

SLW Liquid Turbine Flow Meter

For Corrosive Liquid

Overview

SLW series Turbine Flow has its simple structure, light weight, high-accuracy, perfect repeatability, sensitivity, easy maintenance and use. SLW Series Liquid Turbine flow meters with PE material are used to measure corrosive liquids such as hydrochloric acid (HCL), nitric acid, acetic acid, sodium hydroxide, sulfuric acid (H₂SO₄), etc and other types of liquids with lower viscosity, and for applications requiring highly accurate and precise measurements. PE material is polyethylene, it is a thermoplastic resin material formed by free radical polymerization of ethylene monomer. Polyethylene is a kind of odorless, non-toxic, wax-like material with good low-temperature resistance, resistance to most acid and alkali corrosion and good chemical stability.



This kind of measured liquid has no impurities such as fiber and particles. The movement viscosity is lower than $5 \times 10^{-6} \text{ m}^2/\text{s}$ at working temperature. If the viscosity is higher than $5 \times 10^{-6} \text{ m}^2/\text{s}$, the flow meter should be calibrated in the liquid before use. It can finish batch control, alarm and etc, if matched with special digital controllers. It is also the ideal meter for flow measuring and energy saves.

Features

- High accuracy; Normal type can reach $\pm 1\%R$, $\pm 0.5\%R$. High accuracy type can reach to $\pm 0.25\%R$.
- Excellent repeatability, repeatability in a short time can reach to $0.05\% \sim 0.2\%$. Due to the excellent repeatability; customers can use it for trade purpose.
- Output pulse frequency signal, suitable for total flow measuring and connecting computer, no zero drift and strong ability in anti-noise.
- High frequency signal ($10\text{Hz} \sim 1.5 \text{ KHz}$), strong signal resolution.
- Wide turn down ratio, max 1:20
- Compact and light structure, convenience in installation and maintenance

Technical Specification

Table1

Manufacture Standard	Turbine flow meter (JB/T9246-1999)
Medium	Low viscosity($\leq 5 \times 10^{-6} \text{ m}^2/\text{s}$) liquid, no impurities
Flange Standard	DIN
Thread Standard	Flange
Accuracy	1.0%, 0.5%

Turn Down Ratio	1:10-1:20	
Calibration	Methods	Master meter calibration
		Static weigh mass flow calibration
	Environment	Environment temperature: 20℃
		Relative Humidity :65%
Working Condition	Medium temperature	T1: -20 ~80℃
	Environment temperature	-20 ~60℃
	Relative Humidity	5%-90%
	Atmospheric pressure	86Kpa-106Kpa
Enclosure Protection	SLW-N:IP60; others IP65	
Transmission Distance	No more than 1000 m	
Material	Housing: PE Bearings and Shaft: PE Rotor:PE	
Consumption	< 1W	
Communication	Modbus RTU/Hart Protocol options	



Flow Range & Connection & Pressure Rating

Table2

Size (mm)	Standard Flow (m3/h)	Extended Flow (m3/h)	Connection	Pressure Rating
DN15	0.6-6	0.4-8	Flange	1.6Mpa
DN20	0.8-8	0.45-9	Flange	1.6Mpa
DN25	1-10	0.5-10	Flange	1.6Mpa
DN32	1.5-15	0.8-15	Flange	1.6Mpa
DN40	2-20	1-20	Flange	1.6Mpa
DN50	4-40	2-40	Flange	1.6Mpa
DN65	7-70	4-70	Flange	1.6Mpa



Product Classification

SLW-N			Table 3
	No display, output pulse to upper computer, PLC, DCS., etc., Low cost and compact size, Enclosure Protection :IP60		
	Power supply	DC 24V	
	Consumption	< 0.5W	
	Input signal Frequency	0~3000Hz	
	Pulse output	Pulse load	>1000 Ω
		High level	>22V
		Low level	<0.8V
		Pulse width	1/2f _{in} ×1000(ms) *1

Insulation resistance*2	>500M Ω
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*1: f_{in} is electrical pulse signal frequency which is inducted by coils from rotor.

*2: Insulation resistance is the insulation between test terminal and housing

SLW-A		Table 4
No display, output 4-20mA to upper computer, PLC, DCS., etc., Low cost and compact size, Enclosure Protection :IP65		
Power supply		DC 24V
Consumption		< 0.5W
Input signal Frequency		0~3000Hz
4-20mA output	Current load	< 600 Ω
	Output	2 wire 4-20mA
Insulation resistance*2		>500M Ω

*1: f_{in} is electrical pulse signal frequency which is inducted by coils from rotor.

*2: Insulation resistance is the insulation between test terminal and housing

SLW-B		Table 5
With display, output 4-20mA to upper computer, PLC, DCS., etc., Multi-points correction function ,direct reading, not affected by outside power supply, thunder proof; \square 10 years data recorded after power off; Low cost and compact size, Enclosure Protection :IP65;		
Power supply		DC 3 V Battery powered
Min working voltage		>2V
Consumption	Working current	290 \pm 5uA
	Saving current	320 \pm 5uA *1
Battery Nominal Capacity		12Ah
Battery life time		56 months *2
Input signal Frequency		0~3000Hz
Insulation resistance		>500M Ω

*1 Saving current is the instant current peak value to save every 10 seconds when the transmitter in working status.

*2 Battery life time and working current is calculated value, Specific situations is different result.

SLW-C,C1,C2,C3		Table 6
With display, output 4-20mA or pulse to upper computer, PLC, DCS., etc.,Modbus or Hart Protocol options		
Power supply		DC24V
Consumption		< 0.5W
Input signal Frequency		0~3000Hz
Pulse output (Option)	Pulse load	>1000 Ω
	High level	>22V
	Low level	<0.8V
	Pulse width	1/2 f_{in} \times 1000(ms) *1
4-20mA output (Option)	Current load	< 700 Ω
	Output	4-20mA
Battery Nominal Capacity		12Ah

Insulation resistance*2	>500M Ω
Communication	RS485/Hart

*1: f_{in} is electrical pulse signal frequency which is inducted by coils from rotor.

*2: Insulation resistance is the insulation between test terminal and housing



Model Selection

Table 7

Item	Code	Description
General	SLW	Silver Liquid turbine flow meter
Nominal Diameter	DN15-65	DN16-65
Type	N	Without display, pulse output, 24VDC power supply
	A	Without display, 4-20mA output, 24VDC power supply
	B	With display, Battery powered, without output
	C	With display, 4-20mA output, 24VDC power supply
	C3	With display, Pulse output, 24VDC power supply
	C2	With display, 4-20mA output and Hart, 24VDC power supply
	C1	With display, 4-20mA output and RS485, 24VDC power supply
	Cx	Customized
Accuracy	10	$\pm 1.0\%$ of reading (DN4-DN10, DN125-DN200)
	05	$\pm 0.5\%$ of reading (In line type, DN15-DN100)
	S	Customized
Flow Range	S	Standard (refer to table 2)
	E	Extended (refer to table 2)
Housing Material	PE	PE
Rotor Material	PE	PE
Explosion Proof	N	Non explosion proof
Pressure rating	N	Standard 1.6Mpa
Temperature	T1	-20 ~80°C
Installation	FL	Flange connection
Addition option	H	With Hausman Connector

Sample: SLW-25/C/05/S/PE/PE/N/T1/FL

Liquid turbine flow meter, DN25, With display, 4-20mA output, 24VDC power supply, accuracy 0.5%, standard flow range 1-10m³/h, PE material, non explosion proof, 1.6Mpa, temperature: -20 ~80°C, flange connection.

Dimension

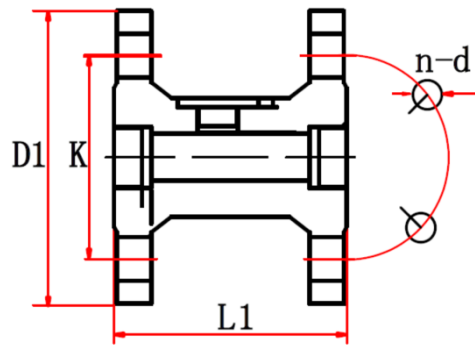


Table 8

Size (mm)	Flange				
	L1(mm)	D1(mm)	K(mm)	d(mm)	n(Hole)
15	75	95	65	14	4
20	80	105	75	14	4
25	100	115	85	14	4
32	140	140	100	14	4
40	140	150	110	18	4
50	150	165	125	18	4
65	170	185	145	18	4