Datasheet

Turbine Flow Meter

SIN-LWGY

Sinomeasure

Committed to process automation solutions

Tel: 86-13336194863

E-mail: info@sinomeasure.com

www.sino-measure.com

Datasheet

Turbine Flow Meter
SIN-LWGY

The LWGY turbine flowmeter is connected with the converter through the flow sensor, and realizes various functions such as pulse output, current output, and on-site display. The flowmeter has the characteristics of high precision, wide measurement range, long life, simple operation and maintenance, etc. It can be widely used in food, medicine, petrochemical, metallurgy, papermaking and other industries, and is an ideal instrument for flow measurement.

The flowmeter is suitable for liquids that do not corrode stainless steel 304, 2Cr13, corundum (Al2O3), cemented carbide, etc., and have no impurities such as fibers and particles.

Applications

- Food
- Medicine
- Petrochemical
- Metallurgy
- Paper making

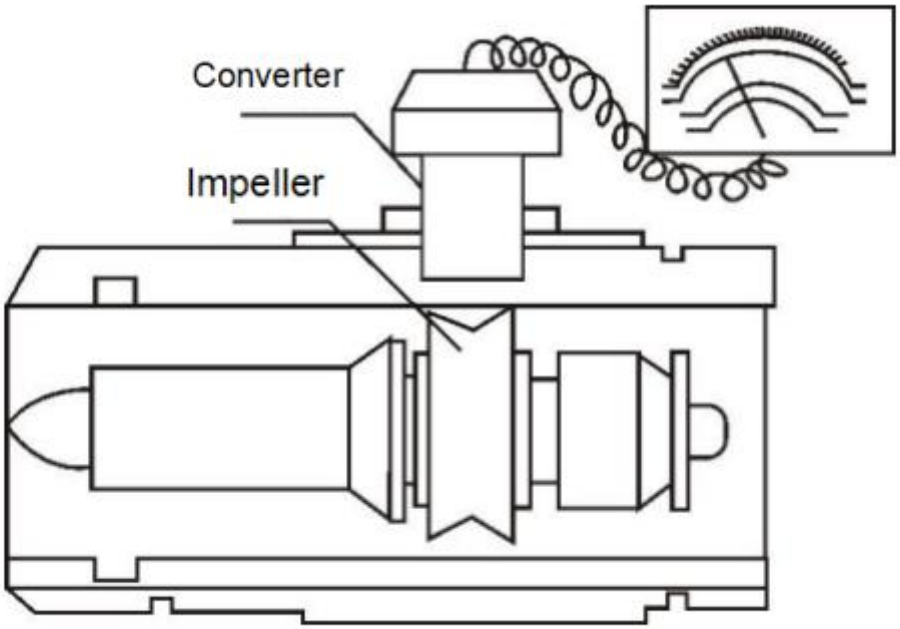
Features

- Multiple functions
- High accuracy
- Wide measuring range
- Long life
- Simple operation and maintenance

Turbine Flow Meter

Principle

When the measured liquid flows through the flow meter sensor, its internal impeller rotates with the help of liquid kinetic energy. At this time, the impeller blade causes the magnetic resistance in the detection device to change periodically. Therefore, an electric pulse signal proportional to the flow rate is induced at both ends of the detection coil, and is amplified by the preamplifier then sent to the display unit. The single chip microcomputer system in the display unit calculates according to the number of pulses measured and the meter coefficient K of the flow meter, and displays the instantaneous flow rate and the accumulated total amount.



The relationship between the meter coefficient and instantaneous flow, frequency, pulse number, and cumulative total is:

K=f/Q and K=N/V

In the formula:

f—flow signal frequency (Hz)

Q—instantaneous flow rate (m^3/s, or /L/s)

N—pulse number

V—Total volume (m^3)

K—Meter coefficient(1/m^3 or 1/L

Parameters	
Medium	Liquid (water, beverage, lubricating oil, hydraulic oil, organic liquid, inorganic liquid without fiber and particle impurities, etc.)
Nominal diameter	DN4-DN200mm;
Accuracy	1.0 %(standard),0.5%;
Medium viscosity	＜5×10-6m2/s（>5×10-6m2/s, the flow meter should be calibrated in real liquid before use）
Medium temperature	-20 ℃～ + 120 ℃ (stainless steel pipe)
Ambient temperature	-20 ℃～ + 60 ℃
Relative humidity	5% ～ 90%
Atmospheric pressure	86kpa ~ 106kPa
Power supply	3.6V, 12V, 24V
Signal output	pulse signal, 4~20mA current signal, Modbus RS485
Ingress protection	IP65(IP67, IP68 optional, pulse converter probe IP00)

Wiring

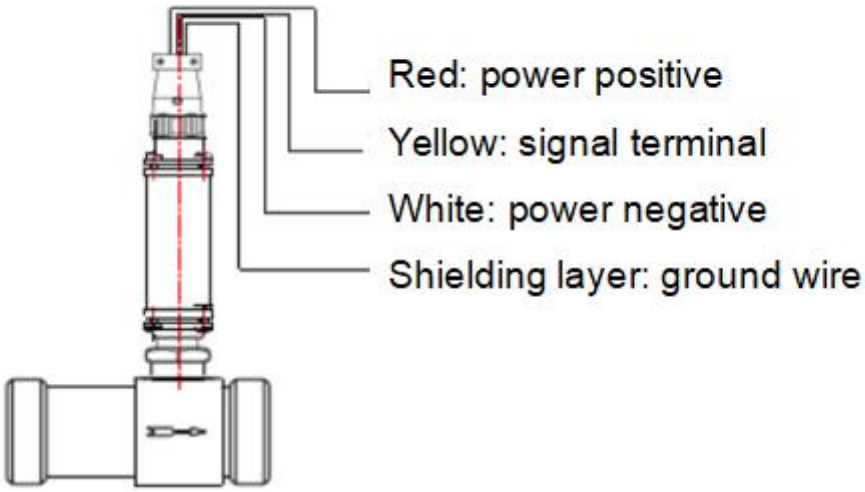


Figure1 Wiring diagram of sensor and display instrument

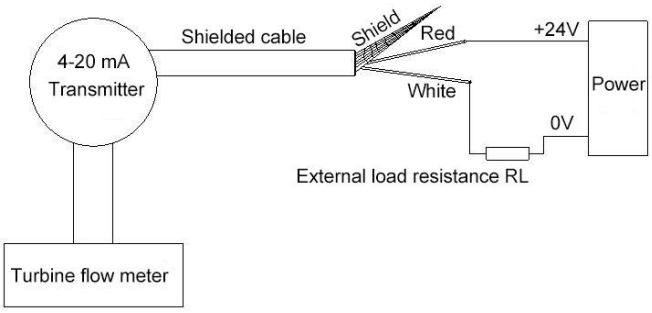
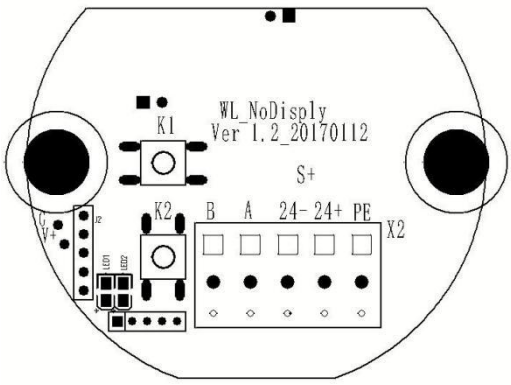


Figure 2 Schematic diagram of external wiring



PE	Ground
24+	24V power supply+
24-	24V power supply
A	485 Communication A
B	485 communication B

Figure 3 Schematic diagram of internal wiring diagram

Dimension

Pulse-Type Structure and Dimensions

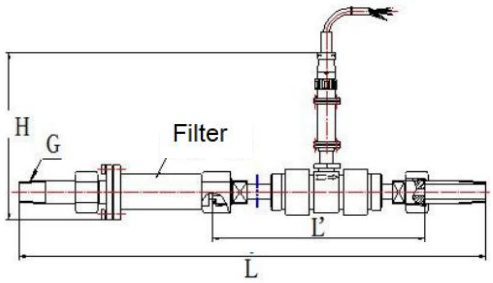


Figure 4 DN4~DN10 threaded connection flowmeter structure and installation dimensions

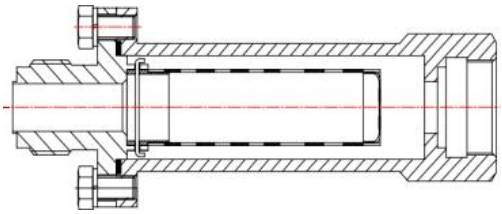


Figure 5 DN4~10 threaded connection turbine flowmeter filter

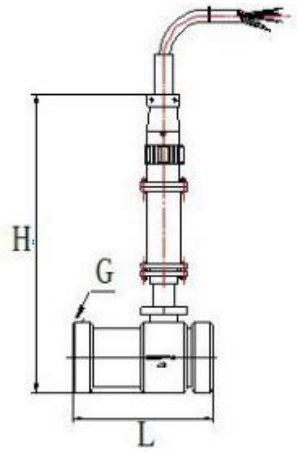


Figure 6 Threaded-connected flowmeter diagram

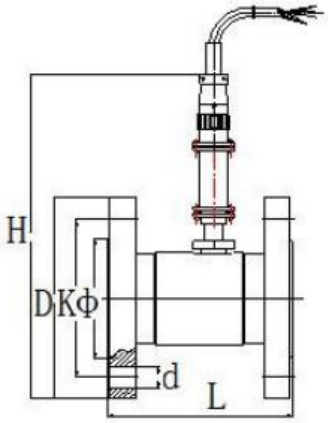


Figure 7 Flange-connected flowmeter diagram

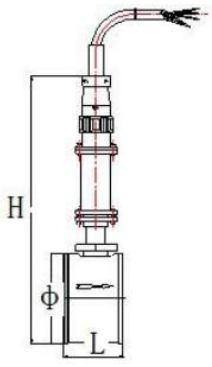


Figure 8 Clamp-connected flowmeter diagram

Table 1 Pulse-Type Turbine Flowmeter Overall Dimensions

Diameter (mm)	Connect Type	L (mm)	H (mm)	G	L' (mm)	D (mm)	K (mm)	n -d (mm)	Weight (kg)
4	thread	4 25	140	R3/8	225				1.02
	flange	225	168			Φ90	Φ60	4- Φ14	1.51
	clamp	225	149			Φ50.5			1.72
6	thread	4 25	141	R3/8	225				1.03
	flange	225	169			Φ90	Φ60	4- Φ14	1.52
	clamp	225	150			Φ50.5			1.72
10	thread	5 45	142	R3/8	345				1.09
	flange	345	17 3			Φ90	Φ60	4- Φ14	1.57
	clamp	345	151			Φ50.5			1.72
15	thread	75	14 5	G1					0.7
	flange	75	175			Φ95	Φ65	4- Φ14	1.82
	clamp	75	153			Φ50.5			2.27
20	thread	85	149	G1					0.7
	flange	85	183			Φ105	Φ75	4- Φ14	2.4
	clamp	85	155			Φ50.5			2.36
25	thread	100	15 5	G1 1/4					1.02
	flange	100	190			Φ115	Φ85	4- Φ14	3.22
	clamp	100	159			Φ50.5			2.46
32	thread	120	162	G1 1/2					1.34
	flange	120	206			Φ140	Φ100	4- Φ18	4.77
	clamp	120	1 6 3			Φ50.5			3.32
40	thread	140	170	G2					2.18
	flange	140	215			Φ150	Φ110	4- Φ18	5.97
	clamp	140	173			Φ64			4.12
50	thread	150	18 4	G2 1/2					3.18
	flange	150	227			Φ 165	Φ125	4- Φ18	7.7
	clamp	150	18 4			Φ78			5.32
65	thread	175	201	G3					4.51
	flange	175	24 5			Φ185	Φ145	8- Φ18	10.17
	clamp	175	19 8			Φ91			6.72
8 0	thread	200	211	G3 1/2					6.2
	flange	200	261			Φ200	Φ160	8- Φ18	11.62
	clamp	200	215			Φ106			8.27
100	flange	220	280			Φ220	Φ180	8- Φ18	14.72
	clamp	220	230			Φ 119			9.87
150	flange	300	337			Φ285	Φ240	8- Φ22	27.22
200	flange	360	391			Φ340	Φ295	12-Φ22	42.82

Display-Type Structure and Dimensions

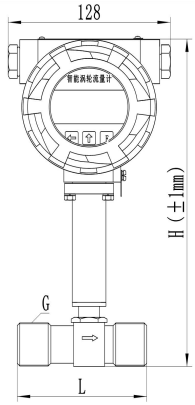


Figure 9 Threaded-connected flowmeter diagram

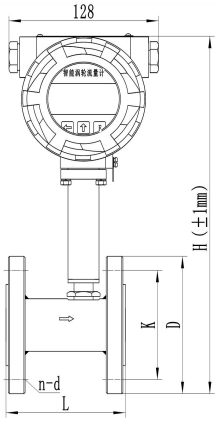


Figure 10 Flange-connected flowmeter diagram

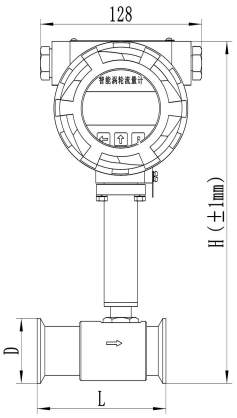


Figure 11 Clamp-connected flowmeter

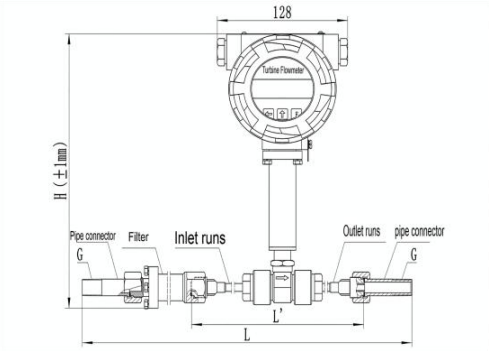


Figure 12 Diagram of DN4~DN10 threaded connection turbine

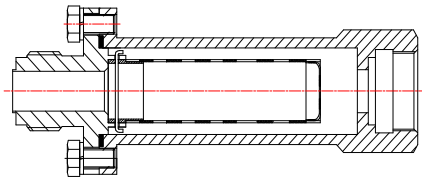


Figure 13 Diagram of DN4~ DN10 threaded connection flowmeter filter

Table 2 Display-Type Turbine Flowmeter Dimensions

Diameter (mm)	Connect Type	L (mm)	H (mm)	G	L' (mm)	D (mm)	K (mm)	n -d (mm)	Weight (kg)
4	thread	4 25	208	R3/8	225				2.34
	flange	225	236			Φ90	Φ60	4- Φ14	2.83
	clamp	225	217			Φ50.5			3.04
6	thread	4 25	209	R3/8	225				2.35
	flange	225	237			Φ90	Φ60	4- Φ14	2.84
	clamp	225	218			Φ50.5			3.04
10	thread	5 45	210	R3/8	345				2.41
	flange	345	238			Φ90	Φ60	4- Φ14	2.89
	clamp	345	219			Φ50.5			3.04
15	thread	75	214	G1					2.02
	flange	75	243			Φ95	Φ65	4- Φ14	3.14
	clamp	75	221			Φ50.5			3.59
20	thread	85	217	G1					2.02
	flange	85	251			Φ105	Φ75	4- Φ14	3.72
	clamp	85	223			Φ50.5			3.68
25	thread	100	222	G1 1/4					2.34
	flange	100	258			Φ115	Φ85	4- Φ14	4.54
	clamp	100	22 6			Φ50.5			3.78
32	thread	120	230	G1 1/2					2.66
	flange	120	274			Φ140	Φ100	4- Φ18	6.09
	clamp	120	2 3 1			Φ50.5			4.64
40	thread	140	238	G2					3.5
	flange	140	283			Φ150	Φ110	4- Φ18	7.29
	clamp	140	241			Φ64			5.44
50	thread	150	252	G2 1/2					4.5
	flange	150	295			Φ 165	Φ125	4- Φ18	9.02
	clamp	150	251			Φ78			6.64
65	thread	175	269	G3					5.83
	flange	175	31 2			Φ185	Φ145	8- Φ18	11.49
	clamp	175	26 6			Φ91			8.04
80	thread	200	279	G3 1/2					7.52
	flange	200	329			Φ200	Φ160	8- Φ18	12.94
	clamp	200	282			Φ106			9.59
100	flange	220	350			Φ220	Φ180	8- Φ18	16.04
	clamp	220	298			Φ 119			11.19
150	flange	300	405			Φ285	Φ240	8- Φ22	28.54
200	flange	360	458			Φ340	Φ295	12- Φ22	44.14

Non-Display-Type Structure and Dimensions

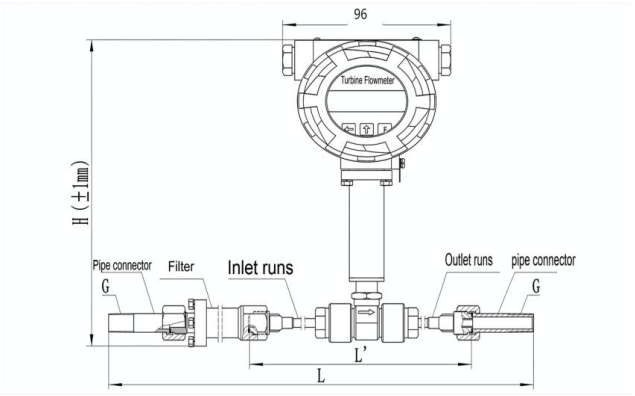


Figure 14 Diagram of DN4~DN10 threaded connection turbine flowmeter

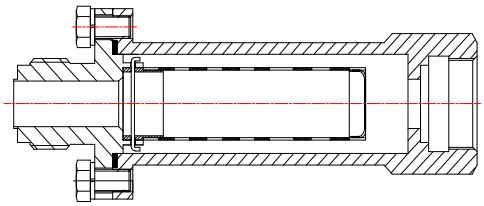


Figure 15 Diagram of DN4~DN10 threaded connection turbine flowmeter

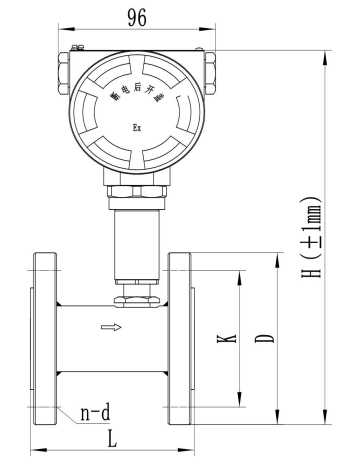


Figure 16 Flange-connected flowmeter diagram

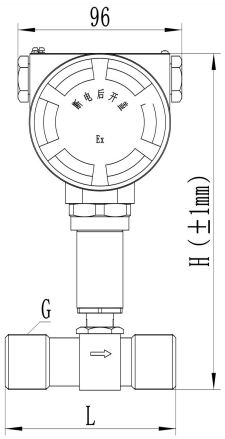


Figure 17 Threaded-connected flowmeter diagram

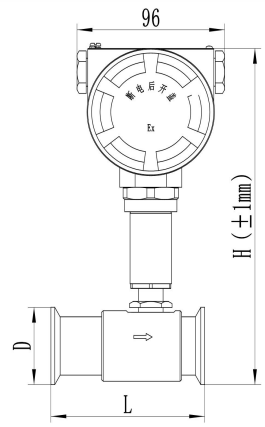


Figure 18 Diagram of clamp-connected turbine flowmeter

Table 3 Non-Display-Type Turbine Flowmeter Dimensions

Diameter (mm)	Connect Type	L (mm)	H (mm)	G	L' (mm)	D (mm)	K (mm)	n -d (mm)	Weight (kg)
4	thread	425	203	R3/8	225				1.67
	flange	225	231			Φ90	Φ60	4- Φ14	2.16
	clamp	225	212			Φ50.5			2.37
6	thread	4 25	204	R3/8	225				1.68
	flange	225	232			Φ90	Φ60	4- Φ14	2.17
	clamp	225	213			Φ50.5			2.37
10	thread	5 45	205	R3/8	345				1.74
	flange	345	233			Φ90	Φ60	4- Φ14	2.22
	clamp	345	21 2			Φ50.5			2.37
15	thread	75	20 6	G1					1.35
	flange	75	238			Φ95	Φ65	4- Φ14	2.47
	clamp	75	216			Φ50.5			2.92
20	thread	85	21 0	G1					1.35
	flange	85	24 4			Φ105	Φ75	4- Φ14	3.05
	clamp	85	218			Φ50.5			3.01
25	thread	100	217	G1 1/4					1.67
	flange	100	253			Φ115	Φ85	4- Φ14	3.87
	clamp	100	222			Φ50.5			3.11
32	thread	120	225	G1 1/2					1.99
	flange	120	269			Φ140	Φ100	4- Φ18	5.42
	clamp	120	2 25			Φ50.5			3.97
40	thread	140	23 1	G2					2.83
	flange	140	275			Φ150	Φ110	4- Φ18	6.62
	clamp	140	23 4			Φ64			4.77
50	thread	150	244	G2 1/2					3.83
	flange	150	290			Φ 165	Φ125	4- Φ18	8.35
	clamp	150	246			Φ78			5.97
65	thread	175	264	G3					5.16
	flange	175	3 07			Φ185	Φ145	8- Φ18	10.82
	clamp	175	2 60			Φ91			7.37
80	thread	200	274	G3 1/2					6.85
	flange	200	324			Φ200	Φ160	8- Φ18	12.27
	clamp	200	275			Φ106			8.92
100	flange	220	340			Φ220	Φ180	8- Φ18	15.37
	clamp	220	293			Φ 119			10.52
150	flange	300	398			Φ285	Φ240	8- Φ22	27.87
200	flange	360	450			Φ340	Φ295	12-Φ22	43.47

Ordering Code

SIN-LWGY -04-B0-M1-TH-NT-3-K0-WG									Description
SIN-LWGY	-	-	-	-	-	-	-	-	
Nominal Diameter	04								DN4(1/16")
	06								DN6(1/8")
	10								DN10(3/8")
	15								DN15(1/2")
	20								DN20(3/4")
	25								DN25 (1 ")
	32								DN32(1.25")
	40								DN40(1.5")
	50								DN50 (2 ")
	65								DN65(2.5")
	80								DN80 (3 ")
	1C								DN100 (4 ")
	1E								DN125 (5 ")
	1G								DN150 (6 ")
	2C								DN200 (8 ")
Process Connection		B0							G thread
		G2							GB/T9119 PN40
		G1							GB/T9119 PN16
		I0							ISO2852 Clamp
		XX							Others
Process Connection and Body Material			M1						304SS
Heat Resistance Temperature				TH					-20-120℃
				X					Others
Impeller Material					NT				430FSS
					MD				Duplex steel 2205
Measurement Range and Accuracy						3			Standard Range, Class 0.5
						2			Extended Range, Class 1.0
Output, Display, and Power Supply							K0		Pulse, No Display, 24VDC
							A0		Two-wire 4-20mA, No Display
							S1		No Output, Display, Battery Powered
							K1		Pulse, Display, 24VDC
							A1		Two-wire 4-20mA, display
							R1		RS485, Display, 24VDC
							XX		Others

Electrical Interface, Housing Material, and Protection Rating	WG	M20 × 1. 5 Cable Gland, Aluminum, IP65
	WF	Aviation Plug, IP00