



# Eldridge Products, Inc.

## Manufacturer of Master-Touch™ Thermal Gas Mass Flowmeters

*Eldridge Products, Inc. has pursued innovation and excellence in thermal dispersion gas mass flow measurement for 25 years. 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 8000MPNH–8100MPNH Flowmeters

*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 two-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. A forced null, Wheatstone bridge, 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 and insensitive to pressure changes, so the output signal is a true mass flow rate signal.



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### 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!



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### Specifications

Linear signal output .....	0–5 VDC & 4–20 mA
Signal Interface.....	RS232 & RS485 Modbus RTU embedded HART, Profibus DP (optional, 24 VDC only)
Accuracy, including linearity (Ref.: 21°C)* .....	±[1% of Reading + (.5% + .02%/°C of Full Scale)]
Repeatability .....	±0.2% of Full Scale
Sensor response time.....	1 second
Turn down ratio.....	100:1 (1500 SFPM/7.6 NMPS minimum)
Electronics temperature range.....	-40°–85°C (-40°–185°F)
Gas temperature range** .....	-40°–200°C (-40°–392°F) extended range available
Gas pressure effect.....	Negligible over ± 20% of absolute calibration pressure
Pressure rating maximum .....	500 PSI Std., > 500 PSI special
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 66°–200°C (150°–392°F)

### Approval

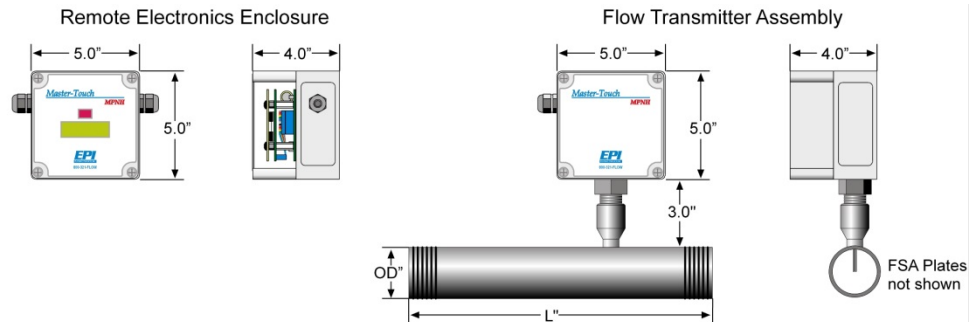
MPNH Series Enclosure — Ordinary (Non-Hazardous) area locations

#### 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



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

Two-wire, twisted pair interconnect cable  
 required between Remote Electronics  
 and Flow Transmitter (max. 5 ohm resistance).

AWG	Wire Length
20	200'
18	300'
16	500'
14	800'
12	1250'

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