



## GENERAL

The Alia insertion mass **Flow Averaging Tubes (FAT™)** give a stable flow signal in non ideal flow profile, such as downstream of a bend, elbow valve, tee or any other obstruction. The flow averaging tube has a number of large diameter (0.125") inlet ports along the length of the upstream impact surface. The impact pressure at each inlet port is averaged inside the tube to create the axial flow through the tube and across our flow sensor. The gas flow then passes back into the main flow stream through the gas return ports located flow stream through the gas return ports located near the flow sensing elements. Multiple tubes can be used for large ducts with a Model 9601MP SCP for an averaged output.

## FEATURES

- ❑ Direct mass flow measurement of any gas with actual gas calibration
- ❑ Idea for flow profile of less than five diameter upstream
- ❑ Up to four in-dependent switch able flow curves
- ❑ Tracking of overall gas consumption over a turndown ratio of at least 100:1
- ❑ Data logger that can store flow, velocity, temperature, total, etc.
- ❑ A 2 line, 16 character display for rate, total, and relay status
- ❑ Selectable engineering units, dynamically converts the flow rate and total flow
- ❑ Can measure higher velocity than any other thermal mass meter - up to 600 m/s
- ❑ Up to 144 units can be installed in a large duct with our 9601 SCP averager
- ❑ Available with Infrared communicator for remote access of data
- ❑ Standard software available multi-curve fit programs
- ❑ Up to 20 instant flow adjustments



## SPECIFICATION

● Process Connection	Threaded, Flanged, Ball valve	● Housing protection:	NEMA 4, Class 1, Div 1, Groups B, C, & D
● Process temperature:	0 to +455°C	● Ex-protection:	II 2 GD EEx d IIC T2 or T3 or T4
● Operating pressure:	40 bar		
● Mass Velocity	Up to 600 normal meters per second	● Cable (remote version):	300 meters
● Flow units	Kg/hr, Kg/mn, Kg/s Lb\hr, Lb/m Lb/s	● Wetted materials	316 SSS (Hastelloy and Monel optional)
	NCMH, SCFM, NLPM, SLPM	● weight:	
	Mt/s, F/mn, BTU/Hr, BTU/min	● Integral Ex proof	5.0 kg
● Gas pressure effect	Minor under ±20% of calibration pressure	● Remote Ex proof	8.0 kg
● Gas temperature effect	0.01% /° C	● Integral Non-Ex proof	2.5 kg
● Accuracy (and linearity)	± [1% of Reading + (.5% FS+ .02%/°C)]	● Remote Non Ex proof	4.0 kg
	± 0.2% of Full Scale	● Linear signal output	0-5 VDC & 4-20 mA
● Repeatability	± 0.25% of Full Scale	● Pulse output	scalable
● Turn down ratio	Over 100:1	● Relays	Two 1-amp, SPDT
● Response time	Less than one seconds		User-selectable alarm functions
● Material:	316SS as per DIN 1.4571 (AISI 316 Ti)	● Signal Interface	RS232 & RS485, HART, MODBUS, etc..
● Data logger	Flow rate, Total, Relays, etc.	● Power requirements	115VAC @, 1/8 A 230VAC @ 1/16 A
	5800 data		24 VDC @ 1/4A
● Display units	Flow, Total flow, Switch settings	● Power Consumption	5 Watts or less
	Temperature, Elapsed time	● NIST traceable calibration	Standard
● RAM Back-up	Lithium Battery	● Self diagnostics functions	ADC, DAC,
● Data storage	EPROM storage up to 10 years		Alarm relay for EMI impulse noise

## ALIA LLC

Shanghai Siqi Industrial&trade Co.,Ltd

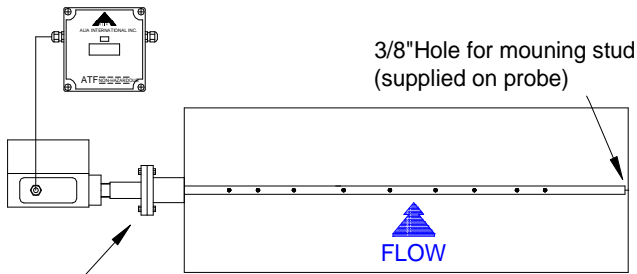
TEL:86-21-50858346 FAX:+86-21-50858343

URL : <http://www.siqitrade.com>

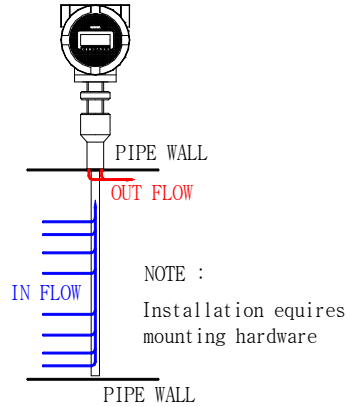
E-mail : [info@siqitrade.com](mailto:info@siqitrade.com)

ALTM062408RV1

Aliamass insertion Flow Averaging Tubes (FAT™) provide accurate flow measurement in large pipes and ducts offering a cost-effective solution for Heating, Ventilation, and Air Conditioning (HVAC) and Variable Air Volume (VAV) applications. They provide accurate, repeatable readings in applications with very limited upstream straight runs or installations in non-circular ducts. The velocity impact pressure follows a square root function. Therefore, the average velocity pressure in the FAT™ probe may vary slightly from the average of the velocities at each inlet port. Adjustment can be made through our electronics.



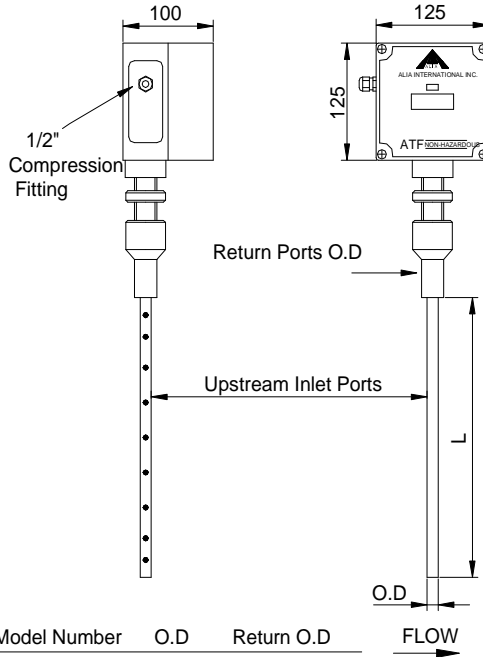
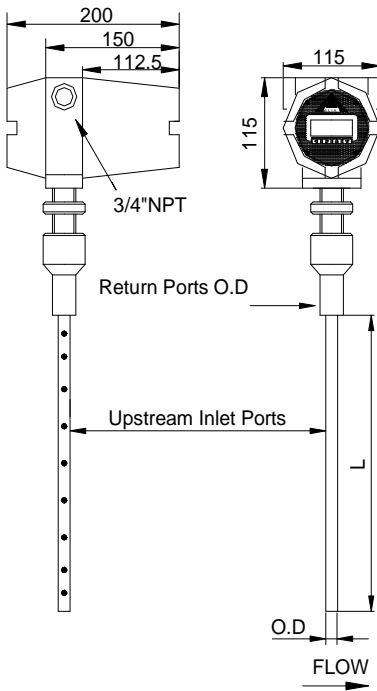
1 1/2" ANSI 150# flange with 1 1/2" pipe, 4" from OD to mating flange face.



**Instrument Drawings**

ATMF 9800MP integral insertion mass flow meters

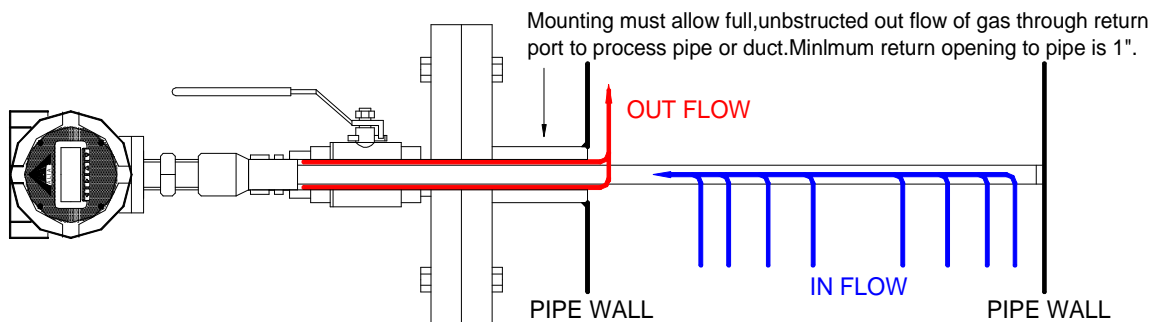
ATMF 9800MPNH integral insertion mass flow meters



Model Number	O.D	Return O.D
ATMF9840	1/2"(12.5mm)	1"(25.0mm)
ATMF9860	3/4"(19.0mm)	1 1/4"(32.0mm)
ATMF9880	1"(25.0mm)	1 1/2"(37.5mm)

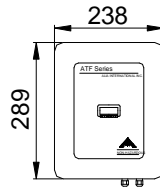
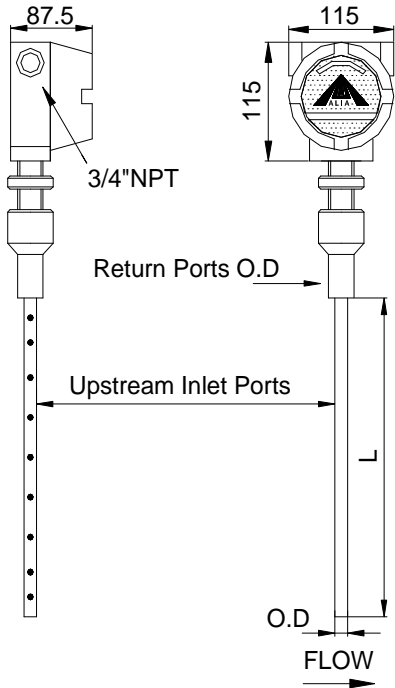
Note: all dimensions are mm unless stated

**Ball valve and flange option**

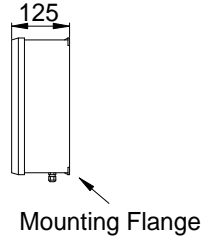


ATMF 9000 insertion mass Flowmeters -Remote version

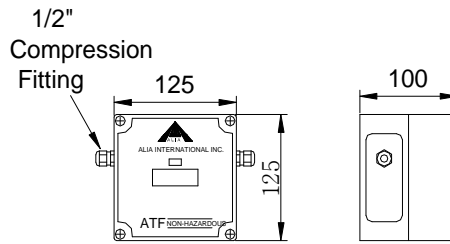
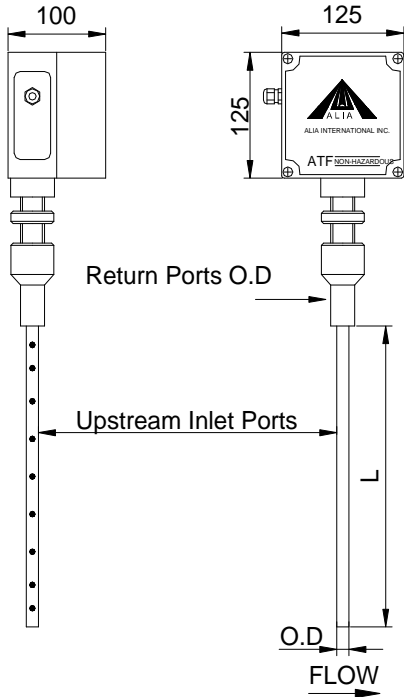
Hazardous version



Mounting:  
Use 1/4\"/>



Non-Hazardous version



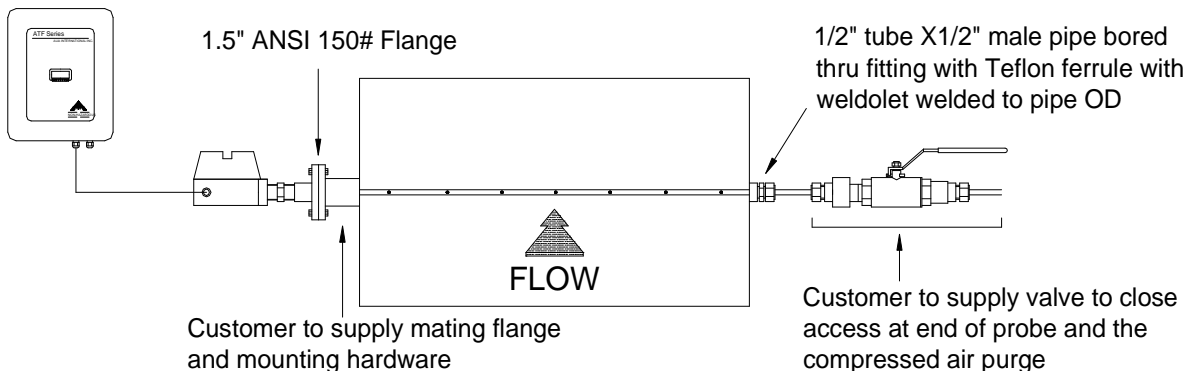
Two-wire, twisted pair interconnect cable required between Remote Electronics and Flow Transmitter (max 5 ohm resistance)

AWG	Wire Length
20	5.0m
18	7.5m
16	12.5m
14	20.0m
12	31.5m

Model Number	O.D	Return O.D
ATMF9240	1/2\"(12.5mm)	1\"(25.0mm)
ATMF9260	3/4\"(19.0mm)	1 1/4\"(32.0mm)
ATMF9280	1\"(25.0mm)	1 1/2\"(37.5mm)

Note: all dimensions are mm unless stated

**Auto-cleaning option- using compressed air to purge particulates**



**\*\* Please contact your local Alia application engineer (You also need to provide the following information)**

<b>Gas Composition</b>	We calibrate our mass Flowmeters to NIST standards with actual gas or a mixture that reflects the customers process. Exact gas name or gas mixtures must be provided, gas mixture must be provide as a percent of the total summing to 100%
<b>Full Scale Flow</b>	We need your maximum and minimum flow rates (Full Scale), units must be Kg/hr, Lb/hr, NCMH or SCFM.
<b>Line Size</b>	we need to know your pipe size as well connection type (flange, threaded, etc..)
<b>Gas Pressure and Temp.</b>	We calibration your mass Flowmeter as close to your application as possible
<b>Electronics Temp.</b>	Temperature of the environment surrounding the Flowmeters electronics.
<b>Power Requirements</b>	Please specify your power requirements such as 24 VDC or 115 VAC or 230 VAC

**➤ Model Selection Guide**

ATMF9000 Series												
Example ATMF9840MP-SSS-XX-133-12"-AC220-NPT-CR1-CONF-Natural Gas (10,000 NCMH,12"ID, 70C,7 Barg)												
AMF9-	X	XX	XXX	XXX	133	XX"	XXXX	XXXXXXXX	XXX	XXXX	Gas type, Flow rate,P,T,Pipe size	<b>Description</b>
Remote	2											<b>Style</b>
Integral	8											
1/2"	40											<b>Probe-Diameter</b>
3/4"	60											
1"	80											
Explosion Proof	MP											<b>Environment</b>
Non Hazardous	MPNH											
316 SSS < 70C	SSS											<b>Material (316SS)</b>
316 SS (70-200C)	SSM											
316 SS (200-325C)	SSI											
316 SS (325-450C)	SSH											
Display- Included	133											<b>Display</b>
Put insertion length in inches	##"											<b>Insertion length</b>
AC 115	AC115											<b>Power Supply</b>
AC 230	AC230											
DC 24	DC24											
NPT	NPT											<b>Process connections</b>
DIN	DNFL											
JIS	JIS											
1/2" ANSI 150#	FBL1502											
3/4"ANSI 150#	FBL1503											
1"ANSI 150#	FBL1504											
1 1/2"ANSI 150#	FBL1506											
2"ANSI 150#	FBL1508											
1/2"ANSI 300#	FBL3002											
3/4"ANSI 300#	FBL3003											
1"ANSI 300#	FBL3004											
1 1/2"ANSI 300#	FBL3006											
2"ANSI 300#	FBL3008											
Ball valve retractor - (please add 12" to the insertion length)	BVR1620											
1"tube X 1" male pipe (swegelock style)	TPM1212S											
One calibration curve (C1R, two C2R etc..maximum of four)	CXR											<b># of output curves</b>
Extended temperature electronics (-40C to 85C)	ETEMP											<b>OPTIONS</b>
Calibration and test point report	CONF											
<b>Process Gas (Please indicate, gas type, flow rate, line size, pressure and temperature)</b>											<b>Process information</b>	
<b>For larger flanges sizes, other material of constructions (Hasteloy C, Monel), high pressure ball valve etc contact Alia inc.</b>												