

SGM3000

IEC® Smart Energy Meter



Smart Metering to Advance the Smart Grid

For more than 100 years, GE has provided reliable and robust metering solutions to utilities and their customers. This tradition continues with the SGM3000 product line, and its innovative and flexible technology that covers metering needs from basic, energy-only metering to comprehensive smart metering with advanced functionality.

GE's family of meters addresses the needs of utilities as well as their customers by implementing advanced energy management and power quality monitoring, and by providing easy access to critical information. This enables higher productivity, improved efficiency and reduced energy costs throughout the energy distribution and usage chain.

Key Benefits

- Improved energy efficiency from the utility to the home
- Advanced co-generation applications using configurable, full quadrant measurements
- Access to multi-utility measurements including electricity, water and gas
- Modular communications with field replaceable options
- Extensive relay and multi-element configurations for application flexibility
- Robust meter security and standards compliance
- Scalable, future-proof metering with ample embedded resources

Integrated Systems

At GE, we've leveraged our expertise to help utilities maximize their investment. GE Smart Meters provide data that can be integrated with a variety of other GE products to optimize utility operational systems outside of traditional billing, such as:

- Outage events and alarms with PowerON™, GE's Outage Management Solution
- Coordinated load control, load shedding and load deferral using GE's GridIQ™ Demand Optimization Solution
- Centralized Volt/VAR applications with GE's PowerON Fusion™ Distribution Management Solutions

Our broad knowledge of electric utilities and their operational systems help us clearly understand the needs of utilities as well as their customers, and allow us to develop solutions that exceed the needs of both. We will continue to provide solutions that advance metering technology and provide differentiated value for both the utilities and the consumer.

Communications

- Home Area Network (HAN) support for ZigBee®
- Modular, field replaceable communications to enable GPRS, 3G, WiMAX®, LTE or RF Mesh
- Integrated power line connectivity for PLC/DLC

Smart Configuration

- Flexible configurations to support customized needs
- Highly configurable load profile, time of use, demand metering and prepayment
- Measurement profiles, load control schedules and multi-element options

Demand Management

- Manage demand with multiple load control relays and independent load control schedules
- Limit total energy supply using supply capacity limiting and main disconnect functions
- Shed additional loads with group based load shedding and under frequency load control
- Maintain control with manual load control and emergency override functions

Reliability

- Robust, revenue-grade metering typically measured at 0.2% accuracy
- Unparalleled design and testing processes



Smart Grid Enabled

The SGM3000 advanced metering product line, delivers Smart Grid capabilities for today and long into the future. Designed to meet challenging Smart Grid applications, the SGM3000 draws on 10-years of solid-state metrology expertise to safeguard critical billing activities. With embedded micro-computing to power a new era of smart metering, the SGM3000 family is ready to rise to the challenge of a shifting industry paradigm.

Family of Meters

The SGM3000 series includes a family of eight (8) meter variants, including single phase, polyphase, dual-element and CT metering for both residential and commercial use. Whether your business calls for basic metering, off-peak tariffs, co-generation, three-phase metering or a mixture across your network, an SGM3000 meter is available to meet your needs. In addition, meters in the SGM3000 family offer the same full set of advanced functionality, limited only by the physical options ordered.

Advanced Capability

The SGM3000 is GE's most feature rich meter series, incorporating advanced capabilities. We've extended the meter's basic capability to meet demanding tariff and billing structures, and have included additional measured quantities, multiple independent load profiles, extra TOU rates and day types, and dedicated event logs.

Demand Management

The SGM3000 family of smart meters support a wide range of load control configurations to suit a variety of demand management applications. The meters can support a 100A main disconnect relay and up to two auxiliary load control relays of either 40A or 2A capacity.

Peak loads can be managed using independent load control schedules, while the meter's supply capacity limiting functions allow utilities to enforce upper supply demand limits or emergency set points. Additionally, the meters include an under frequency load shedding function to provide another way to help manage grid stability.

Power Quality

SGM3000 is the ideal power meter for monitoring and managing power quality in an energy supply network. The SGM3000 monitors quality parameters such as reactive energy, total harmonic distortion, voltage profiles, outage statistics, and under/over voltage and frequency events.

Future Proof Communications

The SGM3000 smart meters support modular, field replaceable communications to facilitate wide area network communications. Designed specifically to accommodate the varying types of Smart Grid communications technology, the SGM3000 communications interface supports a broad range of communications options including GPRS, 3G, WiMAX, LTE, RF Mesh and Ethernet.

The communications interface port is common between all SGM3000 variants, allowing a single communications module to suit different meter models. Industry-standard serial interfaces are also available to support connectivity to standalone or multi-drop communications solutions. Direct connect SGM3000 meters also support built-in power line connectivity to facilitate options such as PLC, DLC, HomePlug and legacy Ripple control technologies.

In addition, we are leveraging GE's world-class Radio Frequency (RF) communications expertise to ensure that our smart meter products are hardened to withstand even the harshest of RF environments without jeopardizing the quality or integrity of the metrology or the communications technology.

Home Area Network

Not too long ago, the energy meter was considered the end point in a Smart Grid network. As the breadth of the Smart Grid expands into the home with smart appliances, the meter is no longer the end of the network. With this in mind, the SGM3000 includes internal interface ports designed to facilitate ZigBee, HomePlug and other Home Area Network (HAN) technologies.

The HAN interface leverages the Smart Energy Profile, which facilitates advanced energy management applications and load curtailment of intelligent in-home appliances. When integrated with GE's Demand Response Management Systems (DMRS), the SGM3000 can enable concise load management and data aggregation.

Plug & Play AMI Communications

Multiple communication options on the SGM3000 allows greater customer choice. With modular solutions optimized for cellular, PLC and RF mesh communications technologies, the SGM3000 can cover a wide variety of communication scenarios.

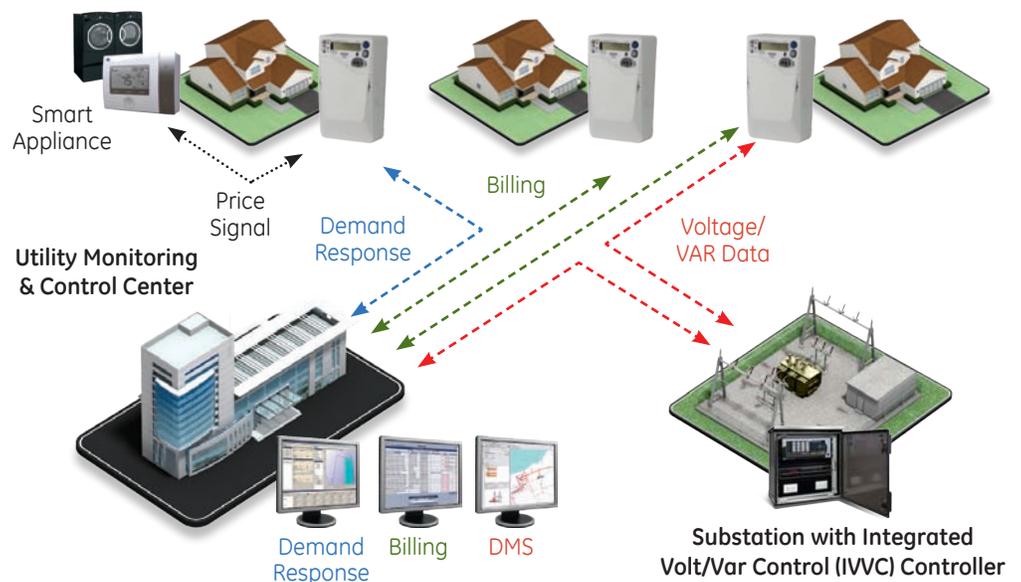


Features & Functions

- Demand metering
- Time-of-use billing measures
- Multiple load profile recording
- Tariff-based prepayment
- Multi-energy recording
- Full quadrant energy measurement (import/export, lead/lag)
- Net or gross measurement options
- Dedicated co-generation and off-peak meter variants
- Energy measurement inclusive or exclusive of harmonic content
- Configurable event logging
- Tamper detection
- AMI notification
- Broad modular communication options
- Supply capacity limiting
- Under voltage/over voltage recording
- Under frequency/over frequency recording
- Under frequency load control
- Main disconnect relay
- Multiple load control relay configurations
- Independent load control schedules
- Boost function
- Group load control
- Manual and emergency load control override
- Managed supply restoration
- Managed load energization

Enabling Billing & Smart Grid Applications

Traditional billing continues to be a vital component of today's solid state meters, but they are also now a vital part of your grid operation. We've leveraged the strength and knowledge of GE Energy around distribution automation, Volt/VAR control, demand optimization, and distributed generation to develop a line of smart metering products that are designed to integrate and provide the critical information needed to optimize grid operation. As GE continues to build on its Smart Grid solutions, you can count on our smart metering products to provide innovative and unique capabilities never thought possible.



Leading the way on integrated appliances for demand response

One of the most compelling benefits of the Smart Grid is the promise of delivering demand management or load control. Utilities can save energy, lower costs, and defer additional transmission and generation expenses with the ability to shave peak load, shape load and curtail load to mitigate grid events.

Additionally, consumers will be able to conserve energy and shift energy use to benefit from time of use or time based rate structures. Various studies have shown that these actions can generate customer savings from 5% to 15% of their monthly electricity use.

Through our Digital Energy and Appliance businesses, we are continuing to work on integrated solutions for electricity metering and smart appliances in the home. We are pioneering a new generation of smart meters and smart appliances that work seamlessly together to deliver energy savings never thought possible.



