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RGTF Gas Turbine Flowmeter Catalog  
File Number: RII20200303



### **BEST MEASUREMENT PERFORMANCE**

- Best measurement performance on gas flow
- Unique dust-proof structure
- Minimum installation requirement
- Excellent design to reduce installation cost and eliminate daily maintenance

### **BEST FIT- FOR- APPLICATION**

- Wide range of line size from DN5 to DN250
- Wide application of hygienic, cryogenic, high pressure and high temperature
- Wide variety of I/O and expansive communication protocols

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## **OVERVIEW**

RGTF series gas turbine flowmeter is a precision metrological instrument used for gas flow measurement. It is elaborately designed and developed by our company with advanced technology, which is characterized in small pressure loss, high accuracy, low starting flow, well vibration and pulsating flow proof performance, and wide range ratio etc.

Considering gas compressibility and close relationship between volume and temperature and pressure of medium, this series flowmeter has added temperature and pressure sensors for tracing change of temperature and pressure of medium, converting the operating condition flow to the flow under normal condition and guaranteeing the accuracy of measurement. RGTF series gas turbine flowmeter can be widely applied in fields such as gas measurement and gas adjustment station for boilers used in petroleum, chemical industry, electric power and industry etc., measurement of natural gas in transmission and distribution pipeline networks and of city natural gas etc.

## **DESIGN & BENEFIT**

- ✧ Patent rectification technology can maintain the measurement reliability under unfavorable installation condition and relatively significant change of medium speed flow condition.
- ✧ Unique dust-proof structure can effectively prevent impurities in the medium from entering into bearing and resulting in rapid wearing and deadlock.
- ✧ Minimum installation requirement, in which the front straight pipe section  $\geq 2D$  can ensure measurement accuracy of the flowmeter.
- ✧ Intelligent integrated design can give a dynamic detect for temperature and pressure of the medium, implement automatic compensation and compressibility factor correction, and directly display the standard instantaneous volumetric flow and total standard volume of gas.
- ✧ Aluminum alloy turbine is characterized in high strength, corrosion resistant, ageing resistant, long service life, high accuracy and well repeatability.
- ✧ Advanced microcomputer technology and mono-chip computers with high performance enable the complete machine to have more powerful function and more excellent performance.
- ✧ Advanced Hi-tech double power supply and micro power consumption enables the complete machine of low power consumption and to be either supplied with internal batteries and run for a long time (two lithium batteries can be used for 3 years) or connected to external power to run.
- ✧ Large screen back-lighting LCD display can be read clearly and visually in darker environment.
- ✧ Infrared remote operator may be matched and parameter setting can be carried out without opening the front cover of flowmeter.
- ✧ The flowmeter is provided with pulse signal output and may also output many signals according to user's need such as 4 to 20 mA standard analog signals and quantization pulse signals of IC card etc.

- ❖ Adopt RS485, RS232C, MODBUS, HART protocols: they can be matched with specific MODEM and construct automatic meter reading management system through telephone network, leading to a high automation level.
- ❖ Adopt data save technology E2-PROM which can save the parameter setting for a long time after power failure.
- ❖ Low voltage alarm of internal battery ( $\leq 2.7V$ ) can remain the user to replace the battery in time.
- ❖ The intelligent flow totalizer can be turned 180° for convenient reading.
- ❖ Data can be saved automatically when there is power failure to prevent data loss.
- ❖ Signal output check function is provided. It can output the standard current signals of 4, 8, 12, 16 and 20 mA.
- ❖ Liquid crystal display screen of totalizer can withstand high temperature of 80°C.
- ❖ External power supply is isolated from the main circuit of flowmeter with isolated voltage up to 1,000 V.
- ❖ Reliable electromagnetic compatibility design.

## APPLICATION

Reliant mass flowmeter is suitable for the most complex and challenging environment for liquid, gas and slurry applications.

Process fluid	Typical application	Industries	
● Gas	<ul style="list-style-type: none"> <li>■ Custody Transfer</li> <li>■ Reactor Feed Ratio</li> <li>■ Density Measurement</li> <li>■ Batch Control</li> </ul>	<ul style="list-style-type: none"> <li>◆ Chemicals</li> <li>◆ Food &amp; Beverages</li> <li>◆ Machinery</li> <li>◆ Minerals &amp; Mining</li> <li>◆ Oil &amp; Gas</li> </ul>	<ul style="list-style-type: none"> <li>◆ Pharmaceuticals</li> <li>◆ Power Plant</li> <li>◆ Pulp &amp; Paper</li> <li>◆ Water</li> <li>◆ Waste Water</li> </ul>

## MEASUREMENT PRINCIPLE

- ❖ Condition for Use
  - Ambient temperature: -30°C to +60°C
  - Medium temperature: -40°C to +85°C
  - Relative humidity: 5% to 95%
  - Atmospheric pressure: 70 kPa to 106 kPa
- ❖ Nominal Diameter: DN25 to DN400, Larger size consult us
- ❖ Working Pressure: 0.5 to 4MPa, Larger pressure consult us
- ❖ Range ratio: The measurement range can reach to 40:1
- ❖ Accuracy:  $\pm 1.0\%$ ,  $\pm 1.5\%$
- ❖ Repeatability: Superior to 0.2%
- ❖ Explosion-proof Degree: ExdIIBT4, ExialIBT4; protection degree: IP65

- ❖ Housing Material : Aluminum alloy, stainless steel (1Cr18Ni9Ti), ductile cast iron
- ❖ Power Supply: 3.6 V lithium battery, 2/3-wire 18 to 30VDC
- ❖ Output signals: 4 to 20 mA
- ❖ Communication: MODBUS, HART

## Flow Range

### For Accuracy 1.5%

DN (mm)	Model	Flow Range (m <sup>3</sup> /h)	Max. Pressure Loss (kPa)	Range Ratio	Starting Flow (m <sup>3</sup> /h)
25	RGTF-025	2.5 to 25	0.7	10:1	0.4
40	RGTF-040	6 to 60	0.7	10:1	1.2
50	RGTF-050	8 to 100	0.6	12:1	1.8
80	RGTF-080	17 to 430	0.6	25:1	3.0
100	RGTF-100	25 to 550	0.7	22:1	5.0
150	RGTF-150	37 to 1500	0.8	40:1	10
200	RGTF-200	60 to 2400	0.8	40:1	15
250	RGTF-250	90 to 3600	0.9	40:1	15
300	RGTF-300	150 to 6000	0.9	40:1	15
400	RGTF-400	260 to 8000	0.9	30:1	15

### For Accuracy 1.0%

DN (mm)	Model	Flow Range (m <sup>3</sup> /h)	Max. Pressure Loss (kPa)	Range Ratio	Starting Flow (m <sup>3</sup> /h)
25	RGTF-025	4 to 30	0.7	7:1	0.4
40	RGTF-040	7 to 60	0.7	8:1	1.2
50	RGTF-050	10 to 100	0.6	10:1	1.8
80	RGTF-080	20 to 400	0.6	20:1	3.0
100	RGTF-100	30 to 550	0.7	18:1	5.0
150	RGTF-150	50 to 1500	0.8	30:1	10
200	RGTF-200	60 to 2000	0.8	33:1	15
250	RGTF-250	100 to 3000	0.9	30:1	15
300	RGTF-300	200 to 4000	0.9	20:1	15
400	RGTF-400	400 to 8000	0.9	20:1	15

(\*Note: For accuracy 0.5%, please consult with us)

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