

Series 7000 Analog Flow Switches

Eldridge Products, Inc. produces a wide variety of thermal instrumentation for fluid mass flow measurement and control. Built with over twenty-five years experience in thermal mass flow metering design and production, our thermal flow switches have earned a reputation for superior quality, dependability, ease of use, and durability in real world applications. Our Series 7000–7200 flow switches are CE, CSA, and CENELEC approved for use in hazardous locations. The Series 7000NH–7200NH flow switches are designed for use in non-hazardous surrounding environments.

All of EPI's flow switches have two single-pole, double-throw relays for Hi/Hi, Lo/Lo and Hi/Lo capability. The contact closure is 5 amps @ 24 VDC and 115 VAC. Two LEDs are provided for verification that the Hi or Lo alarm has been triggered. The standard configuration has 316 Stainless Steel wetted parts (Hastelloy & Monel are also available) for a rugged, cleanable instrument designed for use in applications where corrosion, abrasion, high pressure or rough handling may be expected.



EPI's Flow Technology

Thermal mass flow switches 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 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 rate of flow.

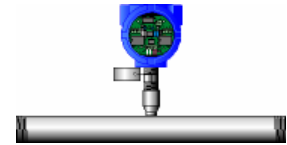
Our sensors are temperature compensated and insensitive to pressure changes, so no additional instrumentation or calculations are

required. The result is a true mass flow rate signal to activate the relays. A response time delay of one to thirty seconds is available as standard with automatic reset in one second upon resumption of non-fault flow conditions.

Installation Options

A wide variety of installation options are available. The Inline style thermal mass flow switch assembly includes the flow sensing element, temperature sensing element, bridge amplifier/signal output board, transmitter enclosure, and flow section.

The flow section is typically specified to match the user's flow conduit and is plumbed directly in the flow line. This design has the sensing elements mounted directly in the flow section for exposure to the process flow.



Inline flow switches are available in sizes from 1/4" pipe through 4" pipe and are provided with threaded male NPT ends as the standard mounting style. Optional end mounting styles may be specified, such as tube ends, tube end fittings, butt weld ends, flanged end configurations, etc. as required. Pipe sizes in excess of 4" require insertion style thermal mass flow switches.



The Insertion style flow switch includes a sensor probe assembly which is inserted into the process conduit to allow the gas to flow across the sensors. The insertion style thermal mass flow switch probe assemblies may be inserted into any suitable flow section, pipe, duct, etc.

Insertion flow switches are available with 1/2", 3/4", or 1" OD probes and may be installed with pipe fitting connections or user-supplied bored through tube fittings. 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.

Specifications

Trip point accuracy (Ref.: 21°C)	±1% of set point (field set)
Trip delay range	1 – 30 seconds adjustable
Trip reset	1 second
Repeatability	±0.5% of Full Scale
Sensor response time	1 second
Range	0 – 15,000 SFPM typical
Electronics temperature range	0°–50°C (32°–122°F), extended temperature optional
Fluid temperature range*	-40°–200°C (-40°–392°F), extended range available
Gas pressure effect (liquid n/a)	Negligible over ± 20% of set point pressure
Pressure rating maximum	500 PSI Std., > 500 PSI special
Input power requirement	24 VDC @ 250mA 115 VAC 50/60 Hz optional 230 VAC 50/60 Hz optional
Flow Transmitter power requirements	5 Watts maximum
Flow Transmitter enclosure	Series 7000–7200 (approved instrument) NEMA 4X, Class 1, Div 1, Groups B, C, & D, Std. Series 7000NH–7200NH (no approvals) NEMA 4X, ABS plastic with clear polycarbonate cover, 5" x 5" x 4"
Wetted materials	316 Stainless Steel (Hastelloy and Monel optional)

*SSM option required for 100°–200°C (212°–392°F)

Approvals



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.

Eldridge Products, Inc.
2700 Garden Road
Building A
Monterey, CA 93940



Tel: 800/321-FLOW (3569)
Fax: 831/648-7780
Email: sales@epiflow.com
Internet: www.epiflow.com