

Series 9800 MPNH (FAT)

A leading manufacturer of Thermal Mass Flow Meters Since 1988.



**SERIES
9800MPNH (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, Landfill, Wet Gas, HVAC systems - virtually any gas flow application. Master-Touch flow meters can solve your gas measurement challenges.

Master-TouchTM Series 9800MPNH (FAT) Flow Meters are approved for use in ordinary locations (Please see specifications)

Insertion Style Thermal Mass Flow Meters include a sensor & probe assembly that is inserted into the process gas flow conduit to allow the process gas to flow across the flow sensing elements. Our insertion style flow meters are available with 1/2", 3/4", or 1" OD probes. Tube fittings and ball valve retractor assemblies, with or without a mounting flange, are also available from the factory as options. The tube length must be specified upon ordering and is determined by the size of the process pipe. Large ducts or stacks may require multiple averaging tubes to achieve the very best accuracy. For problematics, unique situations, or other probe diameters and lengths, please consult the factory.

Integral Style Thermal Mass Flow Meters 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 all of the electrical connections as well as the linearizing electronics and the display/keypad assembly.

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

Master-Touch™

RTD's (Resistance Temperature Detectors)



Series 9800 MPNH (FAT)

Our patented **Flow Averaging Tubes (FAT)** 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 signal is a true direct mass flow rate value. Well suited for application with limited straight run. Up-stream straight run can be reduced to three diameters. Probe has a number of large diameters inlet ports along the 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 adjustments 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. Optional HART, BACnet or Profibus DP
Display LCD 2-line 16-characte	Flow Rate, Flow 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 @ > 1500 SFPM / 7.62 NMPS Minimum Reading
Withstands Ambient temperature (electronics)	-40° to 120°F (-40° to 50°C)
Suitable Process Gas temperature range**	40° to 150°F (5° to 65°C) Extended range available
Gas temperature coefficient (GTC)	0.05% Full Scale/°C @ 40°F -100°F or 0.10% Full Scale/°C @ 100° - 150° F
Gas pressure effect	Negligible over ± 20% of factory calibration pressure
Pressure rating maximum	500 PSI Std.
Input power requirement	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.

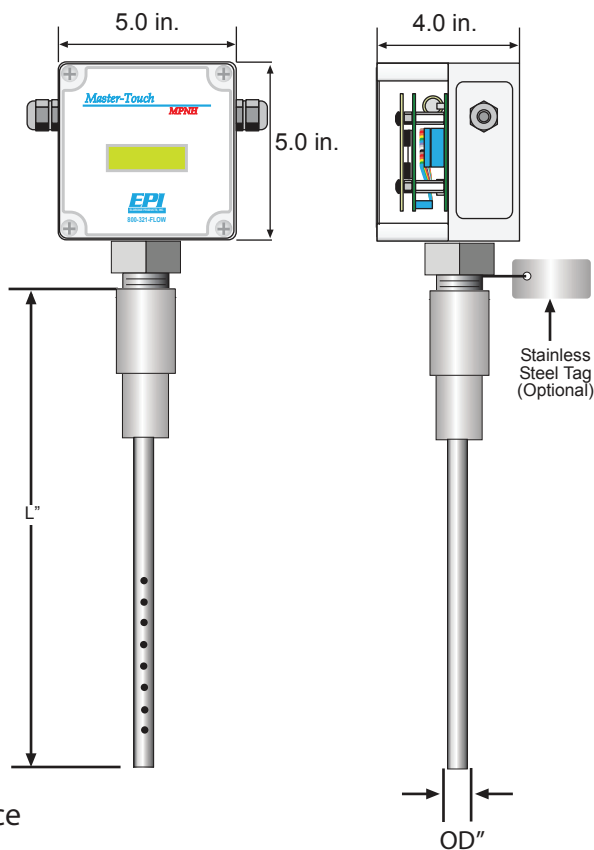
** Specify average process operating temperature, with high & low limits.

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.

Dimensional Specifications

FLOW TRANSMITTER ASSEMBLY



Model Number	MNPT"	Length
9840MPNH	1/2"	36"
9860MPNH	3/4"	60"
9880MPNH	1"	84"

! Not available for Oxygen service

Certification Choices

MPNH Series Enclosure - Ordinary (Non-Hazardous) area locations only. Flow Transmitter - CSA/CUS, CE
Remote Enclosure - CSA/CUS Non-Hazardous area location (Ordinary Locations)



CSA/CUS

APPROVED INSTRUMENT
Class 2252-03 Process
Control Equipment for
Ordinary Locations; Class
2252-80 Process Control
equipment for Ordinary
Locations. Certified



CE
APPROVED INSTRUMENT



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