

Thermal Mass Flowmeter StaMass TMF200 - Insertion

Introduction

Mass thermal flowmeter measures gas flow based on the concept of convective heat transfer. It contains two sensors - resistance temperature detectors (RTDs), one of the sensors is heated by an integrated circuit and functions as the flow sensor, while a second detector acts as the reference sensor, and determines the gas temperature. The meter maintains a continuous overheat between the flow and reference sensor. As gas flows by the heated sensor, flowing gas molecules transport heat away from the sensor and as a result, the sensor cools and the energy is lost. The resulting difference in temperature between the two sensors creates a precisely measurable sensor signal that is a function of the flow velocity: the greater the difference in temperature, the greater the gas' flow velocity over the sensor element.

Based on above principle, Stein mass flowmeter StaMass TMF200 insertion version is designed for all industries using, especially for larger pipeline. Our customer could benefit from it's reliable performance, less pressure drop, high turndown ratio, high repeatability, easy to install and use etc.



Characteristics

4"...48" (DN100...DN1200)

Accuracy: 2% of reading

Idea for low flow rate

High reliability

No need pressure/temperature compensation

Easy to install and maintain

Applications

Water treatment

Chips manufacturing

Power plant



Specifications		
Measuring range	See measuring range below for details	
Applicable medium	Air / Gas	
Nominal diameter	4"48" / DN100DN1200	
Accuracy	2%	
Repeatability	±0.25% of reading	
Operating voltage	85230VAC; 1836VDC	
Output signal	Pulse + 420mA	
	Pulse + 420mA with HART	
	Modbus RS485	
Sensor material	316 stainless steel, Hastelloy C,Titanium	
Transmitter housing material	Aluminum alloy	
Flange material	Stainless steel	
Response time	<100ms	
Sensibility	<0.05m/s	
Medium Temperature	-13248°F / -25120°C (Standard)	
	-13482°F / -25250°C (High temperature)	
Ambient Temperature	Sensor: -13140°F / -2560°C	
Ambient Humidity	≤85%RH (68°F / 20°C)	
Power consumption	Less than 20W	
Electrical connection	M20 × 1.5	
Process connection	3/4" in R coupling	
Exproof	Exd II CT6 Gb	
Protection class	Integrated type: IP65	
	Remote type: IP65(transmitter), IP68(sensor)	

Reference conditions of measurement accuracy

Ambient temperature	20°C / 68°F
Medium temperature	20°C / 68°F
Pressure	1 bar
Power	24VDC + 15%
Stability time	25 mins
Upstream straight pipeline	10 x DN
Downstream straight pipeline	5 x DN
Flow state	Uniform distribution

Features Fea	
Auto "ZERO" calibration	See manual for details
Self-monitoring and diagnostic	Monitor citation circuit, electrode and transmitter malfunction
Change flow direction real time	See manual for details
Bi-directional measurement	Measuring both forward and reverse flow
Flow rate unit selectable	Nm ³ /h, Nm ³ /min, L/h, L/min, t/h, kg/h, kg/min, SCFM
Damping time	032s programmable
Low flow cut off	Adjustable in 010%
Output	Relay, Pulse, 4~20mA, RS485, HART
Display	Instantaneous/accumulated flow rate, current, alarm, flow velocity

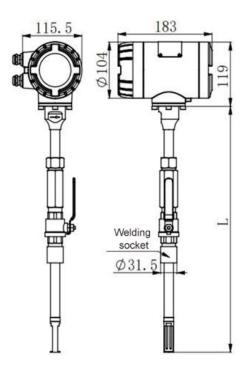


Measuring range and nominal diameter

Inch	Measuring range (SCFM)
4	7.51700
5	132700
6	193900
8	317000
10	6211000
12	9515800
14	12521500
16	15628000
18	18535600
20	22044000
24	31063000
28	37586000
32	500112000
36	625143000
40	750176000
48	1250253000

DN (mm)	Measuring range (Nm³/h)
100	122800
125	204400
150	306300
200	5011300
250	10017600
300	15025400
350	20034600
400	25045200
450	30057200
500	35070600
600	500101700
700	600138400
800	800180800
900	1000228900
1000	1200282600
1200	2000406900

Dimension in mm



Inch	DN	L
4"16"	DN100-DN400	466
18"28"	DN450-DN700	586
32"40"	DN800-DN1000	786
48"	DN1100-DN1200	1086



Order Code

Example: TMF200-I250ABKSADP0Y

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F Integral transmitterR Remote transmitter

2. Pipe size

100 4" (DN100) 125 5" (DN125) 6" (DN150) 150 200 8" (DN200) 250 10" (DN250) 300 12" (DN300) 350 14" (DN350) 400 16" (DN400) 450 18" (DN450) 500 20" (DN500) 600 24" (DN600) 700 28" (DN700) 800 32" (DN800) 900 36" (DN900) 40" (DN1000) 1000 1200 48" (DN1200)

3. Output

A Pulse
4...20mA

H Pulse
4...20mA with HART

R Modbus RS485 Pulse 4...20mA

4. Accuracy

B 2%

5. Sensor material

K 316L Stainless steelC Hastelloy CT Titanium

6. Body material

S 304 stainless steel
L 316L stainless steel

7. High temperature

A -13...248°F / -25...120°C B -13...482°F / -25...250°C

8. Power supply

D 18...36VDCT 85...230VAC

9. Ex-proof

P Non-hazardous area
E Hazardous area

10. Connectivity from Sensor to Remote Transmitter

Select 0 for integral transmitter
 Cable length: 5m / 16ft
 Custom cable length: 2-50m (6.5...164ft)

11. Welding socket

N None

Y Welding socket is included

^{*} Isolation valve is included by default