Application Alley

Smart Grid & Smart Metering Applications

Why Standex Electronics for Smart Grid and Smart Metering Applications?

Standex Electronics

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The power grid in the US and other countries is in the process of a massive transformation, being driven by the need for more efficient power usage, and to generate a better understanding of what is happening during power outages and periods of peak power consumption. This requires utility companies to make many changes to metering systems that allow for the instant flow of important load information, directly from the consumer's meter back to the utility company.

From revenue metering in gas, electrical and water meter systems to features that prevent tampering in these products, Standex Electronics provides a broad range of switches, sensors, current transformers and Rogowski coils commonly applied in these applications. Reed switches and sensors provide a highly reliable means of counting Kilowatt hours (KWH) for electricity, and gallons, and cubic feet for gas and water as a method to determine usage. They can also be used to report tamper conditions in meters as an additional security measure.

Standex Electronics current transformers, split core current transformers, and Rogowski coils are used to help determine KWH usage and high demand in electrical smart metering systems, in homes as well as in large commercial and industrial facilities.

Smart grid systems additionally allow for systems to be automatically shut off in times of peak power usage to decrease load. Highly reliable Standex Electronics reed switches and reed position/proximity sensors can be used in these systems to confirm breaker or disconnect operations in smart grid systems that include automatic and semi-automatic load shedding functions.

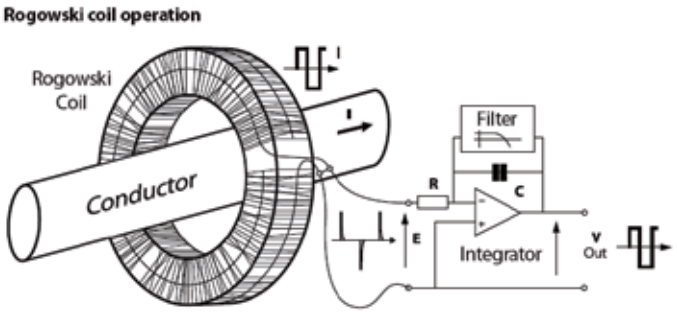
Why Standex Electronics Current Transformers for Revenue Billing?

- Easy installation
- Minimal size and space requirements
- Standard accuracy of 0.30%
- Designed for primary current of 200A and secondary current of 5A
- Other primary and secondary currents available as needed
- Long lead wires
- Ideal for multi-tenant environments
- Suitable for use with both “Socket Meters” and “Closet Meters”
- CTs provide isolation of the instrumentation from the monitored circuit
- Designed for use with a specific burden

Electric currents in the circuit are much too high to be applied directly to measuring instruments. Highly accurate Standex Electronics current

transformers can solve this problem. Current in the monitored circuit produces a reduced but proportional current in the Standex Electronics current transformer, which is then monitored by the measuring instrumentation. Multi-tenant properties can also use this technology to bill tenants for individually measured electricity usage through the use of multiple CTs and a single measuring instrument.

Why Standex Electronics Rogowski Coils for Accurate A/C Current Measurement?



- Low cost
- Low power consumption
- Single-phase or three-phase designs
- No DC/high current saturation problems
- No DC offset problem
- Standex Electronics engineering
- Very good linearity over measurement range
- Very good high current measurement capability
- Very low output variation with temperature
- No saturation and hysteresis problem

The increased prevalence of smart metering has accelerated the use of Rogowski coils to measure AC current in high current metering applications. Due to the innovative technology in Rogowski coils and advances in digital IC measurement technology, Rogowski coils provide very high accuracy for high current measurement. Standex Electronics is uniquely qualified to manufacture coils that meet specific application requirements, and our engineers have extensive experience working with customers on custom applications.

We have the capabilities to determine the ideal wire size and number of turns in the coil for optimal results. We can also add a shield layer to help reduce electromagnetic interference and integrate the internal components of the coil within the assembly.

Industry applications

Revenue metering for gas, electric and water meters, individual measurement of electricity usage in multi-tenant properties, security against tampering in metering systems, and AC current measurement for high-current applications. Future applications include measuring power consumption in home electronics, home appliances and other individual equipment as part of a comprehensive power management system.

Find out more about our ability to propel your business with our products by visiting www.standexelectronics.com or by giving us a hello@standexelectronics.com today! One of our brilliant engineers or sales leaders will listen to you intently.

Component Corner (Expert Insights)
Paul Linsley
Standex Electronics Project Manager

> "The ever increasing demand for electrical power, and the integration of different energy sources into the existing power system, requires new and more efficient tools for managing power consumption. Standex Electronics is a valuable partner in the resulting shift towards smart meter technology, as our engineers have extensive experience in working with utilities to develop custom solutions for specific measurement needs. Our reed switches and sensors, current transformers and Rogowski coils can help with metering, revenue billing and accurate AC current measurement."





About Standex Electronics

Standex Electronics is a worldwide market leader in the design, engineering, and manufacture of standard and custom electro-magnetic components, including magnetics products and reed switch-based solutions.

Our magnetics offerings include planar, current sense, and conventional low- and high-frequency transformers and inductors. Reed switch-based solutions include Meder, Kent, and KOFU brand reed switches, as well as a complete portfolio of reed relays, and a comprehensive array of fluid level, proximity, motion, water flow, HVAC condensate, hydraulic pressure differential, capacitive, conductive and inductive sensors.

We offer engineered product solutions for a broad range of product applications in the transportation, automotive, medical, test and measurement, military and aerospace, aviation, HVAC, appliance, security and safety, and general power and industrial markets.

Standex Electronics has a commitment to absolute customer satisfaction through a partner, solve, and deliver approach. With a global organization that offers sales support, engineering capabilities, and technical resources worldwide – we implement customer driven innovation that puts the customer first.

For more information on Standex Electronics, visit us on the web at standexelectronics.com.

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