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- frame body plan

#### theory

SN58 series precession vortex flowmeter integrates the function of flow, temperature and pressure detection, and can automatically compensate the temperature, pressure and compression factor. It is an ideal instrument for gas metering in petroleum, chemical, electric power, metallurgy and other industries.

The flow profile of the flow sensor is similar to the profile of a Venturi tube (as shown in the figure). A group of spiral guide vanes is placed at the entrance side. When the fluid enters the flow sensor, the guide vanes force the fluid to produce intense eddy flow. When the fluid enters the diffusion section, the vortex flow is affected by the backflow and begins to rotate twice, forming the phenomenon of gyroscopic vortex precession. The precession frequency is proportional to the flow rate and is not affected by the physical properties and density of the fluid. If the second rotation precession frequency of the fluid is measured by the detection element, good linearity can be obtained in a wide flow range. The signal is amplified by the preamplifier, filtered, and transformed into pulse signals proportional to the flow rate, and then sent to the microprocessor for integration processing together with the temperature and pressure test signals. Finally, the measurement results (instantaneous flow, cumulative flow, temperature and pressure data) are displayed on the LCD screen.

#### application

Widely used in petroleum, chemical, electric power, metallurgy, urban gas supply and other industries to measure a variety of gas flow, is the current oil and city gas transmission and distribution metering and trade metering of the first choice of products.

#### Main features

No mechanical moving parts, not easy to corrosion, stable and reliable, long life, long operation without special maintenance;;

- ◆ Using 16-bit computer chip, high integration, small size, good performance, the machine function is strong;
- ◆ Intelligent flowmeter integrates flow probe, microprocessor, pressure and temperature sensor in one, adopts built-in combination, makes the structure more compact, can directly measure the flow rate, pressure and temperature of the fluid, and automatic real-time tracking compensation and compression factor correction;
- ◆ The dual detection technology can effectively improve the detection signal strength and suppress the interference caused by pipeline vibration.
- ◆ Adopts the domestic leading intelligent anti-seismic technology, effectively inhibits the interference signal caused by vibration and pressure fluctuation;
- ◆ Adopt Chinese dot matrix display screen, display number is many, the reading is intuitive and convenient, can directly display the volume flow under the working state, the volume flow under the standard state, the total volume, to and the medium pressure, temperature and other parameters;
- ◆ Using EEPROM technology, convenient parameter setting, can be permanently stored, and can save up to one year of historical data;
- ◆ converter can output frequency pulse, 4 ~ 20mA analog signal, and has RS485
- ◆ Interface, can be directly networked with microcomputer, transmission distance up to 1.0km;
- ◆ Multi-physical parameter alarm output, one of which can be selected by users;
- ◆ The head of the flowmeter can rotate 360 degrees, easy to install and use;
- ◆ with the company's FM data collector, can be through the Internet or telephone network for remote data transmission
- ◆ Pressure and temperature signal for sensor input mode, strong interchangeability;
- ◆ The whole machine has low power consumption and can be powered by internal battery or external power supply.

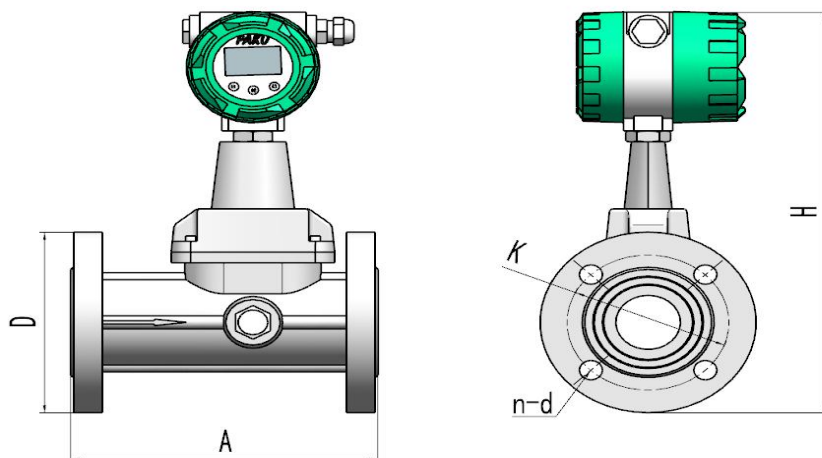
## Technique Data

Meter diameter	15mm、20mm、25mm、32mm、40mm、50mm、65mm、80mm、100mm、125mm、150mm、200mm
nominal pressure	1.6MPa、2.5MPa、4.0MPa
compensation	Double temperature and pressure compensation
output signal	Pulse, 4–20mA, RS485, IC card signal
communication protocol	Modbus–RTU, HART (custom made)
power supply	1. External 24VDC DC power supply. 2. Battery–powered, 3.6 lithium batteries.
service conditions	Medium temperature :–20° C–80° C Ambient temperature :–30° C–60° C Relative humidity :5%–90% Atmospheric pressure :86kPa–106kPa
Protection grade	IP65、IP67
anti–hazard classification	Ex ia IIC T6 Ga
applicable medium	Natural gas, compressed air, nitrogen and other low flow rate gas
Range than	1 : 10–1 : 15
accuracy	1.0、1.5
Material	Aluminum Alloy/Stainless Steel
product standard	SY 6658–2006
installation direction	Install horizontally or vertically

## Range table

Nominal diameter DN ( mm )	range of flow (m <sup>3</sup> / h)	working pressure ( MPa )	accuracy class	repeatability
15	1.0–10	1.6 2.5 4.0 6.3	1.0 1.5	Less than the absolute value of the fundamental error limit 1/3
20	1.5–15			
25	3.0–30			
32	6.0 ~ 60			
40	7.0 ~ 70			
50	12 ~ 150			
65	20 ~ 300			
80	40 ~ 400			
100	80 ~ 900			
125	80–1000			
150	150 ~ 1500			
200	240 ~ 3600	1.6;2.5;4.0		

dimension figure



size specification

nominal diameter DN(mm)	nominal pressure (MPa)	boundary dimension ( mm )		The table body material		weight (kg)
		The length of the table A	altitude H	stainless steel	aluminium alloy	
20	1.6/2.5/4.0	160	360	√	√	6
	6.3/10/16	160	365	√		8
25	1.6/2.5/4.0	180	367	√	√	7
	6.3/10/16	180	378	√		10
32	1.6/2.5/4.0	200	383	√	√	9
	6.3/10/16	200	402	√		12
40	1.6/2.5/4.0	230	383	√	√	9
	6.3/10/16	230	402	√		12
50	1.6/2.5/4.0	230	403	√		9
	6.3/10/16	230	421	√		14
65	1.6/2.5/4.0	285	421	√		11
	6.3/10/16	285	438	√		14
80	1.6	330	438	√	√	14
	2.5/4.0	330	438	√		18
	6.3/10/16	330	446	√		21
100	1.6	410	468	√	√	14
	2.5/4.0	410	475	√		18
	6.3/10/16	410	483	√		33
150	1.6	585	542	√	√	21
	2.5/4.0	585	549	√		52
	6.3/10/16	585	572	√		72
200	1.6	700	618	√	√	41
	2.5	700	626	√		117
	4.0	700	634	√		127

Selection table

SN58–	A	A	4	B4	A	D	specification
SN58–							SN58 series precession vortex flowmeter
	A						ordinary type
	B						flame–proof type
	C						Economical stand–alone version: IC card gas control (optional, see SN59 series for details)
	D						Precision stand–alone version: IC card gas control (optional, see SN59 series for details)
	E						Precision network version: IC card gas control (optional, see SN59 series for details)
		A					Range: 1.0–10m³/H (corresponding pipeline: DN15)
		B					Range: 1.5–15m³/H (corresponding pipeline: DN20)
		C					Range: 3.0–30m³/H (corresponding pipeline: DN25)
		D					Range: 6.0 ~ 60m³/H (corresponding pipeline: DN32)
		E					Range: 7.0 ~ 70m³/H (corresponding pipeline: DN40)
		F					Range: 12 ~ 150m³/H (corresponding pipeline: DN50)
		G					Range: 20 ~ 300m³/H (corresponding pipeline: DN65)
		H					Range: 40 ~ 400m³/H (corresponding pipeline: DN80)
		I					Range: 80 ~ 900m³/H (corresponding pipeline: DN100)
		J					Range: 80–1000m³/H (corresponding pipeline: DN125)
		K					Range: 150 ~ 1500m³/H (corresponding pipeline: DN150)
		L					Range: 240 ~ 3600m³/H (corresponding pipeline: DN200)
			4				4–20 ma output
			C				pulse output
			R				RS485 output
			CR				Equivalent pulse output +RS485 output
			M				MODBUS–RTU ( customization )
			H				HART ( customization )
				B16			Pressure resistance: 16bar, selection B16
				B25			Pressure resistance: 25bar, type B25
				B40			Pressure resistance: 40bar, type B40
				B63			Pressure resistance: 63bar, type B63
				B...			Custom compression
					A		Accuracy: grade 1.0
					B		Accuracy: Level 1.5
						D	External 24VDC DC power supply
						C	Battery powered, 3.6 lithium battery

\* The selection table is only available for parameter selection, and the corresponding code is delivered.