



**SIERRA<sup>®</sup>**



# Welcome.

## We will begin shortly.

- Important: Please put your phone on **MUTE**, if you have called in using your phone to eliminate background noise.
- Please **TURN OFF** your video.
- The **Q&A** session will be after the presentation.
- You can submit your questions using the **QUESTION panel**.



# 2014 Year in Review- Get the Info You Need to Know!

## Presented By:

Glen Coblenz, VP Sales North America  
Scott Rouse, VP Product Line

October 27, 2014





# Webinar Summary

- Introductions-Erica
- Market Trends and Growth Drivers-Glen
- Best in Class Differentiating Features-Glen/Scott
- Price List Review-Glen
- Demo of New Automated Sales Tools-Glen/Jason
- Video & White Paper Resources-Glen
- Questions & Answers – Team

***Reminder- Submit questions using the CHAT feature. We will answer all questions at the end of the webinar.***

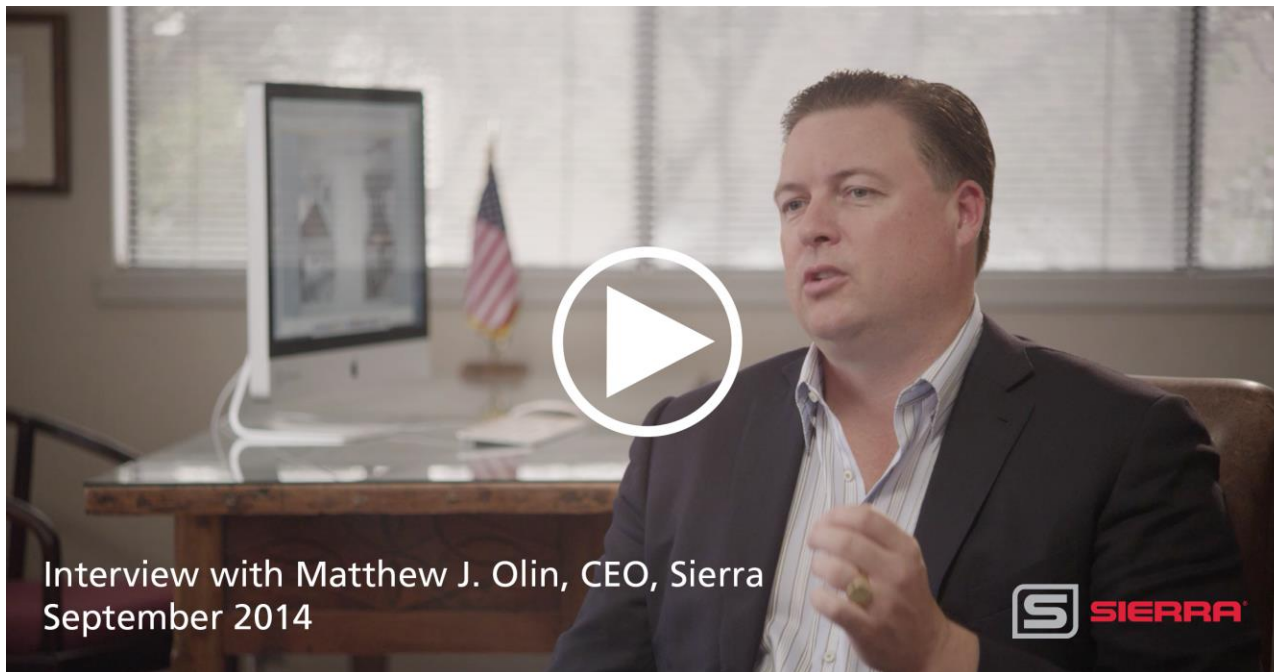




# Where is our CEO?

- Matt needed to be out of town, but he wanted to share with you some thoughts on Innovation and the extreme importance of building deep customer relationships.
- Clips from September 2014 Interview at Sierra headquarters in Monterey, CA.

[Watch video](#)



# Strategic Direction, Key Initiatives 2015

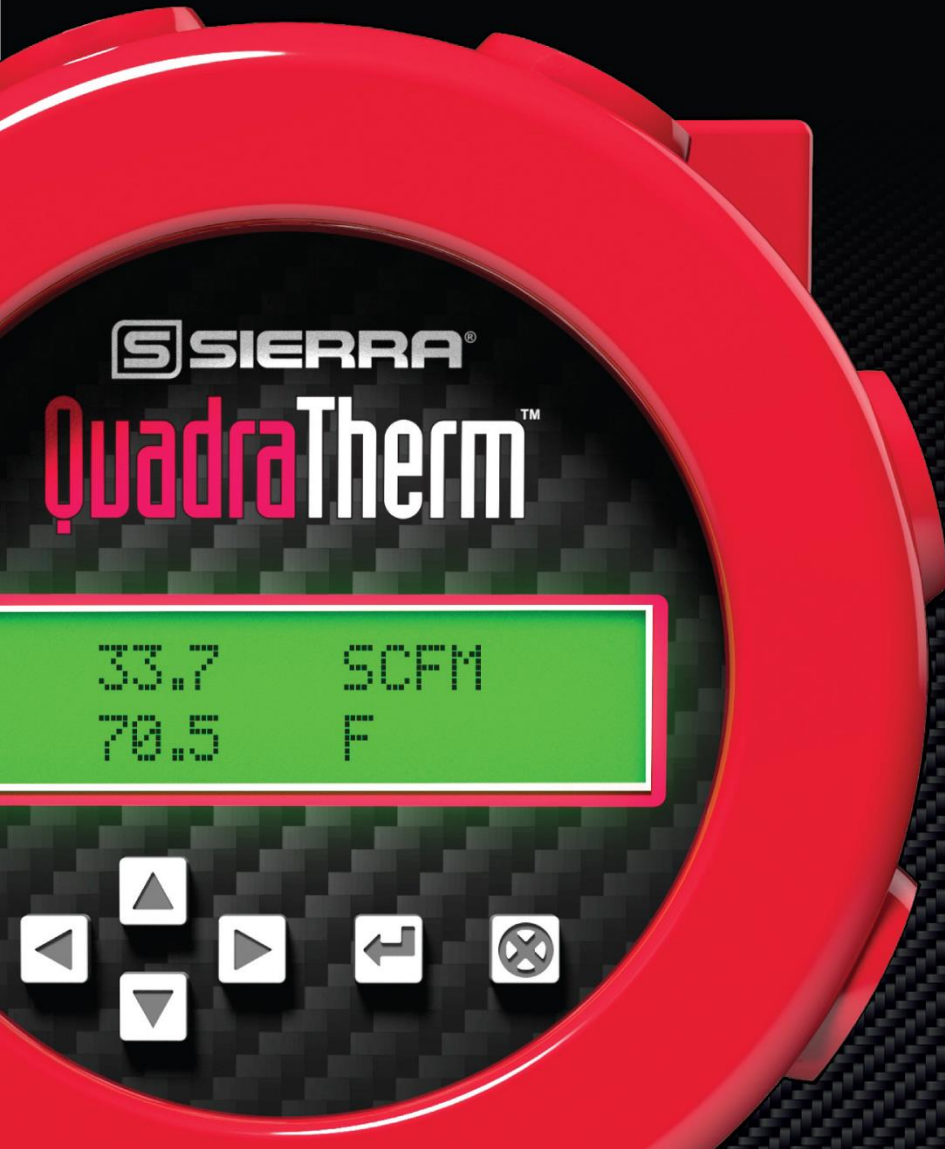


- ✓ Innovate to differentiate
- ✓ Drive innovation in products, features, business processes
- ✓ 25% of sales from products/features 3 years old or less
- ✓ Working on several “Game-Changers” now - TBA at later date
- ✓ Leverage “i-Series” platform across all products
- ✓ Grow quantity and quality of web leads steadily
- ✓ Annual calibration business – service leadership
- ✓ Web based Sierra OS – i.e. : PL Online in 2015, RFQ Follow Up, etc...
- ✓ Uncompromising Focus on QDPICS – Be true to our brand!

QuadraTherm™ 640i / 780i

THERMAL MASS FLOW METER

**NEVER**  
before possible.



# Innovate to Differentiate...

- Accuracy:
  - 780i Inline +/- 0.5% of reading above 50% full scale
  - 640i Insertion +/- 0.75% of reading above 50% full scale
- Sensor 2.0
- High Velocity up to 60,000 SFPM
- Multivariable: Mass flow rate, T, P, totalized flow rate
- QuadraTherm® four-sensor design
- DrySense™ no-drift sensor with lifetime warranty
- qTherm® “Brain” manages changes in gas, T, P, Outside Temp





# Innovate to Differentiate...

- Dial-A-Pipe™: Change pipe size
- Dial-A-Gas®: Change gas type
- Smart Interface Program (SIP): Computer interface software
- ValidCal™ Diagnostics: In-Situ cal validation / performance check
- qTherm Gas Database: gases & mixtures (growing & improving)
- qMix Customized Gas Mixing (pending)
- Flow Totalizer
- Digital Communications/ Approvals

***QuadraTherm sales hit \$1M in 2013 and are growing by 150% in 2014...***



# 640i/780i Key Growth Drivers

All Approvals &  
Digicomms

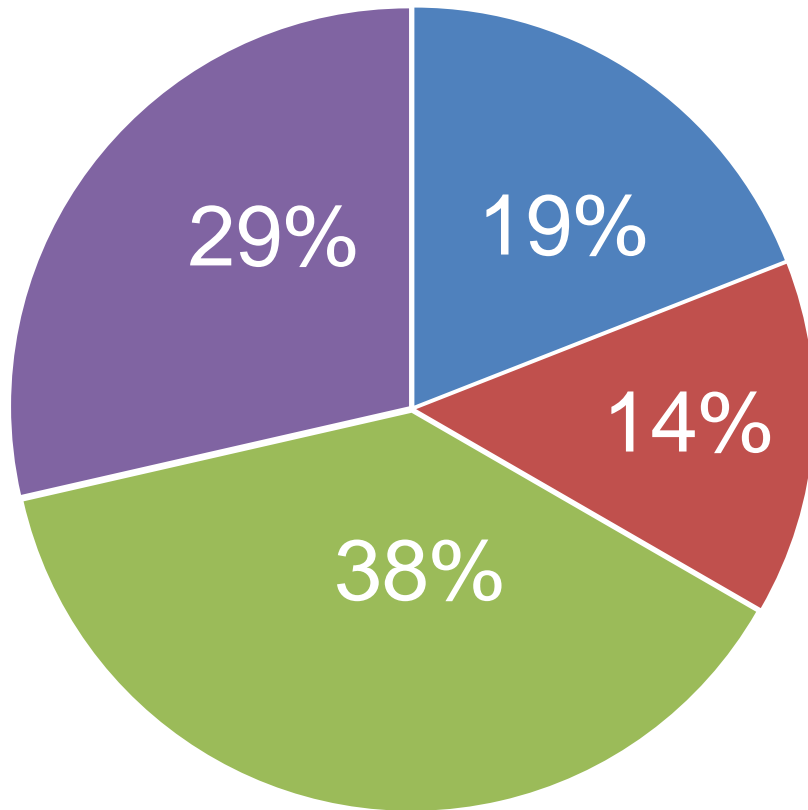
Field Flexibility

Expanded  
Flow Range

Highest  
Accuracy



# Key Growth Markets



■ Biogas



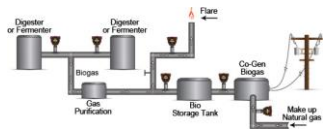
■ Flare



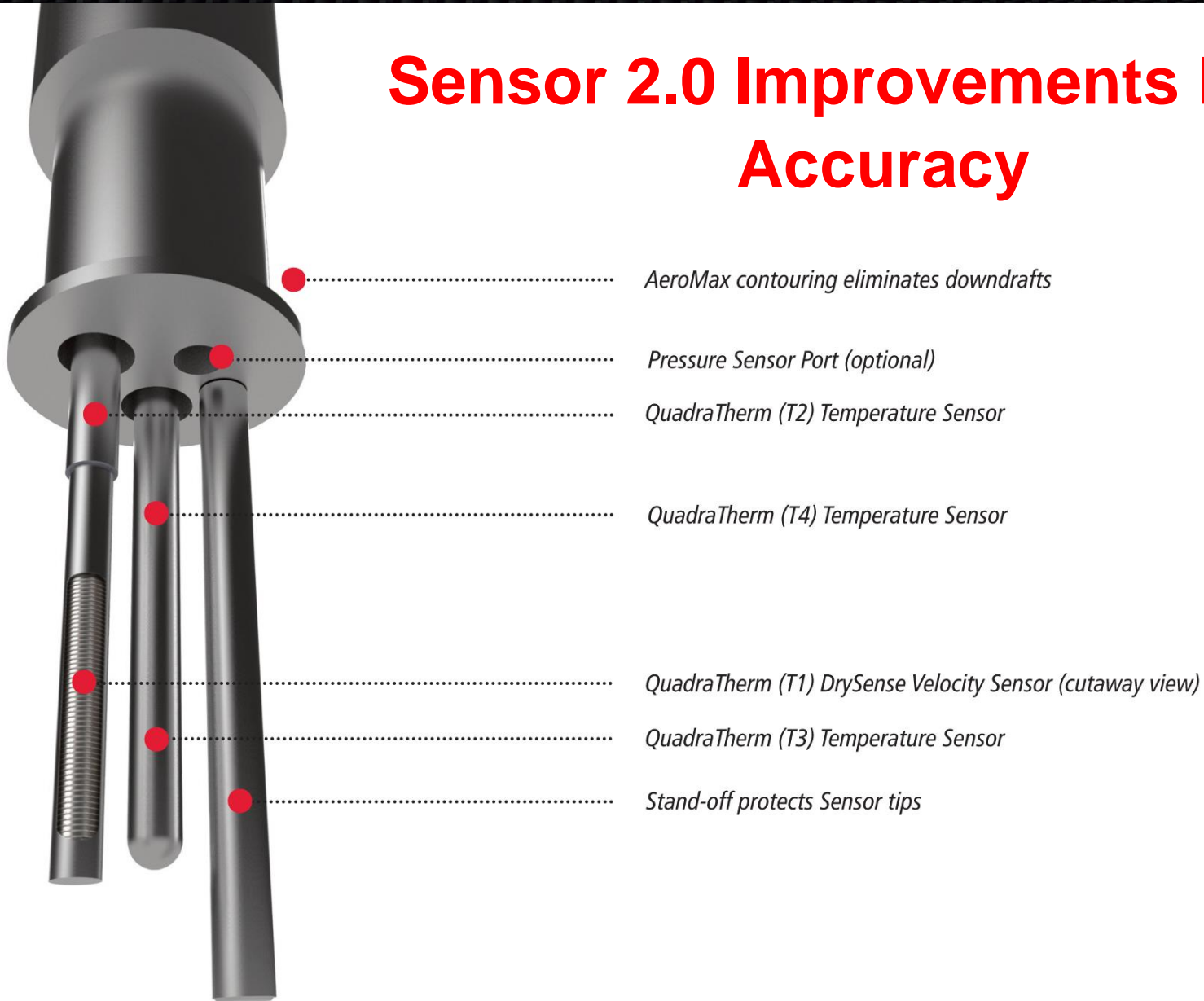
■ Air



■ Methane



# Sensor 2.0 Improvements Higher Accuracy



# Sensor 2.0 CFD Modeling

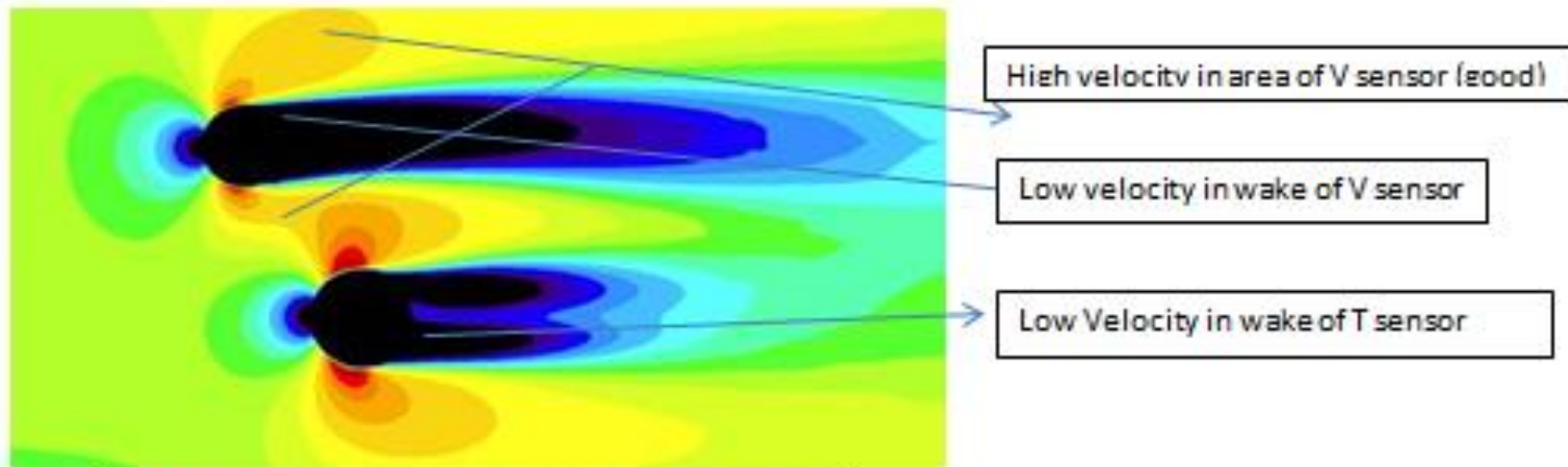


Figure 3 represents a CFD model of the probe with no wings. Note the clean velocity profile around both sensors.

# Sensor 2.0 CFD Modeling

- A perfect thermal sensor has no protective shrouds
- To get the accuracy we achieve, must have no shroud
- All competitors have shrouds
- We added a standoff for bottom-out protection
- A non-issue in the 780i due to the flow body
- Our risk is that sensor is exposed – must educate customer to be careful.



# 640i Sensor Protection

## Key Improvements

- Improved Packaging-Keep box for returns
- Probe Protector-Keep with meter
- Remove the 640i vertically from the pipe

Tech Tips: How to Remove 640i from the pipe, Video coming soon!



# Increase Application Flexibility with qTherm Dial-A-Gas

- Traditional thermal flow meters:

**One Gas**  
**One T**  
**One P**  
**One Outside Temp**

- qTherm Dial-A-Gas:

**Any Gas**  
**Any T**  
**Any P**  
**Any Outside Temp**



*Screenshot: Smart Interface Software*



# qMix Gas Composition

qMix™ Gas Composition SMART INTERFACE PROGRAM

Make Custom Gas Mixtures, Save Them to Your Computer, Load Them Into the Meter...

### Gas Library (On Computer)

- Acetone (C3H6O)
- Acetylene (C2H2)
- Ammonia (NH3)
- Argon
- Benzene (C6H6)
- Butane (C4H10)
- Butene (C4H8)
- Cis-Butene (C4H8)
- Carbon Monoxide (CO)
- Carbon Dioxide (CO2)
- Carbonyl Sulfide (COS)
- Cyclohexane (C6H12)
- Cyclopentane (C5H10)
- Cyclopropane (C3H6)
- Deuterium
- Deuterium Oxide (D2O)
- D4 (C8H24O4Si4)
- D5 (C10H30O5Si5)
- D6 (C12H36Si6O6)
- Decane (C10H22)
- Diethyl Ether (C4H10O)
- Dimethyl Carbonate (C3H6O3)
- Dimethyl Ether (C2H6O)
- Dodecane (C12H26)
- Ethylbenzene (C8H10)
- Ethane (CH3CH3)
- Ethanol (C2H6O)
- Ethylene (C2H4)
- Flourine

### Gas Composition

Mixture Basis:  Mixture Name:

%	Gas
<input type="text" value="25"/>	Butane (C4H10)

**Total: 25 %**

Generate Gas Mixture

→   
  ←

# Digital Communications & Industrial Approvals












[View Digital Communications Matrix](#)

## Industrial Approvals

- cFMus—Explosion proof for Class I, Div I, Groups B,C,D
- CE—European Conformity
- ATEX/IECEX

### 600/700 Series Digital Communications & Approvals Matrix

	 640i	 780i	 640s	 780s	 780s UHP
	✓	✓	✓	✓	✓
Modbus Approvals	cFMus, ATEX/IECEX P2 Only, Full DD	cFMus, ATEX/IECEX P2 Only, Full DD	cFMus, ATEX/IECEX P2 Only, Full DD	FM, ATEX P2 Only, Full DD	FM, ATEX P2 Only, Full DD
	✓	✓	✓	✓	✓
Profibus Approvals	cFMus, ATEX/IECEX P2 Only, Full DD	cFMus, ATEX/IECEX P2 Only, Full DD	FM P2 Only, Full DD, E2/E4 Only	FM P2 Only, Full DD, E2/E4 Only	FM P2 Only, Full DD, E2/E4 Only
	✓	✓	✓	✓	✓
HART Approvals	cFMus, ATEX/IECEX P2 Only, Full DD	cFMus, ATEX/IECEX P2 Only, Full DD	FM Flow, Total, S/N and K-factor Only	FM Flow, Total, S/N and K-factor Only	FM Flow, Total, S/N and K-factor Only
	✓	✓	✓	✓	✓
Fieldbus Approvals	cFMus, ATEX/IECEX P2 Only, Full DD	cFMus, ATEX/IECEX P2 Only, Full DD	FM Full DD, P2 Only, E2/E4 Only	FM Full DD, P2 Only, E2/E4 Only	FM Full DD, P2 Only, E2/E4 Only

# More Innovative Products



**C100 HP to 5000 psig**



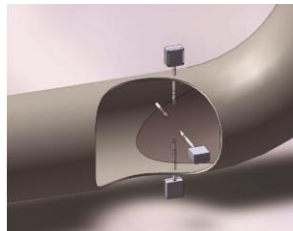
**New HP Calibration Facility**



**C140 low  $\Delta P$**



**Kynar®/Hastelloy®  
Chlorine Trak**



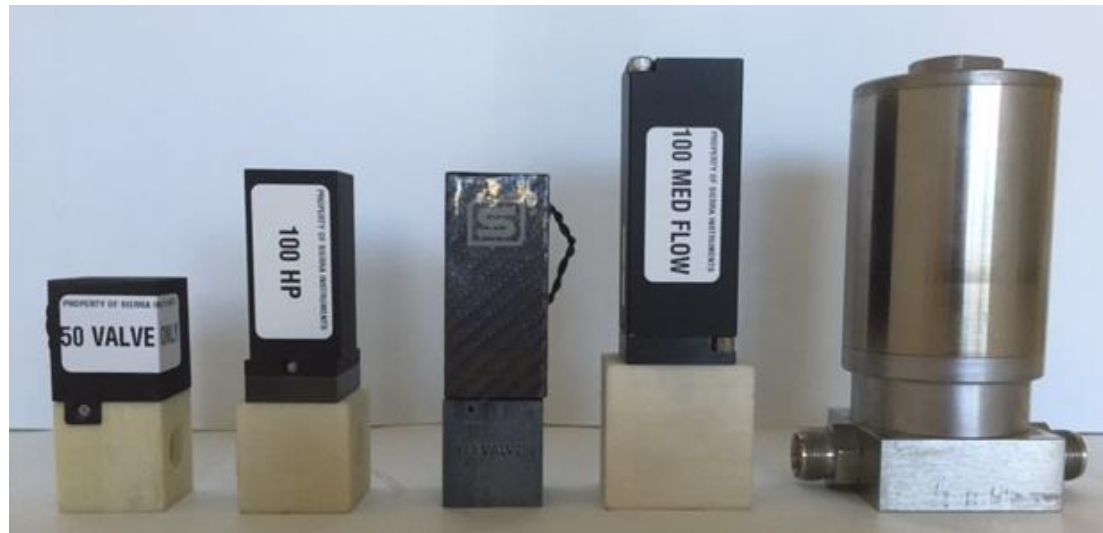
**640S Multipoint  
for Large Ducts**



**OEM Sensors**

# Sensor OEM's and Custom Solutions

We'll custom engineer our sensor for you!



# Price List Review

# New Automation Tools- Demonstrations

1. Online Sales- All Technologies/Fast Delivery

[View Online Store](#)

[View In-stock page](#)

2. Personal Shopper
3. Rep RFQ Lead Management Portal
4. My Units Repair and Calibration Portal



# 2014 Year of the Video & Application Resources

## Recent Videos



[View all Videos](#)

[Thermal Principle of Operations](#)

[In-Situ Calibration Validation](#)

[DrySense Sensor Technology](#)

[Primary Standard Gas Flow Calibration Systems](#)

## Tutorial Videos

[Flow Totalizer](#)

[My Units Service Calibration and Repair Portal](#)

[Flow Meter Technical Support and Repair](#)

[Tech Tips: How to Videos](#)

[Go to Sierra's YouTube Channel for All Videos](#)





# Application Resources-White Papers

## White Papers

[View All White Papers](#)

[In-Situ Calibration Validation](#)

[Flare Gas Mass Flow Metering](#)

[Sub-Metering of Natural Gas](#)

[Precise Biogas Flow Measurement](#)

[In-The-Field Compensation for Changes in Natural Gas Compositio](#)

## QuadraTherm Core Technology Papers

[Introducing a New Paradigm for Thermal Dispersion Mass Flow](#)

[Advances in Thermal Dispersion Mass Flow Meters - Part 1](#)

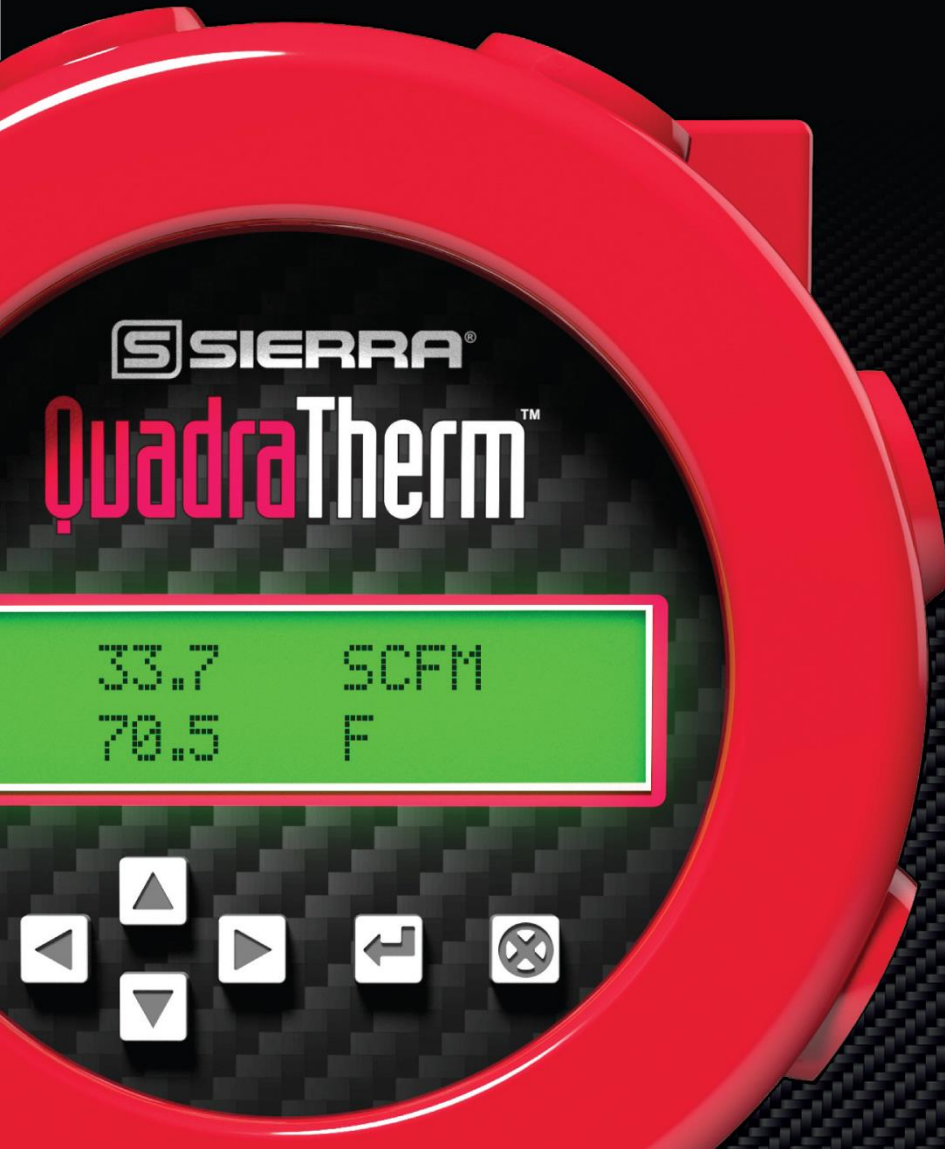
[Advances in Thermal Dispersion Mass Flow Meters - Part 2](#)



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# Ask Us Questions!

## Use the CHAT Function

# **Thanks for attending the webinar!**

**An email with a copy of this Power Point will be sent to all attendees along with a short survey today.**



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