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Gas Turbine Flowmeter

Model: KGFT



Application

- Oil and Gas Industry: Gas turbine flow meters are widely used for measuring the flow of natural gas, petroleum gas, and other gases in oil and gas fields, pipeline transportation, and natural gas trade settlements.

- Urban Gas Distribution Networks: In urban gas supply systems, gas turbine flow meters are used to measure the flow of gas in distribution networks, ensuring accurate allocation and billing.

- Chemical Industry: They are used to measure the flow of various gases in chemical production processes, such as hydrogen, oxygen, and nitrogen, to ensure precise control of chemical reactions.

- Steel and Metallurgy Industry: Gas turbine flow meters are used to monitor the flow of gases like blast furnace gas, coke oven gas, and converter gas in steel production processes to optimize combustion and energy utilization.

- Power Generation and Cogeneration: In power plants, they are used to measure the flow of steam, natural gas, and other media to optimize energy efficiency.

- Food and Beverage Industry: They are used to monitor the flow of gases such as carbon dioxide and nitrogen in production processes to ensure product quality and production efficiency.

- Aerospace Industry: In rocket engine testing, aircraft propulsion systems, and environmental control and life support systems, gas turbine flow meters are used to measure the flow of fuel and gases.

- Pharmaceutical Industry: They are used to measure the flow of gases like oxygen and nitrogen in production processes to ensure precision and safety.

- Environmental Protection: Gas turbine flow meters are used to monitor atmospheric gas flow and exhaust emissions to meet environmental regulations.

Features

- Temp. & pressure compensation
- Digital absolute pressure transmitter
- Segment LCD, displays normally at -30℃
- Integrated movement
- Communication: Modbus RS485
- Simultaneous display flow rate, total flow volume, pressure & temp.

Advangates

- Wide Rangeability: These flow meters have a wide rangeability, meaning they can accurately measure flow rates across a broad spectrum, from
very low to very high flows. This versa lity makes them suitable for applica ons with fluctua ng flow condi ons.

- Fast Response Time: Turbine flow meters have a rapid response me, allowing them to quickly detect changes in flow rates. This feature is par cularly useful in dynamic systems where real- me monitoring and control are essen al.

- Repeatability: Turbine flow meters offer excellent repeatability, ensuring consistent measurement results under the same opera ng condi ons.
This reliability is crucial for process control and quality assurance.

- Low Pressure Drop: Turbine flow meters are designed to have minimal pressure drop across the meter. This low pressure loss ensures energy efficiency and reduces opera onal costs, especially in applica ons with high flow rates.

- Simple and Robust Design

- Low Maintenance Requirements

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Gas Turbine Flow Meter Product Series

			
E Type (SS304)	E Type (Cast Aluminum)	T3 Type (SS304)	T3 Type (Cast Aluminum)

Technical Data

Diameter	DN25-DN400
Ambient Temp.	-20°C~+60°C
Fluid Temp.	-25°C~+55°C
Accuracy	±1.0% of Rate; ±1.5% of Rate
Humidity	5%~90%
Ambient Pressure	86kpa-106kpa
Power Supply	DC24V / DC3.6V Battery
Power Consumption	<2.4W / <2mW
Protection	IP65
Explosion Proof	ExiaIICT4Ga; ExdIICT6Gb
Output	Pulse; 4-20mA
Rotor Material	Aluminum Alloy
Body Material	SS304; SS316; Cast Aluminum
Max Pressure	6.3 Mpa

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Model Selection

Model	Suffix Code							Description
KGTF	❶	❷	❸	❹	❺	❻	❼	Gas Turbine Flow Meter
Diameter	XXX							Stand for diameter 020: DN20; 050: DN50 100: DN100; 400: DN400
Converter Type		E1						Battery power supply; No output; Ex; Digital display
		E2						24V DC; 2 - wire 4-20mA/ Pulse output; Ex; Digital display
		E4						24V DC; 0-20mA/ Pulse output; Local display; Ex; Digital display
		T3						24V DC; 2 wires 4-20mA/ Pulse output; Digital display; Temperature & Pressure Compensation; RS485; Ex
		Notice:						1) Modbus RS485 is optional for E type and T3 type
								2) Battery Power is optional for E1, E2, T3
Accuracy			10					±1.0% of rate
			15					±1.5% of rate
Flow Range				S				Standard Range: S;S1; S2 optional
				S1/S2				Extended Range
Body Material					S4			SS304
					S6			SS316 (Consult factory)
					CA			Cast aluminum (DN25~DN200)
Explosion Proof						BT		Exd II CT6 Gb (Available for E type)
						CT		Exia IIC T4Ga (Available for T3 type)
Connection							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...

Gas Turbine Flow Meter Selection Guide

LWQ – 50 –E1 – 10 – S – S4 – BT – DXX

LWQ: Gas Turbine Flow Meter
50: DN50
E1: Battery power supply; No output; Ex; Digital display
10: ±1.0% of rate
S:Standard Range: S;S1; S2 optional
S4: SS304
BT: Exd II CT6 Gb
D16: DIN PN16 Flange

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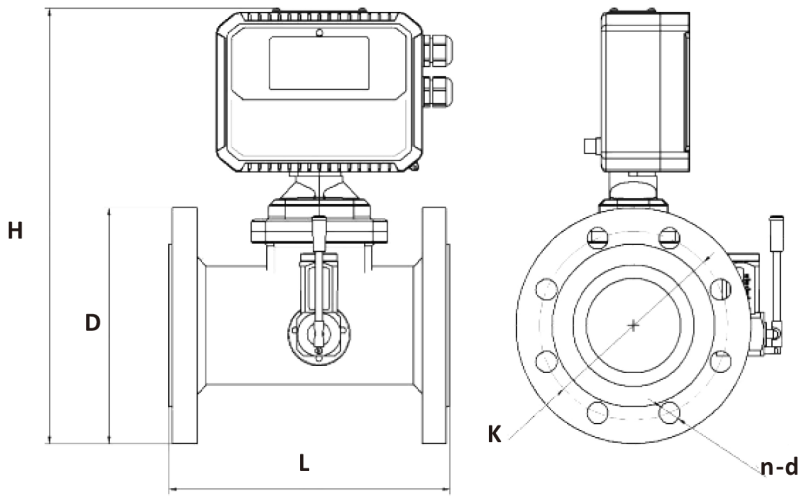
Flow Range

Diameter (mm/inch)	Code	Flow Range (m^3/h)	Max Pressure loss (kPa)	Connection
25 (1")	S	4-40	1.5	Flange
40 (1.5")	S	6-65	1.5	
50 (2")	S	7-70	0.5	
50 (2")	S1	10-100	1.0	
50 (2")	S2	16-160	1.0	
65 (2.5")	S	13-250	1.0	
80 (3")	S	13-250	1.0	
80 (3")	S1	20-400	2.5	
100 (4")	S	20-400	1.0	
100 (4")	S1	32-650	1.5	
150 (6")	S	32-650	1.3	
150 (6")	S1	50-1000	1.0	
150 (6")	S2	80-1600	2.0	
200 (8")	S	80-1600	0.5	
200 (8")	S1	130-2500	1.0	
250 (10")	S	130-2500	0.5	
250 (10")	S1	200-4000	1.5	
300 (12")	S	200-4000	1.0	
350 (14")	S	400-6000	1.5	
400 (16")	S	650-6000	2.0	

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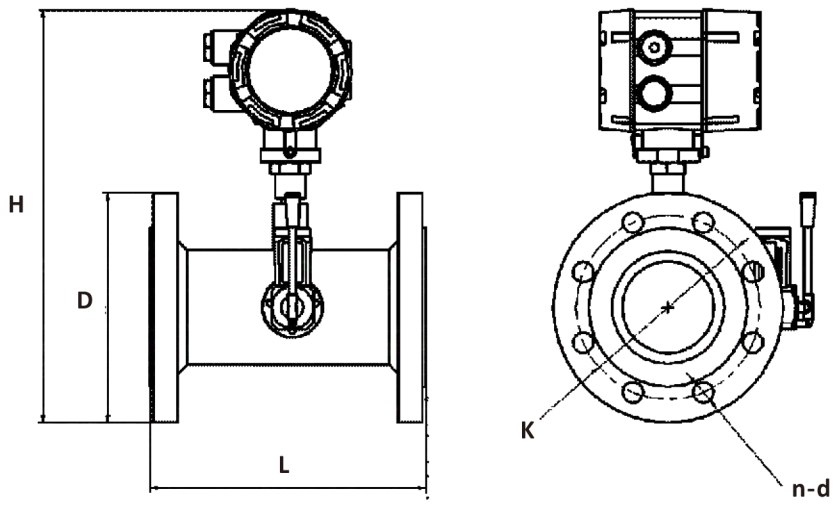
Technical Drawings

Diameter	Range	Standard Length (L)	Customizable Length Range	D	K	H	d	n (Holes)	Weight (kg)
DN25	PN40 and below	200	L~220	115	85	310	14	4	8.2
DN40	PN40 and below	200	L~220	150	110	330	18	4	9.1
DN50	PN40 and below	200	L~230	165	125	345	18	4	10.8
DN65	PN16	240	Not customizable	185	145	370	18	8	12.6
DN80	PN16	240	L~280	200	160	375	18	8	14.2
DN100	PN16	300	L~350	220	180	400	18	8	20.2
DN150	PN16	450	L~550	285	240	455	22	8	35
DN200	PN16	600	L~700	340	295	500	22	12	57.6
DN250	PN16	500	L~600	405	355	560	26	12	66.2
DN300	PN16	300	L~400	460	410	610	26	12	79.5
DN350	PN16	350	L~500	520	470	670	26	16	102
DN400	PN16	400	L~500	580	525	730	30	16	133.7



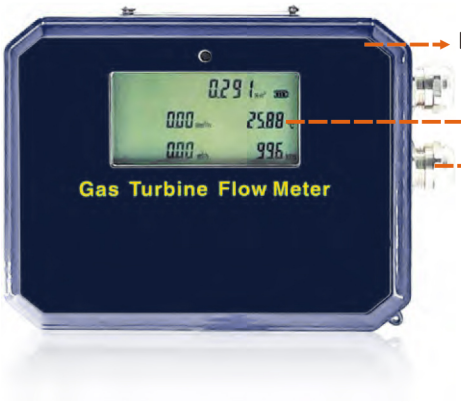
T3 type dimensions

Diameter	Range	Standard Length (L)	Customizable Length Range	D	K	H	d	n (Holes)	Weight (kg)
DN25	PN40 and below	200	L~220	115	85	310	14	4	9.1
DN40	PN40 and below	200	L~220	150	110	335	18	4	10
DN50	PN40 and below	200	L~230	165	125	350	18	4	11.6
DN65	PN16	240	Not customizable	185	145	370	18	8	13.5
DN80	PN16	240	L~280	200	160	385	18	8	15.1
DN100	PN16	300	L~350	220	180	400	18	8	21
DN150	PN16	450	L~550	285	240	460	22	8	35.8
DN200	PN16	600	L~700	340	295	510	22	12	58.4
DN250	PN16	500	L~600	405	355	570	26	12	67
DN300	PN16	300	L~400	460	410	620	26	12	80.3
DN350	PN16	350	L~500	520	470	680	26	16	102.8
DN400	PN16	400	L~500	580	525	740	30	16	134.5

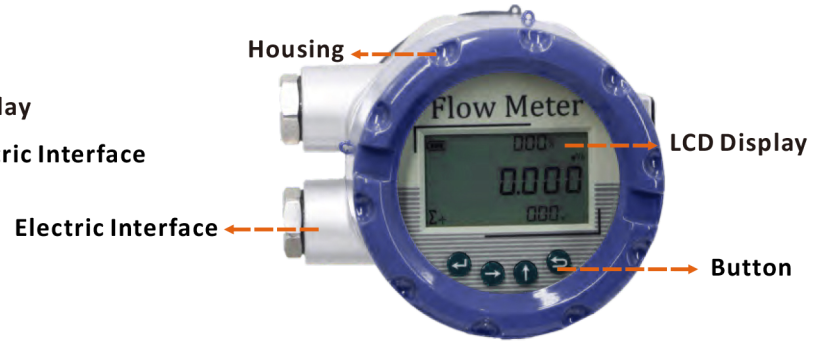


E type dimensions

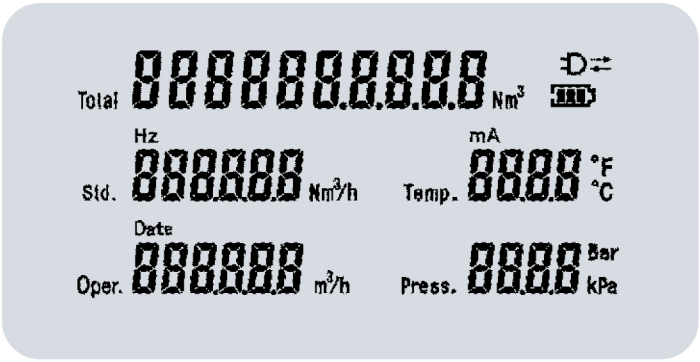
Display



T3 Type



E Type



Symbol	Description
	Power Display
	Displayed when connected to 24V external power supply or loop power supply
	1. RS485 communication symbol, ← for sending display, → for receiving display 2. Enter the correct password and prompt the logo

Button Symbol	Symbol Description
SET	Page down button, parameter modification confirmation storage button
RIGHT	Shift button
UP	Number increase button in parameter setting modification state; page button in non-modification state menu
ESC	Exit button (parameter setting modification state exit modification button; parameter unmodified state one button exit, return to the main display screen)

Installation Requirements

(1) The installation work must be performed by personnel with relevant pipeline equipment installation skills.

(2) When installed outdoors, it is recommended to add a protective cover to prevent rainwater infiltration and exposure to the sun from affecting the service life of the flow meter.

(3) The flow meter should not be installed and used in places where the flow rate changes frequently or there are strong pulsating flows and pressure pulsations.

(4) There should be no strong external magnetic field interference and strong mechanical vibration around the flow meter. Before installation, it should be installed according to its use requirements.

(5) The flow meter must be reliably grounded as specified, but it must not share the ground wire with the high-voltage system.

Mechanical Installation

（1) Before installing the flow meter, especially when installing it on a new pipeline or a pipeline that has been repaired, the pipeline should be cleaned first to remove all slag, rust and other pipeline debris.

(2) Before installing the flow meter into the pipeline, tear off the adhesive tape at the inlet and outlet of the flange, and use the air blowing method to check whether the impeller rotates flexibly and smoothly.

(3) Correct the pipeline to ensure that the diameter of the instrument has good coaxiality with the user's pipeline.

(4) When installing the flow meter, pay attention to the consistency of the gas flow direction with the direction indicated by the shell.

(5) Prevent the flange surface sealing gasket and weld from protruding into the measuring pipeline to disrupt the flow profile of the medium.

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