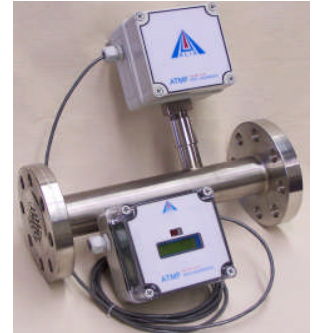




➤ GENERAL

The Alia inline 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 (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. Inline series 9000 ATMF includes built in flow conditioners for stable performance at 3 diameters downstream an obstruction .



➤ FEATURES

- ❑ Direct mass flow measurement of any gas with actual gas calibration
- ❑ Idea for flow profile of less than three 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
- ❑ Available with Infrared communicator for remote access of data
- ❑ Standard software available multi-curve fit programs
- ❑ Up to 20 instant flow adjustments

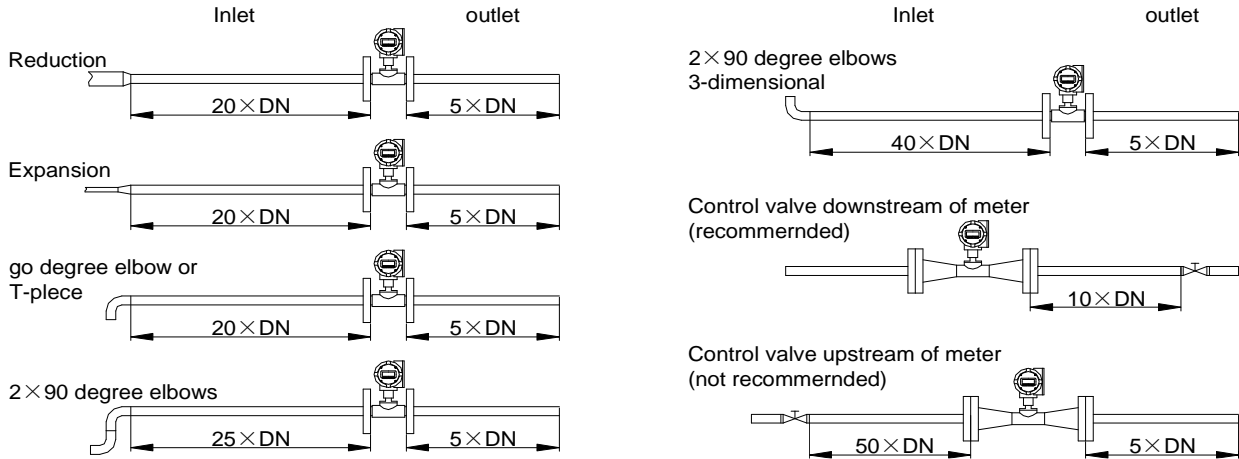
➤ SPECIFICATION

● Process Connection	Threaded, Flanged, Ball valve	● Housing protection:	NEMA 4,Class 1, Div 1, Groups B, C, & D
● Process temperature:	0 to +200°C	● Ex-protection:	II 2 GD EEx d IIC T2 or T3 or T4
● Operating pressure:	40 bar		
● Mass Flow rate	See model selection guide section	● 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 (approximate):	
	Mt/s, F/mn, BTU/Hr, BTU/min	Integral Type	
● Gas pressure effect	Minor under ±20% of calibration pressure	9716MP	8 KG
● Gas temperature effect	0.01% /° C	9720MP	10 KG
● Accuracy (and linearity)	± [1% of Reading + (.5% FS+ .02%/°C)]	9724MP	12 KG
	± 0.2% of Full Scale	9732MP	15 KG
● Repeatability	± 0.25% of Full Scale	9748MP	20 KG
● Turn down ratio	Over 100:1	MPNH style	Reduce weight by 0.5 kg for each above
● Response time	Less than one seconds	Remote Type	
● Material:	316SS as per DIN 1.4571 (AISI 316 Ti)	9116MP	10 KG
● Data logger	Flow rate, Total, Relays, etc.	9120MP	12 KG
	5800 data	9124MP	14 KG
● Linear signal output	0-5 VDC & 4-20 mA	9132MP	17 KG
● Pulse output	scalable	9148MP	22 KG
● Relays	Two 1-amp, SPDT	MPNH style	Reduce weight by 1 kg for each above
	User-selectable alarm functions	Notes:-weight	150# flanges included (add 1kg for 300#)
● Display units	Flow, Total flow, Switch settings	● Signal Interface	RS232 & RS485, HART, MODBUS,etc..
	Temperature, Elapsed time	● Power requirements	115VAC @, 1/8 A 230VAC @ 1/16 A
● RAM Back-up	Lithium Battery		24 VDC @ 1/4A
● Data storage	EPROM storage up to 10 years	● Power Consumption	5 Watts or less
● Self diagnostics functions	ADC, DAC, alarm for EMI interference	● NIST traceable	Standard for all calibration



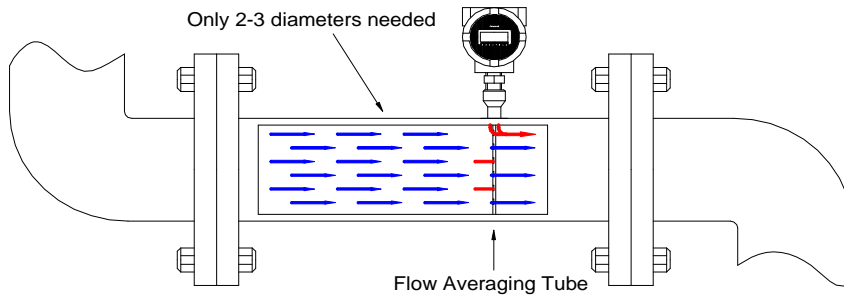
The Alia Advantage

Aliamass 9000 inline Flowmeters significantly reduces the requirements for straight, unobstructed upstream piping. Depending upon the piping configuration, the traditionally required upstream straight run can be 10, 20, even 50 diameters (see diagram below recommended installation piping for standard Flowmeters).



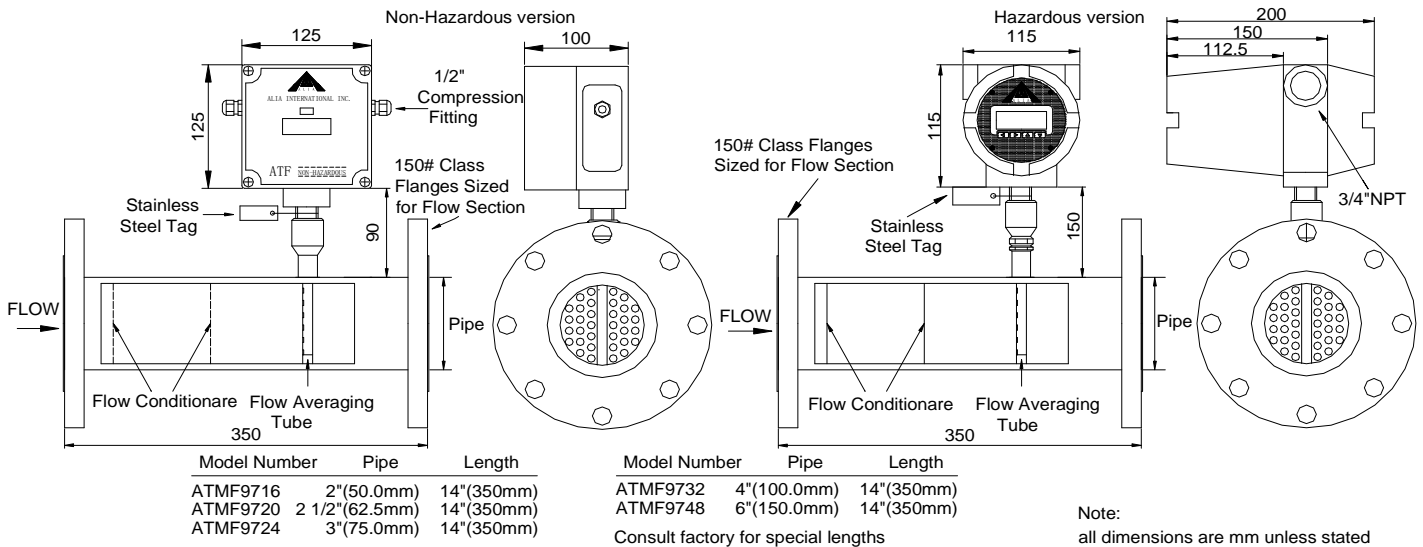
General recommendation of piping for typical insertion and inline flow meters

By measuring the flow velocities across the pipe our 9000 series are far more tolerant of flow profile problems than any other mass flow meters in the market. This allows the required straight run to be greatly reduced. The upstream requirement can be reduced to as little as three diameters



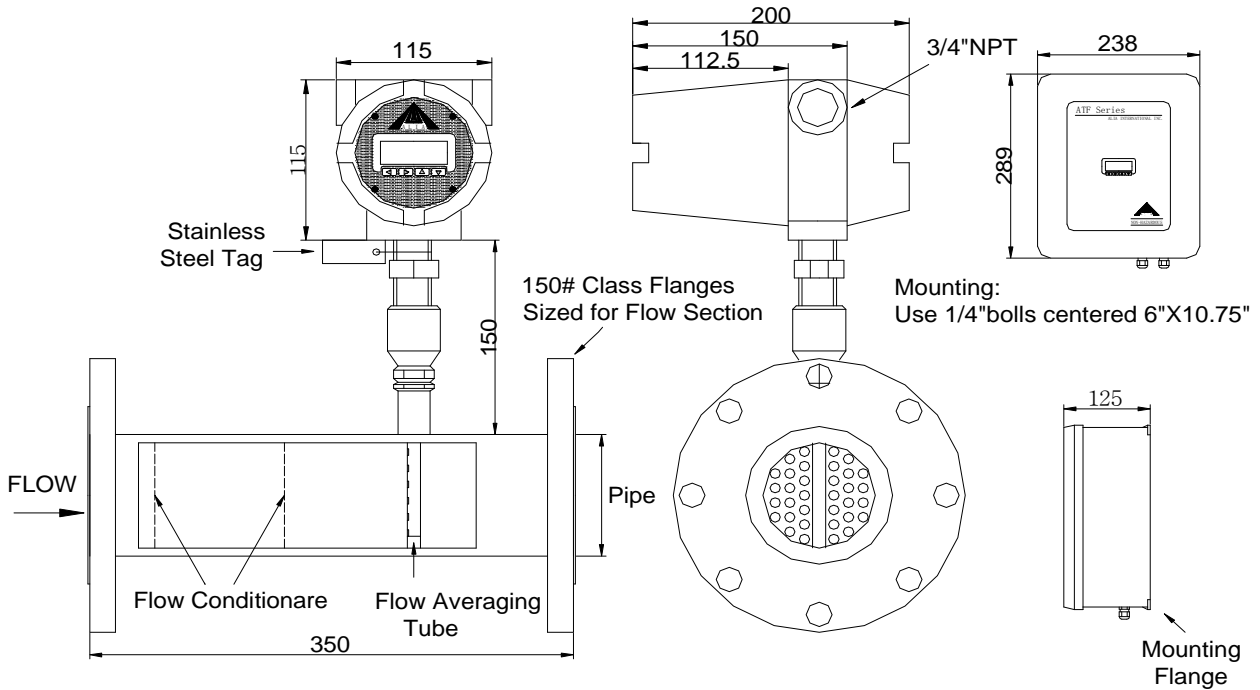
Reducing your straight-run piping to only 2-3 diameters while maintaining great accuracy

ATMF 9000 inline mass Flowmeters -Integral version

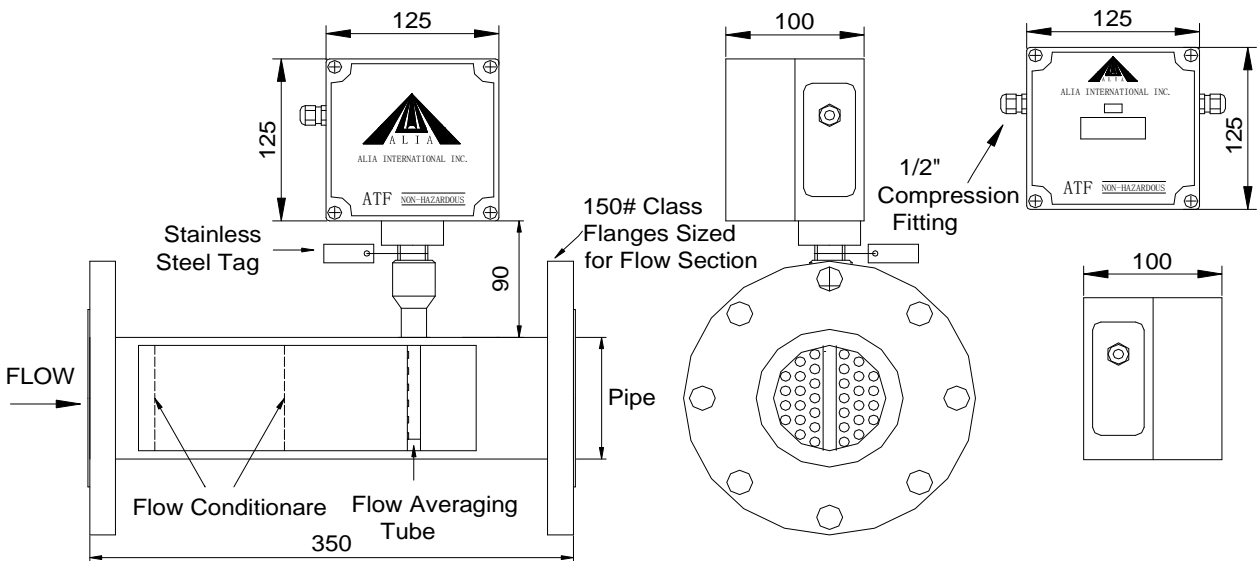


ATMF 9000 inline mass Flowmeters -Remote version

Hazardous version



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	Pipe	Length
ATMF9116	2"(50.0mm)	14"(350mm)
ATMF9120	2 1/2"(62.5mm)	14"(350mm)
ATMF9124	3"(75.0mm)	14"(350mm)
ATMF9132	4"(100mm)	14"(350mm)
ATMF9148	6"(150mm)	14"(350mm)

Consult factory for special lengths

Note: all dimensions are mm unless stated

Procedures to specify Aliamass 9000 inline mass flow meters meters

**** Please contact your local Alia application engineer****

Please provide the following information regarding your application.

- Gas Composition** 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 should be with each gas listed as a percent of the total, with the sum equaling 100%
- Full Scale Flow** We need your maximum and minimum flow rates (Full Scale), units must be Kg/hr, Lb/hr, NCMH or SCFM.
- Line Size** we need to know your pipe size as well connection type (flange, threaded, etc..)
- Gas Pressure and Temperature** We calibrate under conditions as close to your process environment as possible
- Electronics Temperature** Temperature of the environment surrounding the flowmeter's electronics.
- Power Requirements** Please specify your power requirements such as 24 VDC or 115 VAC or 230 VAC
- Configuration** We have various configurations such as Ex proof, Non-Ex proof, remote, integral. See below:

➤ Model Selection Guide

ATMF9000 Series													
Example ATMF9716-SSS-133--AC220-FSW1500-CR1-CONF-Natural Gas (2,000 NCMH, 70C,7 Barg)													
AMF9-	X	XX	XXXX	XXX	133	XX"	XXXX	XXXXXX	XXX	XXXX	Gas type, Flow rate,P,T,Pipe size		Description
Remote	1												Style
Integral	7												
2"	16	0-2500 NCMH											Flow body -Diameter and Flow Ranges
2 1/2"	20	0-3500 NCMH											
3"	24	0-5100 NCMH											
4"	32	0-9200 NCMH											
6"	48	0-20500 NCMH											
Explosion Proof		MP											Environment
Non Hazardous		MPNH											
316 SSS < 70C			SSS									Material (316SSS)	
316 SS (70-200C)			SSM										
Display- Included					133							Display	
AC 115							AC115						Power Supply
AC 230							AC230						
DC 24							DC24						
NPT								NPT					Process connections
DIN								DNFL					
JIS								JIS					
ANSI 150# -Included								FSW1500					
ANSI 3000#								FSW3000					
ANSI 600#								FSW6000					
One calibration curve									C1R				No. of output curves
Two calibration curves									C2R				
Three calibration curves									C3R				
Four calibration Curves									C4R				
Extended temperature electronics (-40C to 85C)									ETEMP				OPTIONS
Calibration and test point report									CONF				
Process Gas (Please indicate, gas type, flow rate, line size, pressure and temperature)												Process information	
For larger flanges sizes, other material of constructions (Hasteloy C, Monel), etc contact Alia inc.													