

REAL-TIME METER HEALTH MONITORING AND INTELLIGENCE FOR DATA DRIVEN DECISIONS

*Realize the Full Potential of Your AMI
with Diagnostic Data*



Electric utilities worldwide are investing in advanced metering infrastructure (AMI) to collect and analyze electricity consumption data to help reduce the cost of meter readings, offer custom billing options, and deliver new services.

However, when it comes to managing meter assets over their deployed lifetime, utilities still rely on checking meters in the field on a case-by-case basis, using statistical methods to verify accuracy, replacing good meters based on age rather than need, and investigating false tamper alerts.

The Opportunity for Utilities— Meter Health in Real Time

With millions of meters in service and billions of dollars lost in electricity theft worldwide, there is a large opportunity for utilities to reduce cost, reduce theft, and improve operations by monitoring individual meter health directly and in real time.

Optimize Operations



Eliminate In-Field
Sample Testing



Efficiently Dispatch
Meter Crews



Prioritize Equipment
Replacement

Protect Revenue



Detect Intermittent
Tamper 24/7



Confirm More
Tamper Cases
with Confidence



Estimate the
Amount of
Tamper Per Meter

*m*Sure In-Meter Diagnostics—Get Visibility into Your Entire Meter Population

*m*Sure® is a noninvasive diagnostics technology built into the energy measurement IC that monitors in real time and reports data on individual meter health, including the accuracy of the current and voltage sensors.

*m*Sure Enabled Smart Meters

Smart electricity meters equipped with *m*Sure produce the meter health data needed for actionable insights to utilities, such as identifying out-of-specification meters, meters with drifting accuracy, and malfunctioning meters, and detecting more tamper cases with confidence.

Cloud-Based Analytics Service

Data generated using an *m*Sure enabled meter gets passed on to an analytics service that processes the data, and allows utilities to run reports on their entire meter population at desired intervals and make informed decisions or take appropriate actions.



Energy Measurement IC

*m*Sure Technology Benefits for Your Next AMI Deployment

Your next AMI deployment involves many moving parts, so you need to make sure you are providing the best technical features with the optimal return on investment.

- ▶ **Completely scalable**—*m*Sure diagnostic capabilities embedded in the meter's energy measurement IC combined with cloud-based analytics allow you to manage both small and large deployments
- ▶ **Flexible integration**—analytics modules are accessed through APIs for integration with your existing meter data management system
- ▶ **Easily customizable**—each part of the solution can be customized to meet different requirements for a particular utility—for example, regularity and size of reports based on existing communication bandwidth and throughput availability

*m*Sure Advantages



Direct Measurement

High confidence results and fewer false positives



Meter Specific

Locate meters with drift, tamper, or malfunction



Noninvasive

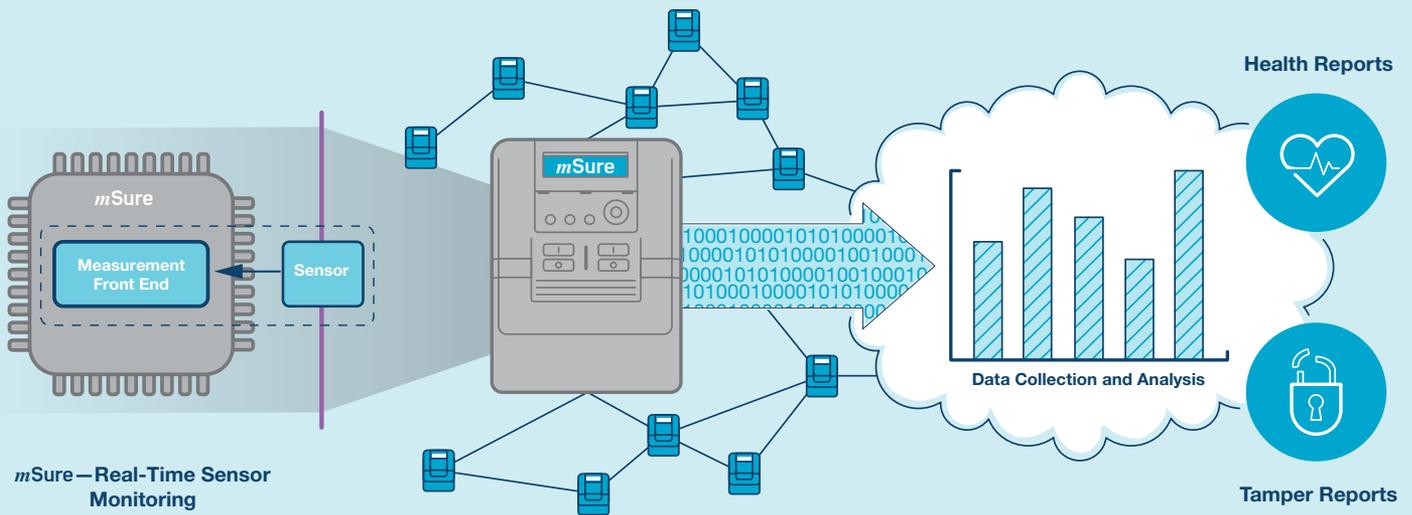
No service interruption or extra equipment needed



Always On

Detect problems quickly or discover intermittent tamper

Analog Devices' Edge-to-Cloud Meter Analytics Solution— Take Control of Your Smart Meters

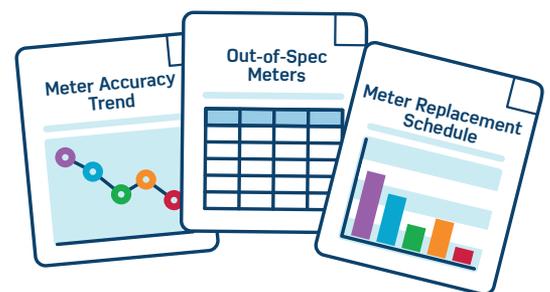


Meter Health Module—Meter Accuracy Over Lifetime

Make decisions quickly and with confidence to replace faulty or aging equipment, dispatch maintenance crews, and verify overall accuracy for customer billing purposes.

Obtain reports based on:

- ▶ **Meter accuracy**—confirm accuracy of meters in the field and prioritize replacement of meters that are outside of specifications
- ▶ **Meter accuracy history**—know when drift started and profile progression of problematic meters
- ▶ **Meter accuracy prediction**—optimize asset planning through estimating when meters will trend outside specified accuracy limits

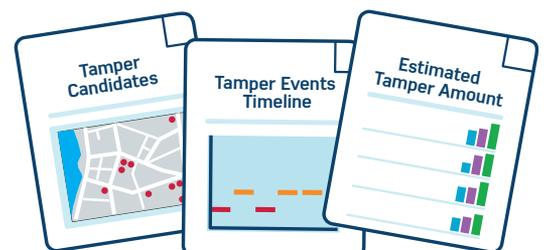


Revenue Protection Module—New Advanced Tamper Detection

Protect more revenue by discovering more tamper types fast and with confidence. Unlike other methods for tamper detection, mSure relies on an always on, direct measurement of the sensor function.

Obtain reports based on:

- ▶ **Meter tamper indicator**—identify when new meter tampering occurs
- ▶ **Meter tamper history**—identify intermittent meter tampering and see a list of tamper events
- ▶ **Meter tamper amount**—prioritize investigations based on an estimate of the amount of energy stolen



mSure Business Benefits

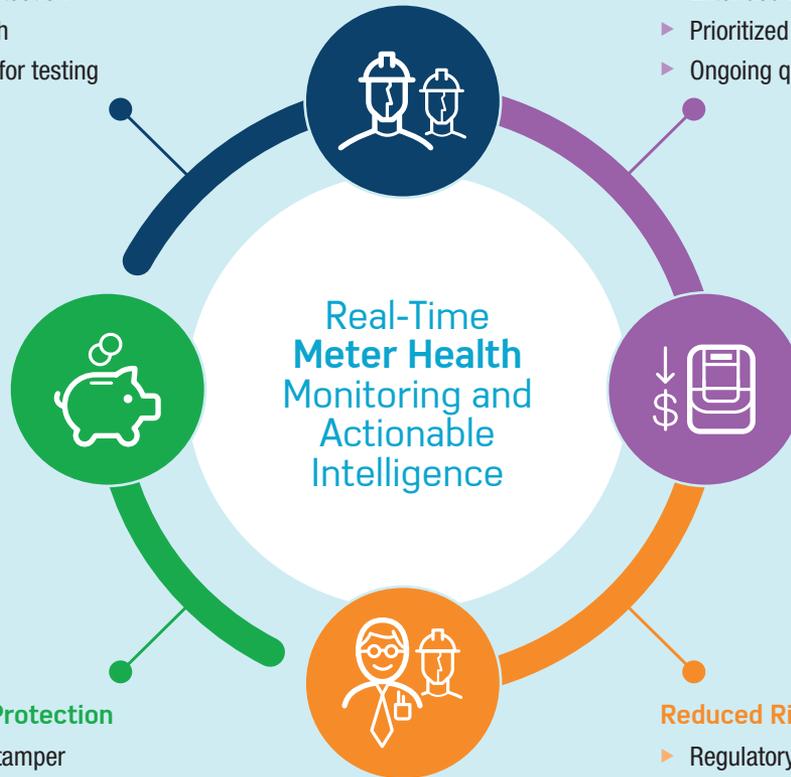
Investing in Analog Devices' edge-to-cloud meter analytics solution helps electrical utilities decrease operational expenses and capital spending, reduce risk, protect revenue, and enhance trust in your brand.

Optimized Field Resources

- ▶ Faster faulty meter detection
- ▶ Efficient crew dispatch
- ▶ No service disruption for testing

Reduced Equipment Cost

- ▶ Extended meter lifetime
- ▶ Prioritized replacement
- ▶ Ongoing quality assurance



Advanced Revenue Protection

- ▶ Estimated amount of tamper
- ▶ More tamper types identified
- ▶ Reduced tamper investigation time

Reduced Risk

- ▶ Regulatory compliance
- ▶ Identify and prevent system failures
- ▶ Customer satisfaction—no overbilling

Next Steps—OEMs and Utilities

Analog Devices is partnering with leading utilities and meter manufacturers interested in enabling next-generation electricity meters and integrating cloud analytics services.

For next steps, visit analog.com/msure.

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