Thermal Mass Gas Flow Meter

KWGFM Series

The KWGFM is a thermal mass flow meter which is designed by Ketwells in advantages of small size, easy installation and high accuracy, etc.

Applications

- Compressed air / gas
- Combustion air flow
- Natural gas
- Greenhouse gas emissions

Features

- Measuring the mass flow or volume flow of gas
- Do not need to do temperature and pressure compensation in principle with accurate measurement and easy operation.
- Wide range: 0.5Nm/s~100Nm/s for gas. The meter also can be used for gas leak detection
- Good vibration resistance and long service life.
- No moving parts and pressure sensor in transducer, no vibration influence on the measurement accuracy.
- Easy installation and maintenance. If the conditions on site are permissible, the meter can achieve a hot-tapped installation and maintenance. (Special order of custom-made)
- Digital design, high accuracy and stability
- Configuring with RS485 or HART interface to realize factory automation and integration

Remote Type

Thread Type

Insertion Type

Technical Data

Description	Specifications
Measuring Medium	Various gases (Except the acetylene)
Pipe Size	DN10~DN4000mm
Velocity	0.1~100 Nm/s
Accuracy	+1~2.5%
Working Temperature	Sensor: -40℃ ~+200 ℃
	Transmitter: -20℃~+45 ℃
Working Pressure	Insertion Sensor: medium pressures ≤ 1.6MPa
	Flanged Sensor: medium pressure ≤ 1.6MPa
	Special pressure please contact us
Power Supply	Compact type: 24VDC or 220VAC, Power consumption ≤ 18W
	Remote type: 220VAC, Power consumption ≤ 19W
Response Time	1s
Output	4-20mA (optoelectronic isolation, maximum load 500 Ω), pluse, Rs485 (optoelectronic isolation) and HART
Alarm Output	1-2 line Relay, Normally Open state, 10A/220V/AC or 5A/30V/DC
Sensor Type	Standard Insertion, Hot-tapped Insertion and Flanged
Construction	Compact E and Remote
Pipe Material	Carbon steel, stainless steel, plastic, etc
Display	4 lines LCD
	Mass flow, Volume flow in standard condition, Flow totalizer, Date and Time, Working time, and
	Velocity, etc.
Protection Class	IP65
Sensor Housing Material	Stainless Steel (316)

Model Selection

Series	KWGFM									
Install Structure		**F**	Flange Type							
		I	Insertion Type							
		T	Thread Type							
		R	Remote Type							
Diameter	**Round Pipe**	**15**	DN15							
		20	DN20							
		25	DN25							
		…	…							
	Square Pipe	**25*25**	25*25							
		50*50	50*50							
		100*100	100*100							
		…	…							
		2000*2000	2000*2000							
Body material				**S4**	SS304 Material					
				S6	SS316 Material					
Pressure Rate						**16**	1.6Mpa			
						25	2.5Mpa			
						40	4.0Mpa			
Temperature Rate								**T1**	-40…100 °C	
								T2	-40…150 °C	
								T3	-40…200 °C	
Communication										**1** RS485
										2 Hart
Power Supply										**1** DC 24V
										2 AC 220V
Display Structure										**S** Compact Type
										L Remote Type
Explosion Rate										**Ex** ExdIIBT4
										N None

Flow Range

Nominal Diameter(mm)	Air	Nitrogen (N_2)	Oxygen (O_2)	Hydrogen (H_2)
15	65	65	32	10
25	175	175	89	28
32	290	290	144	45
40	450	450	226	70
50	700	700	352	110
65	1200	1200	600	185
80	1800	1800	900	280
100	2800	2800	1420	470
125	4400	4400	2210	700
150	6300	6300	3200	940
200	10000	10000	5650	1880
250	17000	17000	8830	2820
300	25000	25000	12720	4060
400	45000	45000	22608	7200
500	70000	70000	35325	11280
600	100000	100000	50638	16300
700	135000	135000	69240	22100
800	180000	180000	90432	29000
900	220000	220000	114500	77807
1000	280000	280000	141300	81120
1200	400000	400000	203480	91972
1500	600000	600000	318000	101520
2000	700000	700000	565200	180480

The flow rate in standard condition: The flow rate is in the condition of 20℃ temperature and 101.325kPa pressure.
The unit of flow rate is optional: Nm3/h, Nm3/min, L/h, L/min, t/h, t/min, kg/h or kg/min.
The reduction formula of flow rate in working condition and flow rate in standard condition:

$$Qs = \frac{0.101325 + P}{0.101325} * \frac{273.15 + 20}{273.15 + t} * Qn$$

Qs: The flow rate in standard condition (Nm3/h).
Qn: The flow rate in working condition (m3/h).
t: The medium temperature in working condition (oC).
p: The medium pressure in working condition (Gauge pressure, MPa).