GAS TURBINE FLOW METER

TRANSDUCER TECHNOLOGY

TTGTF-D1 & D2 series

TTGTF-D4 series

Description

The Gas turbine flow meter in the series TTGTF sre specially designed for use in nature gas, compressed, air and other fluid measurement. And the volume and mass flow rate are available.

- DN 25 - DN400
- Temp.& Press. compensation
- Communication: RS485 / Hart
- Connection: Thread / Flange
- Ten units are optional

Operating principle

The operation of the International Gas Turbine Meter is based on the measurements of the velocity of gas. The flowing gas is accelerated and conditioned by the meters straightening section. The straightening vanes prepare the gas flow profile by removing undesired swirl, turbulence and asymmetry before the gas flows to the turbine wheel. The dynamic forces of the flowing fluid cause the rotor to rotate.

The turbine wheel is mounted on the main shaft, with special high precision, low friction ball bearings. The turbine wheel has helical blades that have a known angle relative to the gas flow. The conditioned and accelerated gas drives the turbine wheel with an angular velocity that is proportional with the gas velocity.

Technical Data

Output (Depending on Converter Model)	Pulse
	4 - 20mA
Accuracy	±1.0% of Rate ±1.5% of Rate
Operating Temperature	-20...+60°C
Fluid Temperature	-20...+80°C
Body Material	SS 304 SS 316 Cast Aluminium Cast Steel (D4: DN50 - DN200)
Rotor Material	Aluminium Alloy Plastic ABS
Bearing Material	SS304

Flow Range

Diameter	Standard Flow Range		Extended Flow Range	
mm	Code	m³/h	Code	m³/h
25	S	2.5-25	W	4-40
40	S	5-50	W	6-60
50	S1	6-65	W1	5-70
	S2	10-100	W2	8-100
65	S	15-200	W	10-200
80	S1	15-300	W	10-160
	S2	20-400		
100	S1	20-400	W	13-250
	S2	32-650		
125	S	25-700	W	20-800
150	S1	32-650	W	80-1600
	S2	50-1000		80-1600
200	S1	80-1600	W	50-1000
	S2	130-2500		
250	S1	130-2500	W	80-1600
	S2	200-4000		
300	S	200-4000	W1	130-2500
			W2	320-6500
400	S	400-8000	W	260-8000

Model Selection

Model	Suffix Code								Description
TTGTF	❶	❷	❸	❹	❺	❻	❼	❽	Gas Turbine Flowmeter
Diameter	xxx								Stand for diameter 020: DN20; 050: DN50 100: DN100; 400: DN400
Converter Type		N							24V DC; Pulse output; No display; Ex
		A							24V DC; 4-20mA output; No display; Ex
		E1							Battery power supply; No output; EX; Digital display
		E1							24V DC; 2-wire 4-20mA output; Ex; Digital display
		E3							24V DC; Pulse output; Local display; Ex; Digital display
		E4							24V DC; 0-20mA output; Local display; Ex; Digital display
		E5							24V DC; 3 wire 4-20mA/ Pulse output; Ex; Digital display
		FE							Fluidwell E series converter
		FF							Fluidwell F series converter
		D1							24V DC; 2-wire 4-20mA output; Digital display; Temperature & Pressure compensation
		D2							24V DC; 3-wire 4-20mA output; Digital display; Temperature & Pressure compensation
		D4							24V DC; 4-20mA output; Modbus RS485 Digital display; Temperature & Pressure compensation
		Notice							1) Modbus RS485 is optional for E2, E3, E4, E5, D1, D4
									2) Battery Power (24V DC + Battery) is optional for E2, E3, E4, E5, D1, D2, D4
									3) D4 converter only configures with cast steel body sensor
Accuracy			10						±1.0% of rate
			15						±1.5% of rate
Flow Range				S					Standard Range
				E					Extended Range
Body Material					S4				SS304
					S6				SS316
					CA				Cast Aluminium
					CS				Cast steel (Only for D4 type)
Rotor Material						AB			ABS Plastic
						AA			Aluminium Alloy
Explosion Proof							BT		Exd II BT6
							CT		Exia II CT4
							NA		None
Connection								THM	Male Thread; Available from DN4...DN50
								THF	Female Thread; Available from DN4...DN50
								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...