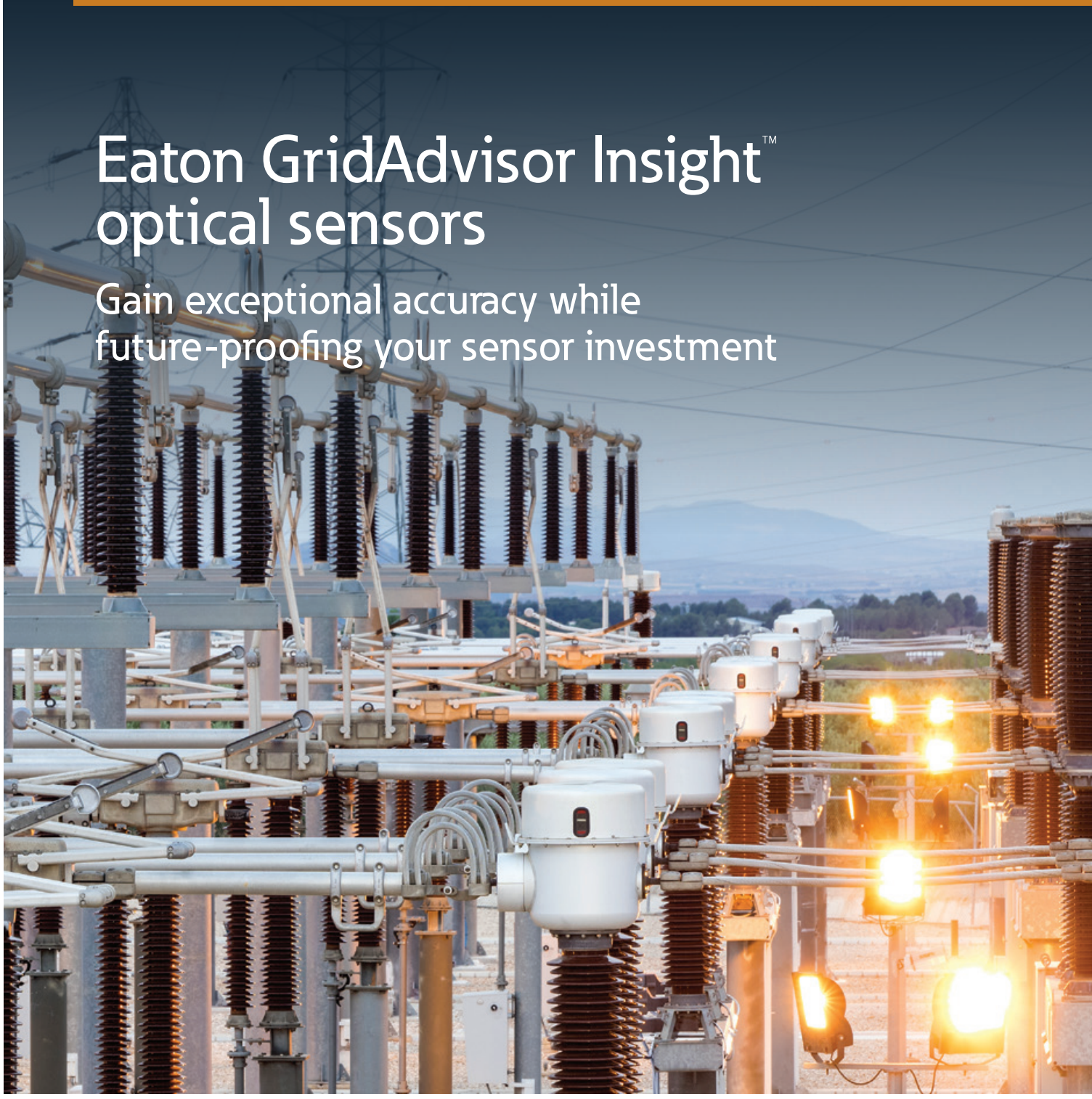
Product brochure

Eaton GridAdvisor Insight™ optical sensors

Gain exceptional accuracy while future-proofing your sensor investment



Powering Business Worldwide

GridAdvisor Insight™ optical sensors

exceptional future-proofing

Eaton's GridAdvisor Insight medium voltage optical sensors deliver industry-leading voltage and current accuracy of +/– 0.5 % with no loss of accuracy or precision over a broad temperature range.

Relying on an all-optical measurement platform for unparalleled reliability, precision and accuracy, GridAdvisor sensors provide superior sensing for controls and meters while dramatically lowering total cost of ownership.

Available in a wide variety of easy to install form factors with a central platform and standard interface, GridAdvisor sensors are highly scalable across all applications and temperature ranges, from –30 °C (–22 °F) to +85 °C (+185 °F). An ideal solution to retrieve real-time site metrology and intelligence on electrical distribution systems, substations and underground distribution locations, the sensors deliver the highest level of data fidelity—facilitating superior grid intelligence, advanced analytics and the information utility companies need to make better-informed decisions.

Key benefits

Future-proof your investment

With GridAdvisor optical technology, utility companies not only achieve best-in-class data via a communications-agnostic interface, but a solution that will outlive the technical viability of all competitive offerings. Sensors remain usable as technology advances, eliminating ongoing replacement costs.

Support technology roadmap expansion

With their superior data quality and resolution, GridAdvisor sensors uniquely address the increasing reliability challenges of grid applications, both today and into the future. Deploy sensors in existing and future installments with the peace of mind that they will continue to operate as your technology roadmap is defined and realized. Applications include power quality monitoring, substation monitoring, Distributed Energy Resource (DER) interconnects, underground network monitoring and DMS applications such as state estimation.

Streamline asset management

With a central platform that supports a wide variety of applications, GridAdvisor sensors provide optimal performance across all voltage classes from 4 kV to 38 kV. Because the same optical technology is packaged in multiple easy-to-install form factors—with a standardized integration point—GridAdvisor sensors simplify asset management and significantly reduce a utility's inventory stocking quotient.

Improve conservation voltage reduction (CVR) and demand response

Utility companies using their ANSI-approved delivery range as responsive demand will significantly benefit from GridAdvisor sensors, which boast an unrivaled accuracy of +/–0.5% that more than doubles the controllable responsive demand. This differentiator enables utilities to defer investments in generation, transmission and distribution assets where there are capacity constraints, as well as achieve precise monitoring and fine-tuning of available voltage reduction, thus lowering consumption and reducing line losses.

Extend asset life

The more accurate the network monitoring, the quicker a utility can identify, isolate and repair failing equipment before a catastrophic event occurs. Data provided by the sensor can enable analytics to facilitate a predictive maintenance system that can pinpoint when an asset's duty cycle is exceeded and optimize capital deployed to maintain, repair and replace network assets.

Improve fault monitoring and outage management/ costs

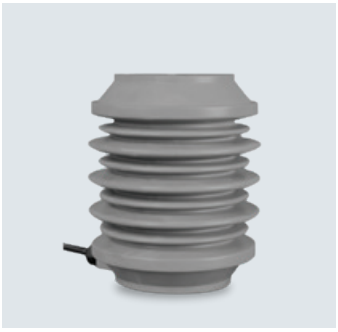
With GridAdvisor sensors, utility companies can accurately predict, identify and isolate problems for faster network restoration and improved system uptime. This can dramatically reduce commercial customers' economic impact, which the DOE estimates at more than $1,000 for each one-hour interruption.

Optical sensors help utilities maximize the efficiency of their operations today while enabling applications and analytics for the future.

GridAdvisor Insight optical sensor solutions

Easily installed and highly accurate, GridAdvisor sensors offer a virtual "one-size fits all" solution from 4 kV to 38 kV.

Bring unmonitored substations online with metering and communications and gain visibility into underground networks that are notoriously difficult and time-consuming to troubleshoot and fix. Ideal for both retrofits and new construction, the sensors can be deployed in a wide variety of applications including overhead, underground, pad-mount, bus bar and vault, providing high accuracy and precision that remains constant regardless of applied voltage or current.



Overhead systems

- Enables low-cost installation with RG235 hanging sensor or the ability to leverage existing construction standards with RP series line post sensors
- Deploy as high accuracy measurement inputs to controls or devices via digital or analog outputs
- Deploy along the distribution line for state estimation, power quality and reliability at critical points, such as distributed energy resource interconnects, end of line and critical loads

Underground cable connections

- Gain visibility to underground distribution voltage profiles with the RE120
- Add the optical current ring sensor with the REC220 to get full power quality measurements on insulated cable
- Monitor the primary side of network transformers
- Use to monitor pad-mounted switchgear
- Identify problems that arise and potentially even predict cable failures before they happen.

Bus bar

- Replace standard bus bar standoff insulators with embedded optical voltage sensing in the RI125
- Monitor voltage and current by adding the optical current ring sensor in the RIC225
- Embed optical technology inside network protector gear
- Provide metering for medium voltage switchgear
- Deploy as a monitoring solution for industrial customer connections

Substation

- Retrofit unmonitored substations with SCADA-ready equipment without requiring an outage
- Leverage high precision, high accuracy and high resolution data to monitor circuit power quality and substation assets
- Replace traditional CT/PT technology at a reduced cost of infrastructure and labor

To learn more, visit
Eaton.com/opticalsensor

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

Eaton
Electrical Automation Solutions Division
3033 Campus Drive, Suite 350N
Minneapolis, MN 55441 United States
Eaton.com/SmartGrid

Printed in USA
Publication No. BR910008EN / GG
December 2018

Follow us on social media to get the latest product and support information.

Powering Business Worldwide