ALIAMASS

Thermal Mass Flowmeter

Model ATF2000 Series

GENERAL

ALIAMASS ATF2000 Series thermal mass flow meter is designed on the basis of thermal dispersion. It adopts method of constant differential temperature to measuring gas flow. It has the advantages of small size, high digitization, easy installation and high accuracy.

ATF2000 is a multi-functional thermal mass flow meter that measures mass flow and volume flow. With insertion type connection, the meter can achieve a hot-tapped installation and maintenance.

FEATURES

- Wide flow range: 0.1-120 m/s for gas
- Turndown ratio of least 100:1
- Temperature range up to 350 °C
- Good vibration resistance and long service life
- Hot-tap installation. Easy to install & maintain
- No moving parts, no wear, maintenance-free, low pressure loss
- Multiple installation options: Flange, thread, wafer, clamp and insertion
- Direct mass flow measurement of gases. No additional pressure and temperature compensation

STANDARD SPECIFICATION

- Size : 15,20,25,32,40,50,65,80,100,125,150, 200,250,300,350,400,450,…7000 mm
- Measuring Range : 0.064 Nm^3/hr-13854000 Nm^3/hr
  : 0.083 kg/hr-17872000 kg/hr
- Turndown Ratio : Over 100:1
- Accuracy : +/-1.0% of reading + +/-0.5% FS
- Gas Pressure Effect : <0.2% / bar of the measured value
- Gas Temp. Effect : <0.02% / K of the measure value
- Repeatability : +/-0.25% of reading
- Flange Type Material
  - Flange : Stainless Steel 304 (Option: S.S. 316)
  - Measuring Tube : Stainless Steel 304 (Option: S.S. 316)
  - Sensor : Stainless Steel 316L
- Insertion Type Material
  - Sensor : Stainless Steel 316L
  - Ball Valve, Adaptor : Stainless Steel 304 (Option: S.S. 316)
  - Hot-Tap Machine : Stainless Steel 304
- Process Connection : Flange Type, Insertion Type…
  - Flange Type : JIS 10K / JIS 20K / JIS 40K
  : ANSI 150# / ANSI 300# / ANSI 600#
  : DIN PN10 / PN16 / PN25 / PN40
  - Insertion Type : Thread M33 * 2, G1-1/2" (Hot-tap Type)
  : R3/4" (Length Adjustable, without Ex)
- Unit : Nm^3/hr, kg/hr, NL/min, kg/min, SCFH, PPH, SCFM, PPM
- Temperature : -40~200 °C (Standard)
  : -40~350 °C (Option)
- Ambient Temperature : -20~60 °C
- Pressure : 63 kgf/cm^2 (Max.)
- Protection Class : Converter: IP67, Sensor: IP68
  : Explosion Proof, Ex d IIC T4
  IR Remote Control : Intrinsically Safe, Ex ib IIC T6
- Display : 11 Digit totalizer / flowrate
- Current Output : 4-20 mA
  Load : Max. 800 Ω
- Pulse Output : Scaled Pulse (unit / Pulse) (Option)
- Communication : RS485 (MODBUS Protocol)
  : HART (Compatible) (Option)
- Housing Material : Aluminum Alloy
- Cable Entry : Standard: M20 * 1.5, Option: 1/2" NPTF
- Power Supply : 24 VDC +/-10%
  : 90-260 VAC, 50/60 Hz
- Keypad : 4 Internal keys / Infrared Remote Control (no need to open the cover) for display control
- Installation : Compact or Remote

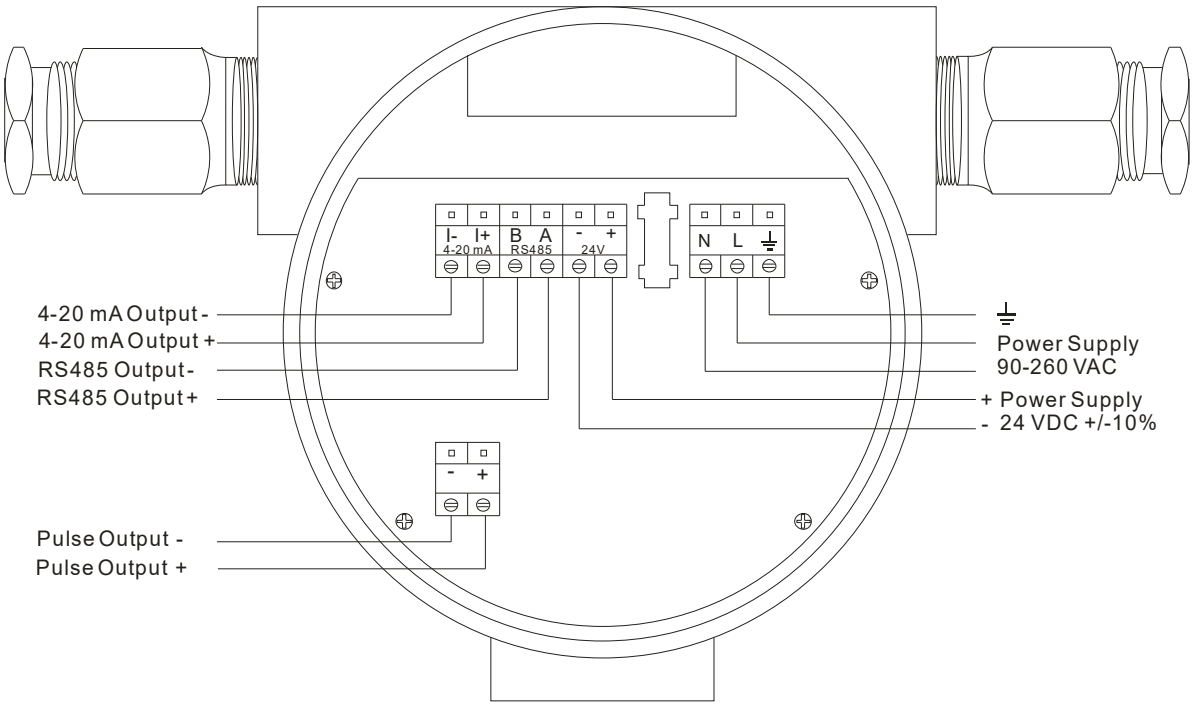
CE

ALIA TECHNOLOGY LLC
633 W. 5th Street, 26th Floor, Los Angeles, CA 90071, USA
TEL : + 1 - 213 - 533 - 4139 FAX : + 1 - 213 - 223 - 2317
URL : www.alia-inc.com
E-mail : alia@alia-inc.com

FLOW RANGE

Flow Range											
Air-20 °C 101.325 kPa											
Normal Size		Flow Rate (Nm^3/hr)		Flow Rate (kg/hr)		Normal Size		Flow Rate (Nm^3/hr)		Flow Rate (kg/hr)	
mm	Inch	Min.	Max.	Min.	Max.	mm	Inch	Min.	Max.	Min.	Max.
15	1/2"	0.064	64	0.083	83	450	18"	57	57,000	74	74,000
20	3/4"	0.113	113	0.146	146	500	20"	71	71,000	92	92,000
25	1"	0.177	177	0.228	228	600	24"	102	102,000	132	132,000
32	1-1/4"	0.290	290	0.374	374	700	28"	139	139,000	179	179,000
40	1-1/2"	0.452	452	0.583	583	800	32"	181	181,000	233	233,000
50	2"	0.707	707	0.912	912	900	36"	229	229,000	295	295,000
65	2-1/2"	1.20	1,200	1.54	1,540	1000	40"	282	282,000	364	364,000
80	3"	1.81	1,810	2.33	2,330	1200	48"	407	407,000	525	525,000
100	4"	2.83	2,830	3.65	3,650	1500	60"	636	636,000	820	820,000
125	5"	4.42	4,420	5.70	5,700	1800	72"	916	916,000	1,182	1,182,000
150	6"	6.36	6,360	8.21	8,210	2000	80"	1,131	1,131,000	1,459	1,459,000
200	8"	11.31	11,310	14.59	14,590	3000	120"	2,545	2,545,000	3,283	3,283,000
250	10"	17.67	17,670	22.79	22,790	5000	200"	7,069	7,069,000	9,119	9,119,000
300	12"	25.45	25,450	32.83	32,830	6000	240"	10,179	10,179,000	13,131	13,131,000
350	14"	34.64	34,640	44.68	44,680	7000	280"	13,854	13,854,000	17,872	17,872,000
400	16"	45	45,000	58	58,000						

WIRING DIAGRAM

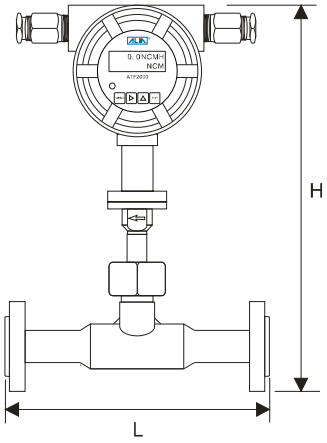


DIMENSIONS

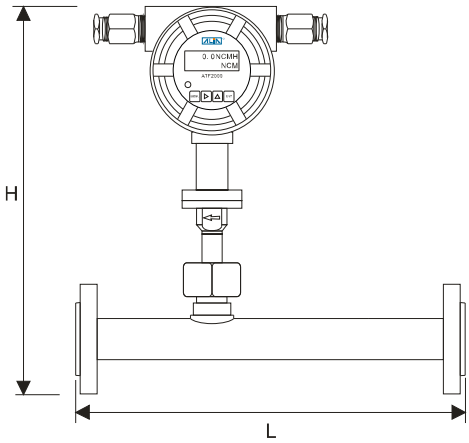
Flange Type

Unit: mm

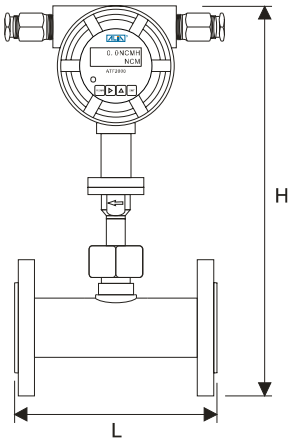
Size				Size				Size			
mm	Inch	L	H	mm	Inch	L	H	mm	Inch	L	H
15	1/2"	280	348	100	4"	220	439	450	18"	510	835
20	3/4"	280	353	125	5"	250	467	500	20"	550	898
25	1"	360	349	150	6"	300	497	600	24"	620	1010
32	1-1/4"	360	364	200	8"	350	555	700	28"	690	1090
40	1-1/2"	360	373	250	10"	400	614	800	32"	750	1198
50	2"	150	385	300	12"	420	668	1000	40"	890	1413
65	2-1/2"	170	406	350	14"	440	724				
80	3"	200	420	400	16"	480	778				



DN<25



DN25-DN40

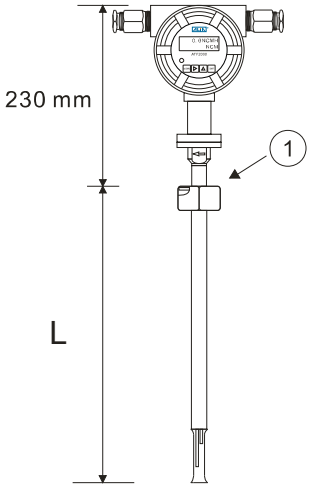


DN>40

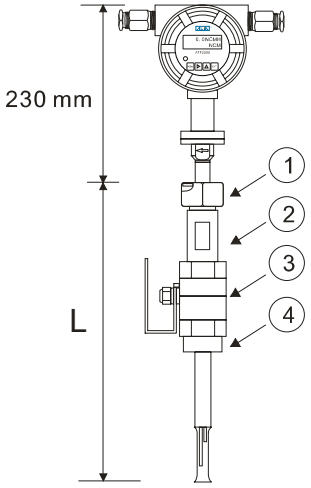
Insertion Type

L (mm)	Direct Installation	Install with Ball Valve
235	DN80-200 mm	
410	DN80-500 mm	DN80-200 mm
560	DN80-800 mm	DN80-500 mm
810	DN80-1300 mm	DN80-1000 mm
1060	DN80-1800 mm	DN80-1500 mm
1310	DN80-2300 mm	DN80-2000 mm
Other	>DN2300 mm	>DN2000 mm

①	Nut	M33 * 2
②	Adapter	M33 * 2 / G1-1/2"
③	Ball Valve	G1-1/2"
④	Extension Tube	G1-1/2" / Welding



Direct Installation

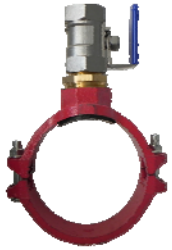


Install with Ball Valve

PLUG-IN HOT-TAP & FIXTURE

Manual Hot-Tap Machine

Electric Hot-Tap Machine



Saddle fitting (carbon steel)

MODEL SELECTION GUIDE

ATF2000 Series										
Example: ATF2000-I0500-6FN-NNN-AD-N-RC/EM/BA										
ATF2000-	X	XXXX	-X	X	X-	XXX	-XX	-X	-XX	Description
Type	F									Flange Type (DN15-DN1000)
	I									Insertion Type (DN80-DN7000)
	Z									Other
Size		0015-7000								0015-7000 mm (1/2"-280")
Wetted Parts Material			-4							Stainless Steel 304
			-6							Stainless Steel 316
Flange Type Process Connection				1						PN10
				2						PN16
				3						PN25
				4						PN40
				A						ANSI 150#
				B						ANSI 300#
				C						ANSI 600# (Max. Pressure 63 kgf/cm^2)
				J						JIS 10K
				K						JIS 20K
				L						JIS 40K
Insertion Length (Only for Insertion Type)				D						L=235 mm
				E						L=410 mm
				F						L=560 mm
				G						L=810 mm
				H						L=1060 mm
				I						L=1310 mm
				Z						Other
Max. Temperature					N-					-40~200 °C
					H-					-40~350 °C
Installation & Cable Length						NNN				Compact Version
						010-015				Remote Version, Cable 010-015 m
Power Supply							-AD			90-260 VAC, 50/60 Hz + 24 VDC (10%)
Output								-N		4-20 mA + RS485 (MODBUS)
								-H		4-20 mA + HART
Option									-NN	None
									-EX	Explosion Proof, Ex d IIC T4
									-RC	IR Remote Control (Ex ib IIC T6)
									-PT	Cable Entry, 1/2" NPTF
									-SP	Scaled Pulse (unit / Pulse)
									-HM	Manual Hot-Tap Machine
									-EM	Electric Hot-Tap Machine (No electric drill included)
									-SF	Saddle fitting(Size≤DN300,Mat'l:Carbon Steel,Size>DN300,Mat'l:S.S.304)***Note1**
									-BA	Ball Valve G1-1/2" + Adaptor (Mat'l: as same as ***Wetted Parts*** code)
									-ET	Extension Tube
									-IL	Insertion Length Adjustable, without Ex, Max. P=2 Bar
									-FL	Other process connections for Insertion Type ***Note 2**

Note:

Note 1: Saddle fitting: For the materials of pipe which is unable to weld plug-in flowmeter such as cast iron and PVC. Please provide the perimeter of outer diameter when ordering.

Note 2: Other connections for Insertion Type such as 2" NPTM, 2" BSPP, 1" ANSI 150# and 1" JIS 10K etc.