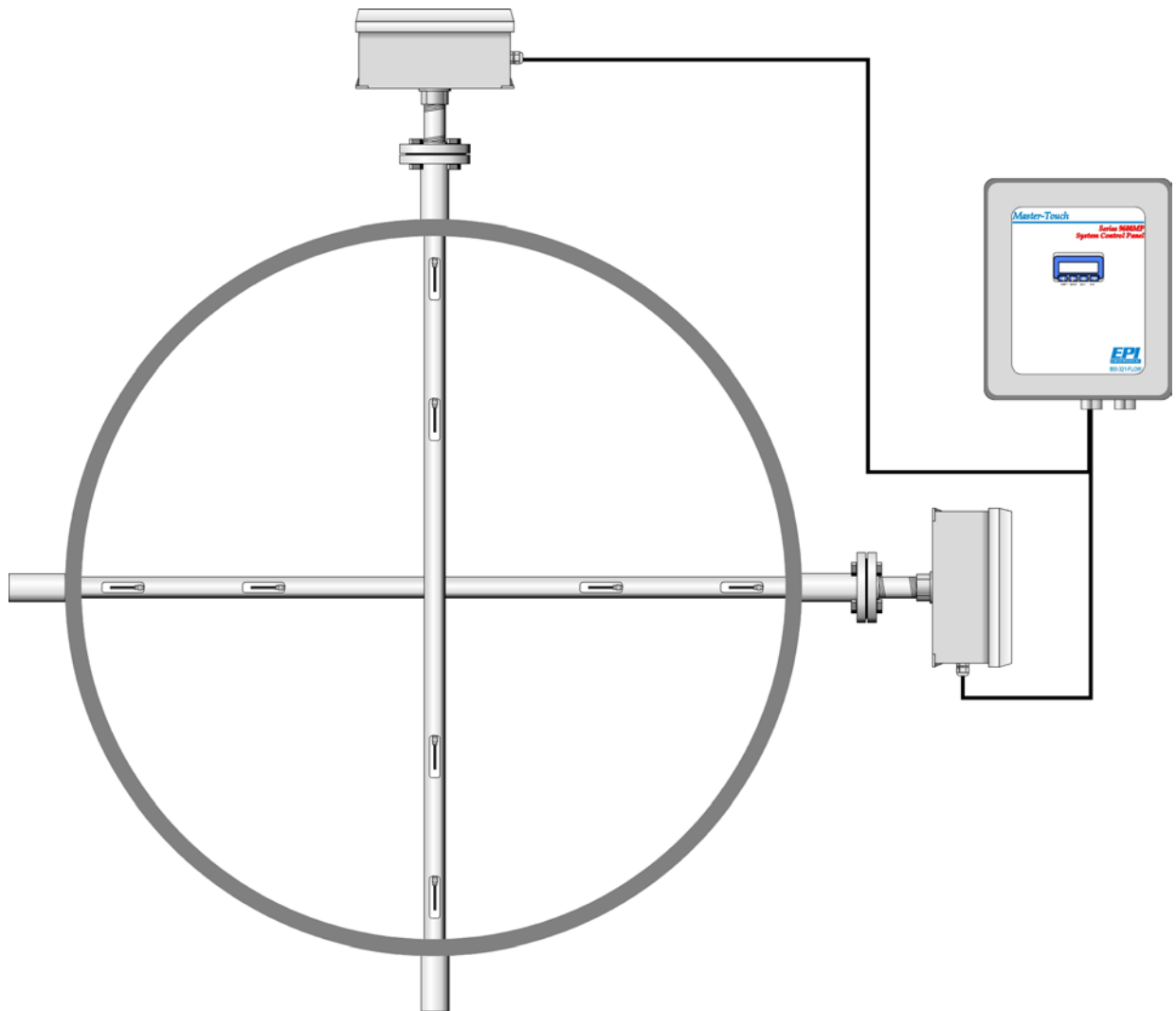


Eldridge Products, Inc.

Series 9000MP Multipoint Systems



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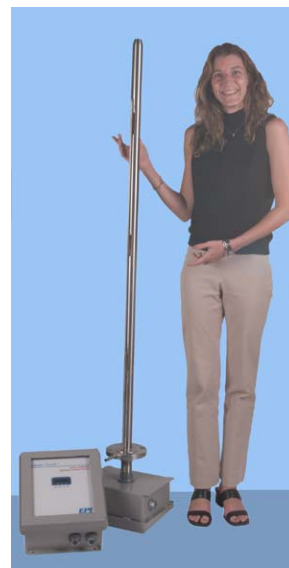
Eldridge Products' Series 9000MP Multipoint Systems are designed to measure gas flows where two or more sensing points are required due to large cross-sectional areas, such as large air intake ducts or exhaust and flue stacks. Our multipoint systems are installed throughout the world, providing our customers with years of steady, reliable service. Coupled with our new Air Purge System, the Series 9600MP Multipoint Systems are now well-suited to an even greater variety of industrial applications.

Configuration

The typical Series 9000MP Multipoint System includes one or more Series 9000MP Probe and a Series 9600MP System Control Panel. The 9000MP flow transmitter probe assembly is the heart of the system. The probe assembly consists of two or more flow sensors mounted in a 1½" OD probe shaft. Each sensor is matched to its own bridge board, and is then individually calibrated and linearized. The voltage output from each sensor and bridge board set is sent to its own microprocessor board for accurate linearization of the flow rate signal. The linearized output signals from the multiple sensors in the probe are then averaged by the probe assembly electronics. The probe assembly's averaged

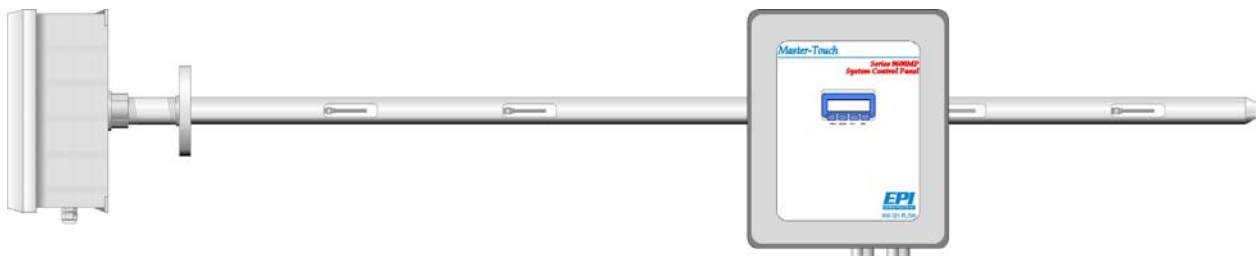
output signal is typically transmitted to a Series 9600MP System Control Panel. If more than one probe is installed, then all of the probes' output signals are transmitted to the control panel.

The Series 9601MP System Control Panel is housed in a 12" x 10" NEMA 4X fiberglass enclosure. This enclosure holds the power supply, Averager Board (for systems with multiple probe assemblies), and a microprocessor board for control of the overall system output signal.



The control panel can be located from as little as a few feet to as much as thousands of feet from the transmitter probe assemblies. The control panel provides the power for the probe assemblies and receives the averaged output over a four wire electrical connection.

The control panel provides two analog output signals (0–5 VDC and 4–20 mA) linearized proportionally to the grand average flow rate, as well as RS232/485 digital interfaces for communication with a PC running *EPICommunicator* software. The 4–20 mA grand average output can drive up to 1200 ohms.



Optional Air Purge System

The Eldridge Air Purge System (APS) option provides a means of cleaning the sensors in applications where particulates cause problems. A stainless steel tube is mounted on the downstream side of the probe support with a pair of outlet holes positioned at each

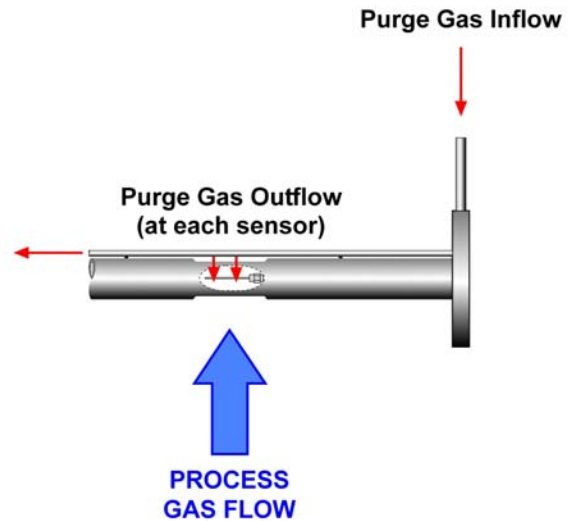


sensor. The tube is connected to a tap located on the mounting flange. After basic installation of the multipoint system is complete, a pressurized gas line — typically compressed air) — is connected to the tap. The gas is released at set intervals to clean the sensor surface of any accumulated particulates.

Although the frequency and duration of the purge cycle can be controlled in a variety of ways separate from the Multipoint System itself, the Master-Touch software supports relay activation based on elapsed flow totals or time intervals. Relay timer functions are then used to set the duration of the active gas purge. For example, a purge cycle might be set to begin after an elapsed flow total of 10,000 SCFH and last for 5 seconds, or begin every 7 days and last for 30 seconds, or virtually any range of similar parameters. During the purge cycle the new Menu 413 — Flow Hold option can be set to maintain the flow rate at its level when the purge was activated. This option preserves the integrity of the flow rate and elapsed



total data which might otherwise be compromised by the purge gas stream.



Optional Multiple C-Factors

The strength of multipoint systems is the increased number of sensing points which measure the gas flow rates across large cross-sectional areas. However, even multipoint systems can be adversely affected by severe flow profile changes at different flow rates. The Master-Touch software now supports optional multiple C-Factors for making up to 20 adjustments to the linear flow output from the System Control Panel. Menus 820 – 839 can be used to make minor adjustments to correct for flow profile anomalies at increments of 5% of the Full Scale. For example, at the upper 10% of the Full Scale flow rate, the flow profile distortions create an overall system flow rate reading which is determined to be 4% too high. To correct this, a C-Factor of .96 is entered into Menu 838 (90–95% FS) and 839 (95–100% FS). Menu 840 is used to reset all C-Factors back to a value of "1".

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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.

Specifications

Linear signal output	0–5 VDC & 4–20 mA
Signal Interface	RS232 & RS485
Sensor Accuracy, including linearity (Ref.: 21°C)	±[1% of Reading + (.5% + .02%/°C of Full Scale)]
Sensor Repeatability	±0.2% of Full Scale
Sensor response time	1 second
Turn down ratio	100:1 minimum
Electronics temperature range	0°–50°C (32°–122°F), extended temperature optional
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
9600MP input power requirement	24VDC @ 250mA 115 VAC 50/60 Hz optional 230 VAC 50/60 Hz optional
9600MP Control Panel power requirements	5 watts maximum
9600MP Control Panel enclosure	NEMA 4X fiberglass, 10" x 12" x 6"
9000MP Probe Assembly enclosure	NEMA 4X fiberglass, 8" x 10" x 4" flanged
Wetted materials	316 Stainless Steel
Standard temperature & pressure (STP)	70°F & 29.92" Hg (Air .075 lb./cubic foot)
NIST traceable calibration	Standard

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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