FLT Liquid Turbine Flow Meter

FLT series Turbine Flow has its simple structure,light weight,hjgh-accuracy,perfect repeatability,sensitivity,easy maintenance and use.It is widely used to measure liquid which has no chemical corrosive reaction with stainless steel 1Cr18Ni8Ti,2Cr13,corundum $Al_2O_3$and cemented carbide. This kind of measured liquid has no impurities such as fiber and particles.The movement viscosity is lower than $5\times10^{-6}m^2/s$ at working temperature.If the viscosity is higher than $5\times10^{-6}m^2/s$,the flow meter should be calibrated in the liquid before use.It can finish amount control ,excess alert and etc,if matched with special functional displaying meter.It is the ideal meter for flow measuring and energy saving.

2. Product characteristics

- High accuracy; Normal type can reach ±1%R, ±0.5%R.High accuracy type can reach to ±0.25%R.
- Excellent repeatability, repeatability in a short time can reach to 0.05%~0.2%,Because of excellent repeatability, customers can have extremely high accuracy if they often calibrate or calibrate on-line. It is preferred in trade settlement.
- Output with pulse frequency signal, suitable total flow measuring and computer connection.
- No zero drift and strong ability in anti-noise.
- Can acquire very high frequency signal(3~4KHz),strong signal resolution.
- Wide range: middle and large diameter can reach to 1:20,small diameter can reach 1:10.
- Compact and light structure, convenience in installation and maintenance, ability of large flow.
- Suitable to measure in high pressure .No need to open aperture on the meter, so it is easy to make high pressure meter.
- Many models of dedicated sensors. Can design dedicated sensors of special requirements for customer, such as low temperature type, two-way type, pump type, sand specific type.
- Can make plug-in type, suitable to large diameter measuring, little pressure loss, low price, can get out without flow cut off. Convenient in installing and maintaining.

3. Technical Parameters

1) Basic Parameters

Table 1

Diameter (mm) & Connection	4, 6, 10, 15, 20, 25, 32, 40 thread connection (15, 20, 25, 32, 40) 50, 65, 80, 100, 125, 150, 200 flange connection
Accuracy	±1%;±0.5%; ±0.2% (need special order)
Turndown	1:10, 1:15; 1:20
Instrument Material	SS304, SS316 (L)

Medium Temperature	-20 to +120 Degree C
Ambient Conditions	Temperature -10 to 55 C, relative humidity 5% to 9%, atmospheric pressure 86 to 106 KPa
Output Signal	Sensor: pulse frequency signal, low electrical level≤0.8V,high level≥8V Transmitter: two wire, 4-20 mA DC current signal
Power Supply	Sensor: +12V DC, +24V DC (optional) Transmitter: +24V DC Local indication type: built-in 3V lithium cell or +24VDC external
Signal Transmission Wire	STVPV3×0.3 (3 wire), 2×0.3 (2 wire)
Transmission Distance	No more than 1000 m
Signal Line Interface	Basic type: Hausman connector or 3-core wire; Explosion-proof type: M20 × 1.5 (F)
Explosion Proof	Basic type: non-explosion proof; explosion proof type: ExdIIBT6
Enclosure Protection	IP65
Wetted Components	Housing:Standard - 304 Stainless Steel ; Optional - 316 Stainless Steel Bearings and Shaft:Tungsten Carbide ;Rotor:2Cr13 Stainless Steel Retaining Rings:304 Stainless Steel
Electrical Connections	Basic Type:Hausman Connector or three-core cable Explosion Proof Type:ISO M20×1.5 Female

2) Measureing range & working pressure

Table 2

Nominal Diameter (mm)	Nominal Diameter (in.)	Standard Flow Range (SFR) (m3/h)	Extended Flow Range (EFR) (m3/h)	Standard Pressure Rating (MPa)	Customized Pressure Rating (MPa) - Flange Fitting
4	0.15	0.04 to 0.25	0.04 to 0.4	Thread: 6.3	12, 16, 25
6	0.25	0.1 to 0.6	0.06 to 0.6	Thread: 6.3	12, 16, 25
10	0.4	0.2 to 1.2	0.15 to 1.5	Thread: 6.3	12, 16, 25
15	0.5	0.6 to 6	0.4 to 8	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
20	0.75	0.8 to 8	0.45 to 9	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
25	1	1 to 10	0.5 to 10	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
32	1.25	1.5 to 15	0.8 to 15	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
40	1.5	2 to 20	1 to 20	Thread: 6.3; Flange: 2.5	4.0, 6.3, 12, 16, 25
50	2	4 to 40	2 to 40	Flange: 2.5	4.0, 6.3, 12, 16, 25
65	2.5	7 to 70	4 to 70	Flange: 2.5	4.0, 6.3, 12, 16, 25
80	3	10 to 100	5 to 100	Flange: 2.5	4.0, 6.3, 12, 16, 25
100	4	20 to 200	10 to 200	Flange: 1.6	4.0, 6.3, 12, 16, 25
125	5	25 to 250	13 to 250	Flange: 1.6	2.5, 4.0, 6.3, 12, 16
150	6	30 to 300	15 to 300	Flange: 1.6	2.5, 4.0, 6.3, 12, 16
200	8	80 to 800	40 to 800	Flange: 1.6	2.5, 4.0, 6.3, 12, 16

4. Products Claasification

Table 3

Photo						
Model	FLT-N	FLT-A	FLT-N	FLT- A	FLT-B	FLT-C
Signal Output	Pulse	4-20mA	Pulse	4-20 mA	No	4-20mA/Pulse
Power Supply	+24VDC±15%	+24VDC±15%	24VDC±15%	24VDC±15%	Lithium Battery	24VDC±15%
Accuracy	1.0% or 0.5% of rate					
Flow Range	Standard		Standard		Standard or Extended	
Local Display	No		No		Yes	
Communica-tion	No		No		Optional RS485	
Housing Material	SS304 or SS316					
Impeller Material	2Cr13 or CD4Mcu Stainless Steel					
Explosion Proof	No		ExdIIBT6 or ExiaIICT4		ExdIIBT6 or ExiaIICT4	
Protection Level	IP65		IP65		IP65	
Diameter	DN4 to DN200					
End Connection	1. Flange (Standard: ISO; Optional: ANSI, DIN, JIS); 2. Thread (Standard: G; Optional: NPT); 3. Wafer					
Fluid Temperature	-20°C~120°C (High Temperature Type: -20°C~150°C)					
Ambient Temperature	-30°C~60°C					

5. Model Selection

Table 4

Model Suffix Code								Description (SFR: Standard Flow Range)
FLT	□	/ □	/ □	/ □	/ □	/ □	/ □	
Nominal Diameter (mm)	4							4mm; SFR: 0.04 to 0.25 m^3/h
	6							6mm; SFR: 0.1 to 0.6 m^3/h
	10							10mm; SFR: 0.2 to 1.2 m^3/h
	15							15mm; SFR: 0.6 to 6 m^3/h
	20							20mm; SFR: 0.8 to 8 m^3/h
	25							25mm; SFR: 1 to 10 m^3/h
	32							32mm; SFR: 1.5 to 15 m^3/h
	40							40mm; SFR: 2 to 20 m^3/h
	50							50mm; SFR:4 to 40 m^3/h
	65							65mm; SFR: 7 to 70 m^3/h
	80							80mm; SFR:10 to 100 m^3/h
	100							100mm; SFR: 20 to 200 m^3/h
	125							125mm; SFR: 25 to 250 m^3/h
	150							150mm; SFR: 30 to 300 m^3/h
	200							200mm; SFR: 80 to 800 m^3/h
Type		N						Basic Type: +12V to +24V DC Power Supply; Pulse Output
		A						4 to 20 mA current output
		B						Battery Power Supply with filed Display
		C						local Display and 4 to 20 mA current output
		C1						local Display and RS485
		C2						local Display and HART
		C3						24V power supply+Pulse output
Accuracy Rating			10					±1.0% of reading
			05					±0.5% of reading
Measurable Range				S				Standard: Refer to table 1
				E				Extended: Refer to table 1
Housing Material					S			304 Stainless Steel
					L			316 (L) Stainless Steel
Explosion Rating								Blank: without Explosion Proof
						E		Explosion Proof: ExdIIBT6
Pressure Rating							N	Standard: Refer to table 1
							H(x)	Customized: Refer to table 1

6. Installation Dimensions

Thread or flange connection is used according to different flow models. See Figure 1, 2, 3 and Table 3 for detailed dimensions.……

Figure 1: DN4-DN10 sensor structure

Figure 2: DN15-DN40 sensor Structure

Figure 3: DN50-DN200 sensor structure

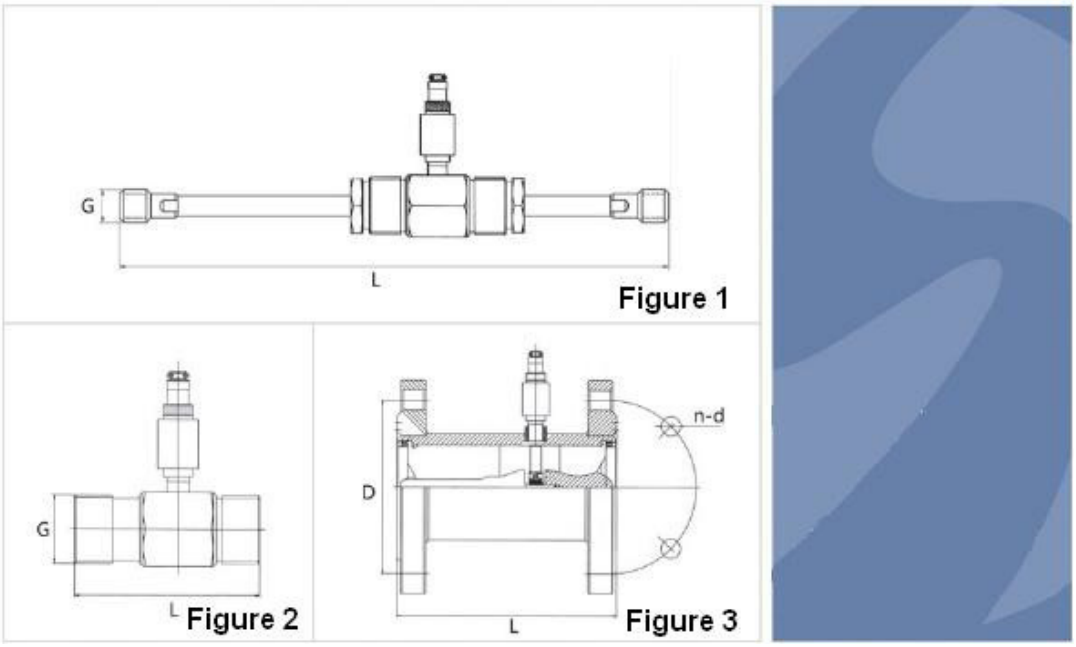

Table 5. Dimensions

Diameter (mm)	L (mm)	G	D (mm)	d (mm)	n (Bolts)
4	295	G1/2			
6	330	G1/2			
10	450	G1/2			
15	75	G1	Φ65	Φ14	4
20	80	G1	Φ75	Φ14	4
25	100	G5/4	Φ85	Φ14	4
32	140	G2	Φ100	Φ14	4
40	140	G2	Φ110	Φ18	4
50	150		Φ125	Φ18	4
65	170		Φ145	Φ18	4
80	200		Φ160	Φ18	8
100	220		Φ180	Φ18	8
125	250		Φ210	Φ28	8
150	300		Φ240	Φ22	8
200	360		Φ295	Φ22	12