

TGF600 THERMAL MASS FLOW METER

Working principle

TGF600 Series Thermal Mass Flowmeter measures the gas mass flow base on thermal diffusion theory. It has two filmed RTDs as its sensors, one of which sense the velocity of the gas flow (RH) and the other one will detect the temperature shift of the gas flow (RMG). When the two RTD are in the gas flow ,the RH will be heated while the RMG will sense the temperature changing of the gas flow. More heat will be taken away as the velocity of the gas flow increasing, so the temperature on RH will decline.

Special features

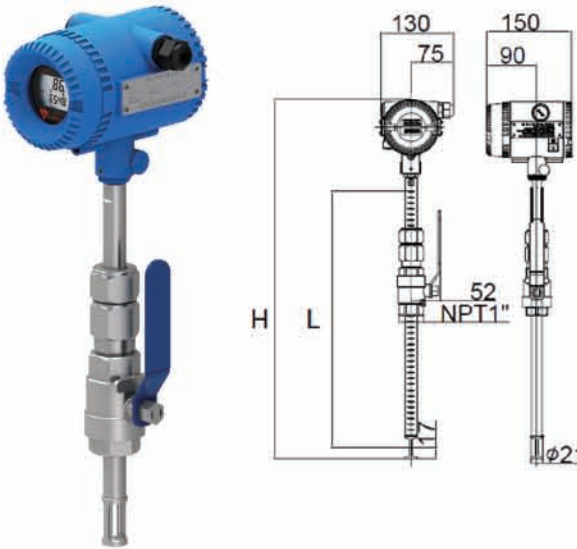
- Direct mass flow or normal flow measurement
- 100:1 turn down ratio in 5 ranges: 0.3~30Nm/s, 0.6Nm/s~60 Nm/s, 0.9~90Nm/s, 1.2~120Nm/s, or 1.5~150Nm/s
- No pressure loss, suitable for pipe in any shape with known sectional area
- For the insertion type, installation and maintenance can be finished on line
- High accuracy data acquisition circuit to ensure outstanding repeatability and accuracy
- High efficiency design of power supply, the total power consumption is only 60mA@24VDC
- 16V~32V wide voltage range input to fit in all electricity environment
- Self-diagnose function plus remote diagnose function, ensure easier trouble-shooting
- Ex-proof version optional
- Bluetooth communication for reading, setting and diagnosis and COMMATE APP
- No mechanical wear part



Specification

Media Compatibility	Air, Nitrogen, O ₂ , CO ₂ , Argon, CH ₄ , Natural gas, biogas, and almost all dry and clean air	
Pipe Diameter	Insertion: DN25 ~ 2500mm Inline: DN25 ~ 300mm	
Flow Velocity Range	0.3~30Nm/s 0.6~60Nm/s 0.9~90Nm/s 1.2~120Nm/s 1.5~150Nm/s	
Accuracy	1.5% Reading	± 0.5% Full Scale
Temperature of Medium	Standard: -40 ~ +150°C Middle: -40 ~ +250°C High: -40 ~ +450°C	
Pressure of Medium	Insertion: 1.6 MPa Flanged insertion: 6.3 MPa Flanged in-line: 6.3 MPa	
Process Connection	NPT 1" insertion with ball valve	
Power Supply	AC85~264V or DC16~32V	
Response Time	1 second	
Output	Frequency and 4~20mA as standard	
Communication	RS~485 + Bluetooth as standard , 4~20mA@HART as optional	
Date Displayed	Mass flow, Total flow Volume flow in normal condition	
Ingress Protection Grade	IP65 (GB China)	
Ex-proof	Ex db IIC T1...T6 Gb	

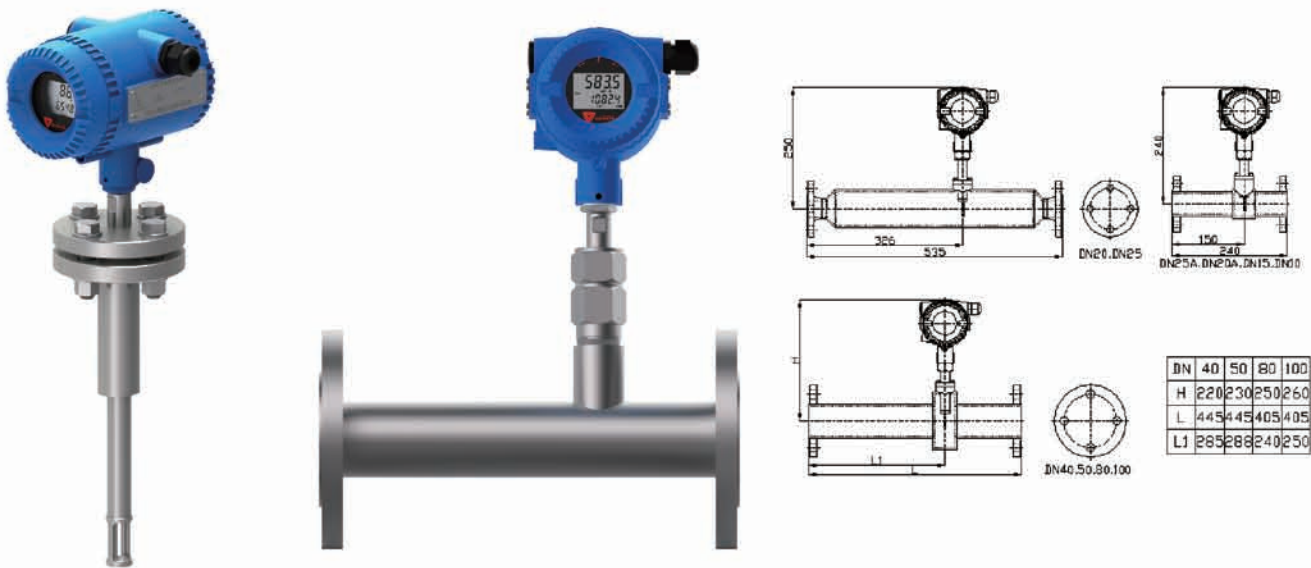
Insertion type with ball valve
Install/remove the meter without stopping the flow



Probe	H	L
290 mm	433.5 mm	255.5 mm
440 mm	583.5 mm	405.5 mm
690 mm	833.5 mm	655.5 mm
1000 mm	1143.5 mm	965.5 mm
1500 mmt	1643.6 mm	1465.5 mm

Max pipe size that each probe can adapt to					
Probe length	290mm	440mm	690mm	1000mm	1500mm
T < 50 dgr C	DN150	DN450	DN900	DN1500	DN2500
50 °C < T < 150 °C	/	DN100	DN600	DN1200	DN2200
150 °C < T < 250 °C	/	/	DN400	DN1000	DN2000
250 °C < T < 450 °C	/	/	DN300	DN600	DN1000
T < 122 °F	6"	18"	36"	60"	100"
122 °F < T < 302 °F	/	4"	24"	48"	88"
302 °F < T < 482 °F	/	/	16"	40"	80"
482 °F < T < 842 °F	/	/	12"	24"	40"

Other process connection



Flanged insertion type

For applications with pressure higher than 1.6MPa

Flanged type

For in-line connection, 1.6 ~ 6.3 MPa and different flanged standard available

Dimension of Flanged type

thermal mass flow meter

Standard Volume flow rate range in popular sizes

Pipe size (mm)	Pipe size (inch)	Option 1 (0.3~30 Nm/s)		Standard (0.6~60 Nm/s)		Option 2 (0.9~90 Nm/s)		Option 3 (1.2~120 Nm/s)	
		Min flow Nm³/hr	Max flow Nm³/hr	Min flow Nm³/hr	Max flow Nm³/hr	Min flow Nm³/hr	Max flow Nm³/hr	Min flow Nm³/hr	Max flow Nm³/hr
25 mm	1"	0.53	53	1.05	105.9	1.58	158.8	2.11	211.8
32 mm	1 1/4"	0.87	86.7	1.73	173.5	2.6	260.3	3.47	347.1
40 mm	1 1/2"	1.36	135.6	2.71	271.1	4.06	406.7	5.42	542.3
50 mm	2"	2.12	211.9	4.23	423.7	6.35	635.5	8.47	847.4
65 mm	2 1/2"	3.58	358.1	7.1	716.1	10.7	1074.1	14.3	1432.2
80 mm	3"	5.42	542.3	10.8	1084.7	16.2	1627.1	21.6	2169.4
100 mm	4"	8.47	847.5	16.9	1694.9	25.4	2542.3	33.8	3389.8
125 mm	5"	13.2	1324.2	26.4	2648.3	39.7	3972.4	52.9	5296.6
150 mm	6"	19.1	1906.8	38.1	3813.5	57.2	5720.3	76.2	7627.1
200 mm	8"	33.9	3389.8	67.7	6779.6	101.6	10169.4	135.5	13559.3
250 mm	10"	53	5296.6	105.9	10593.2	158.8	15889.8	211.8	21186.4
300 mm	12"	76.3	7627.1	152.5	15254.2	228.8	22881.3	305	30508.4

Mode number

The standard model number is usually TGF600-1-2-I2-1-N-T-M-N-1-1-XXXX, Please reference to the table below for what the model codes stand for.

Mode codes			
1	General model	TGF600	Standard
2	Fluid type	1	Air/nitrogen
		2	Oxygen (sensor will be degreased)
		3	Other (Please advise gas composition)
3	Measurement range	1	0.3~30 Nm/s
		2	0.6~60 Nm/s
		3	0.9~90 Nm/s
		4	1.2~120 Nm/s
		5	1.5~150 Nm/s
		6	1.8~180 Nm/s
		I1	Insertion type with 290mm probe
		I2	Insertion type with 440mm probe
		I3	Insertion type with 690mm probe
		I4	Insertion type with 1000mm probe
		I5	Insertion type with 1500mm probe
4	Process connection	F1	Flanged insertion type up to 25 barG (362 psiG)
		F2	Flanged insertion type up to 40 barG (580 psiG)
		F2	Flanged insertion type up to 63 barG (913 psiG)
		D1	Flanged DIN PN16 up to 16 barG (232 psiG) (DN15~DN300)
		D2	Flanged DIN PN25 up to 25 barG (362 psiG) (DN15~DN300)
		D3	Flanged DIN PN40 up to 40 barG (580 psiG) (DN15~DN300)
		D4	Flanged DIN PN63 up to 63 barG (913 psiG) (DN15~DN300)
		C1	Flanged ANSI CL150 up to 16 barG (232 psiG) (0.5 inch~12 inch)
		C2	Flanged ANSI CL300 up to 40 barG (580 psiG) (0.5 inch~12 inch)
		C3	Flanged ANSI CL400 up to 63 barG (913 psiG) (0.5 inch~12 inch)
		J1	JIS 10K up to 16 barG (232 psiG) (DN15~DN300)
		J2	JIS 20K up to 40 barG (580 psiG) (DN15~DN300)
		J3	JIS 30K up to 63 barG (913 psiG) (DN15~DN300)
5	Wet part material	1	316ss sensor with 304ss wet parts
		2	316ss sensor with 316ss wet parts