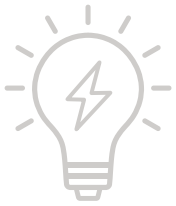




A Meter That Measures for Decades

At Standex Electronics, we develop customized, long-lasting reed switches that can fit into tight compartments.



ZERO ENERGY CONSUMPTION IN PASSIVE STATE

Reed sensors do not draw consistent power, optimizing energy usage.

50_M

50+ MILLION CYCLES

Fully customized, ultra-miniature sensor package tested to last over 50,000,000 cycles.



SMALLEST REED SWITCHES IN THE WORLD

Standex Electronics is the go-to partner for developing sensors that satisfy the compact size and space requirements of today's industrial products.



In many industries, product life cycles are shortening. Products are meant to be consumed or replaced at a quickening speed. But in industrial settings, like the utilities sector, equipment must survive the long haul. Engineers and product designers need to source components that are up to the challenge.

Take utility meters, for example. These sturdy, ultra-rugged devices function in the field for decades. Delicate components that need constant maintenance won't do. Gas meters run on batteries, so power-guzzling parts are a no-go.

So, manufacturers in the utilities sector increasingly turn to **reed sensors**. Lacking moving parts, they're durable sensing devices that can last for millions of cycles. Reed switches also consume less power than any similar technology on the market—making them an appealing option for equipment that needs to last a quarter lifetime.

How Do Reed Sensors Work?

Inside of a reed sensor sits a glass capsule known as a reed switch. It contains two thin ferromagnetic blades. Pass a magnet by the two blades and they push together. When the magnetic field dissipates, the blades draw apart.

Here's why reed sensors are so energy efficient: they only consume power in the "on" position or when the two reeds meet to connect the circuit.



Inside the Utilities Industry:

What makes reed sensors a **popular choice** for metering projects?



Low-energy consumption suits equipment that must last for decades.

Lack of electrical components makes them safe to use around hazardous gasses or fumes.

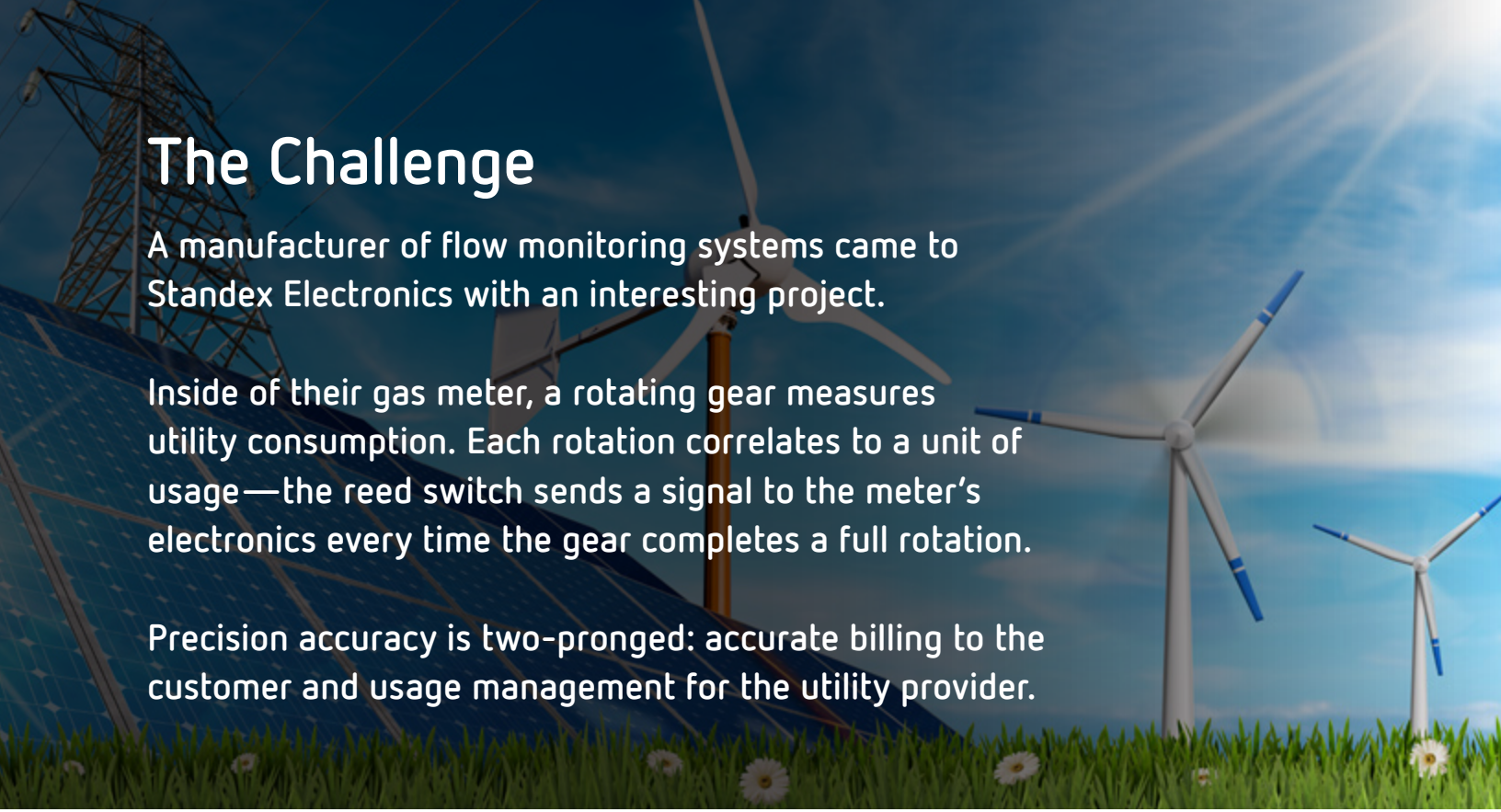
Ultra-durable construction complements a meter's rugged requirements.

Unfamiliar with reed sensors? You'll find them in products you use every day. They're used in all industries: automotive, medical, agriculture, and renewable energy are just a few segments benefiting from this energy-efficient sensing device.

Some laptop or tablet case manufacturers use reed switches to determine whether the lid is open or closed. This informs the screen to turn off, or for the system to enter hibernation mode.

You might find one inside of your coffeemaker, keeping an eye on the water level.

Read on to see how this specialist in gas metering devices uses reed sensors.



The Challenge

A manufacturer of flow monitoring systems came to Standex Electronics with an interesting project.

Inside of their gas meter, a rotating gear measures utility consumption. Each rotation correlates to a unit of usage—the reed switch sends a signal to the meter's electronics every time the gear completes a full rotation.

Precision accuracy is two-pronged: accurate billing to the customer and usage management for the utility provider.

Inside of this meter, the client needed three sensors: two to count signals and one for anti-tampering. They started with off-the-shelf components from another vendor, but experienced two challenges:

- The initial sensor they were using was miscounting rotations, meaning gas measurements were not accurate.
- They were using three separately housed sensors. This made it extremely crowded in the small footprint of the meter's housing.

Instead of toiling with the constraints of a standard product, Standex worked with this client on a new way to approach the problem: customization.

The Answer

Standex and this metering specialist collaborated on a trio of fully customized MK24, MK03, and MK14 sensors, joined together into one housing.

A Fully Customized Trio of Utility Monitoring Sensors

Three Switches in One Package

Originally, the client tried to use commercially available products as-is. But squeezing three individual sensors into the tight casing proved impossible.

Going the custom route, Standex was able to condense all three sensors into one housing. This was a huge win for the client, who'd finally found a way to fit all their sensors without redesigning the outer shell.



Enter the World's Smallest Reed Sensor

There was little room to work with inside this gas meter. The diameter was fixed. Additionally, the signal-counting sensors needed to be close to the gear teeth: a challenge to position magnets and sensors in a very tight space.

Measuring at 5.5 mm x 1.7 mm x 2.2 mm, the ultra-miniature MK24 was the ideal device for this challenging form factor.

We used our 3D-mapping technology to give the client early peeks into the meter's inner workings. This way, we could show the client precisely when and where the gear turned the switch on or off.



Hermetically Sealed, Extra-rugged Potting

Positioned outdoors and subject to tampering, utility meters are a robust piece of equipment that requires equally rugged components. Reed switches are hermetically sealed, meaning dust, rain, or grime won't impact its performance.

To further ruggedize the sensor packaging, we used special potting both inside the sensor and inside the housing.

Plays Well with Neighboring Components

Reed switches exhibit high electromagnetic compatibility. Since they lack electronic parts, they're able to operate efficiently alongside other devices that might operate in the same vicinity.

That's also why they're safe to use in the presence of hazardous gasses and vapors. There are no sparks or ignition points, so you won't need any additional protection to prevent ESD events.

What Brings the Client Back to Standex Time and Time Again?

To your end customer, our products are invisible. But they can make all the difference. If our products draw attention, that means they're not working. So, we strive to remain invisible and unnoticeable — by ensuring our products work unfailingly.

Across the utilities industry, reed sensors are a more reliable, energy-efficient choice than other switch counters.

You'll find them in:

- Electric Meters
- Gas Meters
- Water Meters
- Heat Meters

Extensive Technical Support

At Standex, we stand behind a true partnership through value-added engineering. We don't just sell you what you ask for. We're not just a catalog to buy from. We forge a true collaboration with you to find the right solution for your project. In this project, the client approached us struggling with an off-the-shelf sensor. Working together, we engineered a fully customized sensor that better met their design challenges.

Utility monitoring specialists have enough to worry about. They simply don't have time to hone the expertise required to mind all of their switches, sensors, and relays. They borrow this expertise from us.



On-Site Labs and Testing

Opting for a partner that offers comprehensive testing and manufacturing solutions can simplify your design timelines. Our facilities provide a one-stop shop for evaluating product lifecycles, laser welding, salt spray testing, 3D mapping, and more. For this client, we also produced the tooling for the custom housing.

If you're in our vicinity, we relish the opportunity to host clients for on-site meetings and tours. But if you're on the other side of the world, fret not; our team of proficient experts excels at collaborating with clients across different locations. Just ask our extensive portfolio of satisfied clients from all around the world.

Global Manufacturing Capabilities

Rest assured, we are committed to meeting your manufacturing timelines, and we can do so in the region of your choice. Our extensive manufacturing network makes us highly nimble and able to navigate supply chain disruptions with ease—even for custom-made solutions you need quickly.

Where Else Will You Find Standex?

All industries use magnetic switches like reed and Hall effect sensors. They're tucked into sensing components for agriculture, automotive, manufacturing, solar energy, consumer electronics, and so much more.



Now, more than ever, you need sensors that:

- **Consume minimal power**
- **Meet industrial strength requirements**
- **Last for millions, if not billions, of cycles**

We're here to help.

Contact our engineers to discuss your design requirements.

PARTNER | SOLVE | DELIVER®



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