UF Dual-rotor Flowmeter

Overview

UF Dual-rotor Flowmeter (hereinafter it is abbreviated as flowmeter), also known as twin-screw flowmeter, it is one kind of volumetric flowmeters. One pair of helical rotors is the only movable body in metering chamber, to segment, estimate, transport and drain measured liquid. This flowmeter increases the positioning gear in the structure, so there is no contact between the two rotors during rotation. When the flowmeter works with a stable rotation, it has low noise, low abrasion, high accuracy, good viscosity adaptability. It allows subparticles in the measured liquid to pass through, thus the meter will seldom be jammed.

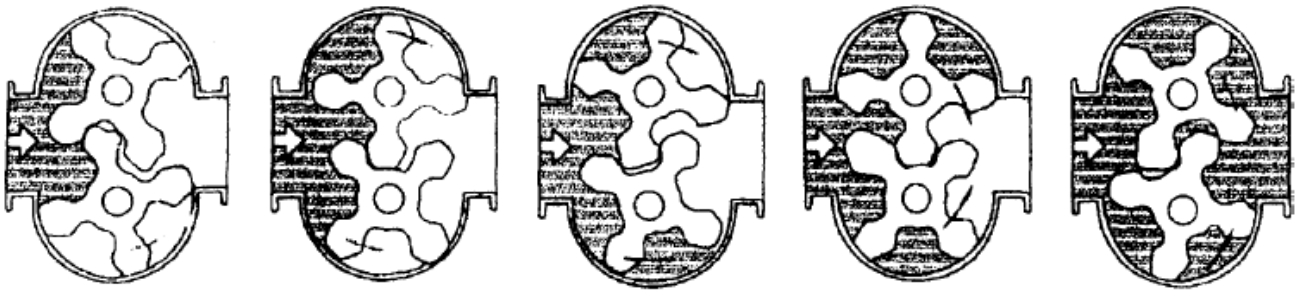
Features

1. It is suitable for thin oil, light oil, heavy oil, crude oil with high sediment concentration or large water content, measured liquid with a large range of viscosity.
2. The maximum flow rate of liquid which flows through the flowmeter is equal to twice as the flow rate of ordinary volumetric meter with same size.
3. Long service life, high accuracy and good reliability.
4. Minimal pressure loss.
5. With two kinds of counters, mechanical counter and electronic counter, a variety of output options. Such as pulse, equivalent, 4-20MA, RS485, Hart protocol and so on.
6. Intrinsic safety and explosion-proof ia Ⅱ CT4 (intrinsically safe); explosion-proof d Ⅱ BT4 (flame-proof); protection IP65.

Operating Principle

As shown below, the flowmeter via a pair of rotative special screw rotors to measure the volume of the liquid flow directly.

The measurement of the flowmeter for the fluid flow is completed in the measuring chamber. A pair of screw rotors to rotate are driven by the pressure of the liquid, the enclosed space formed between the wall of the metering chamber and the rotors (shaded portions in figure), in every rotary, it discharges eight times of the shadow volume. Therefore, according to this flow relationship, as long as calculate the number of rotor rotation, you can calculate the cumulative amount of flow, according to the number of rotation per second, you can calculate the instantaneous flow.



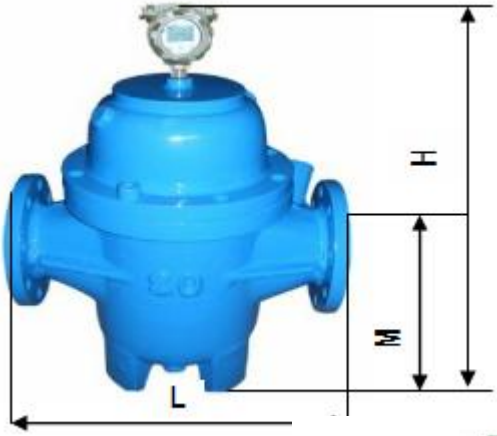
Main technical parameter

Inside Nominal Diameter (mm)	15~400
Accuracy	Grade 0.1, grade 0.2, grade 0.5
Pressure Loss	0~1000mpas<80kpa
Working Pressure	1.6, 2.5, 4.0, 6.3, 10, 16, 20, 42MPa
Temperature Range	-40℃~+80℃, -40℃~+150℃, -40℃~+250℃, -40℃~+350℃
Medium Viscosity	0.1~1000mpa.s
Environmental Condition	temperature-30℃~+70℃ humidity5%~95% air pressure 86kpa~106kpa
Connecting Flange	National standard, can also be produced according to customized flange standard.
Explosion-Proof grade	ExiaII CT4，ExdII BT4

Flow Range

Inside Nominal Diameter	Flow range m^3/h		
(mm)	Accuracy Grade 0.5	Accuracy Grade 0.2	Accuracy Grade 0.1
15	0.6~3	1~3	
25	1.5~9	2~6	
40	4~20	6~18	9~18

50	6~36	10~30	15~30
80	10~80	20~70	30~60
100	20~120	30~100	45~90
150	40~250	80~240	100~200
200	60~400	120~360	160~320
		180~540	240~480
		240~720	300~600
		500~1500	600~1200



Nominal Diameter (mm)	Flange Interval L	Overall Height	Center Height	Installation Method
		H	M	
15	200	280	70	Horizontal type
25	250	350	80	Horizontal type
40	300	500	80	Horizontal type
50	380	500	80	Horizontal type

80	400	700	154	Horizontal, Vertical type
100	450	740	190	Horizontal, Vertical type
150	650	840	220	Horizontal, Vertical type
200	700	1180	450	Horizontal, Vertical type
250	1000	1210	500	Horizontal, Vertical type
300	1000	1460	640	Horizontal, Vertical type
400	1200	1700	700	Horizontal, Vertical type

Ordering Model

Basic Model	1	2	3	4	5	6	7	Illustration
	Counter	Nominal Diameter	Nominal Pressure	Material	Output Mode	Working Temperature	Accuracy	
UF								Dual-rotor flowmeter
	J							Mechanical counter
	E							Electronic Counter
	H							Zero returning counter
		15～400						Nominal diameter 15~400mm
			1.6～42					Nominal pressure 1.6~42mpa
				C304				The rotor is made of stainless steel
				C316				The rotor is made of stainless steel
				CC304				The case and rotors are made of Stainless iron.
				CC316				The case and rotors are made of stainless steel

					F			Pulse output
					I			4-20mA Current output
					R			RS485, Mudbus
					H			Hart Protocol output
						A		Working temperature -40℃~+80℃
						B		Working temperature -80℃~+350℃
							0.5	Grade 0.5
							0.2	Grade 0.2
							0.1	Grade 0.1