

JCWQ Gas Turbine Flowmeter

I Outline

JCWQ series gas turbine flowmeter is widely used for measurement of natural gas, coal gas, liquefied gas and light hydrocarbon gas, etc.

II Features

- Dedicated instrument for gas measurement
- Dedicated instrument for oil & gas recycle system
- High accuracy: $\pm 1.5\%$, $\pm 1.0\%$ or $\pm 0.75\%$
- Good repetitiveness
- Test temperature, pressure and flow of measured gas; automatic tracking and compensation of flow; indication of gas total volume under standard status; real-time query of temperature, pressure, time and date, etc.
- Built-in pressure & temperature sensor, high safety performance, compact structure & beautiful outlook
- Low power consumption, more than 3 years service life for one 3V 10AH lithium cell
- Instrument factor, total flow value kept for 10 years after power off

III Technical Parameters

1. Basic Parameters

Table 1

DN (mm) & Connection	25, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300 flange connection 25, 40 thread connection
Accuracy	$\pm 1.5\%$, $\pm 1.0\%$ or $\pm 0.75\%$ (need special order)
Turndown	1:10; 1:20; 1:30
Instrument Material	Body: 304 SS; impeller: anti-corrosive ABS or high-quality aluminum alloy; indicator: cast aluminum
Medium Temperature (°C)	-30 °C ~ +80 °C
Ambient Conditions	Temperature: -20 °C ~ +60 °C , relative humidity 5% ~ 90%, atmospheric pressure 86 ~ 106 KPa
Output Signal	Sensor: pulse frequency signal, low level less than 0.8V, high level more than 8V Transmitter: two wire 4-20mA DC current signal

Power Supply	Sensor: +12V DC, +24V DC (optional) Transmitter: +24V DC Local indication type: built-in 3V lithium cell
Signal Transmission Line	STVPV3×0.3 (3 wire), 2×0.3 (2 wire)
Transmission Distance	No more than 1000 m
Signal Line Interface	M20×1.5 (F)
Explosion Proof	ExdIIBT6
Enclosure Protection	IP65

2. Measuring Range & Working Pressure

Table 2

DN (mm)	Model	Standard Span (m ³ /h)		Extension Span (m ³ /h)		Pressure (MPa)	Mounting
DN25	JCWQ-25---		-----	W3	0.5-4	4.0	Flange (thread)
			-----	W4	0.7-7	4.0	
			-----	W5	1.5-15	4.0	
		S1	3-30	W1	1.5-30	4.0	
		S2	4-40	W2	2-40	4.0	
DN40	JCWQ-40---	S1	5-50	W1	2.5-50	4.0	Flange (thread)
		S2	8-80	W2	4-80	4.0	
DN50	JCWQ-50---	S1	10-100	W1	5-100	4.0	Flange
		S2	15-150	W2	8-150	4.0	Flange
DN65	JCWQ-65---	S	15-200	W	10-200	1.6	Flange
DN80	JCWQ-80---	S	15-300	W1	10-300	1.6	Flange
				W2	15-350	1.6	Flange
DN100	JCWQ-100---	S	20-400	W1	15-400	1.6	Flange
				W2	20-500	1.6	Flange
DN125	JCWQ-125---	S	20-800	W1	18-800	1.6	Flange
				W2	20-900	1.6	Flange
DN150	JCWQ-150---	S	50-1000	W1	25-1000	1.6	Flange
				W2	50-1200	1.6	Flange
DN200	JCWQ-200---	S	150-2000	W	80-2500	1.6	Flange
DN250	JCWQ-250---	S	200-3000	W	150-3500	1.6	Flange
DN300	JCWQ-300---	S	250-4000	W	200-4000	1.6	Flange

Note 1: In table 2, "standard span" refers to general measuring range (applicable for JCWQ-N/A/B/C/D)

Note 2: In table 2. "extension span" only for "smart integral gas turbine flowmeter" or "smart integral gas flowmeter with temperature & pressure compensation (JCWQ-B/C/D)

IV Instrument Classification

1. According to function, JCWQ gas turbine flowmeter can be divided into 3 types:
 - ※ Gas turbine flow sensor / transmitter
 - ※ Smart integral gas turbine flowmeter
 - ※ Smart integral gas turbine flowmeter with temperature & pressure compensation

2. Function Description



★ Gas Turbine Flow Sensor / Transmitter

This type turbine flow meter itself has no local indication function, only remote output flow signal under working status; low price, small volume, suitable for using together with secondary display meter, PLC, DCS, etc. This type turbine flowmeter is explosion proof type, ExdIIBT6.

Diagram 1

According to output signal, this product can be divided to JCWQ-N & JCWQ-A

	JCWQ-N	JCWQ-A
Indication	No indication	No indication
Signal Output	3 wire, pulse under working status; high level more than 8V, low level less than 0.8V	4-20 mA under working status
Power Supply	12 or 24V DC	24V DC
Explosion Proof	ExdIIBT6	ExdIIBT6



★ Smart Integral Gas Turbine Flowmeter

Integral smart meter;	two-line LCD display
Compact structure;	clear reading
High reliability	not affected by external power
Anti-lighting	low cost

Diagram 2

According to power supply whether with remote signal output, this type turbine flow meter can be divided to JCWQ-B type & JCWQ-C type.

	JCWQ-B	JCWQ-C
Indication	Flow rate & Total flow	Flow rate & Total flow
Signal Output	no	4-20 mA, pulse
Power Supply	3V lithium cell	24V DC external
Explosion Proof	ExdIIBT6	ExdIIBT6



★ Smart Integral Turbine Flowmeter with T & P Compensation
 JCWQ-D type gas turbine flowmeter has built-in temperature & pressure sensor and smart totalizer.

Indication	Flow rate, daily accumulative flow, total accumulative flow, temperature, pressure and battery capacity
Signal Output	4-20mA, pulse, IP card signal, RS485 protocol
Power Supply	Built-in lithium cell & external 24VDC
Explosion Proof	ExdIIBT6

V Model Selection

Model should be selected according to nominal pressure, medium max pressure, medium temperature, medium components, flow range and signal output.

Working flow range should be (20% to 80%) Qmax.

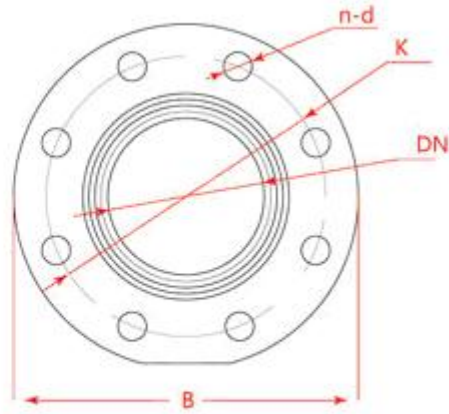
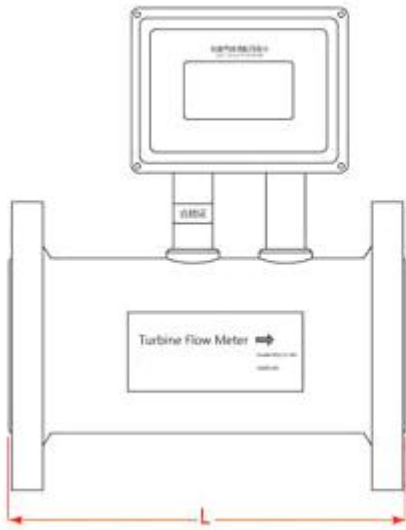
Standard signal output: pulse signal (ws) output 3 wire, standard flow signal (IC card) output or RS485 communication output; please specify at ordering.

Table 3

Model						Remarks
JCWQ						
Type	N					Sensor type: +12V or 24V, output 3 wire pulse signal
	A					Transmitter type: +24V, output 2 wire 4-20 mA
	B					Smart type: lithium cell, local indication without output
	C					Smart type: +24V, local indication, output two wire 4-20mA
	D					Smart type: T & P compensation integrated, local indication with remote signal
DN	25					DN 25 mm
	40					DN 40 mm
	50					DN 50 mm
	65					DN 65 mm
	80					DN 80 mm
	100					DN 100 mm
	125					DN 125 mm
	150					DN 150 mm
	200					DN 200 mm
	250					DN 250 mm
300					DN 300 mm	
Range	W (x)					Extension range, see table 2
	S (x)					Standard range, see table 2
Body Material	S					Stainless Steel
	L					Aluminum Alloy
Movement Material			S			Anti-corrosive ABS

	L	Aluminum Alloy
	N	No special structure
	A	Dedicated for oxygen
	B	Dedicated for compressed air

VI Mounting Dimension



DN (mm)	L	B	K	n	d	Bolt Spec.	Pressure MPa
DN 25	170	115	85	4	Φ14	M12×50	4.0
DN 40	200	150	110	4	Φ18	M16×56	
DN 50	220	165	125	4	Φ18	M16×50	
DN 65	220	185	145	4	Φ18	M16×65	1.6
DN 80	240	200	160	8	Φ18	M16×70	
DN 100	300	220	180	8	Φ18	M16×80	
DN 125	240	250	210	8	Φ18	M16×80	
DN 150	450	285	240	8	Φ22	M20×80	
DN 200	500	340	295	12	Φ22	M20×90	
DN 250	500	403	255	12	Φ26	M24×90	
DN 300	500	460	410	12	Φ26	M24×90	