

FOX THERMAL



■ Full Line Brochure



WWW.FOXTHERMAL.COM

Make downtime a thing of the past.

The Fox Thermal Difference

- Microprocessor-based, field-programmable electronics
- Repeatability and exceptionally broad measurement range: turndown up to 1000:1 (100:1 typical)
- Low pressure drop
- No moving parts
- AC or DC power input
- Integral or remote display/transmitter
- Insertion, inline, and retractable/hot-tap meter styles*

Award-Winning Products

- 4 Innovation Awards
- 4 Breakthrough Product Awards
- 1 Product of the Year Award

Certifications, Compliance, and Approvals

- ISO 9001:2015 certified Quality Management System
- CE Mark
- FM/FMc product certifications
- ATEX, UKEX, and IECEx certifications*
- CRN approvals*
- Welding qualifications to ASME IX
- BLM 3175 and API 14.10 accuracy compliant

*Refer to product data sheets for details.



Industries and Applications

Major Industries Served

- Industrial facilities
- Oil & Gas
- Wastewater
- Environmental and emissions monitoring
- Aluminum and steel production
- Pulp & Paper facilities
- Chemical plants
- Textile plants
- Manufacturing of glass and ceramics
- Food and beverage facilities
- Automotive plants
- Pharmaceutical facilities

Industrial

- Pure and mixed gas measurement of industrial process gases

Oil & Gas

- Measurement of gas to flares or combustors
- Gas measurement for allocation
- Gas from Vapor Recovery Units (VRU's)
- Gas from separators
- Fuel and natural gas monitoring

Wastewater Treatment Facilities

- Air flow monitoring of aeration to pools
- Natural gas flow to sludge incinerators
- Biogas and digester gas flow

Environmental & Emissions Monitoring

- Natural gas monitoring for emissions calculations
- Vent or flash gas monitoring
- Flare or waste gas monitoring
- Landfill gas (LFG) monitoring

PROCESS VARIABLES	THERMAL MASS	VORTEX SHEDDING
Volumetric	•	•
Mass Flow	•	•
Temperature	•	•
Pressure		•
Energy	•	•
Density	•	•

FLUID TYPES	THERMAL MASS	VORTEX SHEDDING
Steam		•
Gases	•	•
High-Viscosity Liquids		•
Low-Viscosity Liquids		•
Conductive Liquids		•
Non-Conductive Liquids		•

Benefits of Thermal Mass Flow Technology

- Direct mass flow measurement of air and gases in standard volumetric units (e.g., SCFM or NM3/H) or mass units (e.g., LBS/H or KG/S)
- Measures flow rate and temperature
- Exceptional measurement sensitivity at low flows and low pressures
- No additional pressure or temperature compensation required
- Standard linear 4-20mA output proportional to mass flow rate
- Cost-effective

State-Of-The-Art Technological Features

DDC-Sensor™, a Direct Digitally Controlled Sensor: Speed and Programmability

- Innovative design for precise measurement and full-featured flow meters.
- Interfaces directly with the flow meter's microprocessor
- More control, precision, and programmability
- Robust sensor design, sensor element tubes supported at both ends
- Provides the technology platform necessary for calculating accurate gas correlations

ModbusView™ & FT View™ Software: Advanced Downloadable Software to Access Meter Settings

- Installed in minutes, flow meter connects by either USB or Modbus RTU (RS485)
- Configure flow meter settings or perform diagnostics

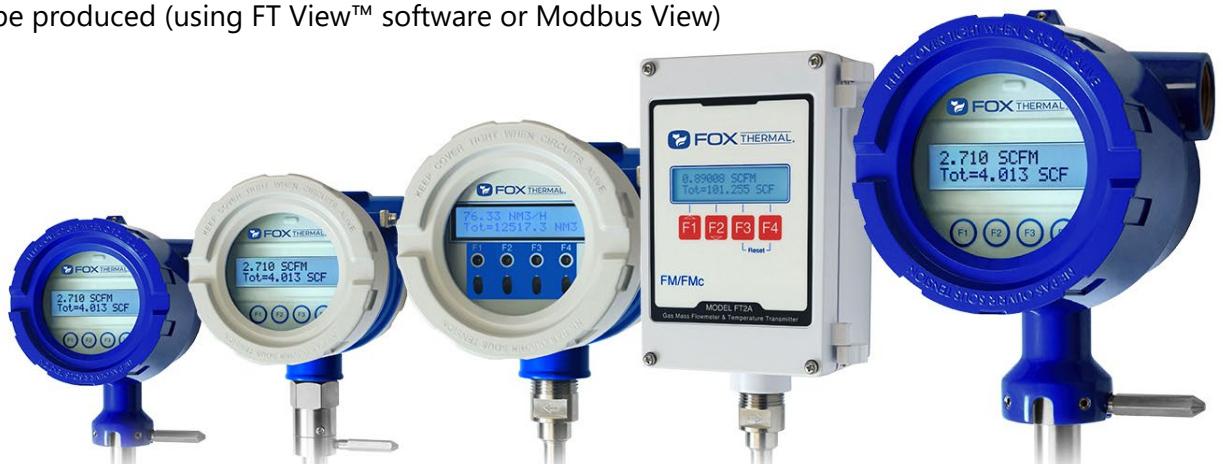
Gas-SelectX® Gas Selection Menu: In-Field Gas Programming

- Allows the user to choose from gas menus with more than 40 available gases
- Switch gases or gas mixes in the field
- No need to return the flow meter to the factory for recalibration

CAL-V™ Calibration Validation: In-Field Verification of Meter Accuracy

- Calibration Validation at the push of a button
- Eliminate the cost and inconvenience of annual factory calibration due to changing gas compositions.
- Test takes less than 5 minutes to run
- Produces a pass/fail result
- Certificate can be produced (using FT View™ software or Modbus View)

Scan to View
Thermal Products



FT4X Standard Data Logger with Date/Time Stamp

The advanced features of the Model FT4X Data Logger include:

- 40 daily totals (24-hour totals)
- Contract Time set to define Contract Day
- Time/date stamped alarm and event logs; 7 year history
- Power off totalizer; power failure creates event log entry

Access logs to learn about the meter's settings and functionality:

- View the meter's gas or gas mix composition
- View the meter's configuration and other meter settings
- View Calibration Validation historical test data
- View and print logs of events and alarms



Thermal Mass Specs

		FT1	FT2A	FT3	FT4A	FT4X
PHYSICAL	Remote Electronics Available		●	●		●
	Display Standard		●		●	●
	Digital Sensor	●			●	●
FEATURES	Data Logger			●		●
	Calibration Validation	●		●	●	●
	In-Field Gas Menus	●			●	●
	Free PC Software	●	●	●	●	●
	Modbus View Software Option	●			●	●
PERFORMANCE	Pipe Sizes (Insertion)	1½" - 70"	1½" - 70"	1½" - 70"	1½" - 70"	1½" - 70"
	Pipe Sizes (Inline)	½" - 6"	½" - 6"	½" - 6"	½" - 6"	½" - 6"
	Outputs	4-20mA; Pulse/alarm or communication option	2 X 4-20mA; Pulse/alarm	2 X 4-20mA; Pulse/alarm	4-20mA; Pulse/alarm or communication option	2 X 4-20mA; Pulse/alarm
	Communications	USB (Standard); Modbus RTU; BACnet MS/TP; HART	USB (Standard); Modbus RTU; BACnet MS/TP; Profibus-DP; DeviceNet; Ethernet Modbus TCP	USB (Standard); Modbus RTU; HART	USB (Standard); Modbus RTU; HART	USB (Standard); Modbus RTU; HART
	Accuracy	±1% R ±0.2% FS (air or N2) ±1.5% R ±0.5% FS (other gases)	±1% R ±0.2% FS	±1% R ±0.2% FS	±1% R ±0.2% FS (air or N2) ±1.5% R ±0.5% FS (other gases)	±1% R ±0.2% FS (air or N2) ±1.5% R ±0.5% FS (other gases)
	Power	12-24VDC	12-24VDC; 100-240VAC	12-24VDC; 100-240VAC	12-24VDC	12-24VDC; 100-240VAC
	Velocity Range	0 - 25,000 SFPM; 0 - 120 NMPS	0 - 60,000 SFPM; 0 - 283 NMPS	0 - 60,000 SFPM; 0 - 283 NMPS	0 - 60,000 SFPM; 0 - 283 NMPS	0 - 60,000 SFPM; 0 - 283 NMPS
	Max. Pressure *	740 psig (51 barg)	500 psig (34 barg)	500 psig (34 barg)	740 psig (51 barg)	740 psig (51 barg)
	Approvals **	CE Mark FM/FMc Class I Div 1 ATEX/IECEX Zone 1	CE Mark FM/FMc Class I Div 2	CE Mark FM/FMc Class I Div 1 ATEX/IECEX Zone 1	CE Mark FM/FMc Class I Div 1 ATEX/IECEX Zone 1	CE Mark FM/FMc Class I Div 1 ATEX/IECEX Zone 1

*Maximum Pressure rating (100°F) depends on end connections, materials, and retractor options.
For detailed pressure ratings, see model datasheets to view full features and specs.

** See model datasheets to view specific information on product approvals.



FT1

Key Features:

- Insertion & Inline Styles
- DDC-Sensor™ Technology
- Gas-SelectX® Gas Selection Menu
- CAL-V™ Calibration Validation



FT2A

Key Features:

- Insertion, Inline & Remote Styles
- USB Port, free FT2A View™ Software
- 2 x 4-20mA outputs
- DC and AC input power options



FT3

Key Features:

- Insertion, Inline & Remote Styles
- Modbus or HART options
- Calibration Validation
- DC and AC input power options



FT4A

Key Features:

- Insertion & Inline Styles
- DDC-Sensor™ Technology
- Gas-SelectX® Gas Selection Menu
- CAL-V™ Calibration Validation



FT4X

Key Features:

- Insertion, Inline & Remote Styles
- DDC-Sensor™ Technology
- Gas-SelectX® & CAL-V™
- Advanced Data Logger
- DC and AC input power options

Scan to View
Thermal Products



8 Vortex Shedding Flow Meters For Gas, Steam, & Liquid Flow



VF3

Key Features:

- Insertion Local, and Remote Styles
- Compression, Flange, or Male NPT Connections
- Hot-Tap/Retractor Installation Options



VF4

Key Features:

- Inline Local, and Remote Styles
- Flange, NPT, Wafer, and Reduced Bore connection options

Benefits of Vortex Shedding Flow Technology

- Measures gas, liquids, and steam
- Multivariable outputs for mass flow rate volumetric flow rate, temperature, pressure, density, and energy (BTU) readings from a single installed device and reduces initial and installation costs.
- Single process connection.
- No moving parts.
- Temperature up to 750°F (400°C).
- Pressure up to 1,500 psig (100 barg).
- Calibration is valid for the life of the meter.

Versatile Technological Features

Microprocessor-Based Vortex: Flexible Flow

- Built-in flow computer with multiple outputs allows users to replace multiple instruments with a single flow meter.
- Field-configurable ranges, alarms, outputs, and displays.
- Basic volumetric or mass flow option.
- Smart DSP electronics extends low-flow range down to a Reynolds number of 5,000.
- Mass flow equations for real gas, ideal gas, AGA-8 equations for natural gas, API 2540.
- AC or DC power options

Scan to View
Vortex Products



Vortex Shedding Specs

		VF3 Insertion	VF4 Inline
PHYSICAL	Remote Electronics Available	●	●
	Display Standard	●	●
	Reduced Bore Options		●
	Hot-Tappable	●	
PERFORMANCE	Pipe Sizes (Insertion)	>2" pipes	
	Line Sizes (Inline)		½" - 12"
	Line Sizes (Inline Reduced-Bore)		¾" x ½" to 12" x 10"
	Outputs	Up to 3 x 4-20mA outputs and alarms; Pulse; Frequency	Up to 3 x 4-20mA outputs and alarms; Pulse; Frequency
	Communications	HART Modbus RTU; Modbus TCP/IP; BACnet MS/TP; BACnet IP	HART Modbus RTU; Modbus TCP/IP; BACnet MS/TP; BACnet IP
	Accuracy	Volumetric: ±1.5% of rate Mass: ±2% of rate Temp: ±2°F (±1°C) Pressure: ±0.3% of full scale Density: ±0.3% of reading	Volumetric: ±1.5% of rate Mass: ±2% of rate Temp: ±2°F (±1°C) Pressure: ±0.3% of full scale Density: ±0.3% of reading
	Power	DC or AC	DC or AC
	Temperature *	ST: -330 to 500°F HT: Up to 750°F	ST: -330 to 500°F HT: Up to 750°F
	Max. Pressure *	Up to 1,500 psig (xx barg)	Up to 1,500 psig (xx barg)
	Approvals	CE Mark FM/FMc Class I Div 1 ATEX/IECEx Zone 1	CE Mark FM/FMc Class I Div 1 ATEX/IECEx Zone 1

** To view more specific information on product specifications see model datasheets.



Make downtime a thing of the past.

399 Reservation Road | Marina, CA 93933
Email: sales@foxthermal.com | Tel: 831.384.4300
foxthermal.com