

Technical Datasheet



ZHM 01/3*

Gear Flow Meter

for Test Rigs, Diesel, Fuel, Chemical Injection

Application

Gear flowmeters of the series ZHM 01/3* are particularly suitable for applications in test stands and test equipment. The measuring device is equipped with low friction stainless steel ball bearings and manufactured with an optimized measuring chamber to realize low flow rates of low-viscous fluids.

Thanks to the use of very high-quality materials for manufacture of parts this instrument can measure large variety of media. These gear flowmeters are used to measure diesel oil or other fuel consumption. Large numbers of pulses and dynamic reactions allow achieving the highest possible accuracy in injection and dosing devices.

Applications

- Especially suitable for diesel and fuel consumption
- Additive Injection
- Leakage-Measuring
- Odorization

Principle and Design

Gear flowmeters are volumetric counters that have internal design similar to gear pumps. There are two gear wheels inside the flowmeter body; they have mutual engagement with a minimum backlash.

Between the teeth and walls of the flowmeter body closed chambers arise into which medium forced-flows and it puts thereby the gear wheels in motion.

The gearwheels move freely and do not brake the medium flow. Their number of revolutions is proportional to the flow rate and is sensed using contactless sensors through the body wall.

Features

- Measuring from 0.002 l/min
- High resolution
- Turndown 250:1
- Pressure up to 345 bar (5,000 psi)
- Stainless materials
- Dynamic measurement principle

Technical Data

Type	Measuring range, l/min			K-Factor, pulses/l ¹⁾	max. Pressure, bar	Frequency, in Hz ¹⁾			Weight, kg
	0.002	bis	0.5			1.3	bis	330	
ZHM 01/3*	0.002	bis	0.5	40,000	345 bar (5,000 psi)	1.3	bis	330	2.2

1) Average values with single-pickup TYP VTE*/P. Use twin-pickup for higher resolution.

* Detailed type code on request

General

Linearity	± 2.5% of measured value (≥ 5 mm ² /s)
Repeatability	± 0.1%
Viscosity	0,8 to 30 mm ² /s
Materials	Housing: as per DIN 1.4404 (SS316L) / 1.4305 (SS303) Gears: as per DIN 1.4122 Ball Bearing: stainless steel Sealing: FKM, FFKM, PTFE
Medium temperature	-20 to +120°C (higher temperatures on request)
Dimensions	See drawing (page 4 to 5)
Filtering	< 15 µm (see Filter Element)

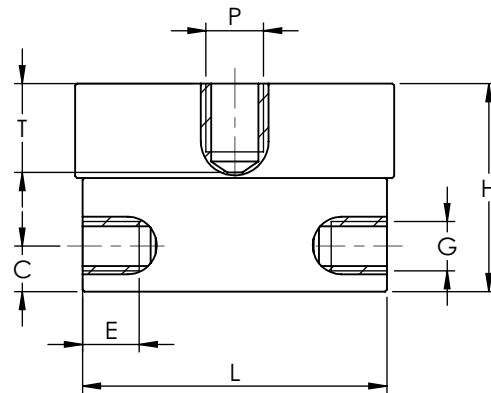
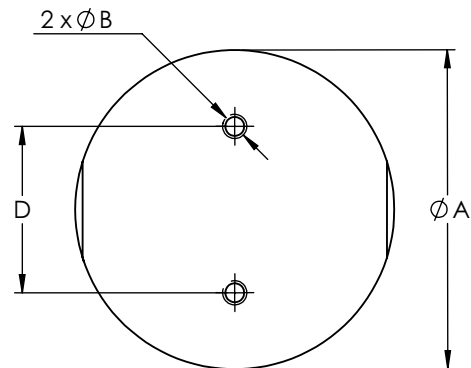
Pickup Selection

Criteria	Type	VTE *	WT *	VIE *	IF * / VIEG	VTC *	VTB *	TD *	VHD *	FOP *
		Drilling type ¹⁾	E	E	E	E	E	E	D	D
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) - ZHM 01/3*



ZHM Type	Ø A	B	C	D	E	G	H	L	P ¹⁾	T ²⁾
ZHM 01/3*	84.4	M6 ∇ 10	12	44	14	G1/4" NPT1/4" G1/8"	55	8.5	B/E/D	24.4

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)

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