ELDRIDGE PRODUCTS, INC

Master-Touch™

Series 9700MP

Flow Averaging Tube(FAT™)

A leading manufacturer of Thermal Mass Flow Meters Since 1988.

4″ OD / 14″ Lenght shown here

SERIES 9732MP FAT

Eldridge Products, Inc. has pursued innovation and excellence in thermal dispersion mass flow measurements since 1988. Thermal Mass Flow Meters offer simple, low cost operating for accurate, economical and reliable gas flow measurements for various applications - Compressed Air, Biogas, Natural Gas, Aeration,Digesters, Landfield, Wet Gas, HVAC systems - virtually any gas flow application. Master-Touch flow meters can solve your gas measurement challenges.

Master-Touch Series 9800MP Flow Meters are for use in hazardous area locations (Flame proof locations) Certified to CSA/CUS, ATEX, IECEx, KOSHA standards.

Inline Style Thermal Mass Flow Meters *include a flow section that is usually specified to match the user's flow conduit and is then plumbed directly into the process line. This design has the sensing elements mounted directly on the flow section for exposure to the process gas. Our inline style flow averaging thermal mass flow meters are available in sizes from 2" pipe through 6" pipe and are provided with flanged end configurations. Pipe sizes in excess of 6" typically require insertion style thermal mass flow meters.*

Integral style thermal mass flow meters *all of the components and connections are located within the enclosure. The enclosure is Explosion proof (Flame proof) rated for use in hazardous are locations. The enclosure is mounted directly to the insertion probe assembly. The enclosure contains the electrical connections, signal processing electronics and the LCD display, with programming keypad.*

THERMAL GAS MASS FLOW MEASUREMENT APPLICATIONS-

- Compressed Air Monitoring
- Ventilation Hood Alarms
- Bio / Digester Gas production
- Boiler Combustion Efficiency
- Pharmaceutical Clean Rooms
- Food Processing
- Pulp & Paper Mills
- and many more.....
- Natural Gas Consumption
- Water &Waste Aeration
- Landfill Gas Recovery
- Stack / Flue Gases
- Semiconductor Fabrication
- Nitrogen Purging

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Flow Averaging Tubes (FAT)

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What is Flow Averaging Tube (FAT ™)

*Our patented **Flow Averaging Tubes**™ (FAT ™) Thermal mass flow meters generally follow King's Law, and use the principle of convective heat transfer to directly measure mass flow. EPI's proprietary thermal mass flow sensors use two **precisely matched**, reference-grade platinum **Resistance Temperature Detectors (RTDs**).The sensor elements are hermetically sealed in 316L Stainless Steel (or optional Hastelloy C276) thin wall sheaths. Our microcontroller operated smart sensor technology preferentially heats one RTD; the other RTD acts as the temperature reference. The process gas flow dissipates heat from the first RTD, causing an increase in the power required to maintain a balance between the RTDs. This increase is directly related to the molecular gas flow rate.Our sensors are temperature compensated for a wide process gas temperature range and insensitive to pressure changes, therefore the flow meter output is a direct mass flow rate value. The FAT is well suited for applications with limited straight run. Up-stream straight run can be reduced to three diameters. The probe has a number of large diameter inlet ports along the up stream length. The pressure at each inlet port is averaged to create the axial flow across our flow sensor. The gas returns to the main flow stream through the return port. The actual flow profile may still require some minor adjustment to achieve the best accuracy.*

Specifications

Linear signal output	0–5 Vdc & 4–20 mA (Flow and Temperature)
Event Relays (Two)	1 Amp @ 30 Vdc event selectable functions (see Manual)
Communication Protocols	RS232 & RS485 Modbus RTU or BACnet; Optional HART or Profibus DP
Display LCD 2-line 16-characte	Rate, Total, milliwatts, Temperature, Event
Accuracy including linearity (Ref.: 21°C)*	±(1% of Reading + 0.5% of Full Scale + GTC)
Repeatability	±0.2% of Full Scale
Sensor response time	1 second to 63% of final value
Turn down ratio	100:1; 10 SFPM (0.05 NMPS) Minimum Reading
Withstands Ambient temperature (electronics)	-40° to 158°F (-40° to 70°C)
Suitable Process Gas temperature range**	-40° to 392°F (-40° to 200°C)
Gas temperature coefficient (GTC)	0.02% Full Scale/°C
Gas pressure effect	Negligible over ± 50% of factory calibration pressure
Pressure rating maximum	500 PSI Std.
Input power requirement	6 Watts 24 Vdc @ 250mA 120 Vac 50/60 Hz optional 240 Vac 50/60 Hz optional
Flow Meter power requirements	5 watts maximum
Date/Time RAM Back-up	Lithium Button Cell, ten-year life, quantity 1
Wetted materials	316L Stainless Steel (Optional Hastelloy C276)
Standard temperature & pressure (STP)	70°F & 29.92" Hg (Air 0.075 lb./cubic foot) Optional 0°C & 1.0132 BarA (Air 0.081 lb./cubic foot) Or user specified STP at time of order
NIST traceable calibration	Yes

* EPI is not responsible for measurement errors due to flow profile irregularities caused by installation, piping configurations, surface corrosion or scale, valve placement, etc.
** Specify average process operating temperature, with high & low limits.
NOTE: Specifications subject to change without notice. Consult our web site, www.epiflow.com, at time of order.
NOTE: Eldridge Terms & Conditions for sales available on our web site, www.epiflow.com.

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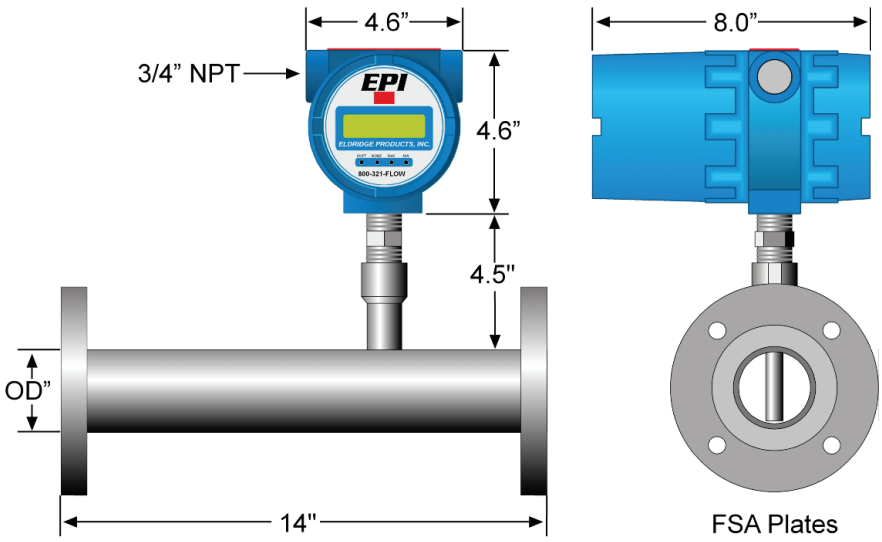
Dimensional Specifications

Model Number	OD"	Length
9716MP	2"	14"
9720MP	2 1/2"	14"
9724MP	3"	14"
9732MP	4"	14"

Flow Transmitter Assembly



FSA Plates not shown

Not available for Oxygen service.

Certification Choices

Flow Transmitter - CSA/CUS, ATEX, IECEx, KOSHA (specify preference at the time of order)

C US

CSA/CUS
APPROVED INSTRUMENT
For use in hazardous area locations; Class I Group B, C, D; Class II Group E, F, G; Class III: Encl Type 4X; Class I Zone I; AEx d IIB + H2 IP66; Ex d IIB + H2 IP66; T2 or T3 or T4 as marked; Ta = 0°C to 50°C

Consult Factory for T3 or T4

IECEx
APPROVED INSTRUMENT
For use in hazardous area locations; T2 or T3 or T4 as marked; Ta= 0ₒC to 50ₒC; Ex d IIB + H2 T2...T4 Gb IP66; Ex tD A21 IP66, T135°C...T300ₒC IECEx CSA 11.0014

Consult Factory for T3 or T4

KOSHA
APPROVED INSTRUMENT
For use in hazardous area locations; Class I Group B,C D; Class II Group E, F, G; Class III; Encl Type 4x; Class I Zone I; AEx d IIB + H2 IP66 Ex d IIB +H2 T2...T4 Gb IP66; Ex tD A21 IP66 T135°C....T300°C

Consult Factory for T3 or T4

ATEX
APPROVED INSTRUMENT
For use in hazardous area locations; Ta = 0°C to 50°C; IP66; Ex d IIB + H2 T4 Gb / Ex t IIIC T135°C Db or EX d IIB + H2 T3 Gb/ Ex t IIIC T2000°C Db or Ex d IIB + H2 T2 Gb/Ex t IIIC T3000°C Db; SIRA 12ATEX1302

Consult Factory for T3 or T4

CE
APPROVED INSTRUMENT

EPI™
ELDRIDGE PRODUCTS, INC

ORDER YOURS TODAY

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WANT TO LEARN MORE...

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CMC TECHNOLOGIES

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