The turbine flow meters KEM are indirect volume counters built on the principle of using the counter with the Woltmann turbine impeller. The energy coming from the flow of the liquid sets in motion a centrally and rotatably mounted rotor. The number of the rotor revolutions is directly proportional to the volumetric liquid flow. The speed of rotation of the turbine rotor is contactlessly sensed through the wall of the flow meter body. The impulses generated by each turbine blade correspond to a certain accurate volumetric flow of the measured medium.

The number of pulses for a certain period of time corresponds to the value of the medium flow rate expressed, for example, in litres per minute. The lightweight turbine wheel allows quick response to changes in the value of the medium flow rate (< 50 m/s).

### Features

- Short response time (< 50 ms)
- Dynamic measuring system
- High resolution
- Temperature: -196°C to +350°C
- Pressure: up to 630 bar
- Robust carbide bearing
- Pipe connection for E 0 24°

## Technical Data

Type	Measuring range, l/min		K-Factor, pulses/l <sup>1)</sup>		max. Pressure, bar	Frequency, in Hz <sup>1)</sup>		Weight, kg
			≥ 1cst	> 8cst		≥ 1cst	> 8cst	
HM 003 E*	0.3	to 1.5	32,000	32,500	630	1,000	1,000	0.20
HM 004 E*	0.5	to 4	24,000	19,500	630	1,700	1,250	0.20
HM 005 E*	0.8	to 6	17,800	17,800	630	1,740	1,780	0.25
HM 006 E*	1.2	to 10	11,000	11,000	630	1,750	1,750	0.25
HM 007 E*	2.0	to 20	5,200	5,200	630	1,800	1,800	0.30
HM 009 E*	3.3	to 33	1,900	4,200	630	1,080	2,200	0.35
HM 011 E*	6.0	to 60	1,300	2,730	400	1,350	2,700	0.40
HM 013 E*	8.5	to 85	900	1,900	400	1,300	2,600	0.50
HM 017 E*	12	to 120	380	840	400	800	1,650	0.80
HM 019 E*	15	to 150	310	650	400	800	1,600	1.10
HM 022 E*	20	to 200	217	450	160	800	1,600	1.30
HM 024 E*	25	to 250	170	362	400	800	2,000	1.40
HM 028 E*	30	to 360	155	320	315	960	2,000	1.80
HM 030 E*	35	to 400	130	270	160	860	1,850	2.00
HM 036 E*	40	to 500	60	135	160	600	1,200	2.40

1) The data on K-factors and maximum frequencies are average values at 1mm<sup>2</sup>s. The numbers of pulses and frequencies at higher viscosities may vary. Exact values can be found in individual calibration records.

\* Detailed type code on request

General	
Linearity	± 1.0% of actual flow (1 mm <sup>2</sup> /s)
Repeatability	± 0.2%
Viscosity range	0,8 to 100 mm <sup>2</sup> /s
Materials	Housing: as per DIN 1.4571 (SS 316L) / 1.4305 (SS303) Wheels: as per DIN 1.4460 (SS 329) / 1.4122 Bearing: Carbide
Medium temperature	-196°C to +350°C (higher temperatures on request)
Dimensions	See drawing (page 4 to 5)

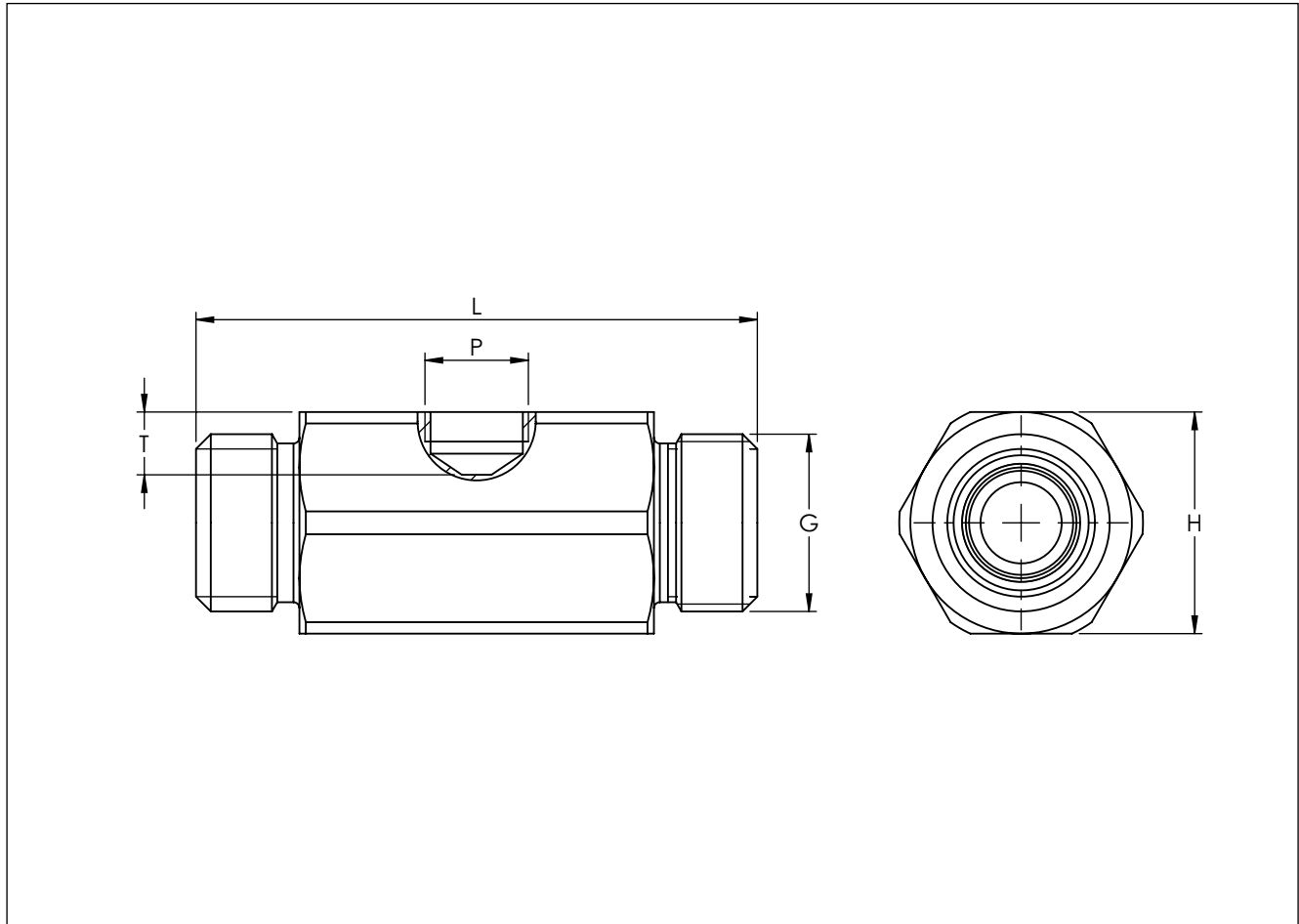
## Pickup Selection

Criteria	Type	VTE *	WT */ WI*	VIE *	IF */ VIEG	VTC *	VTB *	TD *	VHE	FOP *
Drilling type <sup>1)</sup>		E	E	E	E	E	E	D	E	E/F
Medium temperature	≤ +70°C									
	≤ +120°C					✓	✓		✓	✓
	≤ +150°C	✓	✓	✓						
	≤ +350°C				✓					
EX-Approval		✓	✓	✓	✓	✓	✓			✓
Frequency output		✓	✓	✓	✓	✓			✓	✓
Dual frequency output										
Analogue output 4 - 20 mA			✓			✓				
Forward / backward recognition										
Local display						✓	✓			
Linearization			✓			✓				
Supply 12 - 24 V		✓	✓	✓	✓	✓			✓	
Supply battery							✓			✓
Interface			✓			✓				

1) Thread types: E: single pickup / D: dual pickup / F: FOP-pickup

\* Ordering code (please see separate datasheet)

## Dimensional Drawings (mm) - HM...E



HM Type	G <sup>3)</sup>	L	P <sup>1)</sup>	T <sup>2)</sup>	SW	Ermeto thread
HM 003 E*	M14x1.5	50	E	12	30	M06S
HM 004 E*	M14x1.5	50	E	12	30	M06S
HM 005 E*	M16x1.5	56	E	11	30	M08S
HM 006 E*	M16x1.5	56	E	11	30	M08S
HM 007 E*	M20x1.5	62	E	10	30	M12S
HM 009 E*	M22x1.5	68	E	19	30	M14S
HM 011 E*	M24x1.5	76	E	8	30	M16S
HM 013 E*	M30x2	84	E	10	36	M20S
HM 017 E*	M36x2	96	E	11	41	M25S
HM 019 E*	M36x2	107	E	12	46	M25S
HM 022 E*	M36x2	117	E	11	46	M28L
HM 024 E*	M42x2	122	E	12	50	M30S
HM 028 E*	M52x2	140	E	12	55	M38S
HM 030 E*	M45x2	149	E	11	55	M35L
HM 036 E*	M52x2	165	E	10.5	60	M42L

1) See "Pickup Selection" table (P. 3)

2) Please notice: total height is calculated by adding up the height (H) and the height of the pickup (separate data sheet) and subtract the bore hole depth (T)

3) DIN-thread for E 0 24°C.

\* Detailed type code on request

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