

SONIX IQ

The Future of Residential Gas Metering

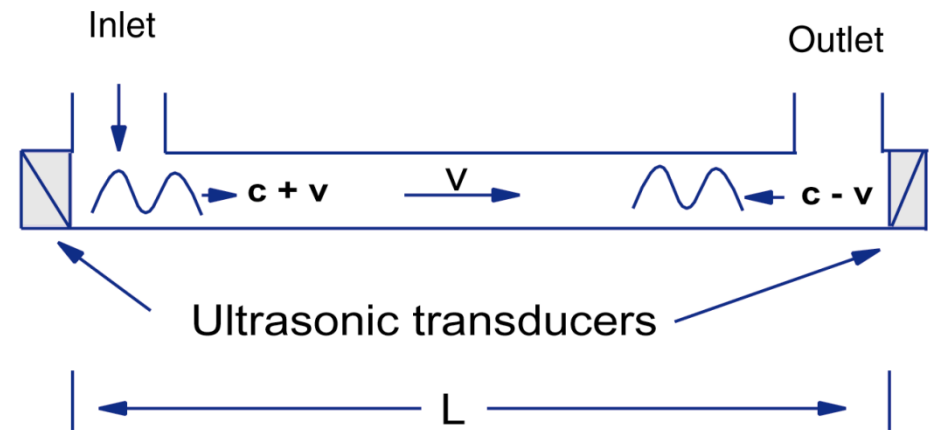


NGA Virtual Gas Ops
June 2, 2020

Fundamentals of Ultrasonic Measurement

Single Path – Low Flow

- Pulses are produced with – and against – the gas stream.
- Pulses flowing with the gas velocity speed up
- Pulses flowing against the gas velocity slow down
- Difference = gas speed within the known area



Ultrasonic: Basics

Sound waves

- Acoustic (audible sound)
 - 20 Hz to 20,000 Hz
- Ultrasonic
 - Generally above 20,000 Hz
- Time of Flight
 - Velocity is determined based upon transit time of sound waves
 - Volume (ft³) = **Velocity** (fps) x cross-sectional **Area** of flow tube (ft²) x sample **Time** (s)

Accuracy Benefits

- Pilot flow $\pm 5\%$ vs $\pm 10\%$ for diaphragm meters
- Initial $\pm 0.5\%$ vs $\pm 1.0\%$ for diaphragm meters
- Long Term $\pm 1.0\%$ vs $\pm 2.0\%$ for diaphragm meters
- Temperature Compensation $\pm 1.0\%$ (-30°F to $+150^{\circ}\text{F}$) vs $\pm 2.0\%$ (-20°F to $+120^{\circ}\text{F}$) for diaphragm meters
- Fixed Factored Pressure Compensation to exact conditions, not limited to available diaphragm meter pressure compensating index.

Next Generation Gas Metering – Available Now

- 30+ years of ultrasonic meter experience
- No moving parts
- Dual-class metrology (250 class and 400 class)
- Integrated FlexNet[®] radio inside the housing



Value Propositions

Features:

- 250 CFH or 400 CFH meter class options
- 20-year battery life
- 90-day hourly data log
- Configurable scrolling LCD display
- Built-in diagnostics and alarms
- $\pm 1.0\%$ temperature compensation
- Fixed factor pressure compensation
- Priced for residential applications



Value Propositions

Features:

- Low Flow Cutoff 0.17cfh
- MAOP 10 psig
- Operating Temp -30 to +130
- Class I,II,III, Div 2
- Available Pulse Output
- 1 D Sized Lithium Battery Standard (2 With Built In Radio)
- 4,5 or 6 Digit Display



Value Propositions

Dimensions

Width	9.94"
Height	7.89"
Depth	4.38"
Center to Center	6"
Weight	6.3 lbs.



Sonix IQ is half the size of traditional gas meters

Value Propositions

Easy to store and transport

- Smaller meter = more meters per pallet and truck
- Less weight = fuel savings + reduced chance of injury
- Fits in tight closets, vaults or indoors
- 6500 meters will fit on a truck



Value Propositions

Connection Sizes

10 LT

20LT

30LT

Sprague #1A

1-1/4" NPT



Value Propositions

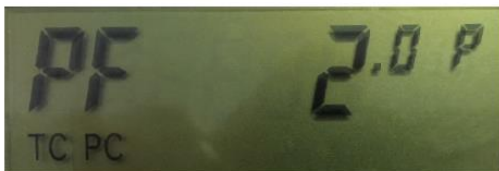
Configurable scrolling LCD



Corrected read



Uncorrected read



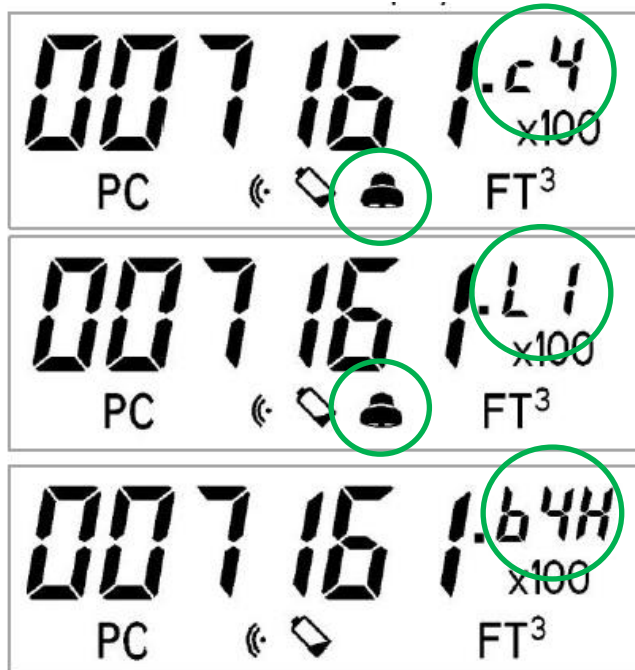
Fixed or live pressure



Current temperature

Value Propositions

Detailed alarm indications



Flow out of range

End of battery life warning

Meter reboot

Battery and Alarms

Indicators at Bottom of Display

Battery Icon – At 19.5 years or Low Voltage



Alarm Icon – Displays on All Views When an Alarm Occurs. Details in Notification View.



Flags

Alarm Class	Alarm Class Description	Result
A Flag	Catastrophic Difficulty	The meter stops working.
b Flag	Environmental Abnormality or Security	The meter continues operating and measuring.
C Flag	Operational Situation	The meter continues operating and measuring.
r Flag	Radio Failure	The meter continues operating and measuring.
L Flag	Battery Warning	The meter continues operating and measuring.

Next Generation Value Propositions

Integrated radio and metrology

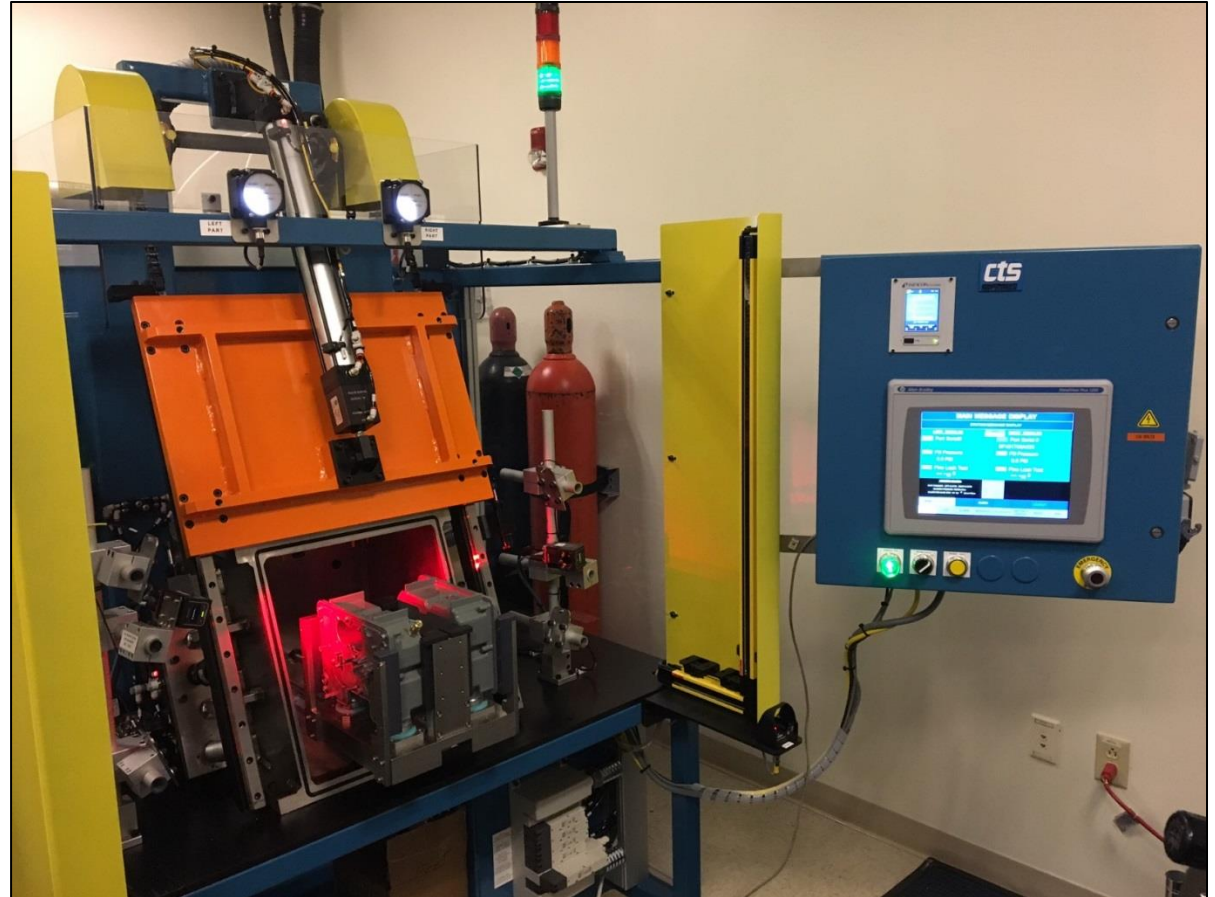
- Faster installation
- No stranded assets

Pulse output available to support third-party devices.



Next Generation Value Propositions

Automated helium
leak testing



Next Generation Value Propositions

Automated proving



Tomorrow

Next phase already in development to expand your capabilities even further.

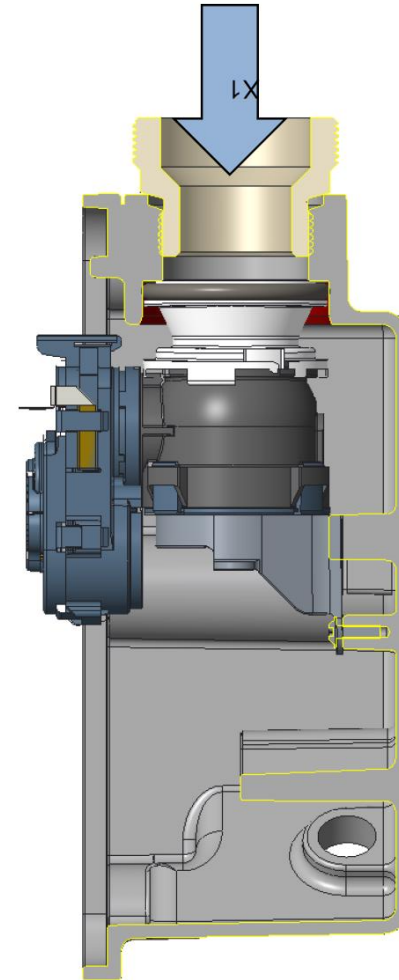
- Remote shut off
- Pressure measurement
- Advanced analytics applications



Customer Safety – Faster Response Time

Two-way FlexNet system can shut off the valve remotely

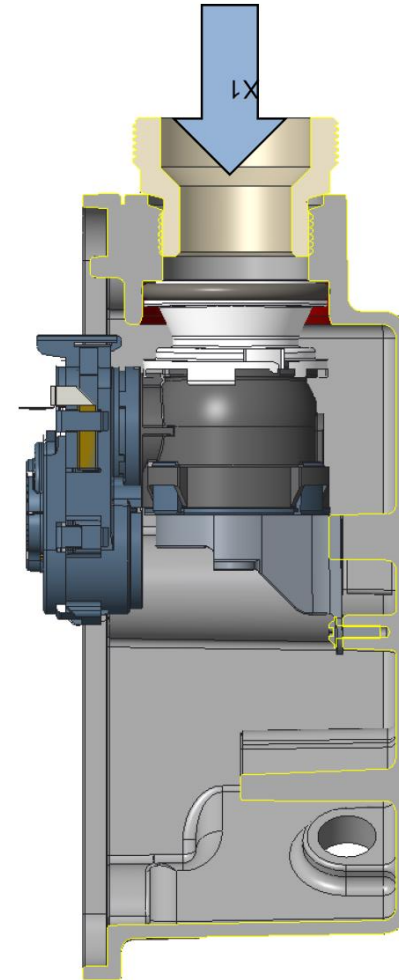
- Natural disasters
- Customer calls
- First responders
- Accidents
- Construction



Mitigation of Life & Property Loss

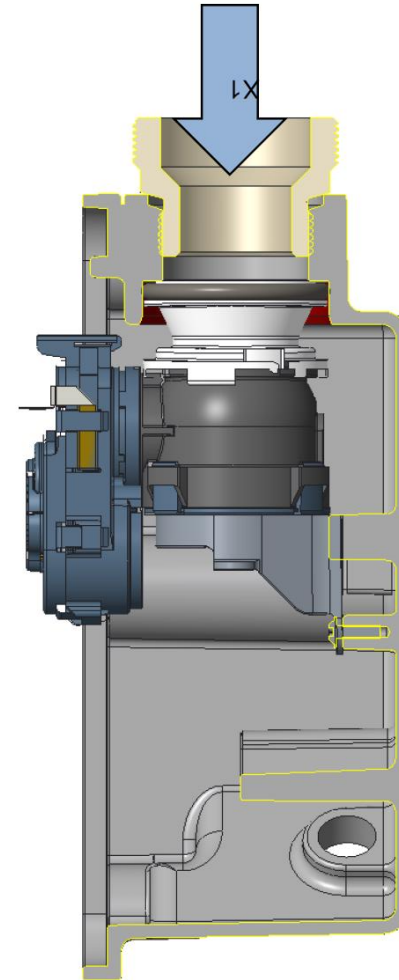
Internal monitoring can shut off the valve

- High / low pressure
- Rapid temperature rise
- High temperature
- Air in meter
- Reverse flow
- Excess flow



Employee Safety

- Two-way FlexNet system can shut off the valve locally



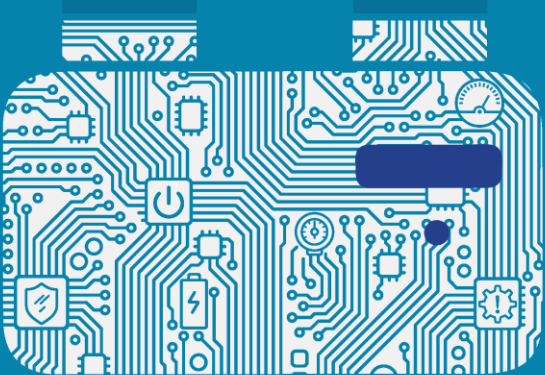
The Sonix Meter Warranty...

- 15-year materials & workmanship
- 10-year warranty on the battery
- Current battery life of 13 years
- Accuracy retention better than $\pm 1.0\%$
- All sizes and models covered

QUESTIONS?

Sonix IQ. Smarter.

Taking the gas meter to next-level smart.



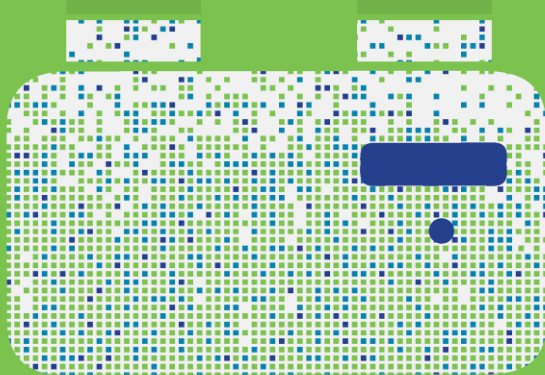
With the smallest, most compact ultrasonic residential gas meter available, Sensus has made smart gas even smarter. In addition to measuring consumption and raising alarms, the Sonix IQ™ monitors pressure, provides remote shutoff, indicates system health and has a 20-year battery—all for about the same cost as meters twice as big (and half as efficient).

There's the same. And there's smart. Now there's Sonix IQ.
Sensus.com/SonixIQ



Sonix IQ. Smarter for you.

Taking your gas utility to next-level smart.



This powerful, compact ultrasonic residential gas meter does more than produce an accurate bill. Way more. From monitoring pressure and diagnosing system health, the new Sonix IQ™ takes your gas utility to next-level smart. With pinpoint-accurate data in real time, plus remote shutoff and theft detection, this little meter gives your utility big results.

There's the same. And there's smart. Now there's Sonix IQ.
Sensus.com/SonixIQ



Sonix IQ. Smarter for us all.

Taking our community to next-level smart.



It may start with making a better meter. But the vision is bigger—even if it comes in a smaller meter footprint. The compact size and embedded communication module mean greater efficiency in packaging, shipping and storage. Plus, more accurate data and improved safety features ensure satisfied gas customers. Ultimately, though, Sensus developed the Sonix IQ™ ultrasonic residential gas meter for the same reason you do what you do: to build a better community.

There's the same. And there's smart. Now there's Sonix IQ.
Sensus.com/SonixIQ

