

TURBINE GAS FLOW METER ELECTRONICS(TGFE)



SUMMARY

The durability of the TGFE type gas turbine flowmeter has been raised by minimizing the flow obstacle of gas with the design through 3D CAD program and flow analysis. Also, it can be used conveniently for the measuring of the pure gas and standard volume fixed quantity by improving the accuracy with the combination of the up-to-date digital electronic technology. The TGFE type flowmeter shall be in accordance with the KS A 0515(turbine flowmeter) and JIS B 8765, 7501 (turbine flowmeter).

* PRODUCTION
AUTOMATION
SYSTEM

* CONTROL &
INSTRUMENTATION
SYSTEM

FEATURES

- High accuracy ($\pm 1\%$) and durability
- Excellent straightness and repeatability ($\pm 0.1\%$)
- Temperature, pressure, instantaneous flow rate, accumulated flow rate, accumulated flow rate percentage (%)
- Automatic separation function of inside and outside power supply
- RS-485, 4~20mA, Plus output(Open collect) communication and output function
- The odometer can be rotated to up, down, left, and right direction.
- Minimization of the straight tube distance between the front and the rear end by the installation of the flow stabilizer through the flow analysis

OPERATION POWER SUPPLY

- Inside power supply : 3.6V lithium battery
(power consumption : average 0.7mW, continuous 2.5mW)
(international standard specification : ER32L615, standby usage 7 years, continuous usage 5 years)
- Outside power supply : 12~24VDC, total power consumption is less than 4.8W

INPUT SIGNAL

- Flow signal : 0~5 KHz pulse signal, $V_{pp}=3V$
- Temperature signal : Resistance signal delivered from the temperature sensor
- Pressure signal : The mV class signal delivered from the pressure sensor

OUTPUT SIGNAL

- Flow pulse signal output (output distance less than 50m)
- 4~20mA signal output (output distance less than 200m)
- RS-485 communication connection signal (long distance data transmission)

OPERATING CONDITION

- Environmental temperature : $-30^{\circ}\text{C} \sim +60^{\circ}\text{C}$
- Medium temperature : $-20^{\circ}\text{C} \sim +80^{\circ}\text{C}$
- Atmospheric pressure : 20kPa~600kPa
- Relative humidity : $5^{\circ}\text{C} \sim 95^{\circ}\text{C}$

EXPLOSION-PROOF CLASS

- Internal pressure explosion-proof : Exd II B5
- Water proof class : IP 65

PRINCIPAL SUITABLE PLACE

Natural gas	Air	Town gas	Acetylene
Methane	Helium	Ethane	Propane
Hydrogen	Nitrogen	Butane	Carbon dioxide (Dry)

- ◆ City gas weighhouse, Natural gas transportation weighting, Gas pressure regulation smallness etc

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● FLOWMETER MODEL SELECTION

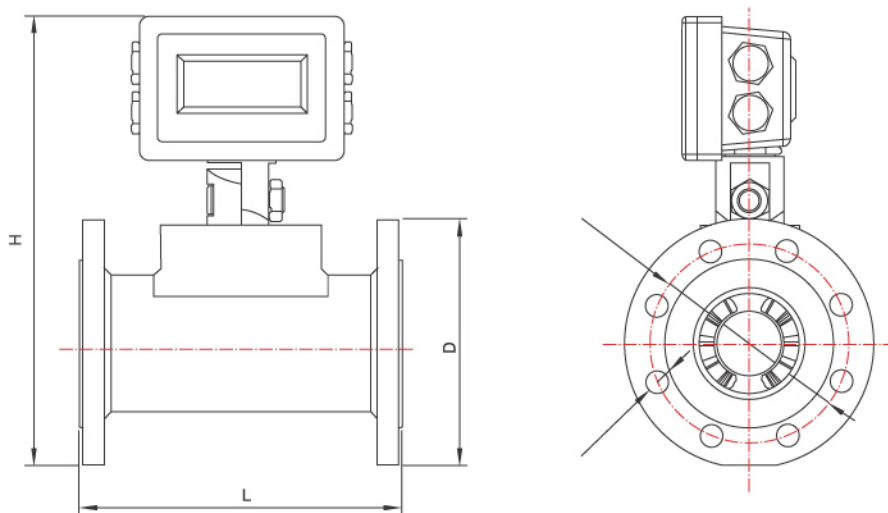
Model specification	Standard specification mm(in)	Flow range (m ³ /h)	Accuracy (%)	Pressure loss ΔP (kPa)	Case Material
TGFE-A050-G65	50(2)	3.3~100	$\pm 2.0\%$ for Qmin to 0.2 Qmax	0.5	1.6MPa Aluminum alloy
TGFE-A080-G100	80(3)	8~160		0.2	
TGFE-A080-G160	80(3)	13~250		0.6	
TGFE-A080-G250	80(3)	20~400		1.4	
TGFE-A100-G250	100(4)	20~400	$\pm 1.0\%$ for 0.2 Qmin to Qmax	0.4	
TGFE-A100-G400	100(4)	32~650		1.0	
TGFE-A150-G650	150(6)	50~1000		0.6	
TGFE-A150-G1000	150(6)	80~1600		1.2	
TGFE-A200-G1000	200(8)	80~1600		0.3	
TGFE-A200-G1600	200(8)	130~2500		0.8	

▶ Manufacturing of higher class flowmeter is possible in accordance with the 2.5MPa of the steel specification and the demand of customer

▶ Installation condition : The flowmeter and the tube are connected by flange, and the flange specification shall be in accordance with DIN standard.

▶ The straight tube length of the front section and the rear section of the flowmeter : Front straight section $\geq 2DN$; rear straight section $\geq 1DN$

● DIMENSION OF THE PRODUCT



Model specification	Standard specification	1.6 Mpa(mm)				
	mm(in)	L	H	D	C	n ϕ
TGFE-A050	50(2)	150	353	$\phi 165$	$\phi 125$	4- $\phi 18$
TGFE-A080	80(3)	240	381	$\phi 200$	$\phi 160$	8- $\phi 18$
TGFE-A100	100(4)	300	402	$\phi 220$	$\phi 180$	8- $\phi 18$
TGFE-A150	150(6)	450	415	$\phi 285$	$\phi 240$	8- $\phi 23$
TGFE-A200	200(8)	600	425	$\phi 340$	$\phi 295$	12- $\phi 23$