



Solved.

Optimize Gas Flow Measurement
and Meet Regulations.

SIERRA's
QuadraTherm® 640i
Thermal Mass Flow Meter
Delivers the Data
You Demand.

“The unnecessary or excessive venting or flaring of natural gas produced from a well is prohibited.”

Rule 912, Colorado's Oil and Gas Conservation Commission

THE FUTURE OF FLARE

While Colorado currently has some of the nation's strictest rules regarding venting and flaring, there is every indication that other states will follow. The federal government has also proposed greatly expanding the regulation of current methane emissions to reduce greenhouse gases 30% by 2030. New rules could require oil producers to capture and report 95% of methane emissions.

Sierra is acutely aware of the challenges you face in measuring natural gas in flare, combustor, and VOC applications. Flow measurement error can be as high as 20% in flare applications over the life of the well due to widely varying compositions and density changes. And flare flow rates can range from very small to very large during upset conditions. Sierra's QuadraTherm 640i with qMix has been designed to meet those challenges.

With an uncertain political climate, the future of flare measurement is anything but clear. To comply with existing and future regulations and avoid expensive fines, we recommend acting now to understand your measurement options and be prepared.



QuadraTherm® 640i

QuadraTherm® 640i with qMix™

WORLD'S MOST ACCURATE THERMAL FLOW METER

- +/- 0.5% of reading (inline)
- +/- 0.75 of reading (insertion)
- Revolutionary four-sensor technology provides critical inputs
- Drysense™ sensor technology eliminates drift
- Lifetime limited sensor warranty
- Industry's only ultra-low flow calibration from 0 to 499 sfp
- 40-point calibration available for highest accuracy
- Accuracy compliant with BLM 3175, API 14.10, EPA Regulations 40 CFR Part 98 and 40 CFR Part 60 Subpart OOOO (Quad O)

DIRECT MEASUREMENT OF GAS MASS FLOW

- Provides low-end sensitivity for flares, venting and leak detection
- Measures very high flows during upset conditions – Up to 60,000 sfp (305 smps)
- Outputs allow for continual trending and monitoring of gas flows
- Totalizer makes monthly reporting easy

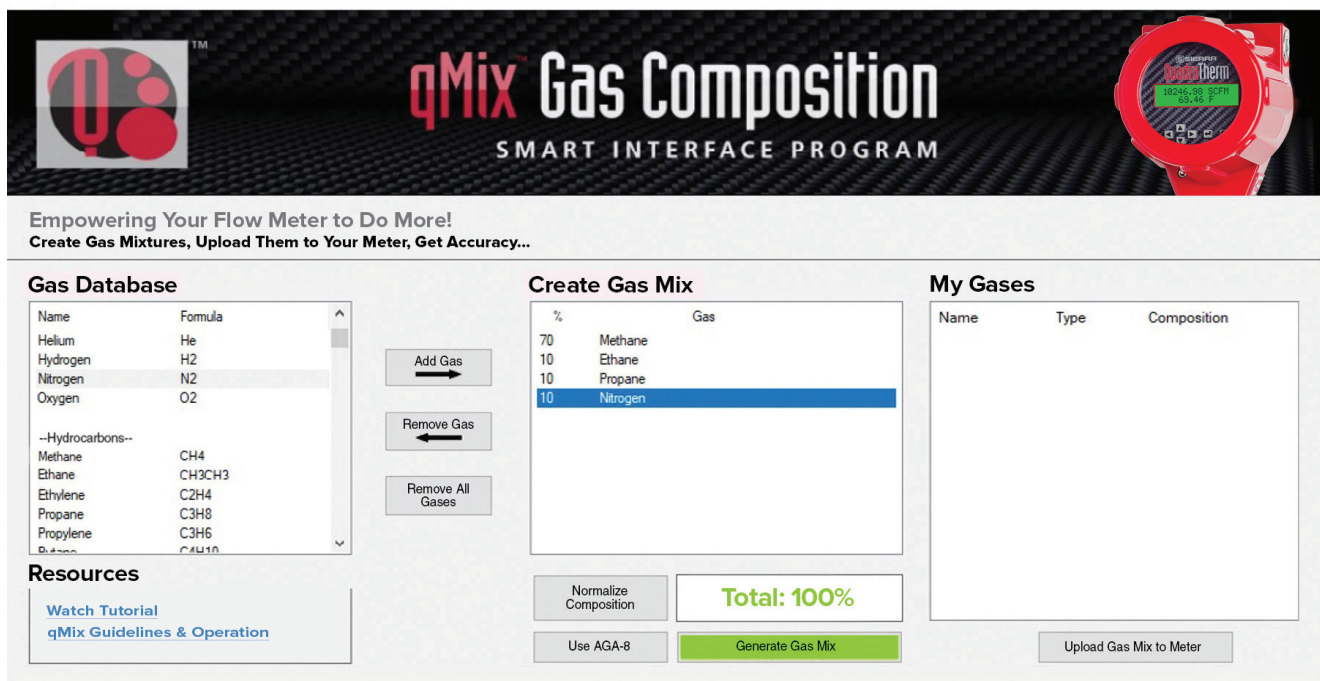
UNRIVALED FIELD FLEXIBILITY

- qMix software easily manages gas composition changes without factory calibration (see below)
- Enables Dial-A-Pipe
 - Insertion - Adapts to pipes 2" diameter or greater
 - Inline - Built-in flow conditioning eliminates straight run requirements
- Easy to install with hot tap and retractors. No process shutdown

Quickly Compensate for Gas Composition Changes with qMix

Sierra's proprietary qMix software comes ready to use with every QuadraTherm meter. It empowers you to quickly compensate for changes in the composition of any gas being measured. Within minutes, you can create custom gases and gas mixes from a library of 120 pure fluid components with gas properties, upload them, and start measuring. No additional factory calibration is necessary.

With the qMix RealTime software, part of Sierra's qMix RealTime Flare Management System, you can adjust for gas composition changes as they happen. Integrate the QuadraTherm meter with a compositional sampling device, like a gas chromatograph, and qMix automatically provides real-time adjustment for gas composition changes. No manual adjustments are necessary and it meets EPA rule 40 CFR 63.



qMix Gas Composition
SMART INTERFACE PROGRAM

Empowering Your Flow Meter to Do More!
Create Gas Mixtures, Upload Them to Your Meter, Get Accuracy...

Gas Database

Name	Formula
Helium	He
Hydrogen	H2
Nitrogen	N2
Oxygen	O2
--Hydrocarbons--	
Methane	CH4
Ethane	CH3CH3
Ethylene	C2H4
Propane	C3H8
Propylene	C3H6
Butane	C4H10

Create Gas Mix

%	Gas
70	Methane
10	Ethane
10	Propane
10	Nitrogen

Buttons: Add Gas, Remove Gas, Remove All Gases, Normalize Composition, Use AGA-8, Generate Gas Mix, Total: 100%, Upload Gas Mix to Meter

My Gases

Name	Type	Composition
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Resources: [Watch Tutorial](#), [qMix Guidelines & Operation](#)

Why Thermal?

Lower cost of ownership

Sierra's thermal technology delivers direct measurement of gas mass flow. It's a simpler measurement to make and maintain. Unlike differential pressure (dP) meters, no temperature or pressure corrections are required. Thermal has no pressure drop, and no flow restrictions. This reduces expense significantly once the full cost of ownership is considered.

For decades, the dP meter has been the conventional choice in the oil and gas industry. It measures volumetric flow by employing two pressure transmitters to measure the pressure drop (the differential pressure) across a flow restriction. This results in the dP meter's inherent shortcomings:

- Flow restriction causes pressure drop and it can become clogged, needing frequent maintenance.
- dP requires additional calculations to convert volumetric flow to mass flow, the measurement that most often needs to be reported. This reduces accuracy.

World-class calibration

Sierra has invested heavily in our factory gas calibration loop to simulate field conditions. Sierra's NIST traceable calibration lab uses extremely high accuracy multi-beam ultrasonic meters as a measurement standard. This is the same technology used for the custody transfer of natural gas. This results in accuracies as high as +/- 0.5% of reading.

No One Makes YOU Smarter.

We recognize the impact regulations will have on the future of your industry. Our primary goal is to help make YOU smarter and more productive with the precision flow measurement tools we design and build to match your measurement needs.

LEARN MORE: sierrainstruments.com/quadratherm-flowmeters

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