

MICRO OVAL GEAR FLOWMETER

For very low flow liquid Applications



FEATURES

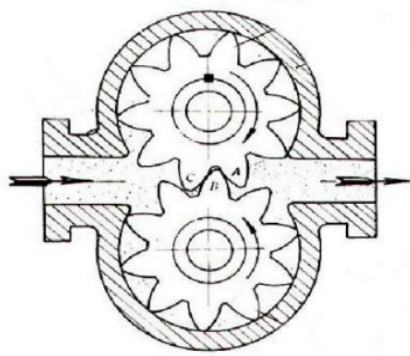
- * High voltage resistance (1.0-45MPa)
- * High and low temperature resistance
- * Able to measure different kinds of viscous media.
- * Impulse output/Analog output available
- * Range ratio width (1: 100)
- * Broad range of measurement
- * Strong corrosion and pollutant resistance (acid)
- * High precision and repeatability

APPLICATIONS

- * 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
- * Fluid quantitative control system

MICROFLOW 3000

Gear flow transmitter belongs to a kind of volumetric flow transmitter and can be used for measuring volume and flow precisely. The flowing medium makes the gear engage and rotate. Under the flowing effect of fluid, pressure difference is formed between the inlet and outlet of instrument. 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 flow can be known through measuring the number of revolutions of



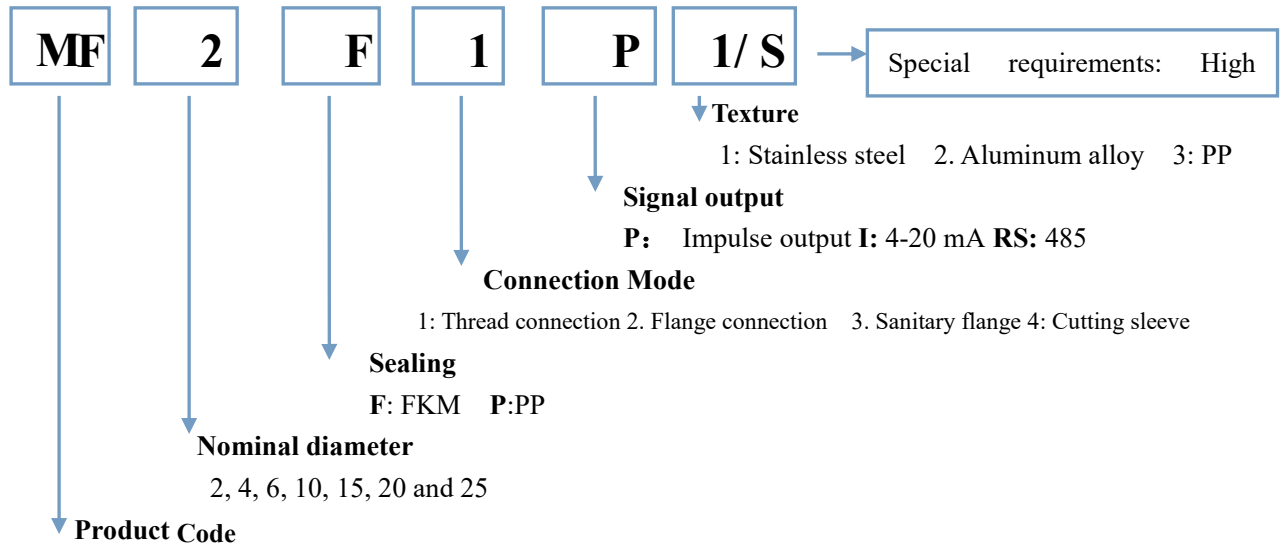
Schematic Diagram of Fluid Flowing



The rotation speed of the transmitter 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 impulse 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 impulse signal to frequency current conversion circuit to convert the impulse signal to simulation amperage so as to display the instantaneous flow value. The transmitter has high processing precision and can be installed precisely. The gear rotation undergoes non-contact scanning. One impulse is generated by one gear with very high resolution. The column gear transmission can measure the liquid with very small flow and small quantitative volume

MICROFLOW 3000

◆ Product Code



◆ Product Diagram:



Fig. 1 Thread Connection



Fig. 2 Quick Hoop Connection



Fig. 3 Cutting Sleeve Connection

◆ Calculation Formula:

K coefficient of gear flow transmitter (flow coefficient) defines the number of impulses per L within the unit flow precisely.

The following formula is used:

$$Q = f \times 60 / K$$

Q= Instantaneous flow L/min

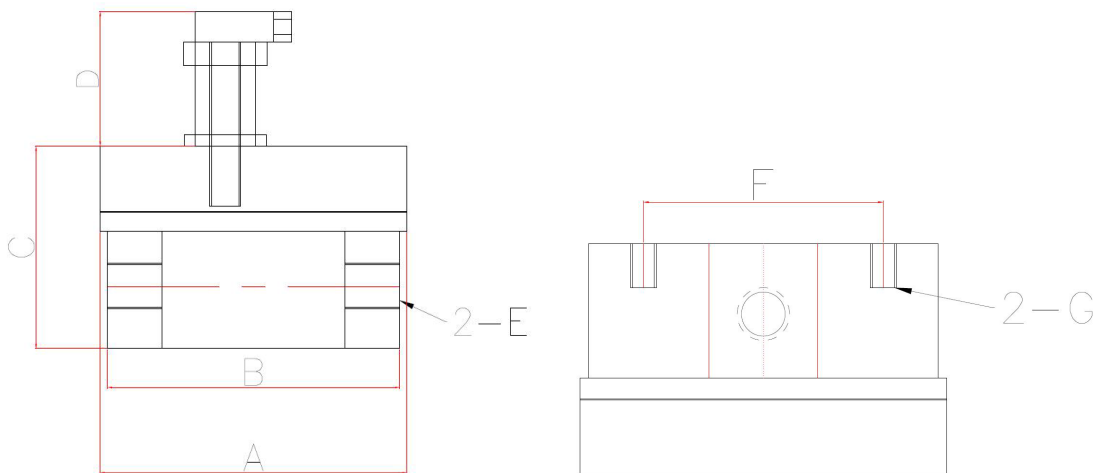
F= Frequency of output impulse (HZ)

K= Coefficient of gear flow meter (impulse/min)

MICROFLOW 3000

As a kind of new volumetric flow transmitter, the round gear flow transmitter is used for measuring the flow or instantaneous flow of the liquid inside pipeline precisely, either in a continuous or discontinuous manner. It is particularly suitable for the measurement of heavy oil. Flow measurement of media with high viscosity such as vinol and resin. (It can be used for measuring the fluid the viscosity of which is as high as 10,000 Pa.s) with the characteristics of 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

Outline Drawing



In mm

Model \ Size	A	B	C	D	E	F	G
MF02	Φ83	80	50	70	G1/4	40	M6
MF04/04A	Φ83	80	50	70	G1/4	55	M6
MF06	Φ83	80	62	70	G1/2	55	M6
MF10	Φ83	80	62	70	G1/2	55	M6
MF15	Φ113	110	62	70	G3/4	90	M6
MF25	Φ158	140	85	70	G1	110	M8
MF32	Φ218	160	100	70	M35*1.5	180	M8

The sizes above are for the standard products. We also accept customization based on the customers' site demand.

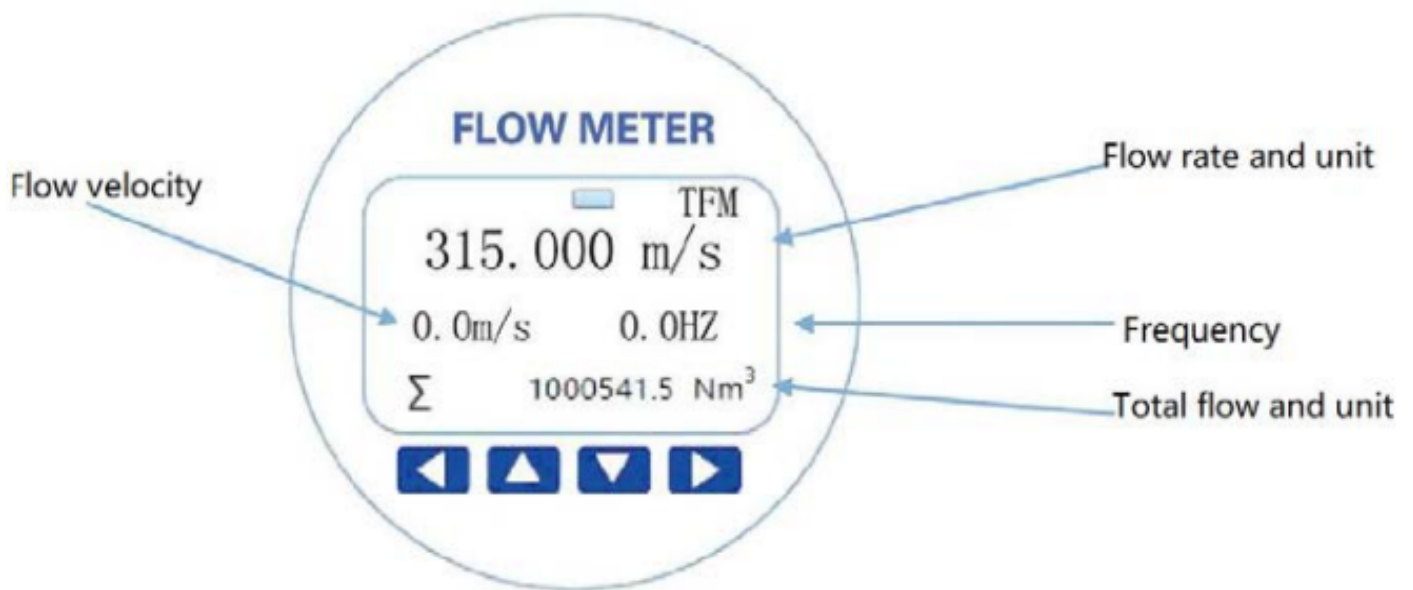
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Table 1 List of Basic Parameters

Flow unit: L/h

Model	Scope of Measurement l/H	K Coefficient P/L	Max. Pressure (Bar)		Temperature	Accuracy	Interface
			Aluminum Alloy	Stainless Steel			
MF04	0.6-50	4780	150	400	-15-80°C	+/- 0.5% (Range: 1: 10)+/- 1.0% (Range: 1:100)	G1/4
MF04A	5-200	4780	150	400	-15-80°C		G1/4
MF06	10-500	2468	150	400	-15-80°C		G1/2
MF10	50-1200	1280	150	400	-15-80°C		G1/2
MF15	200-3000	126.75	150	400	-15-80°C		G3/4
MF25	1000-12000	61.1	150	400	-15-80°C		G1
PF32	2000-20000	59.9	150	400	-15-80°C		M35*1.5

LOCAL DISPLAY UNIT



CONNECT+
IoT Solution Enabled

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