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 8600MP–8700MP Flowmeters

MP Series flowmeters are approved for use in hazardous 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.

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

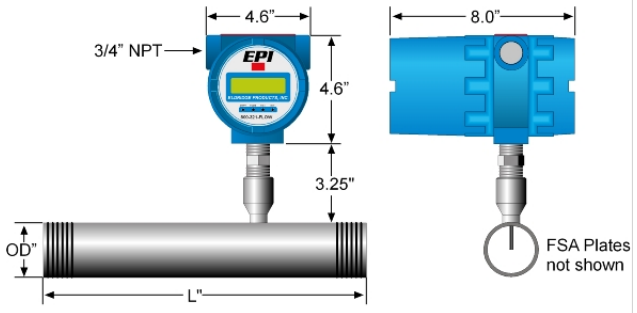
Linear signal output	0–5 VDC & 4–20 mA (Flow and Temperature)
Signal Interface	RS232 & RS485 Modbus RTU embedded
	HART, Profibus DP (optional)
	LCD (flow rate, flow total, gas temperature)
Accuracy, including linearity (Ref.: 21°C)*	±[1% of Reading + (.5% + .02%/°C of Full Scale)]
Repeatability	±0.2% of Full Scale
Sensor response time	1 second
Turn down ratio	100:1 (1500 SFPM/7.6 NMPS minimum)
Electronics temperature range	-40°–70°C (-40°–158°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 Choices

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

Flow Transmitter Assembly



Model Number	MNPT	Length
8636MP	1/4"	6"
8649MP	3/8"	6"
8659MP	1/2"	7"
8669MP	3/4"	7"
8689MP	1"	8"
8710MP	1 1/4"	10"
8712MP	1 1/2"	14"
8716MP	2"	14"
8720MP	2 1/2"	14"
8724MP	Flanged	14"
8732MP	Flanged	14"

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APPROVAL CHOICES

CSA/CUS
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 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 T135°C...T300°C