



Recorder



Flow



Pressure



Temp



Analyzer



Level

Datasheet

Turbine Flow Meter

SUP-LWGY

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Datasheet**Turbine Flow Meter
SUP-LWGY**

The SUP-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.

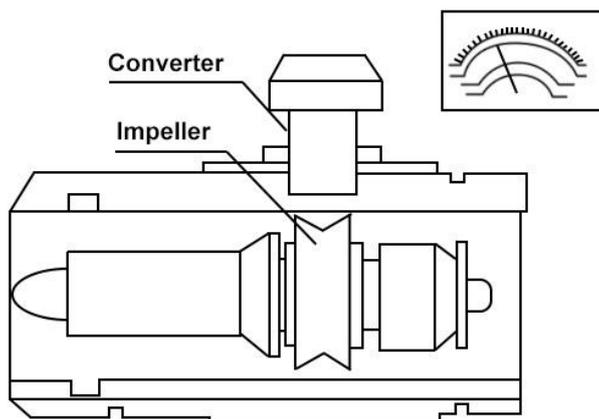


Figure 1

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

$$K=f/Q \text{ and } K=N/V$$

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 - DN200mm
Accuracy	0.5%; 1.0%
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-+120°C (high temperature type); -20°C-+80°C (common type)

Environmental conditions	Ambient temperature: -20°C-+60°C Relative humidity: 5%-90%
Atmospheric pressure	86kPa-106kPa
Power supply	3.6V lithium battery, 24VDC
Output signal	Pulse output; 4~20mA output; 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

Wiring

1. No Display (with Case) Amplifier Wiring Instructions

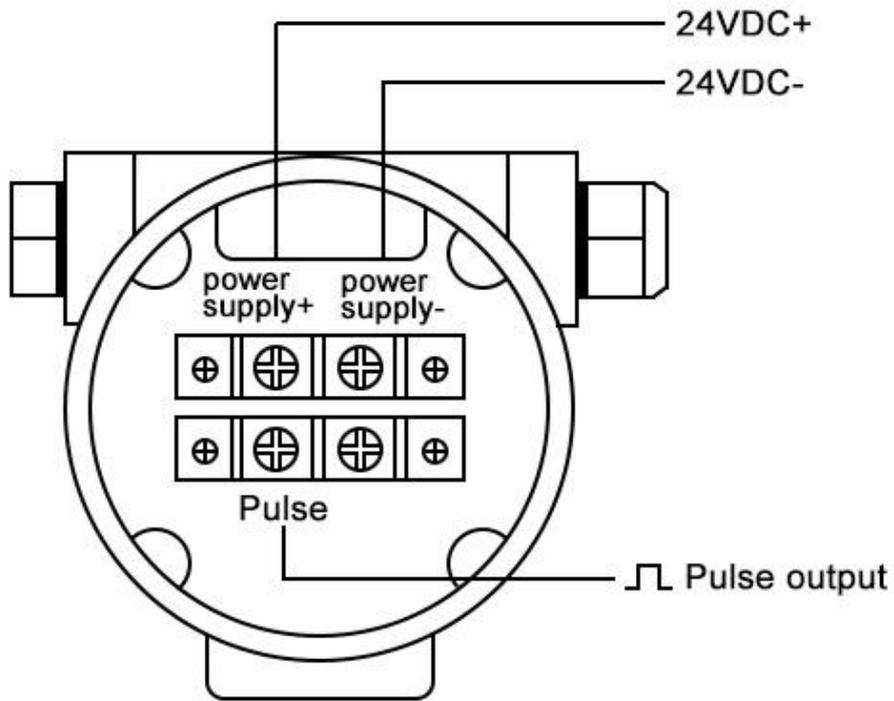


Figure 2 no display pulse output type wiring diagram

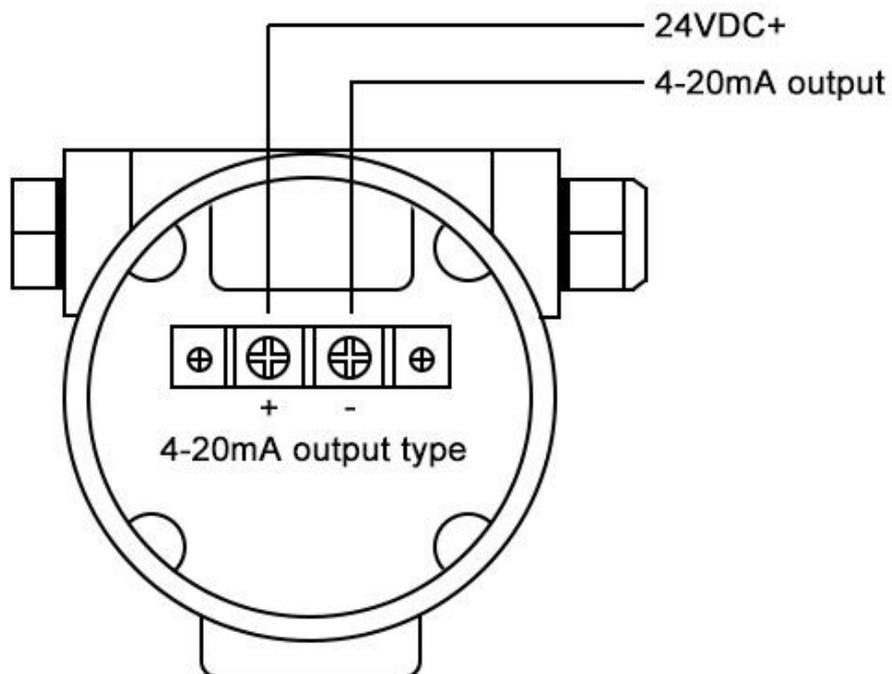


Figure 3 no display 4-20mA current output type wiring diagram

2. Intelligent On-site Display Amplifier Wiring Instructions

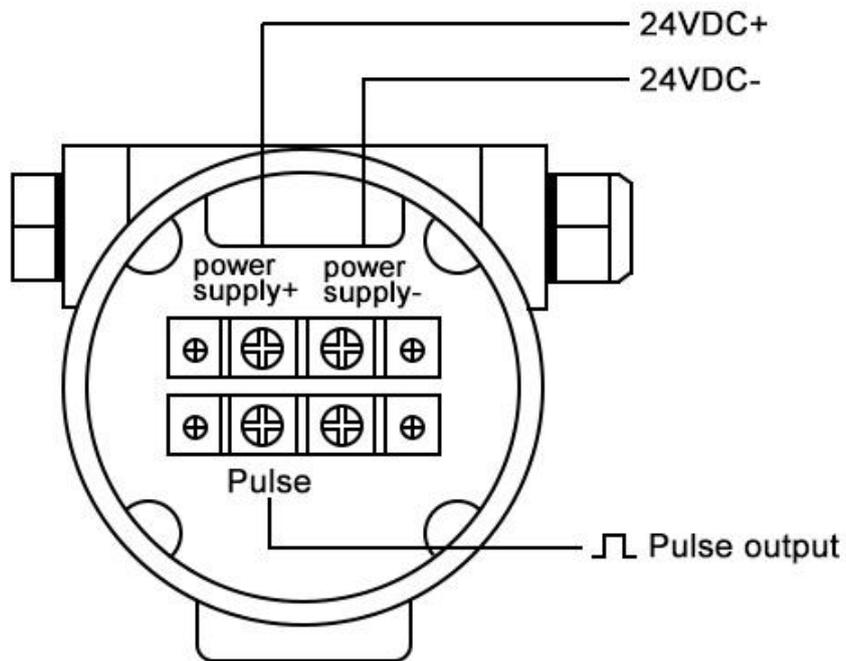


Figure 4 wiring diagram of intelligent display pulse output type

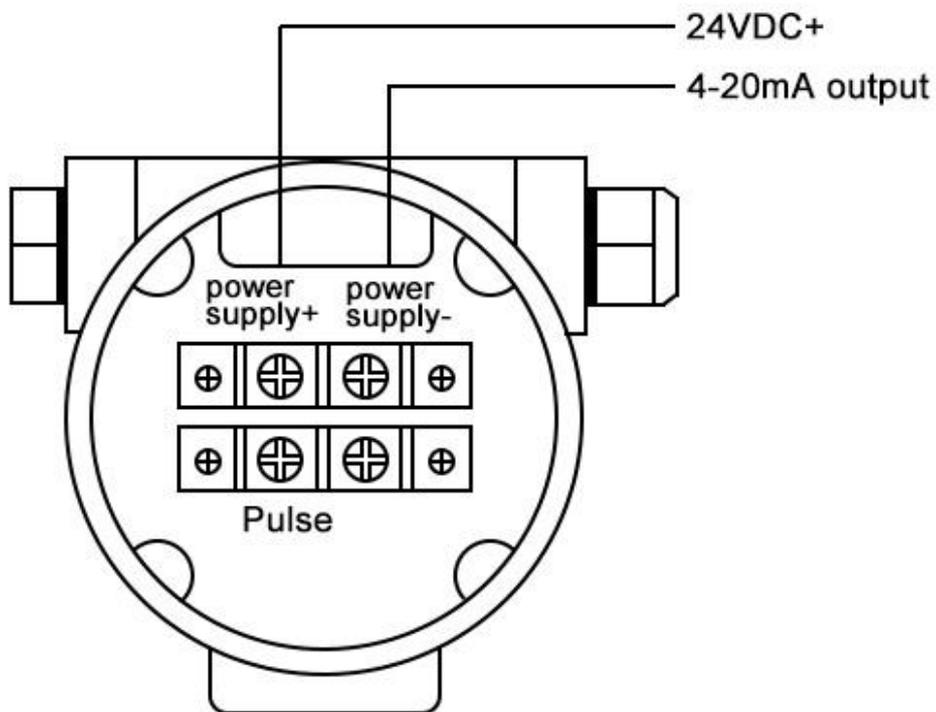


Figure 5 intelligent display 4-20mA current output wiring diagram

Dimension

1. Structure

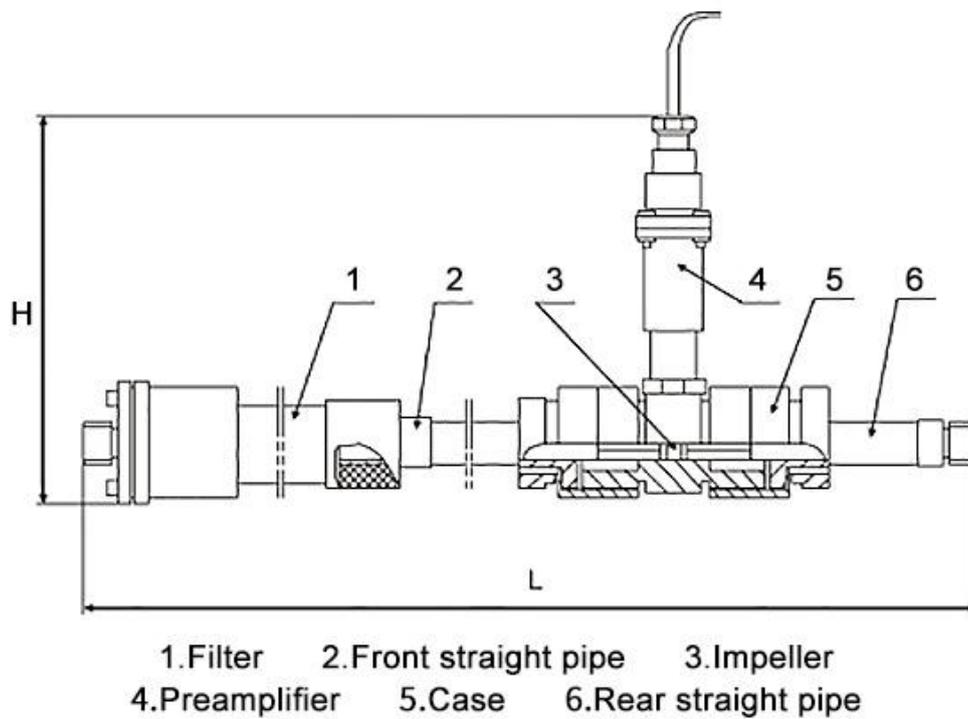


Figure 6 structure of SUP-LWGY turbine flow meter

2. Dimension

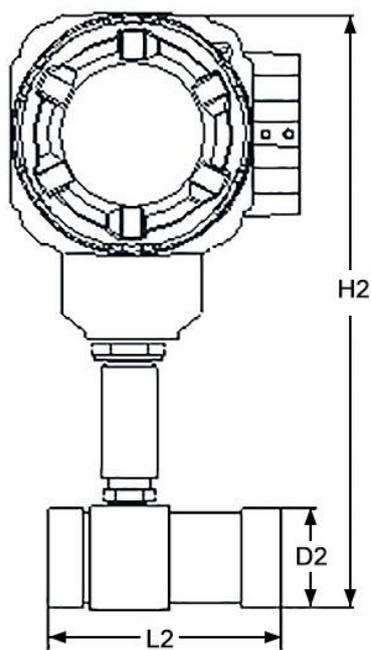


Figure 7 threaded connection type

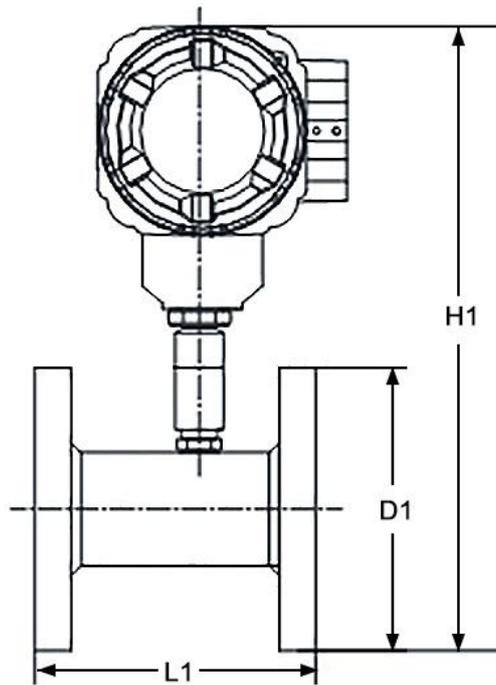


Figure 8 flange connection type

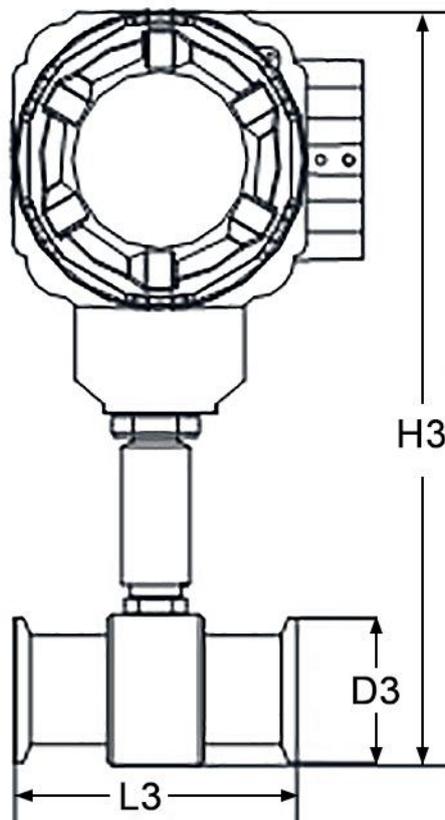


Figure 9 hygienic clamp connection type

Table 1 installation dimensions of flange connection type

Flange Connection Type (Pressure Resistance 1.6Mpa)						
Size	Meter body flange diameter D1	Meter body length L1	Flange bolt hole center distance	Flange bolt holes	The maximum height of the whole meter H1	Hassman connector Height of overall meter H1
DN4	DN15 flange 95	310 (Including front and rear straight pipe sections, filter)	65	4-Φ14	295	215
DN6	DN15 flange 95	310 (Including front and rear straight pipe sections, filter)	65	4-Φ14	300	215
DN10	DN15 flange 95	430 (Including front and rear straight pipe sections, filter)	65	4-Φ14	300	215
DN15	95	75	65	4-Φ14	300	215
DN20	105	85	75	4-Φ14	310	225
DN25	115	100	85	4-Φ14	315	230
DN32	140	140	100	4-Φ18	330	245
DN40	150	140	110	4-Φ18	340	255
DN50	165	150	125	4-Φ18	355	270
DN65	185	180	145	4-Φ18	370	285
DN80	200	200	160	8-Φ18	385	300
DN100	220	220	180	8-Φ18	405	320
DN125	250	250	210	8-Φ18	430	345
DN150	285	300	240	8-Φ22	465	380
DN200	340	360	295	12-Φ22	515	430

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.

Table 2 installation dimensions of threaded connection type

Threaded Connection Type (Pressure Resistance 6.3Mpa)				
Size	Thread type D2	Meter body length L2	The maximum height of the whole meter H2	Hassman connector Height of overall meter H2

DN4	G1/2	310 (Including front and rear straight pipe sections, filter)	265	190
DN6	G1/2	310 (Including front and rear straight pipe sections, filter)	265	190
DN10	G1/2	430 (Including front and rear straight pipe sections, filter)	265	190
DN15	G1	75	275	200
DN20	G1	85	275	200
DN25	G1 1/4	100	285	210
DN32	G1 1/2	140	290	215
DN40	G2	140	300	225
DN50	G2 1/2	150	315	240

Note:

1. The length of the threaded connection meter body refers to the distance between the outermost end faces of the two threads of the meter body.
2. The body length of DN4-DN10 is the length including the front and rear straight pipe sections and 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.

Table 3 installation dimensions of hygienic clamp connection type

Hygienic Clamp Connection Type (Pressure Resistance 1Mpa)				
Size	Chuck outer diameter size D3	Meter body length L3	The maximum height of the whole meter H3	Hassman connector Height of overall meter H3
DN4	50.5	380 (Including front and rear straight pipe sections, filter)	290	205
DN6	50.5	380 (Including front and rear straight pipe sections, filter)	290	205
DN10	50.5	500 (Including front and rear	290	205

		straight pipe sections, filter)		
DN15	50.5	75	290	205
DN20	50.5	85	290	205
DN25	50.5	100	290	205
DN32	50.5	140	290	205
DN40	63.5	140	300	215
DN50	77	150	315	230
DN65	91	180	330	245
DN80	106	200	345	260

Note:

1. The length of the clamp connecting the meter body refers to the distance between the outermost end faces of the two clamps of the meter body.
2. The body length of DN4-DN10 is the length including the front and rear straight pipe sections and the filter.
3. Due to the wide variety of amplifiers, the height of the entire meter is the maximum height, and the actual product shall prevail.

Ordering code

SUP-LWGY-DNXX-C-I1-RT1-J6-F1-P2-B1-MQ1-IP0											Description	
SUP-LWGY	-	-	-	-	-	-	-	-	-	-	-	DN4-DN200
Pipe size	DNXX-C											
Installation		I1										Threaded installation (DN4-DN50) (Conventional pressure resistance 6.3 MPa)
		I2										Flange installation (DN4-DN200) (Conventional pressure resistance 1.6 MPa)
		I3										Clamp installation (DN4-DN80) (Conventional pressure resistance 1.0 MPa)
Measuring range			RT1									Standard range
			RT2									Wide range (negotiation order)
			RT3									Other ranges (negotiation order)
Accuracy			J6									1.0% (preferred)
			J5									0.5%
Amplifier type				F1								No display Haasman connector amplifier pulse output (24VDC power supply, IP00, not waterproof)
				F2								No display Hassman connector amplifier 4-20mA output (24VDC power supply, IP00, not waterproof)
				F3								No display (with watch case) amplifier pulse output (24VDC power supply)
				F4								No display (with watch case) amplifier 4-20mA output (24VDC power supply)
				F5								LCD display amplifier without output (3.6V lithium battery power supply)
				F6								LCD display amplifier pulse output (24VDC power supply)
				F7								LCD display amplifier

						4-20mA output (24VDC power supply)
	F8					LCD display amplifier pulse output (3.6V lithium battery and 24VDC power supply)
	F9					LCD display amplifier 4-20mA output (3.6V lithium battery and 24VDC power supply)
Nominal pressure	P2					1.0 MPa
	P3					1.6 MPa
	P4					2.5 MPa
	P6					6.3 MPa
	PZ					Other nominal pressure
Pipe material	B1					304 stainless steel
	B2					306 stainless steel
Movement (impeller) material			MQ1			2Cr13 impeller (conventional)
			MQ2			Duplex Steel Impeller
Protection grade				IP0		IP00 (Pulse Converter Probes)
				IP1		IP65
				IP2		IP67
				IP3		IP68