

Technical Datasheet



ZHA Series

Gear Flow Meters with ball bearings
Aluminium version

Application

The gear flowmeters of the series "ZHA" are good quality sensors of measured values for any lubrication and non-abrasive liquids, e.g. oils and emulsions. The parts of these inexpensive products are manufactured of aluminium and high-grade stainless steel materials.

The products of ZHA series are suitable for simple consumption measuring, monitoring and dosing works. For different ranges of flow rates there are also available various design sizes of products as options.

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 gear wheels 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.

Applications

- Dosing systems
- Consumption measurement
- Monitoring systems

Features

- High resolution
- Low pressure drop
- Dynamic measuring system
- Measuring accuracy
- Low weight

Technical Data

Type	Measuring range, l/min	K-Factor, pulses/l ¹⁾	max. Pressure, bar	Frequency, in Hz ¹⁾	Weight, kg
ZHA 01/2*	0.02 to 3	14,000	315	4.6 to 700	0.8
ZHA 02*	0.1 to 7	4,200	315	7 to 490	1.2
ZHA 03*	0.5 to 25	1,740	315	14 to 730	1.3
ZHA 04*	0.5 to 70	425	315	4 to 560	4.1
ZHA 05*	5 to 150	134	250	11 to 340	12.7
ZHA 06*	20 to 500	58	250	18 to 450	16.8
ZHA 07*	50 to 1,000	24	100	20 to 400	25.5

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

* Detailed type code on request

Allgemein	
Linearity	± 1% of actual flow (≥ 30 mm ² /s; up to 0.1% with linearization electronics)
Repeatability	± 0.1%
Materials	Housing: as per DIN ALZn5.5MgCu-7075-F54 Gears: as per DIN 1.4122 Bearing: ball bearings: high-grade stainless steel (ZHA 01/2-04), chromium steel (ZHA 05-06) tapered bearings: chromium steel (ZHA 06-07) Sealing: FKM, PTFE
Medium temperature	-20 to +150°C (higher temperatures on request)
Dimensions	See drawing (page 4 to 5)

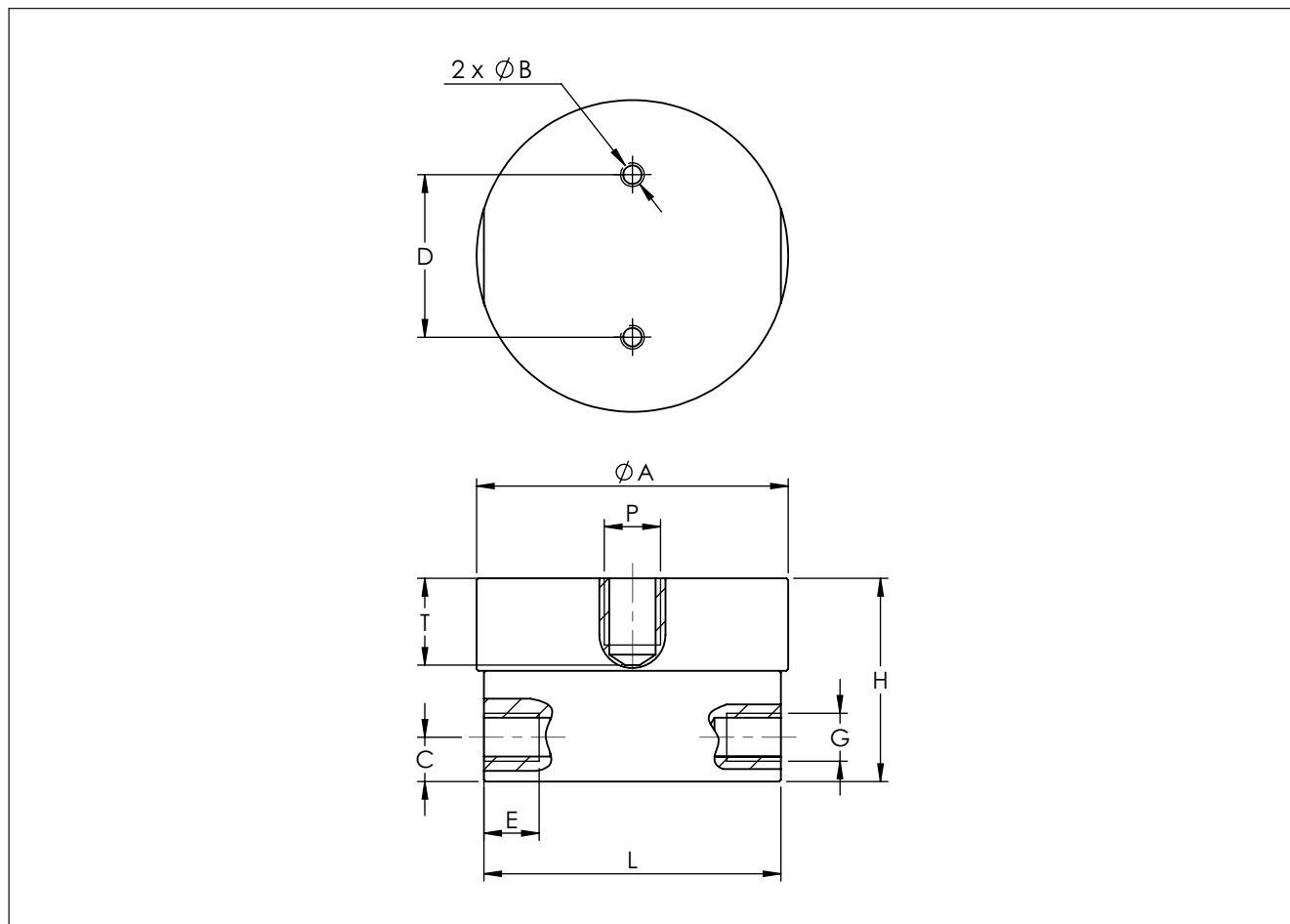
Pickup Selection

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

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

* Ordering code (please see separate datasheet)

Dimensional Drawings (mm) - ZHA 01/2 bis 05

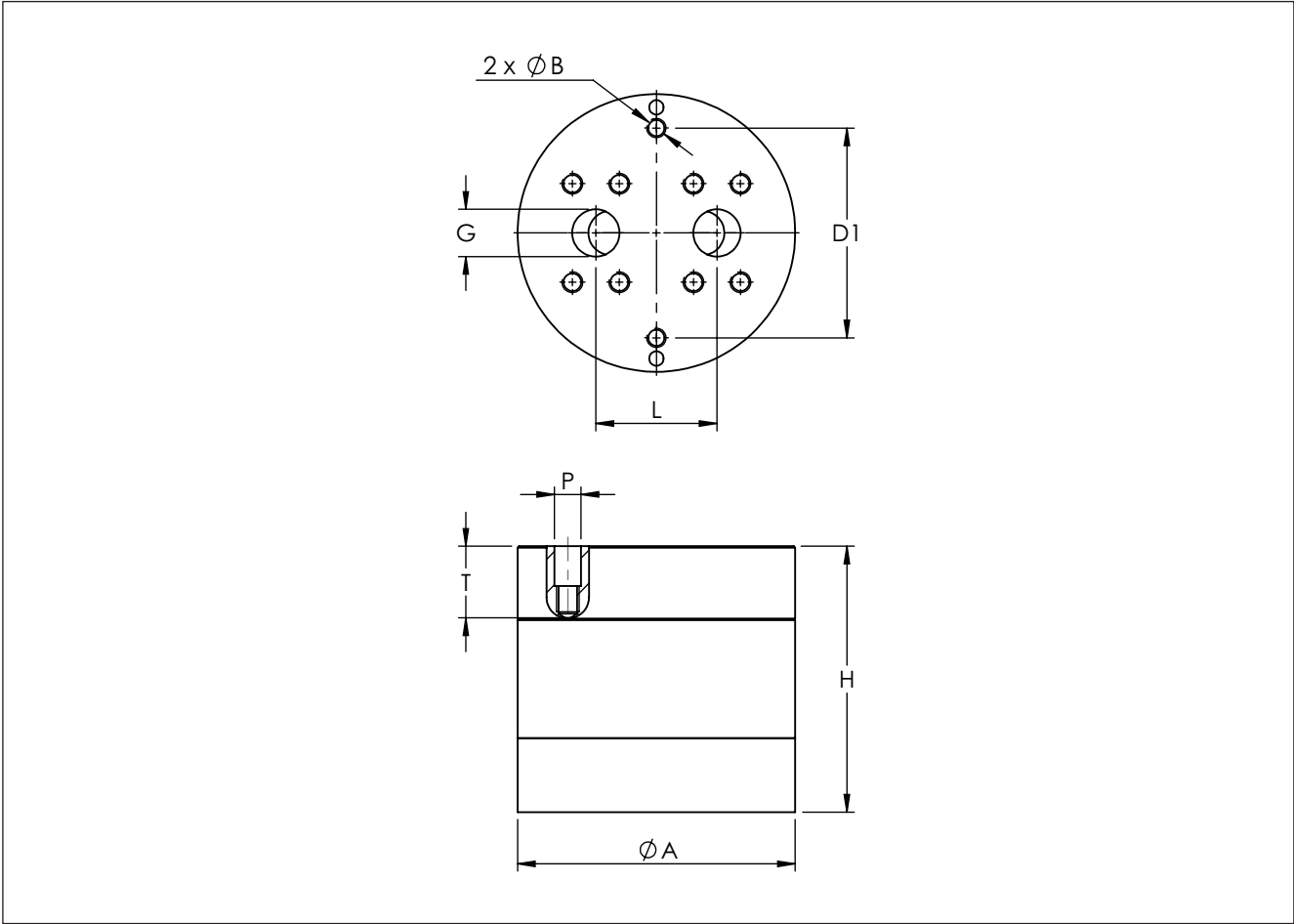


ZHM Type	$\varnothing A$	B	C	D	E	G	H	L	P ¹⁾	T ²⁾
ZHA 01/2	76	M6 ∇ 10	12	44	16	G1/4"	55	72	D/E	23.5
ZHA 02	84.4	M6 ∇ 10	12	44	16	G1/4"	55	80	D/E	23.5
ZHA 03	84.4	M6 ∇ 10	12	44	16	G1/4"	67	80	E	23.5
ZHA 04	125	M10 ∇ 16	19	60	17	G1/2" G3/4" G1" R1/2"	107	121	D/E	30.5
ZHA 05	175	M12 ∇ 20	22.5	100	18	G1"	133	170	D/E	43.5

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)

Dimensional Drawings (mm) - ZHA 06



ZHA Type	Ø A	B	D	G	H	L	P ¹⁾	T ²⁾
ZHA 06	188	M12 ↓ 25	142	SAE 1 1/4"	180	82	E	48.5
ZHA 07	233	M12 ↓ 25	150	SAE 1 1/2"	220	100	E	63.5

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)