



Datasheet

Turbine Flow Meter LWGY

Committed to process automation solutions

Turbine Flow Meter

LWGY

The LWGY turbine flow meter is connected to the converter through the flow sensor to realize multiple functions such as pulse output, current output, and on-site display. The flow meter has the characteristics of high precision, wide measurement range, long life, and simple operation and maintenance. It can be widely used in food, medicine, petrochemical, metallurgy, papermaking, and other industries. It is an ideal instrument for flow measurement. The flow meter is suitable for liquids that do not corrode stainless steel 304, 2Cr13, corundum (Al₂O₃), hard alloy, etc., and are free of impurities such as fibers and particles.

Applications

- petrochemical
- Pharmaceutical
- Paper industry
- Metallurgy
- Electric power
- Environmental protection
- Food and beverage



Features

- They are of high-accuracy.
- Easy to install and maintain.
- Can handle a wide range of flow rates, from low to high velocities.
- Can provide both digital and analog output signals.
- Can be constructed from various materials, such as stainless steel, brass, or plastic, to accommodate different fluid types

Turbine Flow Meter

Principle

When the liquid to be measured flows through the flow meter sensor, the internal impeller rotates with the kinetic energy of the liquid. At this time, the impeller blades cause the magnetic resistance in the

detection device to change periodically, so the two ends of the detection coil are induced and The electrical pulse signal proportional to the flow rate is amplified by the preamplifier and then sent to the display unit. The single-chip microcomputer system in the display unit performs calculations according to the measured pulse number and the instrument coefficient K of the flow meter and displays the instantaneous flow and the cumulative total.

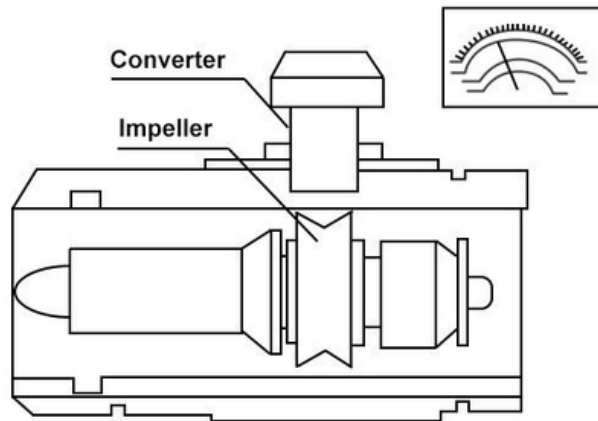


Figure 1

The relationship between the meter coefficient and instantaneous flow rate, frequency, pulse number, and the cumulative total is as follows: $K=f/Q$ and $K=N/V$ where: f —flow signal frequency (Hz) Q —instantaneous flow rate (m³/s, or /L/s) N —number of pulses V —total volume (m³) K —meter coefficient (1/m³ or 1/L)

Parameters	
Items	Main parameters
Measuring medium	Liquid (water, liquefied petroleum gas, refined oil, light crude oil, organic liquid, inorganic liquid, and other liquids without fiber and particle impurities)
Nominal diameter	DN4 – DN200 mm
Accuracy	0.5%R; 1.0%R
Medium viscosity	Less than 5×10^{-6} m ² /s (For liquids larger than 5×10^{-6} m ² /s, the flow meter should be calibrated with natural fluid before use)
Medium temperature	-20°C to +120°C (high temperature type) -20°C to +80°C (common type)
Environmental conditions	Ambient temperature: -20°C to +60°C Relative humidity: 5% – 90%
Atmospheric pressure	86kPa-106kPa
Power supply	3.6V、12VDC、24VDC
Output signal	Pulse signal, (4~20)mA current signal, Modbus communication
Protection grade	IP65 (IP67, IP68 agreement supply, pulse converter probe IP00)
Nominal pressure	1.0Mpa, 1.6Mpa, 2.5Mpa, 4.0Mpa, 6.3Mpa

Terminal Schematic

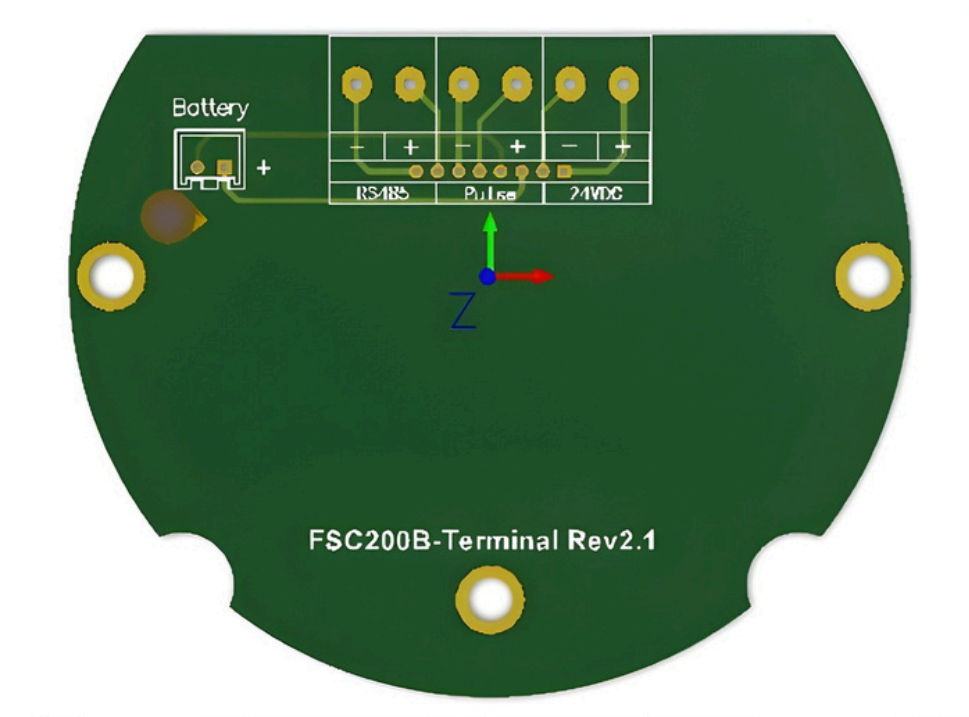
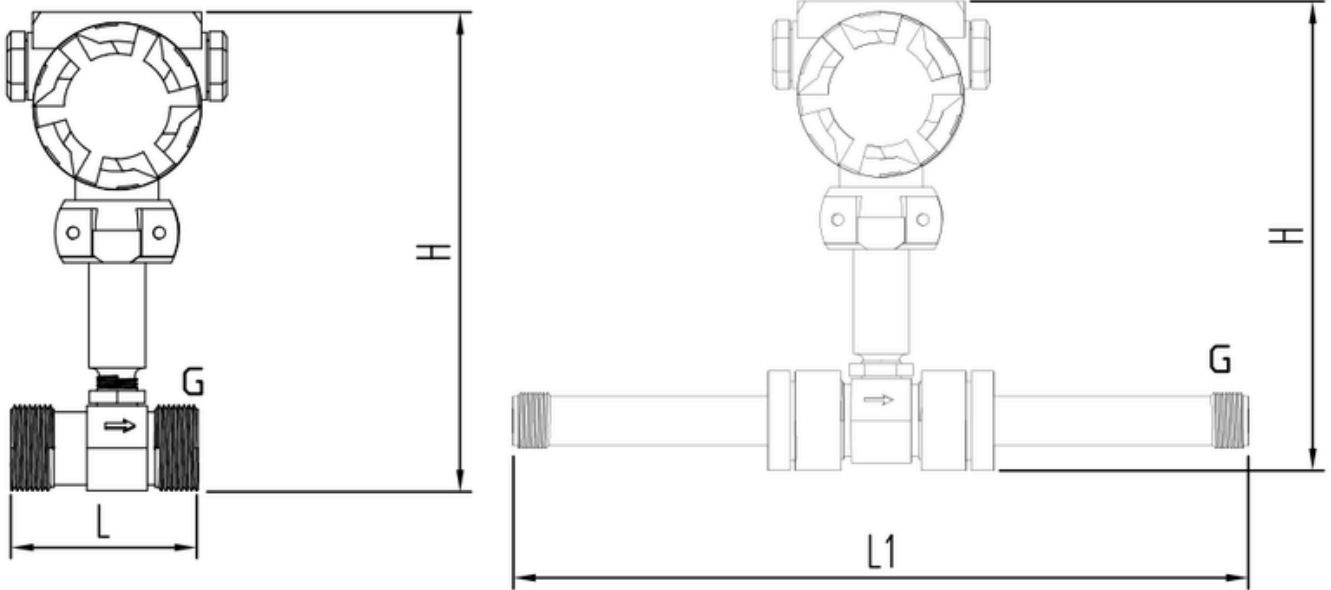


Figure 2

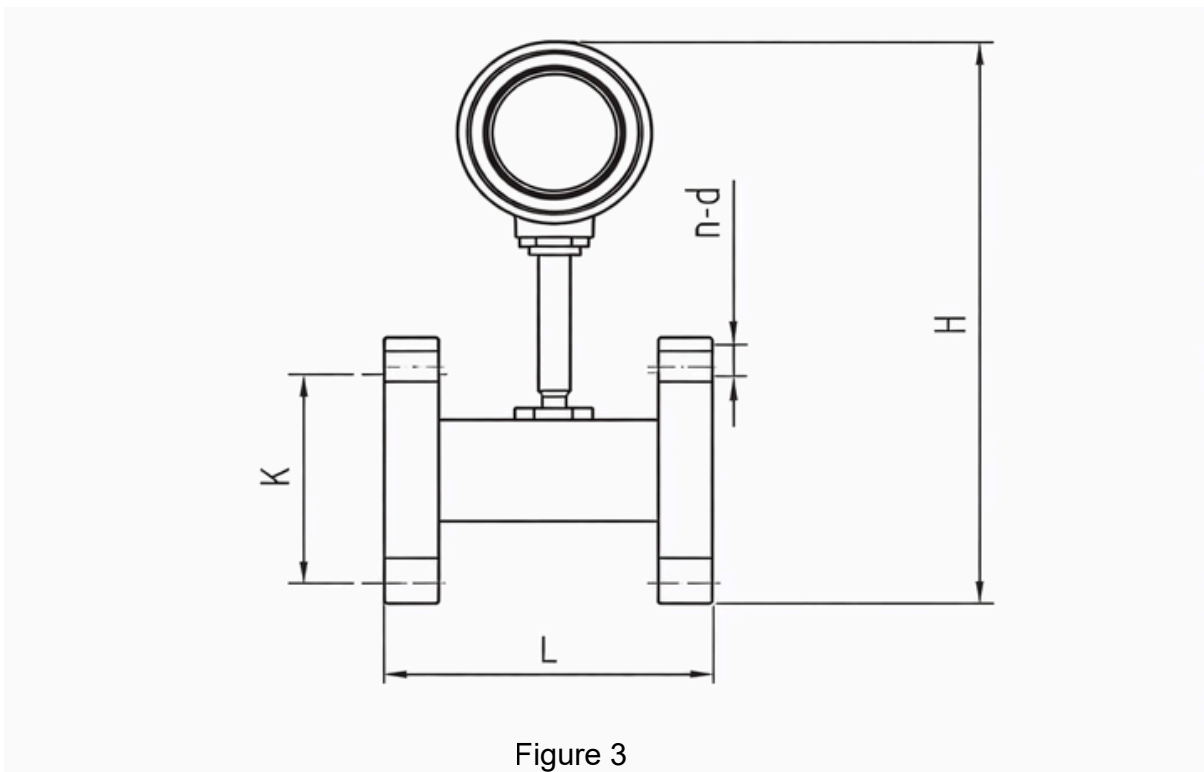
Terminal Board Wiring Instructions

Marked		Function	N
24VDC	+	DC 18-36V Power	Power supply 24V plus
	-	DC 18-36V Power	Power 24V-
<i>With a two-wire</i>			
Pulse	+	Frequency or pulse	The frequency or pulse output is passive
	-	Frequency or pulse	
RS485	+	RS485 Output . .	RS485 output
	-	RS485 Output -	

Dimension



DIN PN16 flange



Dimension

size	L(mm)	Thread G	D(mm)	K(mm)	H(mm)	d(mm)	n
DN4	225	G1/2					
DN6	225	G1/2					
DN10	345	G1/2	90	60		14	4
DN15	75	G1	95	65	260	14	4
DN20	85	G1	105	75	270	14	4
DN25	100	G1 1/4	115	85	280	14	4
DN32	120	G1 1/2	140	100	290	18	4
DN40	140	G2	150	110	300	18	4
DN50	150	G2 1/2	165	125	310	18	4
DN65	175	G3	185	145	330	18	4
DN80	200		200	160	340	18	8
DN100	220		220	180	360	18	8
DN125	250		250	210	390	18	8
DN150	300		285	240	420	22	8
DN200	360		340	295	470	22	12

Note: 1. The length of the flange connection meter body refers to the distance between the outermost end faces of the two flanges of the meter body.

2. The body length of DN4-DN10 includes the front and rear straight pipe sections and the length of the filter; due to a large number of connecting parts, there is a slight deviation in size.

3. Due to the wide variety of amplifiers, the height of the entire meter is the maximum height, and the actual product shall prevail.

Installation

- (1) The flow meter can be installed horizontally and vertically, and the fluid direction must be upward when installed vertically. The liquid should fill the pipe without air bubbles.
- (2) During installation, the liquid flow direction should be consistent with the direction of the arrow indicating the flow direction on the flowmeter housing. There should be at least a straight pipe section of 10 times the diameter at the upstream end, and a straight pipe section of no less than 5 times the diameter at the downstream end.
- (3) The flow meter should be far away from the external electromagnetic field. If it cannot be avoided, the necessary shielding measures should be taken.
- (4) In order not to affect the normal delivery of liquid during maintenance, a bypass pipeline should be installed at the place where the flow meter is installed (Figure 4).

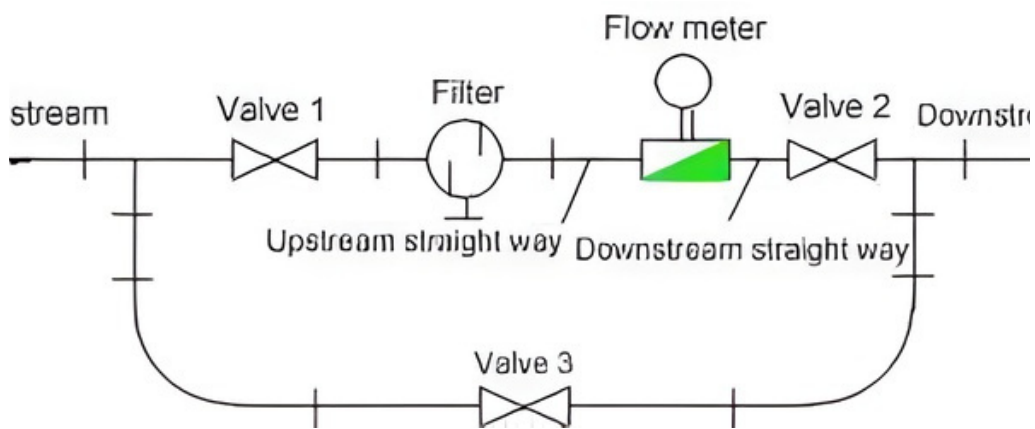


Figure 4

Installation

(5) When the flow meter is installed in the open air, please do the waterproof treatment of the amplifier and plug.

Caliber (mm)	Flow range(m ³ /h)	Extended flow rangem ³ /h)
4	0.04~0.25	0.04~0.4
6	0.1~0.6	0.06~0.6
10	0.2~1.2	0.15~1.5
15	0.6~6	0.5~5
20	0.8~8	0.45~9
25	1~10	0.5~10
32	1.5~15	0.8~15
40	2~20	1~20
50	4~40	2~40
65	7~70	5~70
80	10~100	7~100
100	20~200	10~200
125	25~250	13~250
150	30~300	15~300
200	80~800	40~800
Accuracy	0.5%	1.0%

Ordering code

Model		Code						Specification	
		LWGY						Turbine Flow Meter	
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")
	100								DN100(4")
	125								DN125(5")
	150								DN150(6")
200								DN200(8")	
Connection		FL							Flange
		JZ							Thread
		Z							Customized
Temperature			1						-20°C ~ +80°C
			2						-20°C ~ +120°C
Communication Protocol				N					No Communication Interface
				H					HART Protocol
				M					MODBUS Protocol
Impeller Material					M7				2cR13 SS
					MD				Duplex Steel 2205 (1)
Output						1			No Output
						2			Two-wire 4-20mA Output
						3			Pulse Output
Power Supply							DD		24V DC
								B	Battery 3.6V (2)
Body Material								S	SS304
								L	SS316
Flange Standard								DXX	D16 DIN PN16 Flange...
								AXX	A15 ANSI150# Flange...
								JXX	J10 JIS 10K Flange...
								XXX	Customized

Note:

(1): Recommended for use with ultrapure water

(2): Only for Display