GENERAL
The Alia Inline mass Flowmeter assembly includes the flow sensing element, temperature sensing element, bridge amplifier and signal output board, transmitter enclosure, and flow section. Both integral and remote electronics configurations are available (see drawings below). The flow section is typically specified to match our customer's pipe configuration and is installed directly in the flow line. This design has the sensing elements mounted directly in the flow section for exposure to the process gas. Our Inline style thermal mass flowmeters are available in sizes from 1/4" pipe through 4" pipe and are provided with threaded male NPT ends as the standard mounting style. Optional end mounting styles may be specified, such as tube ends, tube end fittings, VCR mountings butt weld ends, flanged end configurations (see diagrams), etc., as required. Pipe sizes in excess of 4" (100mm) require insertion style thermal mass flow meters.

FEATURES
- Direct mass flow measurement of any gas with actual gas calibration
- Up to four independent switchable flow curves
- Tracking of overall gas consumption over a turndown ratio of at least 100:1
- Selectable engineering units, dynamically converts the flow rate and total flow
- A 2 line, 16 character display for rate, total, and relay status
- Data logger that can store flow, velocity, temperature, total, etc.
- 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
- Process temperature: 0 to +200°C
- Operating pressure: 40 bar
- Mass Flow rate: See model selection guide section
- Flow units: Kg/hr, Kg/mn, Kg/s Lb/hr, Lb/m Lb/s
  - NCMH, SCFM, NLPM, SLPM
  - M/s, F/mn, BTU/Hr, BTU/min
- Gas temperature effect: 0.01% /° C
- Accuracy (and linearity): ±[1% of Reading + (.5% FS + .02%/°C)]
  - ± 0.2% of Full Scale
- Repeatability: ± 0.25% of Full Scale
- Turn down ratio: Over 100:1
- Response time: Less than one seconds
- Material: 316SS as per DIN 1.4571 (AISI 316 Ti)
- Data logger: Flow rate, Total, Relays, etc.
  - 5800 data
- Linear signal output: 0-5 VDC & 4-20 mA
- Pulse output: scalable
- Relays: Two 1-amp, SPDT
  - User-selectable alarm functions
- Display units: Flow, Total flow, Switch settings
  - Temperature, Elapsed time
- RAM Back-up: Lithium Battery
- Data storage: EPROM storage up to 10 years
- Self diagnostics functions: ADC, DAC,
  - Alarm relay for EMI impulse noise
- Signal Interface: RS232 & RS485, HART, MODBUS, etc.

Housing protocols: NEMA 4, Class 1, Div 1, Groups B, C, & D
- Ex-protect II 2 GD EEx d IIC T2 or T3 or T4
- Cable (remote 300 meters)
- Wetted ms 316 SSS and Hastelloy (optional)
- Weight (approximate):
  - Integral Type:
    - 8636MP tc 1 to 4 Kg
    - 8669MP tc 2-3 Kg
    - 8710MP a 4-5 KG
    - 8716MP a 6-7 KG
    - 8724MP (flanges included): 10 KG
    - 8732MP (flanges included): 11 KG
  - MPNH style: Reduce weight by 0.5 kg for each above
- Remote Type:
  - 8036MP tc 3 to 6 Kg
  - 8069MP tc 6-8 Kg
  - 8110MP a 8-10 KG
  - 8116MP a 12-14 KG
  - 8124MP (flanges include): 16 KG
  - 8132MP (flanges included): 18 KG
  - MPNH style: Reduce weight by 1 kg for each above
  - Notes: weight +0.5 kg for 150# flanges +1kg for 300#
- Power req 115VAC @, 1/8 A 230VAC @ 1/16 A
  - 24 VDC @ 1/4A
  - Power Cor 5 Watts or less
- NIST traceable Standard for all calibration

SMC-ALIA LLC.
2960 Polk St. Suite 12, San Francisco, CA 94109 USA
URL: http://www.smartmeasurement.com
e-mail: thermal@smartmeasurement.com
ATMF80IL.V1.072806.xls
ATMF 8000 Inline Flowmeter - Remote Version

Hazardous Version

Non-hazardous Version

Model Number       O.D          Length
ATMF8636       1/4"(6.3mm)    6"(150mm)
ATMF8649       3/8"(9.5mm)    6"(150mm)
ATMF8659      1/2"(12.5mm)    7"(175mm)
ATMF8669      3/4"(19.0mm)    7"(175mm)
ATMF8689        1"(25.0mm)    8"(200mm)
ATMF8710     1 1/4"(32.0mm)   10"(250mm)

Model Number      MNPT         Length
ATMF8112   1 1/2"(37.5mm)    15"(375mm)
ATMF8116       2"(50.0mm)    20"(500mm)
ATMF8120     2 1/2"(62.5mm)   25"(625mm)
ATMF8124        3"(75.0mm)    30"(750mm)
ATMF8132        4"(100mm)   40"(1000mm)

Note: all dimensions are mm unless stated.
ATMF 8000 INLINE SERIES PRESSURE DROP

Flow Section Dimensions for Tube flow section and VCR Sensor

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VCR Gland SS-8-VCR-3
(requires VCR Nut SS-8-VCR-1 and VCR Gasket SS-8-VCR-2)

Inline style flowmeter with VCR end fittings
Please contact your local Alia application engineer

**You also need to provide the following information:**

**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 mixtures 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 Flowmeters 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

**ATM8000 Inline Series**

**Example**: ATMF8716-SSS-133--AC220-JIS-BTW-VCR-10Ra-O2CLN-CR1-CONF-O2 (600 NCMH, 70C, 7 Barg)

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**Explosion Proof**

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**Operating temperature**

AC 115
AC 230
DC 24

**Power Supply**

NPT
DIN
JIS
ANSI 150#
ANSI 300#
ANSI 600#

**Process connections**

One calibration curve
Two calibration curves
Three calibration curves
Four calibration curves

**Options**

Oxygen Cleaning
Butt Welded
Ra Finish (7-10Ra)
VCR Sensors
Extended temperature electronics (-40C to 85C)
Calibration and test point report

**Process information**

**Process Gas (Please indicate, gas type, flow rate, line size, pressure and temperature)**

**Note**: Options such bus outputs, HART, monel and hasteloy C material, etc. are available. PLEASE contact Alia-inc.