

Certified according to DIN EN ISO 9001

## Technical Datasheet



# HM...U

Turbine Flow Meters  
for low-viscosity fluids

# HM...U Turbine Flow Meters

## Application

The turbine flow meter of HMU series are of good quality and inexpensive measuring devices to measure all lubrication liquids and liquids of low viscosity, such as for example hydraulic oils, emulsions and test oils. The good quality and inexpensive products of this series are suited for simple measurement of consumption, monitoring and various other tasks with continuous flow. High quality structural materials allow application of these products in hydraulic systems to the pressure of 400 bar. For the large range of various flow rate values there are accessible various structural sizes of these products.

## 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 flow the liquid flow 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 flowmeter 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).

### Applications

- Hydraulic oil
- Glycol mixtures
- Emulsions
- Test oils
- Fuel oil
- Solvents

### Features

- Low-cost version
- Pressure: up to 400 bar
- Internal parts made of stainless steel
- Serial pressure and temperature connection
- Low weight

## 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
HM 007 U*	1.2 to 20	4,800	400	1,800	0.6
HM 011 U*	6 to 60	2,800	400	1,350	0.7
HM 022 U*	15 to 300	605	400	800	1.3
HM 030 U*	40 to 600	204	315	860	1.4

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	± 2% of actual flow (30 mm <sup>2</sup> /s; up to 0.5% with linearization electronics)
Repeatability	± 0.5%
Materials	Housing: Anodized aluminium (AlMgSi1-EN573-3) Internal parts: as per DIN 1.4305 (SS303) Weehls: as per DIN 1.4122 Bearing: PTFE, ball bearings
Medium temperature	-20°C to +120°C (higher temperatures on request)
Dimensions	See drawing (page 4)

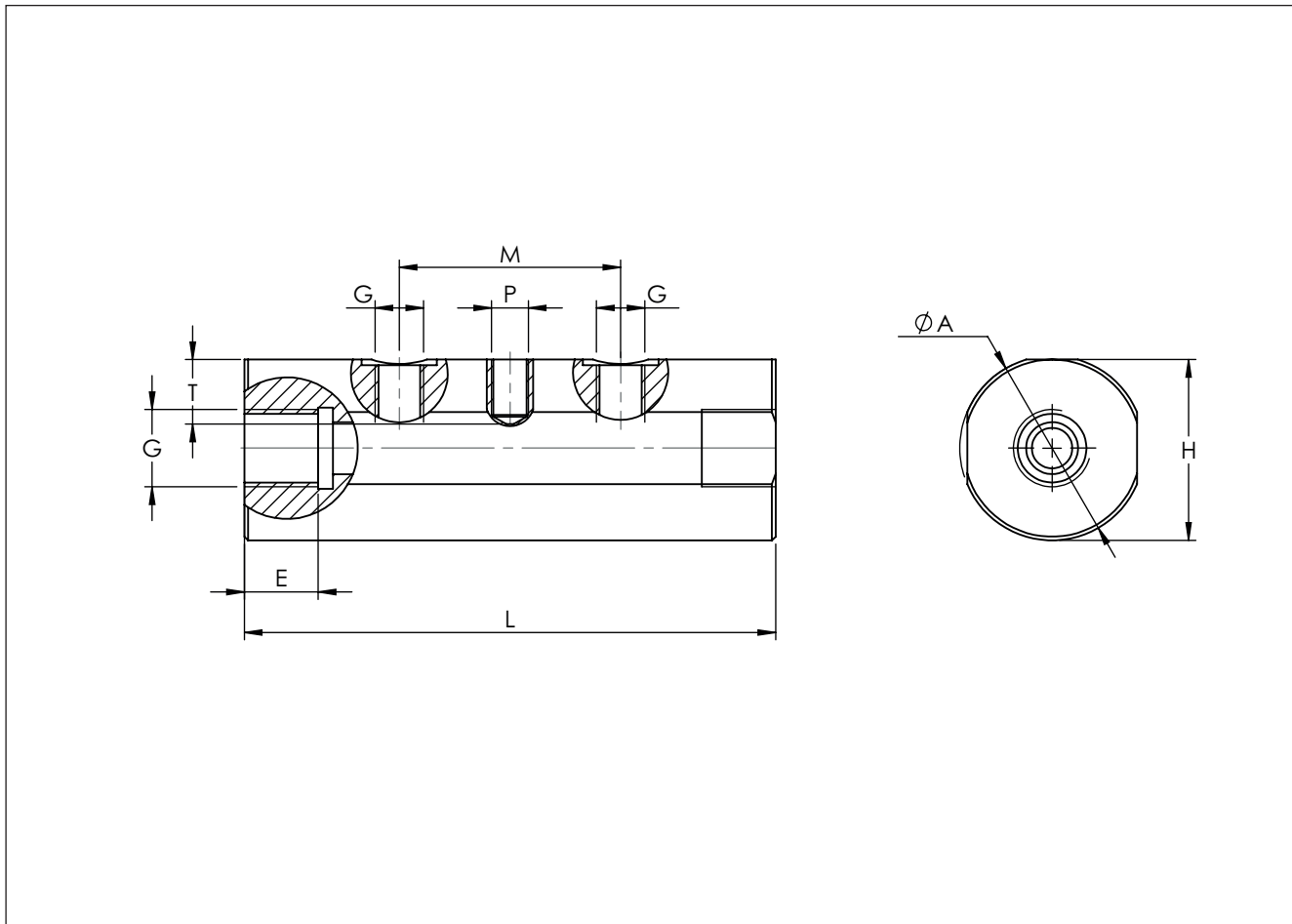
## Pickup Selection

Criteria \ Type		VTE *	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)

# HM...U Turbine Flow Meters

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



HM Type	Ø A	E	G <sup>3)</sup>	H	L	Ermeto Adapter	P <sup>1)</sup>	T <sup>2)</sup>	SW
HM 007 U*	50	14	G1/4"	47,5	117	GE 12-PSR 1/4-ED	E	18	46
HM 011 U*	50	15	G1/2"	49	144	GE 16-PSR-ED/71	E	18	46
HM 022 U*	65	22	G1 1/4"	64	155	GE 30-PSR-ED/71	E	19	60
HM 030 U*	65	23	G1 1/2"	64	181	GE 38-PSR-ED/71	E	15	60

1) See "Pickup Selection" table (page 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)

\* Detailed type code on request

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