

Klinger STG

Thermal massflowmeter

Klinger STG is a thermal mass flow meter, based on the thermal dispersion principle, which can be used for measurement on pure dry gases.

Principle

The principle describes how a heated body is cooled in a gas stream, and we hear it mentioned daily on both TV and radio in connection with the weather forecast. Here we often talk about what the cooling of the wind will mean for our perception of the temperature - and how a strong wind can give us the feeling that it is much colder than it really is.

In practice, it is possible to use this phenomenon to measure the flow. This is done by controlling the heating of a body in the flowing medium, the heating being controlled so that there is always a constant differential temperature with an identically designed reference body. The power to be used for the heating will then be proportional to the mass flow of the medium.

STG is delivered in different versions, but common to them all is that the two temperature sensors (bodies) are located at the tip of an insertion sensor, which must be placed where the flow is desired to be monitored.

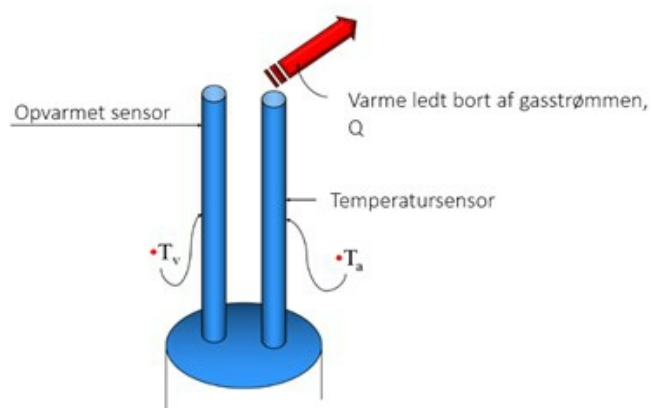
This means that the sensor part itself will only be a slight restriction in the pipe system, and therefore it will be suitable for working at very low operating pressures.

The main disadvantage of the measuring principle is that it is a measurement at a point, which means that the optimum accuracy can only be achieved where the speed profile of the product is defined. For this type of meter - more than any other - you need longer straight pipe lengths before the meter, the longer the better for correct measurement.

Application

Klinger STG can be used for most gases in installations from DN10 up to DN 4,000mm - in a very large measuring range - typically a span of 100: 1.

A feature that makes the meter suitable for tasks where both high flow monitoring and leak detection are desired.



Klinger STG gasflowmeter:

- Can be used for clean and dry gases
- Large measuring range, typically 100: 1
- Easy to install
- Independent of pressure and temperature variations
- Direct reading of mass flow or compensated volume flow

Specifications

Specifications	
Range	0.1Nm/s ~ 100 Nm/s
Accuracy	±1.0 ... 2,5%
Pipe size	DN 10mm til DN 4.000mm
Media	Clean dry gasses (not Acetylene)
Sensor type	Insertion, Insertion Hot Tapped or Flanged
Electrical	
Output	Analogue output:4~20mA,max belast 500Ω. Pulse (Scaled) Option: RS485 Modbus / HART
Power supply	24VDC or 220VAC max 18W (Compact)
Display	4-Line LCD Mass or Volume flow, Totalizer, Date + Time
Temperature	Transmitter: -20to +45grC Sensor: -20 to +200 grC
Pressure	Max. 1,6MPa (Higher on request)
Physical specifications	
Protection Class	IP65
Wetted parts	Stainless Steel 304 or 316
Construction	Compact or Separated version
Ex-version	Ex d II B T4 (option)



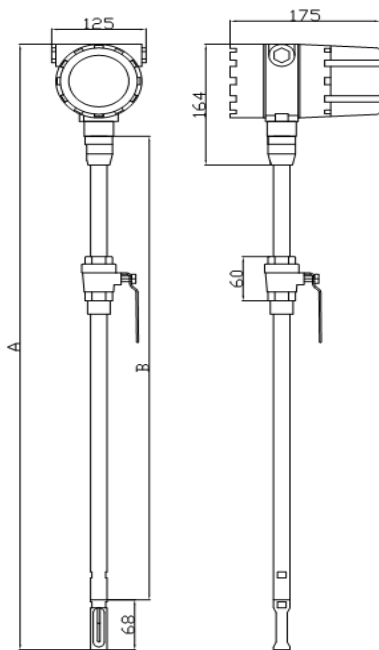
Example of maximum measuring range for different gases -

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

Units are Nm³/h

Dimensions

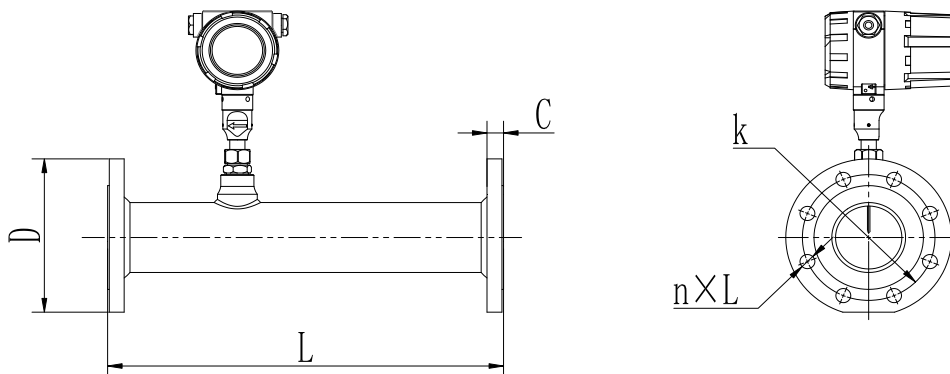
Insertion version



DN	A	B
DN65-DN350	560	340
DN400 -DN500	640	425
DN600-DN1000	820	600

All dimensions in mm

Flange version



Nominal Diameter	Flange Outer diameter	Center Hole	Screw Hole	Screw Thread	Sealing Face		Flange Thickness	Pipeline Length
					d	f		
DN	D	k	n×L		d	f	C	L
15	95	65	4×14	M12	46	2	14	250
20	105	75	4×14	M12	56	2	16	250
25	115	85	4×14	M12	65	2	16	250
32	140	100	4×18	M16	76	2	18	250
40	150	110	4×18	M16	84	2	18	250
50	165	125	4×18	M16	99	2	20	280
65	185	145	4×18	M16	118	2	20	280
80	200	160	8×18	M16	132	2	20	280
100	220	180	8×18	M16	156	2	22	280

All dimensions in mm

Order code

Model	Suffix Code							Description
STG	①	②	③	④	⑤	⑥	⑦	Thermal Mass Flowmeter
Structure	S							Compact Type
	L							Remote Type
Diameter	Round Pipe	15						DN15
		20						DN20
		25						DN25
	
	Square Pipe	2000						DN2000
		25*25						25*25
		50*50						50*50
		100*100						100*100
	
	2000*2000						2000*2000	
Body material			S4					SS304 Material
			S6					SS316 Material
Temperature Rate				T1				-40... +100°C
				T2				-40... +150°C
				T3				-40... +200°C
Communication						1		RS485
						2		HART
Power Supply							1	24V DC
							2	220V AC
Connection							F	Flange Type: DIN; JIS; ANSI
							I	Insertion Type
							T	Thread Type
Explosion Roof							BT	ExdIIBT4
							NA	None

Other Principles

Magnetic Inductive Flowmeters



VA meters



Vortex flowmeters

