

Gear type flow meters
VC 0.01



KRACHT®
FLUID TECHNOLOGY AND SYSTEMS

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General

I Function

Consisting of two high-precision gears, the measuring unit is driven by the liquid flow based on the displacement principle. The gears run in an almost contactless manner in the measuring chamber. The bearing consists of ball bearings.

This encoder version offers a maximum measurement resolution. Compared with standard sensors, encoders are capable of generating considerably more pulses, thus increasing measurement resolution by orders of magnitude. Encoder-equipped SVC flow meters generate up to 2 500 pulses per revolution and can recognise the direction of flow. Encoders, like the standard versions, send square-wave signals to the electronics.

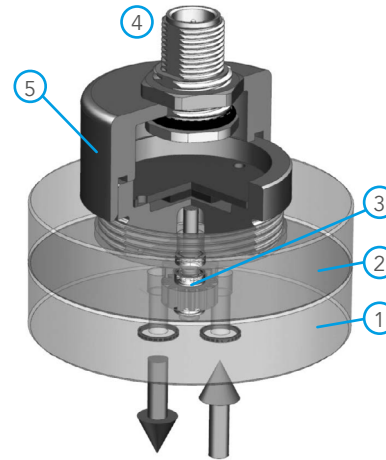
I Product characteristics

- Any flow direction
- High measuring resolution
- Measurement independent of viscosity within the specified ranges
- Low pressure drop
- High-response measurement
- Low measuring starting point
- Low noise emission
- Highly-accurate measurements with outstanding reproducibility
- High degree of accuracy, even with low flow rates at the bottom end of the measuring range
- High working reliability of the electronics

I Applications

Application	Medium	Version
Measurement of extremely small volumes, microdosing	Lubricating fluids, Diesel fuels	Stainless steel housings, steel gears, steel ball bearings

I Construction



- 1 Housing
- 2 Cover
- 3 Gears
- 4 Plug
- 5 Sensor electronics

Technical data

I General characteristics

Connection type	Plate mounting
Mounting position	optional
Flow direction	optional
Viscosity	0.8 ... 60 mm ² /s
Working pressure	max 120 bar
Pressure drop	7 bar
Media temperature	30 ... 100 °C
Ambient temperature	-15 ... 80 °C
Geom. toothvolume	0.138995 cm ³
Sensor resolution	512 pul/rev
Measuring resolution	3.686.0 pul/ml
By 4-x evaluation	14.744 pul/ml
Impulse volume	271.47 x 10 ⁻⁶ cm ³ /Imp
Measuring range	0.5 ... 500 ml/min
Repeat accuracy	< ± 0.1 ml/min
Materials	Housing Stainless steel (1.4404) Gears Steel Ball bearing Steel
Filter fineness	< 6 µm
Permissible media	Lubricating fluids in the range of the operating parameter (in case of doubt please consult)

Type key

Example

VC	0.01	K	6	F	3	P	5E	512
1	2	3	4	5	6	7	8	9

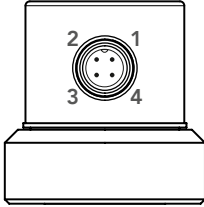
1 Product	
2 Nominal size	
0.01	
3 Bearing	
K	ball bearings
4 Material	
6	Stainless steel housing Steel gears
5 Sealing	
F	FKM
6 Surface	
3	without paint
7 Connection type	
P	Plate mounting
8 Sensors	
5E	Encoder
9 Electronic versions (pre-amplifier)	
512	512 Imp/rev

Electronic

I Electric connections

Encoder version

Connection plug arrangement (M12x1 metal/4-pole round connector)



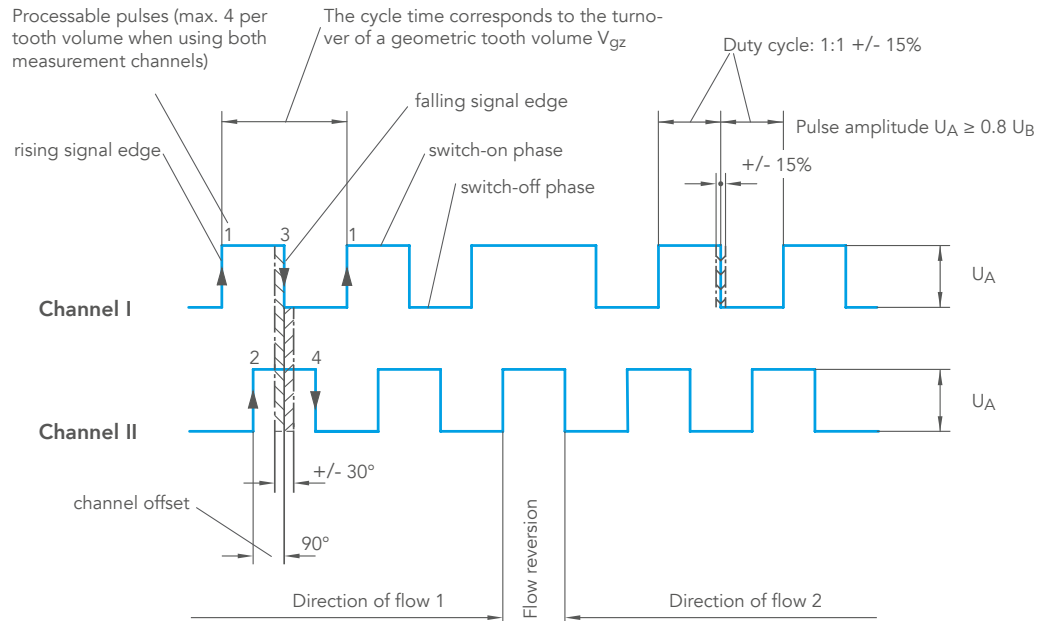
1: U_B
2: channel A
3: 0 Volt
4: channel B

I Encoder versions electrical characteristics

Number of measuring channels	2 (A, B)
Working Voltage	5 ... 30 V DC
Degree of protection	IP 65
Signal output	Push-Pull
Short-circuit proof	Yes
Reverse-polarity protection	Yes
Connection	Axial plug M12x1 (4-pin)

I Signal characteristics

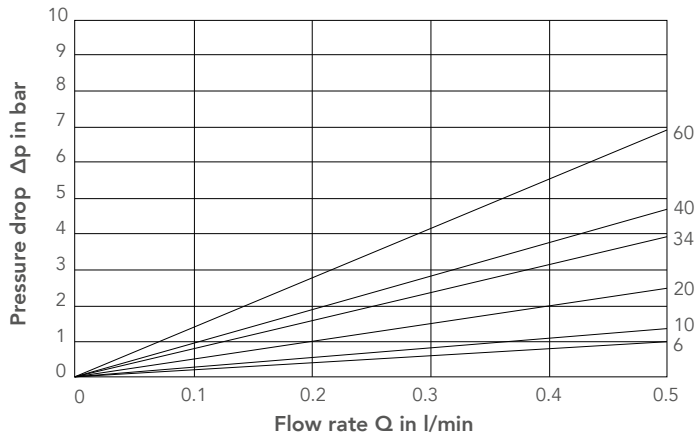
The pre-amplifier generated square-wave signal enables application-specific resolutions. Standard resolution means that the electronics will process one pulse from a channel/sensor per cycle time (rising signal edge in channel I). In contrast, the 4-fold evaluation uses the maximal pulse rate per cycle time, allowing for a resolution that is four times as high as in the standard evaluation. All characteristics of the signal (rising and falling signal edge of both sensors/channels) are exploited in the evaluation.



Pressure drop

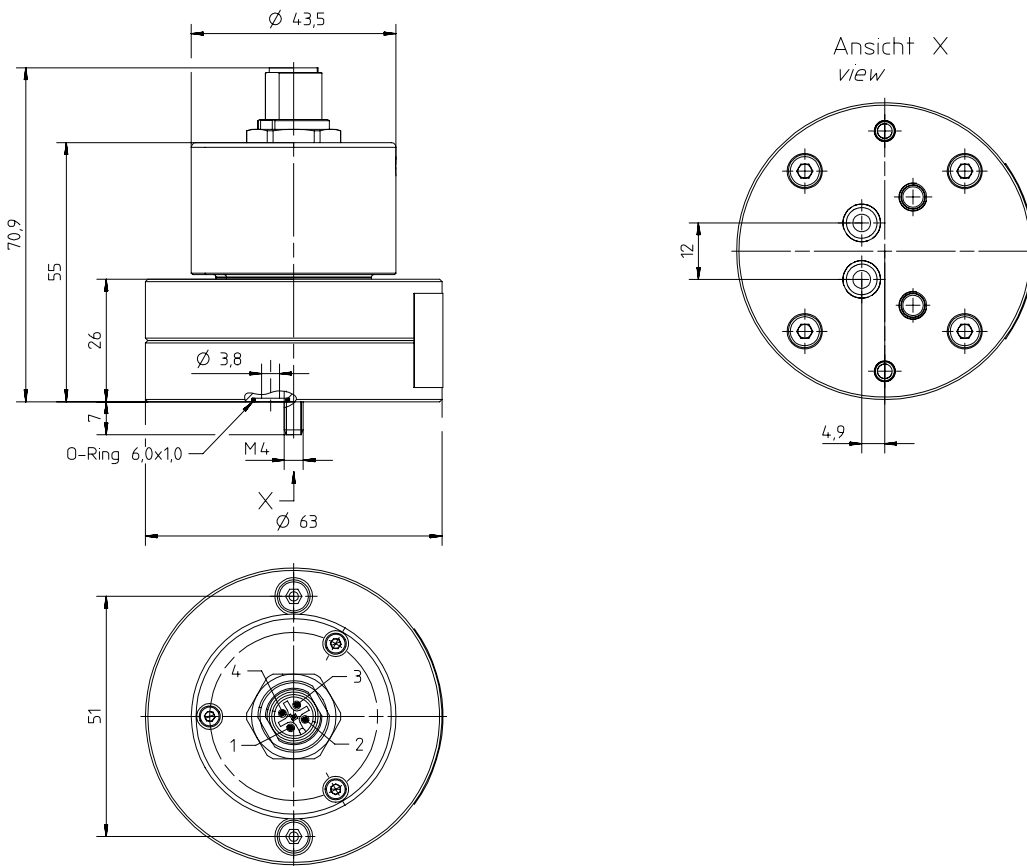
I Ball-bearing versions Parameter: Viscosity in mm²/s

VC 0.01

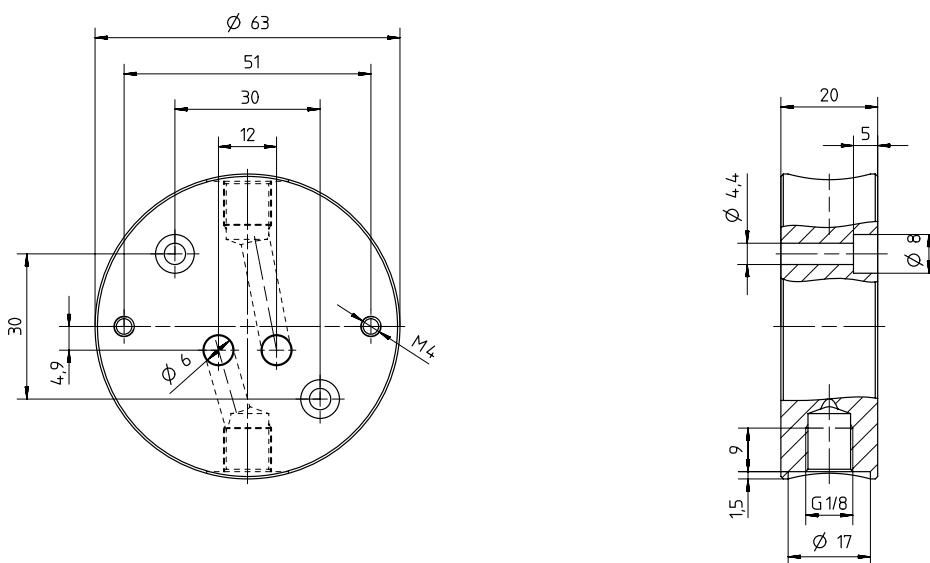


Dimensions

I Gear type flow meter VC 0.01



I Connection plate (stainless steel) with G1/8 side threaded connection



Notes

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