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Datasheet

Thermal Mass Flow Meter

SIN-MF

Sinomeasure

Committed to process automation solutions

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Datasheet

Thermal Mass Flow Meter SIN-MF

The thermal mass flow meter is designed based on the principle of thermal diffusion. The instrument uses the constant temperature difference method to accurately measure the gas. It has the advantages of small size, high degree of digitization, convenient installation and accurate measurement.

Reduce your energy costs and increase your sustainability. Monitor your consumption and analyze your leakage flows with just one measuring device.

Applications

- Compressed air measurement.
- Sewage treatment aeration measurement
- Flue gas emission measurement
- Chimney flue exhaust monitoring

Features

- Without temperature and pressure compensation
- Wide range: 0.5Nm/s~100Nm/s
- Vibration resistance and long service life
- Easy installation and maintenance
- Digital circuit, accurate measurement
- With RS485 communication



Thermal Mass Flow Meter

Parameters		
Type	Insertion Type	In-line Type
Nominal Diameter	DN65~DN1000	DN10~DN300
Velocity Range	0.1~100 Nm/s	
Flow Rate Range	Refer to Table 1	
Accuracy	±2.5%	
Respond Time	1s	
Transmitter Output	(4~20) mA,Photoelectric isolation, maximum load 500 Ω	
Communication Output	RS485 interface with photoelectric isolation, Modbus protocol	
	Hart	
Alarm	1~2 normally open contacts	
Power Supply Input	AC 220V;DC 24V (Power should be greater than 18W)	
Power Consumption	≤7W	
Measuring Medium	Common stable gases (moisture content < 5%) Note: Unstable media such as acetylene and boron trichloride are not measurable.	
Working Temperature	Sensor: (-40~+300) °C Converter: (-20~+45) °C	
Working Pressure	Medium Pressure:≤2.5MPa	Medium Pressure:≤1.6MPa
On-site Display	Four-line Chinese LCD display showing	
Displayed Content	Mass flow,Standard volumetric flow,Cumulative flow,Standard time,Standard velocity,etc.	
Ingress Protection	IP65	
Sensor Material	Stainless steel	Stainless steel,Carbon Steel

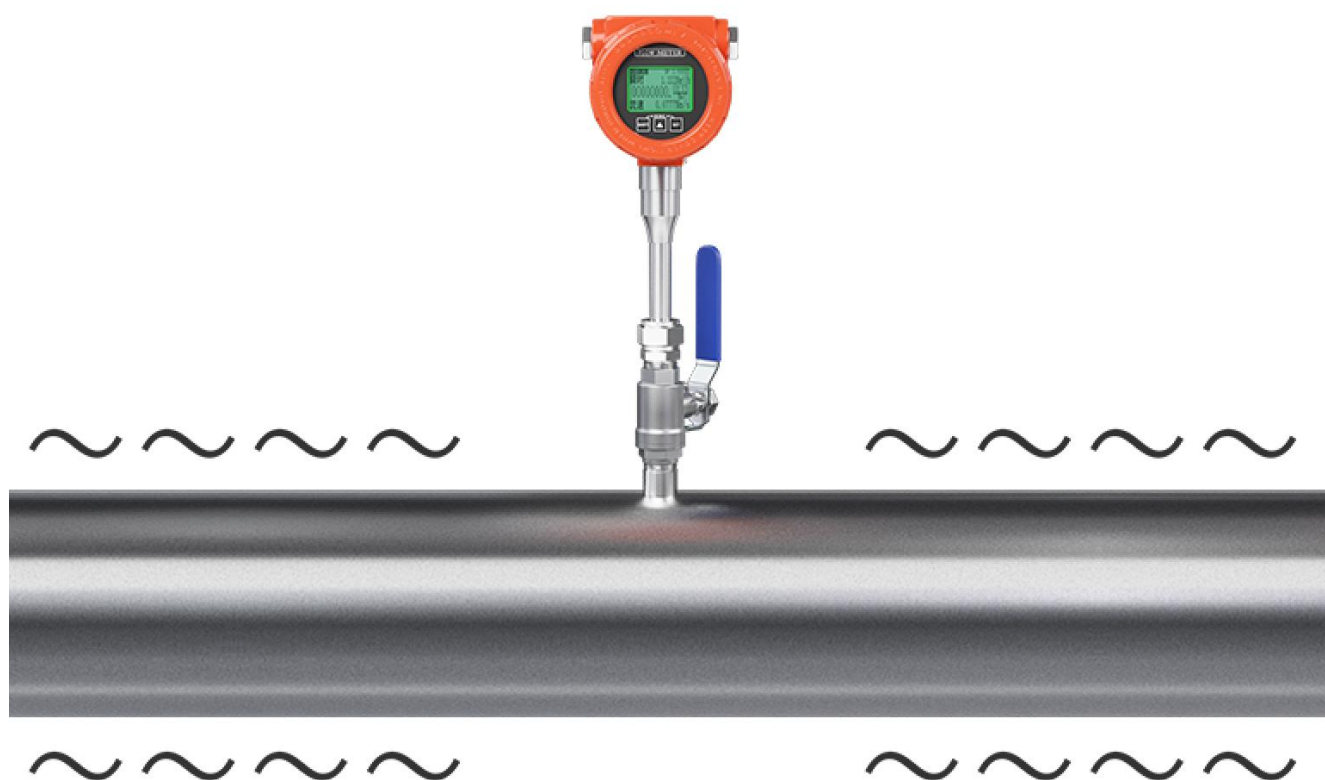


Table 1

Flow Rate Range				
Diameter	Air (Nm ³ /h)	Extended range (Nm ³ /h)	Oxygen (Nm ³ /h)	Combustible gas (Nm ³ /h)
10	0.5~28	0.03~30	0.5~14	0.5~5
15	0.5~65	0.07~65	0.5~32	0.5~10
20	0.5~100	0.12~110	0.5~55	0.5~20
25	0.5~175	0.18~180	0.5~89	0.5~28
32	0.5~290	0.3~290	0.5~144	0.5~45
40	0.5~450	0.5~450	0.5~226	0.5~70
50	1~600	0.5~700	0.7~352	0.7~110
65	1.5~1000	1~1200	1.2~600	1.2~185
80	2~1500	1.5~1800	2~900	2~280
100	3~2300	3~2800	3~1420	3~470
125	4.5~3500	4~4400	4.5~2210	4.5~700
150	6.5~5200	6~6300	6.5~3200	6.5~940
200	12~9000	12~11500	12~5650	12~1880
250	18~14500	18~17500	18~8830	18~2820
300	25~21000	25~25000	25~12720	25~4060
350	35~28000	35~34500	35~17000	35~5600
400	45~36500	45~45000	45~22600	45~7200
450	60~46500	60~57000	60~29000	60~9200
500	70~57000	70~70000	70~35300	70~11280
600	100~81000	100~101000	100~50600	100~16300
700	140~110000	140~138000	140~69000	140~22100
800	180~150000	180~180000	180~90000	180~29000
900	230~185000	230~230000	230~115000	230~36500
1000	290~230000	290~280000	290~140000	290~45500

Wiring

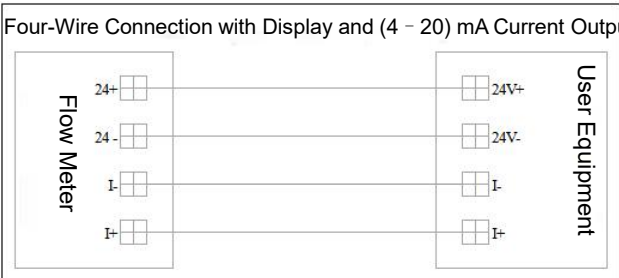
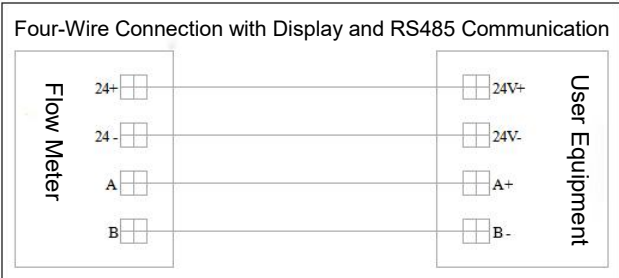
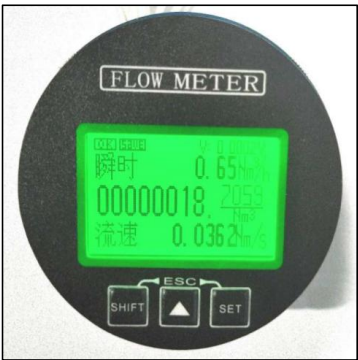


Figure 1

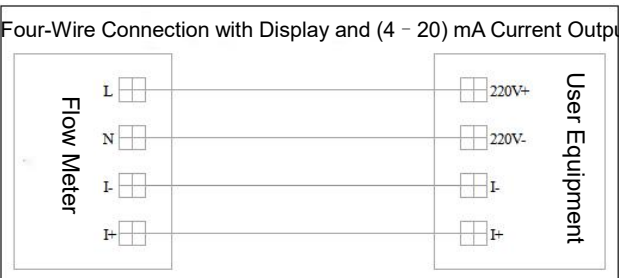
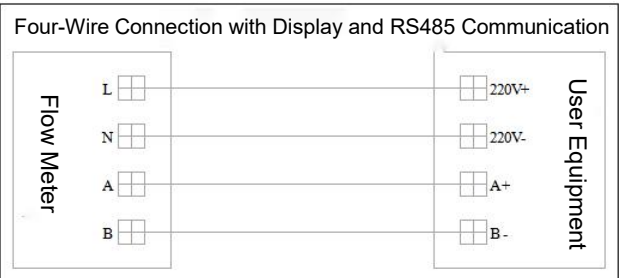


Figure 2

- Note:
- 1. When using 24V on-site power supply, it is recommended to use a branded power source with power output less than 50W.
 - 2. When using (4-20) mA output, two-wire current wiring is strictly prohibited on the circuit board.

Dimension

Insertion Type Thermal Mass Flow Meter Dimensions

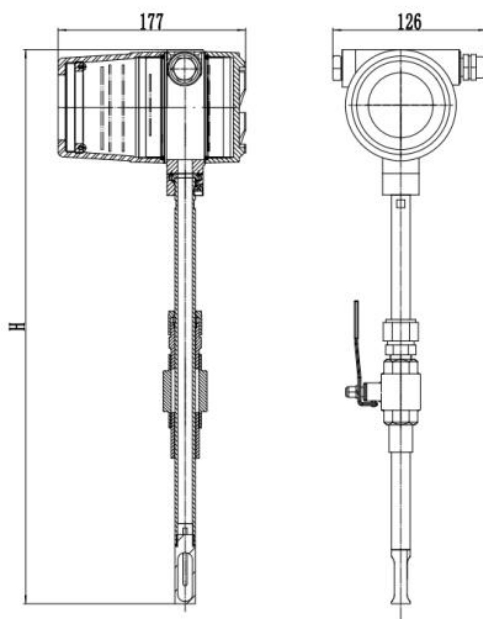


Figure 3 Insertion Type Dimensional Drawing

Table 2

Nominal Diameter (mm)	H (mm)
DN65~DN200	400
DN250	520
DN300	520
DN350	520
DN400	520
DN450	520
DN500	520
DN500 and Above	780

In-line Type Thermal Mass Flow Meter Dimensions

Table 3 Flanged Type Thermal Mass Flow Meter Dimensions

Nominal Diameter(mm)	L (mm)	ΦD (mm)	H (mm)	Φd1 (mm)	N (mm)	Φd (mm)
DN10	170	90	329	60	4	14
DN15	170	95	332	65	4	14
DN20	170	105	337	75	4	14
DN25	170	115	342	85	4	14
DN32	170	140	354	100	4	18
DN40	170	150	359	110	4	18
DN50	170	165	370	125	4	18
DN65	190	185	388	145	8	18
DN80	190	200	378	160	8	18
DN100	200	220	388	180	8	18
DN125	200	250	403	210	8	18
DN150	200	285	421	240	8	22
DN200	200	340	448	295	12	22
DN250	240	405	481	355	12	26
DN300	240	460	503	410	12	26
DN350	240	520	533	470	16	26

Flange Standard: HG/T 20592-2009 Steel Pipe Flanges

Table 4 Clamp Connection Type Thermal Mass Flow Meter Dimensions

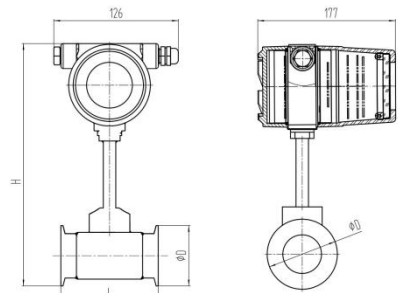
	Nominal Diameter(mm)	L (mm)	ΦD (mm)	H (mm)
	DN15	110	50.5	310
	DN20	110	50.5	310
	DN25	110	50.5	310
	DN32	110	50.5	310
	DN40	125	64	316
	DN50	125	77.5	327

Table 5 Female Thread Connection Thermal Mass Flow Meter Dimensions

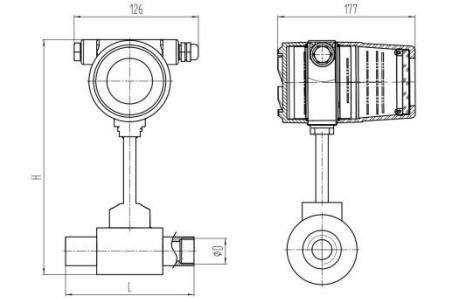
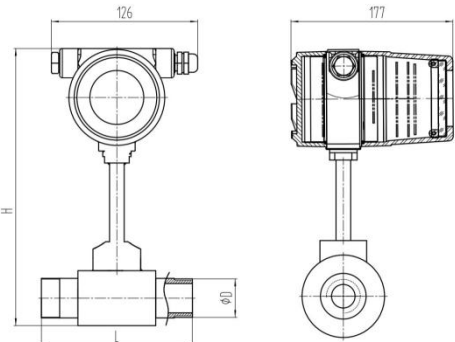
	Nominal Diameter (mm)	L (mm)	Female Thread	H (mm)
	DN15	146	G1/2	310
	DN20	146	G3/4	310
	DN25	146	G1	310
	DN32	146	G1-1/4	310
	DN40	160	G1-1/2	311
	DN50	170	G2	322

Table 6 Male Thread Connection Thermal Mass Flow Meter Dimensions

	Nominal Diameter (mm)	L (mm)	Female Thread	H (mm)
	DN15	146	G1/2	310
	DN20	146	G3/4	310
	DN25	146	G1	310
	DN32	146	G1-1/4	310
	DN40	160	G1-1/2	310
	DN50	170	G2	317

Ordering Code

SUP-MF-C-10-B-P-1-AM-0-1-0-M1-M3-P0-TD													Description
SUP-MF	-	-	-	-	-	-	-	-	-	-	-	-	
Type	C												Insertion
	D												Inline
Nominal Diameter	10												DN10(3/8")
	15												DN15(1/2")
	20												DN20(3/4")
	25												DN25(1")
	32												DN32(1.25")
	40												DN40(1.5")
	50												DN50(2")
	65												DN65(2.5")
	80												DN80(3")
	1C												DN100(4")
	1E												DN125(5")
	1G												DN150(6")
	2C												DN200(8")
	2G												DN250(10")
	3C												DN300(12")
	3G												DN350(14")
	4C												DN400(16")
	4G												DN450(18")
	5C												DN500(20")
	6C												DN600(24")
	7C												DN700(28")
	8C												DN800(32")
	9C												DN900(36")
	A0												DN1000(40")
	X												Other
Measuring Medium		B											Gas
Accuracy		P											Level 2.5
		M											Level 1.5
Display Type		1											Have
Output and Power Supply				AM									4-20mA+Pulse+RS485, 24VDC

	AK						4-20mA+HART+pulse, 24VDC
	AB						4-20mA+HART+Pulse, 220VAC
	AA						4-20mA+Pulse+RS485, 220VAC
	XX						Other
Alarm	0						None
	1						Single Group SPST
Mounting Base	1						304SS Threaded Base + Ball Valve
	4						304SS DN50 PN16 HG/T20592 Upper Flange Base
	6						304SS DN50 PN16 HG/T20592 Upper and Lower Flange Base
	3						316LSS Threaded Base + Ball Valve
	5						304SS DN80 PN16 HG/T20592 Upper Flange Base
	7						304SS DN80 PN16 HG/T20592 Upper and Lower Flange Base
	0						None
	X						Other
Process Connection	0						None
	H						HG/T20592 Flange Connection
	I						ISO2852 Clamp Connection
	B						British G Thread Connection
Body Material	M1						304SS
	M3						316LSS
Sensor Material	M3						316LSS
	XX						other
Electrical Interface, Housing Material and Protection Level						P0	M20×1.5 Cable Gland, Aluminum Alloy, IP65
						P1	NPT1/2 Aable Aland, Aluminum Alloy, IP65

Heat Resistant Temperature	TD	-20-150℃
	TQ	-20-200℃
	TU	-20-320℃