



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 800MPNH–8100MPNH 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 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 or tube, and are provided with a variety of options such as MNPT ends, tube end fittings, butt weld ends, flanged end configurations, etc. as required. Pipe sizes in excess of 4" typically require insertion style thermal mass flow meters.



Remote style thermal mass flowmeters utilize two enclosures. One enclosure is mounted at the point of measurement on the flow section or on the probe assembly. This enclosure may be rated for either hazardous environments or for ordinary, non-hazardous environments, as necessary. The second (remote) enclosure is usually placed in a readily accessible location rated for non-hazardous conditions. (Contact the factory for information concerning remote explosion-proof enclosure). The remote enclosure includes the all of the electrical connections as well as the linearizing electronics and the display/keypad assembly. Only a four-wire, twisted-pair cable is required to carry the input power and flow signal between the two enclosures.

Thermal mass flowmeters use the principle of convective heat transfer to directly measure mass flow. EPI's proprietary thermal mass flow sensors use two ratiometrically-matched, reference-grade platinum Resistance Temperature Detectors (RTDs). The platinum sensing element wire is encapsulated in a 316 Stainless Steel sheath or, if specified, a Hastelloy C sheath. 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 gas molecular rate of flow. Our sensors are temperature compensated for a wide process gas temperature range and insensitive to pressure changes, so the output signal is a true mass flow rate signal.



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°–392°F (-40°–200°C) extended range available |
| Gas temperature coefficient (GTC) | 0.02% Full Scale/°C |
| Gas pressure effect..... | Negligible over ± 20% of absolute calibration pressure |
| Pressure rating maximum | 500 PSI Std. |
| 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.

** Consult factory for options required for 150°–392°F (66°–200°C)

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.

Approval

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

Remote Electronics Enclosure

Flow Transmitter Assembly

| Model Number | MNPT | Length | Model Number | MNPT | Length |
|--------------|------|--------|--------------|------------|--------|
| 8036MPNH | 1/4" | 6" | 8110MPNH | 1 1/4" | 10" |
| 8049MPNH | 3/8" | 6" | 8112MPNH | 1 1/2" | 14" |
| 8059MPNH | 1/2" | 7" | 8116MPNH | 2" | 14" |
| 8069MPNH | 3/4" | 7" | 8120MPNH | 2 1/2" | 14" |
| 8089MPNH | 1" | 8" | 8124MPNH | 3" Flanged | 14" |
| | | | 8132MPNH | 4" Flanged | 14" |

FSA Plates not shown

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

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