KLINGER GAS TURBINE

Flow meter

The gas turbine flowmeter is a kind of velocity flow meter that accurately measures gas flow. It has the advantages of simple and light structure, high measurement accuracy, good repeatability, wide measurement range, convenint installation and mantance, etc.

It is widely used in the measurement of various gases such as natural gas, city gas, propane, butane, air, nitrogen, and other gases in petroleum, chemical industry, metallurgy, aviation, scientific research, and other departments and industrial fields. Due to its high precision and good repeatability, the instrument is suitable for trade measurement and industrial process detection.

FEATURES

- High precision, good repeatability, small pressure loss, and good seismic performance.
- Use high-quality bearings, with small friction resistance, good sealing performance, and hand name.
- Integrating a microprocessor, a flow sensor, a high-precision temperature sensor, and a pressure sensor, directly measuring the flow rate, the temperature, and the pressure of the measured gas, and automatically performing flow tracking compensation and compression factor correction operation.

PRODUCTS GALLERY

Temperature & Pressure Compensation Converter with flange connection

Temperature & Pressure Compensation Converter with thread connection

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TECHNICAL DATA

DIAMETER	DN25-DN300 (DN25-DN50 supports thread connection; DN25-DN300 supports flange connection)
ACCURACY	±1.5% as default; ±1.0% is optional
TURNDOWN RATIO	1:10; 1:20; 1:30
MATERIAL	SS304 and SS316L for the body; Rotor: SS304 and SS316L (selected by actual sensor material)
AMBIENT TEMPERATURE	-20°C to +60°C
MEDIUM TEMPERATURE	-20°C to +80°C
PROTECT LEVEL	IP65
OUTPUT	Pulse, 4~20mA
COMMUNICATION	Modbus-RS485
REAL-TIME RECORDING FUNCTION	Start-stop record, daily record, time interval record
POWER SUPPLY	24V DC as default; battery is optional
ELECTRICAL INTERFACE	M20*1.5
EXPLOSION-PROOF	ExdIICT4
PROCESS CONNECTION	Flange and Thread

FLOW RANGE & PRESSURE RATING

DN (MM)	FLOW RANGE (M3/H)		MAX PRESSURE LOSS (KPA)
25	S	4-40	1.5
40	S	6-65	1.5
50	S	5-70	0.5
	L	6-100	1.0
80	S	8-160	1.0
	L	20-400	2.5
100	S	20-400	1.0
	L	32-650	1.5
150	S	50-1000	1.0
	L	80-1600	2.0
200	S	80-1600	0.5
	L	125-2500	1.0
250	S	125-2500	0.5
	L	200-4000	1.5
300	S	200-4000	1.0
	L	325-6500	1.5

Note: 1. The maximum pressure loss is the pressure loss when the flowmeter works at the maximum flow point, the medium is air, and the temperature is normal.
2. DN20, DN32, DN65, and DN125 are non-national standard products and need to be customized.

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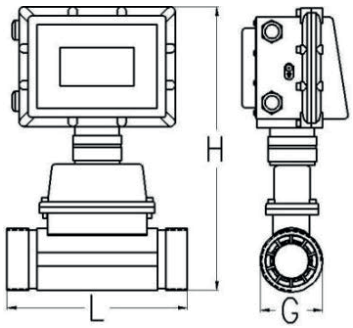
INSTALLATION DIMENSION

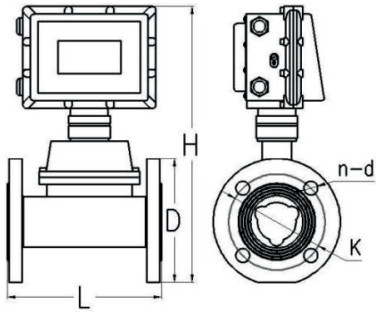
Threaded Connection Dimensions



Thread connection diagram

DN (MM)	L (MM)	H (MM)	G (MALE THREAD)
25	200	310	G2
40	200	310	G2
50	250	325	G2 1/2

Threaded Connection Dimensions



Flange connection diagram

DN (MM)	L (MM)	D (MM)	K (MM)	H (MM)	D (MM)	N (HOLE COUNT)	MAX PRESSURE RATING
25	200	115	85	330	14	4	1.6 MPa
40	200	150	110	355	18	4	
50	200	165	125	370	18	4	
65	200	185	145	390	18	4	
80	240	200	160	400	18	8	
100	300	220	180	425	18	8	
125	350	250	210	455	18	8	
150	350	285	240	485	22	8	
200	400	340	295	545	22	12	
250	400	405	355	605	26	12	
300	400	460	410	670	26	12	

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CONVERTER DISPLAY CONTENT & BASIC PARAMETERS SETTINGS

Self-check is performed when power on. If abnormal, the self-check error interface will be displayed, and it will jump to the main interface after about 1 to 2 seconds. Otherwise, it will jump directly to the main interface.

- Total flow: cumulative flow, the displayed value can retain 4 decimal places, the maximum value is 9999999999;
- Flow rate under working conditions: the minimum display value retains 3 decimal places, and the maximum value is 9999m3/h ;
- Standard flow rate: the minimum display value retains 3 decimal places, and the maximum value is 99999Nm3/h;
- Pressure: The minimum value displayed is 3 decimal places, and the maximum value is 99999;
- Temperature: the display value range is -50°C-300°C;
- External power supply: display when DC24V power supply;
- Battery power prompt, display battery level.

KEY DESCRIPTION

Some parameters need to be manually set by pressing the keys. There are four buttons, the order from left to right is SET, SHT, INC, RST:

SYMBOL	NAME	FUNCTION
SET	Set key	1. Enter the parameter setting; 2. Switch and display each parameter item; 3. Confirm to save the new parameter value.
SHT	Shift key	Make each bit of the parameter flash in turn
INC	Add key	Make a bit of the parameter blink from 0 to 9
RST	Escape key	Exit the setting interface and enter the flow display interface

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WIRES TERMINAL DESCRIPTION

Sensor Wiring Terminal Description

FLOW SIGNAL			PRESSURE SENSOR				TEMPERATURE SENSOR		
1	2	3	4	9	10	11	12	13	14
VCC	S1	S2	GND	IP+	VP+	VP-	IP-	T1	T2

1	2	3	4	5	6	7	8	9	10	11	12
A	B	I-	I+	V+	V-	PL	DL	IC	BC	BL	GND

External Terminal Description

The instrument accepts the processed signal and can supply power to the signal processing board. The wiring method is as follows:

VCC	Power supply 3V
S1	Frequency input
GND	Public place

T1	Pt100 (1)
T2	Pt100 (2)

Temperature Sensor (Pt100 or Pt1000):

IP+	Pressure sensor power supply+;
VP+	pressure sensor signal+;
VP-	pressure sensor signal-;
IP-	Pressure sensor power supply-;

Pressure Sensor

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MODEL SELECTION

SPECIFICATIONS	SUFFIX CODE							DESCRIPTION
LWQ								Gas Turbine Flowmeter
DIAMETER	XXX							Stand for diameter 020:DN20; 050: DN50 100: DN100; 300 DN300
CONVERTER TYPE		D						24V DC;4-20mA/ pulse output; Digital display (round shape) without compensation
		PT						24V DC;4-20mA/ Pulse output; Digital display Temperature & Pressure Compensation (Modbus RS485 is optional for D & PT type)
ACCURACY			10					± 1.0 % of rate
			15					± 1.5 % of rate
BODY MATERIAL				S4				SS304
				S6				SS316L
ROTOR MATERIAL					S4			SS304
					S6			SS316
EXPLOSION-PROOF						BT		-40~100 °C
						NA		-40~250 °C
CONNECTION							THM	Male Thread; Available from DN25-DN50
							THF	Female Thread; Available from DN25-DN50
							DXX	DN16: DIN PN16 Flange; D25: DIN PN25 Flange
							AXX	A15: ANSI 150# Flange; A30: ANSI 300# Flange
							JXX	J10: JIS 10K Flange; J20: JIS 20K Flange

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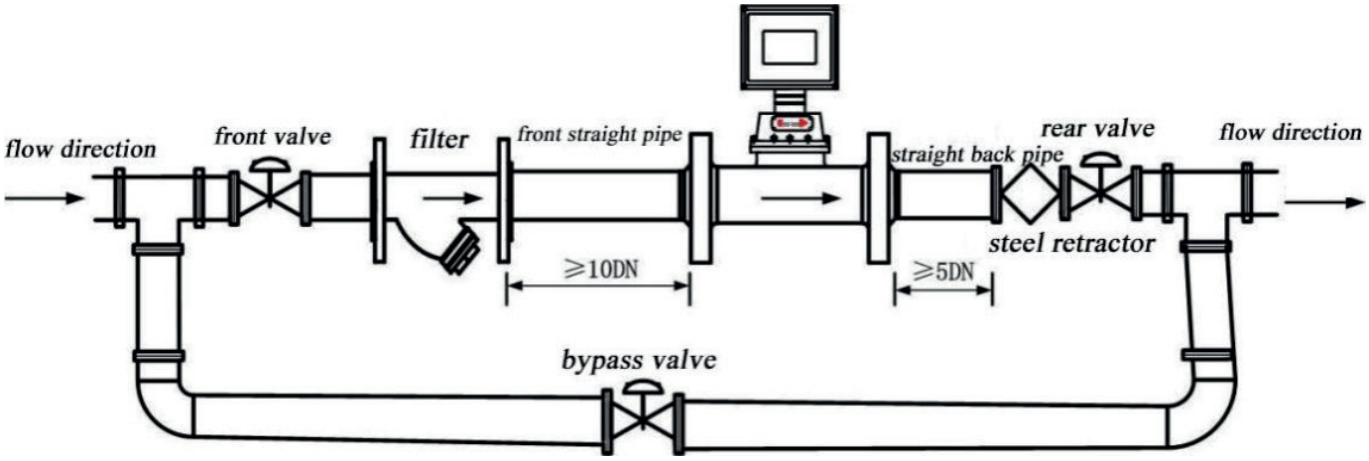
INSTALLATION DIMENSION

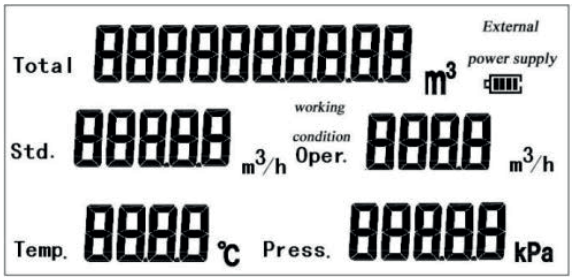


Installation Location

- It is strictly forbidden to weld the pipeline flange of the flowmeter online. The flowmeter should be removed before welding.
- Before installing the flowmeter, the debris, welding slag and dust in the pipeline should be cleaned up.
- In order to facilitate maintenance and not affect the normal transmission of fluid, it is recommended to set up the bypass pipeline as shown in Figure 4-3 above.
- To prevent impurities from entering the flowmeter, a filter must be installed.
- The flowmeter should be installed horizontally. It is recommended to install a steel expansion joint (compensator) on the back side of the straight pipe section behind the flowmeter. The expansion joint must meet the requirements of the nominal diameter and nominal pressure of the pipeline design. The expansion joint is used to compensate the pipeline stress and facilitate the installation and disassembly of the flowmeter.
- If it needs to be installed vertically, it should be specified when ordering, and the product needs to be configured accordingly. When installing and using, the airflow direction should be from top to bottom.
- When the flowmeter is installed outdoors, it is recommended to add a protective cover to avoid rainwater immersion or scorching sun exposure, which will affect the service life of the flowmeter.
- There should be no strong external magnetic field interference and strong mechanical vibration around the flowmeter.
- The flowmeter needs to be grounded reliably, but it must not be shared with the ground wire of the strong power system.

CONVERTER DISPLAY CONTENT & BASIC PARAMETERS SETTINGS

Self-check is performed when power on. If abnormal, the self-check error interface will be displayed, and it will jump to the main interface after about 1 to 2 seconds. Otherwise, it will jump directly to the main interface. After the main interface is started, the following figure is shown:



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