

## Non-Hazardous Applications



In many industries the need for monitoring gas flow does not involve hazardous gases or potentially dangerous operating conditions. These applications can include many water and wastewater treatment applications, the HVAC

industry, the general use of compressed air, and many other applications using air, nitrogen, argon, etc. In these cases, an explosion-proof electronics enclosure is not required, and may be considered a needless expense. To meet this challenge, *Eldridge Products, Inc.* now offers the Master-Touch™ Family of microprocessor-based thermal gas mass flowmeters... in a non-hazardous enclosure.

We have combined all of the features of our Master-Touch technology with a convenient ABS enclosure. These new enclosures have a clear polycarbonate cover for viewing the rate and total display. The cover can be easily removed for all input/output connections and for access to the four button tactile key-pad which provides direct control and adjustment of the flowmeter. So now you can have the accuracy and flexibility of the Master-Touch for virtually all non-hazardous applications...



### Thermal Technology

Thermal mass flowmeters are solid state instruments that use the principle of convective heat transfer to directly measure mass flow. *EPI's* sensors consist of two resistance temperature detectors (RTDs). 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 no additional

instrumentation or calculations are required. The output signal is a true mass flow rate signal which can be directly interfaced with your data acquisition system.



### Master-Touch™ Advantages

With a Master-Touch™ flowmeter, you get a powerful set of features that includes:

- Tracking of overall gas consumption over a turndown ratio of at least 100:1 with an accuracy of  $\pm [1\% \text{ of Reading} + (.5\% \text{ of Full Scale} + .02\%/^{\circ}\text{C})]$ , and repeatability of .02% Full Scale;
- Extensive diagnostics including time and date stamping of maximum and minimum flow rates;
- User-selectable high or low biasing to optimize long term tracking against supplier metering;
- A 2 line, 16 character display for rate, total, and relay status;
- Up to four independent metering ranges, and the ability to switch between the ranges without interrupting



your production process; and

- A wide variety of user-selectable engineering units that dynamically convert the flow rate and elapsed total to the new units.

You can control all of these features with the four button touch keypad or via RS232 and RS485 I/O communications.

The ABS enclosure gives you convenient access to all power supply input and sensor signal output

connections. Your installation requirements can be easily accommodated by your choice of in-line or insertion models with 115VAC, 230VAC, or 24VDC configurations, and with either integral or remote displays. The remote style AC-powered models only need two conductors from the flowbody electronics (5 ohm loop) — no local power is required.

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## Specifications

Linear signal output	0–5 VDC & 4–20 mA
Signal Interface	RS232 & RS485
Accuracy (including linearity)	$\pm [1\% \text{ of Reading} + (.5\% \text{ Full Scale} + .02\%/^{\circ}\text{C})]$
Repeatability	$\pm 0.2\% \text{ of Full Scale}$
Sensor response time (stainless)	1 second
Turn down ratio	100:1 minimum
Electronics temperature range	0–50° C (32–122° F), extended temperature optional
Gas temperature range	0–200° C (32–392° F), extended range available
Gas temperature effect	.01% /° C
Gas pressure effect	Negligible over $\pm 20\%$ of absolute calibration pressure
Pressure rating maximum:	
Inline flowmeters	500 PSI Std., > 500 special
Insertion flowmeters .500 O.D.	125 PSI Std., > 125 special
" " .750 O.D.	55 PSI Std., > 55 special
Transmitter power requirements	5 Watts or less
Flow transmitter enclosure	NEMA4/4X ABS plastic with clear polycarbonate cover
Wetted materials	316 Stainless Steel
Standard temperature & pressure (STP)	70° F & 29.92" Hg (Air .075 lb./cubic foot)
NIST traceable calibration	Standard

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## SPECIFICATION NOTICE

The specifications contained herein are subject to change without notice. EPI cannot guarantee the applicability or suitability of our products in all situations since it is impossible to anticipate or control every condition under which our products and specifications may be used.

## LIMITED WARRANTY

EPI warrants its products to be free from defects in materials and workmanship for one year from the date of factory shipment. If there is a defect, the purchaser must notify EPI of the defect within the warranty period. Upon receipt of the defective product, EPI will either repair or replace the defective product at its sole option. EPI MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AS TO THE PRODUCTS. EPI MAKES NO WARRANTY THAT THE GOODS SOLD TO ANY PURCHASER ARE FIT FOR ANY PARTICULAR PURPOSE. FURTHERMORE, EPI MAKES NO WARRANTY OF MERCHANTABILITY WITH RESPECT TO ANY PRODUCTS SOLD TO ANY PURCHASERS. There are no other warranties that extend beyond the description on any brochure or price quote.

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