



# Eldridge Products, Inc.

*a leading manufacturer of thermal gas flow meters since 1988*

*Eldridge Products, Inc. has pursued innovation and excellence in thermal dispersion gas mass flow measurement since 1988. Thermal flow meters offer simple, low cost operation for accurate, economical and reliable gas flow measurement for compressed air, natural gas, aeration basins, bio/digester gas, HVAC systems — virtually any gas flow. With all of the major industry approvals and a variety of configuration and installation choices, our Master-Touch™ flowmeters could be solving your measurement challenges, too.*

## Master-Touch™ Series 9700MPNH Flow Meters

**MPNH Series flowmeters are approved for use in ordinary locations (see specifications)**

**Inline style thermal mass flowmeters** 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 flowmeters are available in sizes from 2" pipe through 4" pipe and are provided with flanged end configurations, as required. Pipe sizes in excess of 4" typically require insertion style thermal mass flow meters.

**Integral style thermal mass flowmeters** have all of the electrical components and connections located within one enclosure. This enclosure may be rated for either hazardous environments (MP Series) or for ordinary, non-hazardous environments (MPNH Series), as necessary. The enclosure is mounted directly to the inline flow section or to the insertion probe assembly at the point of measurement. The enclosure includes the all of the electrical connections as well as the linearizing electronics and the display/keypad assembly.



Our patented **Flow Averaging Tubes™ (FAT™)** use the principle of convective heat transfer to directly measure mass flow, and are well suited to most applications with limited available straight run. In many installations, the up-stream straight run can be reduced to three diameters. The probe has a number of large diameter inlet ports along the length of the upstream impact surface. The 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 returns to the main flow stream through the ports located near the sensing elements. Anomalies in the actual flow profile or installations in non-circular ducts may still some require minor adjustment to achieve the best accuracy.



### THERMAL GAS MASS FLOW MEASUREMENT APPLICATIONS —

Compressed Air Monitoring

Natural Gas Consumption

Ventilation Hood Alarms

Water & Wastes Aeration

Bio / Digester Gas Production

Landfill Gas Recovery

Boiler Combustion Efficiency

Stack / Flue Gases

Pharmaceutical Clean Rooms

Semiconductor Fabrication

Food Processing

Nitrogen Purging

Pulp & Paper Mills

and many more!



## Specifications

Linear signal output.....	0–5 VDC & 4–20 mA (Flow and Temperature)
Signal Interface.....	RS232 & RS485 Modbus RTU embedded Optional HART or Profibus DP LCD (flow rate, flow total, gas temperature)
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 @ 15 SFPM (.076 NMS) Minimum Reading
Electronics PCB temperature range .....	-40° to 158°F (-40° to +70°C)
Environmental temperature range .....	-40° to 140°F (-40° to +60°C)
Gas temperature range .....	40°–150°F (5°–65°C)
Gas temperature coefficient (GTC) .....	0.05% Full Scale/°C @ 40°–100°F (5°–40°C) 0.10% Full Scale/°C @ 100°–150°F (40°–65°C)
Gas pressure effect.....	Negligible over ± 20% of absolute calibration pressure
Pressure rating maximum .....	500 PSI
Input power requirement.....	24VDC @ 250mA 115 VAC 50/60 Hz optional 230 VAC 50/60 Hz optional
Flow Transmitter power requirements .....	5 watts maximum
RAM Back-up .....	Lithium Battery
Wetted materials .....	316 Stainless Steel (Hastelloy optional)
Standard temperature & pressure (STP) .....	70°F & 29.92" Hg (Air .075 lb./cubic foot)
NIST traceable calibration .....	Standard

\* The accuracy specification applies to the instrument only. EPI is not responsible for measurement errors due to flow profile irregularities caused by installation piping configurations, corrosion on inner pipe surfaces, valve placement, etc.

**NOTE: Specifications subject to change without notice. Consult our web site, [www.epiflow.com](http://www.epiflow.com), at time of order.**

**NOTE: Eldridge Terms & Conditions for sales available on our web site, [www.epiflow.com](http://www.epiflow.com).**

## Approval Choice

MPNH Series Enclosure — Ordinary (Non-Hazardous) area locations (standard)

**Flow Transmitter Assembly**

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

**⚠ Not available for Oxygen service.**

### APPROVAL

CSA/CUS  
APPROVED INSTRUMENT  
Class 2252-03 Process Control  
Equipment for Ordinary  
Locations; Class 2252-80  
Process Control Equipment  
for Ordinary Locations

Certified to US CSA/CUS  
Standards: Class 2252-03  
Process Control Equipment  
for Ordinary Locations;  
Class 2252-80 Process Control  
Equipment for Ordinary  
Locations

Certified to US Requirements