



# 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 8800MP Flow Meters**

***MP Series flowmeters are approved for use in hazardous locations (see specifications)***

**Insertion style thermal mass flowmeters** 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 flowmeters 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. Standard lengths range from a minimum of 6" to a maximum of 36". For other probe diameters and lengths, please consult the factory.



**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.

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<br>Optional HART or Profibus DP<br>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 @ 1500 SFPM/7.6 NMPS minimum FS   |
| 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)<br>extended range available   |
| Gas temperature coefficient (GTC) .....           | 0.02% Full Scale/°C   |
| Gas pressure effect.....                          | Negligible over ± 20% of absolute<br>calibration pressure   |
| Pressure rating maximum .....                     | 500 PSI Std.  |
| Input power requirement.....                      | 24VDC @ 250mA<br>115 VAC 50/60 Hz optional<br>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](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 Choices

MP Series Flow Transmitter — CSA/CUS, ATEX, IECEx, KOSHA (customer to specify)

### APPROVAL CHOICES

#### CSA/CUS

##### APPROVED INSTRUMENT

For use in hazardous area locations; Class I Division 1 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

#### 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 T200°C Db or Ex d IIB+H2 T2 Gb/EX t IIIC T300°C Db; SIRA 12ATEX1302

#### IECEx

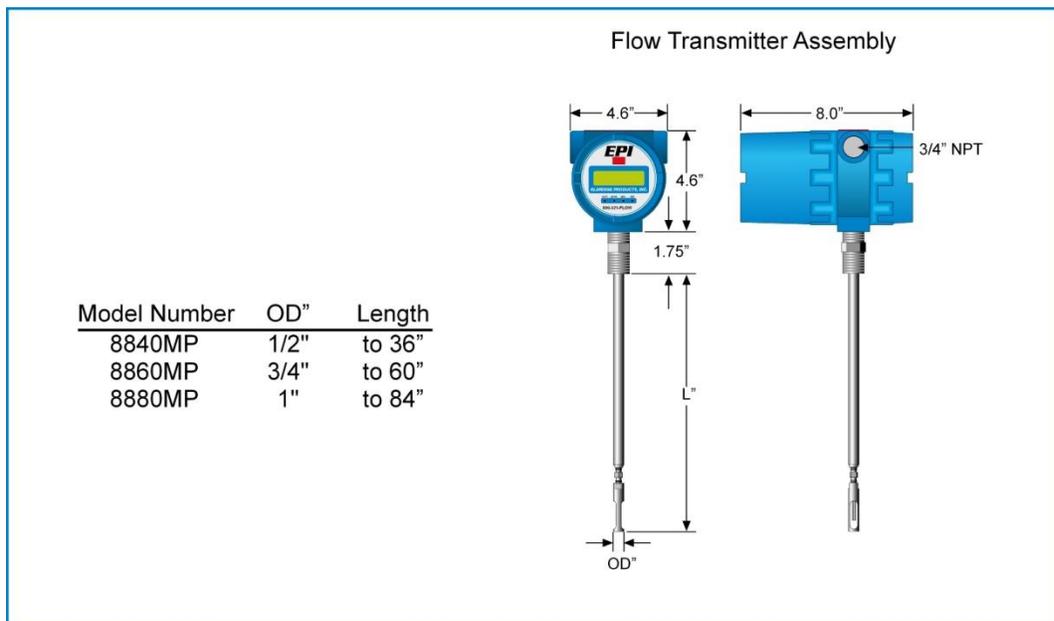
##### APPROVED INSTRUMENT

For use in hazardous area locations; T2 or T3 or T4 as marked; Ta = 0°C to 50°C; Ex d IIB+H2 T2...T4 Gb IP66; Ex tD A21 IP66 T135°C...T300°C IECEx CSA 11.0014

#### 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



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