



Fox Thermal Mass Gas Flowmeters Theory of Operation

- Direct mass flow measurement of air and gases in standard volumetric units (i.e. SCFM or NM3/H) or mass units (i.e. lbs/m or kg/h)
- No additional pressure or temperature compensation required
- Exceptionally broad measurement range, (up to 1000:1; 100 to 1 typical) including very low velocity flow rates
- Linear 4 to 20mA output proportional to mass flow rate
- Linear 4 to 20mA output for process temperature
- Low Pressure drop
- No moving parts
- Insertion and inline configurations (FT1 available in insertion only)
- Microprocessor based, field programmable electronics
- Proprietary DDC-Sensor™ or PowerPro™ Sensor
- Measures flow rate and flow total

Repeatable Gas Mass Flow Measurement

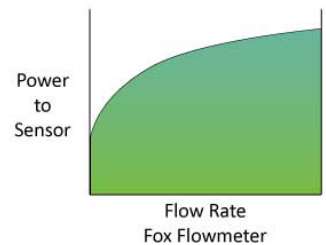
Fox Thermal Flowmeters use a constant temperature differential (ΔT) technology to measure mass flow rate of air and gases. The thermal mass flow sensor consists of two Resistance Temperature Detectors (RTD's). The sensor elements are constructed of a reference grade platinum wire wound around ceramic mandrels that are inserted into stainless steel or Hastelloy tubes.

The Reference RTD measures the gas temperature. The instrument electronics heat the mass flow sensor, or heated element, to a constant temperature and measures the cooling effect of the gas flow. The electrical power required to maintain a constant temperature differential is directly proportional to the gas mass flow rate. The microprocessor then linearizes this signal to deliver a linear 4 to 20mA signal.

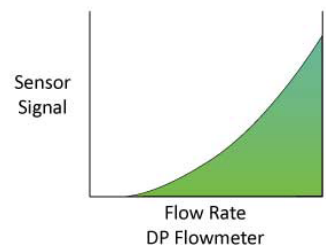


Power Pro™ Sensor and DDC-Sensor™ Technology

Used in Fox Models FT2A and FT3, the Fox Power Pro™ Sensor, operates at a higher power level than other competitive thermal technologies, providing better response time and wider turndown. Compared to a typical Differential Pressure type flowmeter, as shown to the right, the Power Pro™ sensor offers better low flow or low end sensitivity. The Power Pro™ sensor also provides exceptional accuracy at high velocities - up to 50,000 SFPM air.



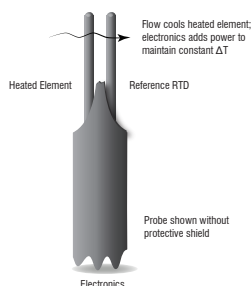
The Fox DDC-Sensor™ is a new state of the art sensor technology used in the Fox Model FT1 Thermal Gas Flow Meter. The DDC-Sensor™, a Direct Digitally Controlled sensor that is interfaced directly to the FT1 microprocessor for more speed and programmability. Like the PowerPro™ Sensor, the DDC-Sensor™ accurately responds to changes in process variables (gas flow rate, pressure, and temperature) which are used by the microprocessor to determine mass flow rate, totalized flow, and temperature.



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DDC-Sensor™



In addition to measuring flow, the DDC-Sensor™ provides a technology platform for calculating accurate gas correlations. The FT1 correlation algorithms allow the meter to be calibrated on a single gas in the factory while providing the user the ability to select other gases in the Gas-SelectX™ gas menu. Fox's Model FT1 with its DDC-Sensor™ and state-of-the-art correlation algorithms provide an accurate, multi-gas-capable thermal gas flow meter.