

GF Series Gear Flow Meter



Product Overview

- Can detect micro flow as low as 0.6 Liter/hr
- Can measure viscous liquid
- Fast response
- High resolution
- Pressure resistant up to 40Mpa
- Corrosion-resistant materials, 304sst or 316sst
- Robust construction with a long service life

Overview

Industrial gear flow meters are designed for a variety of chemical applications including petroleum based fluids, water solutions and any other liquid compatible with the materials of construction. Gear flow meter belongs to a kind of volumetric flow meter and can be used for measuring liquid volumetric flow precisely. The flowing medium makes the gear engage and rotate. Under the flowing effect of the fluid, pressure difference is formed between the inlet and outlet of the gear flow sensor. One pair of gears can rotate freely without the need of power supply. The empty cavity between gears is filled with liquid, which is discharged through rotation. The liquid flowing through instrument and liquid can be known through measuring the number of revolutions of the gear.

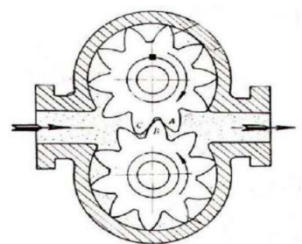
How Gear Flow Meter Work?

The rotation speed of the gears is detected by the sensing coil inside the signal amplifier on the case. The signal amplifier cannot contact the measured medium. The magnetic line of force generated inside the permanent magnet inside the case due to transmitter gear cutting will lead to flux change inside the sensing coil. The sensing coil sends the signal of flux change cycle detected to the pre-amplifier so as to amplify and shape the signal. The pulse signal which is in direct ratio with flow velocity will be sent to the unit conversion and flow integration circuit to obtain and display the accumulative flow value. At the same time, it will also send the pulse signal to frequency current conversion circuit to convert the impulse signal to simulation amperage so as to display the instantaneous flow value.

The flow meter has high processing precision and can be installed precisely. The gear rotation undergoes non-contact scanning. One pulse is generated by one gear with very high resolution. The column gear transmission can measure the liquid at very small flow and small quantitative volume.

Gear Flow Meter Application

- Measurement of resin and glue
- Measurement of hydraulic oil, lubricating oil and grease
- Measurement of fuel oil
- Measurement of printing ink and asphalt
- Measurement of liquid nitrogen, refrigerant and solvent
- Measurement of edible oil, fish oil and food canning
- Measurement of chemical fluid or fluid with corrosion resistance requirements
- Fluid quantitative control system



Technical Specifications

- Aluminum alloy gear flow meter can bear max 15Mpa pressure, stainless steel gear flow meter can bear 40Mpa
Standard fluids operation temperature: -15-80°C, Special request for fluids temperature: -50°C~200°C
- High Accuracy: rangibility 1:10, the accuracy is +/- 0.5%; rangibility1:100, accuracy is +/- 1.0%
- Pulse output/current output available
- Large Turn down Ratio (1:100)
- Broad range of measurement
- Able to measure different kinds of viscous media, max can measure 10,000Mpa.s fluids
- Can be used to measure corrosive or aggressive liquid by choosing different material

Features

As a kind of new volumetric flow meter, the gear flow meter is used for measuring the flow or instantaneous flow of the liquid inside pipeline precisely, either in a continuous or discontinuous flow.

It is particularly suitable for the measurement of heavy oil. Flow measurement of media with high viscosity such as vinyl and resin (It can be used for measuring the fluid the viscosity of which is as high as 10,000Mpa.s), Gear flow meter has small volume, light weight, small operation noise and stable operation. It can also be used for measuring the micro flow of small pipe diameter. With small startup flow and broad range ratio, it is applicable to the measurement of liquid flow with significant change and its measurement precision is not affected by either pressure or flow change. It is stable in performance, long in service life and large in circulation capacity.

Product Pictures



Flow Range

Table 1

Model	Flow Range Liter/h	K Factor P/L	Max Pressure Bar		Connection (Standard)
			Aluminum alloy	Stainless steel	
GF02	0.6-50	11200	150	400	G1/4
GF04	5-200	4780	150	400	G3/8
GF06	10-500	3468	150	400	G1/2
GF10	50-1200	2780	150	400	G1/2
GF15	200-3000	334	150	400	G3/4
GF25	1000-12000	59.9	150	400	G1
GF32	2000-20000	39.9	150	400	G1-1/4

Connection can be customized according to customer's demand.

Model selection

Table 2

Item	Code	Description
Product	GF	Gear flow meter
Flow Meter Size	XX	2, 4, 6, 10, 15, 20, 25, 32mm(refer to Table 1)
Sealing Material	F	FKM
	P	PP
Process Connection	1	Thread (specify standard, female or male)
	2	Flange (specify standard and pressure rating)
	3	Tri-clamp

Output & Communication	4	Compression fittings (specify standard)
	P	Pulse output
	I	4-20mA
	RS	RS 485, MODBUS
Flow Sensor Material	HR	HART
	1	Stainless steel 304
	2	Aluminum alloy
	3	PP
	5	Stainless steel 316L
Digital Display	6	PTFE
	4	Others
	N	No display and Horseman connector
Operation Temperature	Y	With Integral Digital Display
	YF	With Remote Digital Display (10m cable)
	T1	-20~80°C
Fluids Viscosity	T2	80~200°C
	T3	-50~-20°C
	V1	< 50 cp
Operation Pressure	V2	50~10000 cp
	P1	< 1.6Mpa
	P2	1.6~5Mpa
	P3	5~40Mpa

Flow meter size

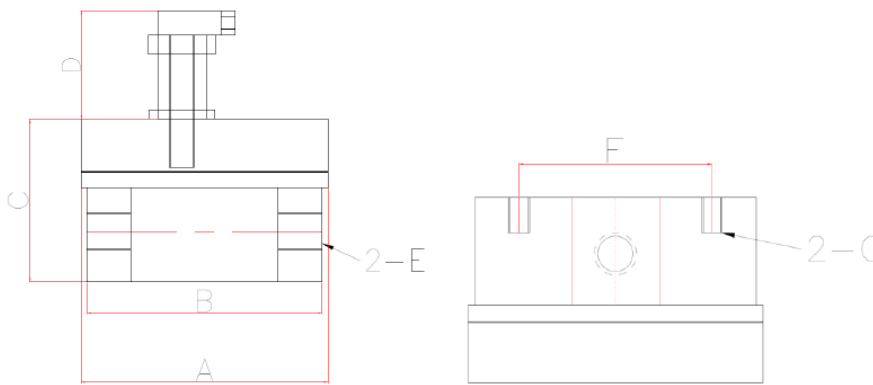


Table 3

Model	A	B	C	D	E	F	G
GF02	Φ83	80	55	70	G1/4	40	M6
GF04	Φ83	80	55	70	G3/8	55	M6
GF06	Φ83	80	62	70	G1/2	55	M6
GF10	Φ83	80	65	70	G1/2	55	M6
GF15	Φ113	110	66	70	G3/4	90	M6
GF25	Φ158	140	85	70	G1	110	M8
GF32	Φ218	160	100	70	G1-1/4	180	M8

Above is standard size, we can customize according to customer's demand.

Digital Display

