



Frequently Asked Questions

Sonix 215, 600 & 880

Sonix™ Ultrasonic Gas Meter

When the very first gas meter was introduced it no doubt caused a stir. The new Sonix meter is every bit as revolutionary and it is understood that it will generate a multitude of questions. So that you can become more familiar with Sonix technology and can better appreciate its wide variety of cost and time saving advantages, we offer this list of frequently asked questions. If you have questions that are not addressed here, please feel free to contact us.

What is an ultrasonic meter?

An ultrasonic meter is an inferential meter that uses sound waves to detect the movement of gas in a flow tube. The sound waves are in the ultrasonic range, which is above the range of human hearing.

How does the Sonix ultrasonic meter work?

Sonix uses the time-of-flight technique to determine the velocity of the flowing gas. Inside the meter, transducers send ultrasonic waves back and forth across the flow tube. Since sound travels faster with the flow of gas than against it, the transducers and associated electronics simply measure the difference in time it takes for an ultrasonic signal to travel with the gas flow compared to the time it takes travel against the gas flow. The electronics use this difference to calculate the velocity of the gas. Once the velocity of the gas is found, the electronics calculate the volume of gas by multiplying the gas velocity by the cross-sectional area of the flow tube.

Is Sonix based on proven technology?

The ultrasonic technology has unique advantages over conventional methods. The use of transducers allows the meter to operate in an environment where dust, dirt, or moisture does not affect the operation. These transducers are resistant to external disturbances such as vibration, infrared radiation, ambient noise and electromagnetic interference radiation. Since the Sonix meter is a solid-stated device including the transducers, the meter has virtually unlimited maintenance-free lifespan. Furthermore, Sonix's reliability has been verified in over 1 million installations.

What are the advantages of Sonix?

Sonix's electronic design eliminates moving parts for greater accuracy, reliability, and cost savings. Because there are no moving parts, there is no mechanical wear. As a result, there are no parts to replace and no repair costs. The electronic design also improves accuracy. The meter retains its proof over its entire working life and is highly accurate at low flows. In addition, Sonix's electronic design provides extensive diagnostics, anti-tamper features, highly accurate temperature correction and integral pressure compensation. Because it has no moving parts, Sonix is significantly smaller than existing residential and commercial meters. The Sonix 215 can fit between wall panels, conserving space and enhancing architectural aesthetics. The Sonix 600 and 880 all offer a 6" center-to-center meter connection allowing utilities to standardize on one meter set size.

What level of accuracy can I expect?

Sonix 215: $\pm 1.0\%$ from 10 cfh to Qmax, and $\pm 2.0\%$ from 3 cfh to 10 cfh. Sonix is more accurate than diaphragm meters at low flows, the level at which most residential meters frequently operate.

Sonix 600: $\pm 1.0\%$ from 25 cfh to Qmax, and $\pm 2.0\%$ from 6 cfh to 25 cfh.

Sonix 880: $\pm 1.0\%$ from 40 cfh to Qmax, and $\pm 2.0\%$ from 8 cfh to 40 cfh.

How is Sonix proved?

The Sonix meter is compatible with most sonic nozzle provers and the traditional bell prover. With Sonix, however, the meter itself is used to turn the sonic nozzle prover on and off or control the motion of the bell prover. The meter proof can be adjusted in increments of 0.04%.

How does Sonix compensate for temperature?

Sonix uses a highly accurate thermistor to measure the temperature of the gas, and then it performs Charles' Law calculations to provide temperature compensation.

Are the ultrasonic sensors affected by dirt build-up?

The Sonix gas meter electronic design is such that the transducers are out of the flowing gas stream allowing virtually endless operational life. Therefore, they are safe from dirt build-up.

What is the capacity of the Sonix 215 meter for residential use?

Sonix is rated at 215 cubic feet per hour at 0.5" water column pressure drop on 0.6 specific gravity natural gas using the standard ANSI B109.1 test.

Does Sonix need any maintenance at all, since it is electronic?

The Sonix is powered by a single "D" cell lithium thionyl chloride battery, which has an expected life of 13 years. The Sonix 215 battery and LCD readout are in one easy-to-replace plug-in module. The Sonix 600 and 880 utilize the same battery but has a separate battery pack located behind the secured front cover. Beyond that, since Sonix has no moving parts, there is nothing to repair, replace, or maintain.

How is data retrieved?

Like any other meter, Sonix displays gas consumption represented in cubic feet or cubic meters, which is user-defined via the software. Additionally, an optical reading head, which is connected to a PC or PDA equipped with special meter-reading software, can be connected to the Sonix optical port. Once connected, there is the option to view hourly data up to 60 days. The data can be downloaded and saved for billing disputes and load profiling.

What optional functions can be added to Sonix?

Because of Sonix's electronic design, it is easy to incorporate value-added features such as pressure compensation and remote communications.

Does Sonix retrofit into existing meter sets?

All Sonix meters have 6" center-to-center connections in any standard size. This allows utilities to standardize on one size, which provides a common platform for small, compact, and inexpensive meter sets.

Can Sonix be installed indoors?

Yes, the Sonix meter was designed and field-tested to insure that it works well from -30 to +130 degrees F. The electronics are sealed and protected from the elements.

How small is the Sonix meter?

Sonix is very compact. The residential models weigh just 4 pounds, and measures 7.5 inches high, 9.5 inches wide, and 3.5 inches deep. The commercial models weigh 12 pounds, and measures 10.25 inches high, 9.5 inches wide, and 6.8 inches deep. All Sonix meters are significantly smaller than comparable diaphragm models while occupying just one-fourth the volume of a comparable diaphragm meter.

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