

SOLUTIONS

Landis+Gyr *advantis*

THE SMART SOLUTION
FOR ADVANCED METERING

Landis+
Gyr⁺



THE SMART SOLUTION FOR ADVANCED METERING

Landis+Gyr is the world's leading supplier of energy measurement solutions. We have been providing innovative metering products for over 100 years; our system solutions are renowned for the last 30 years. We deliver comprehensive support during project planning, implementation and throughout the lifetime of your solution, including engineering, training and technical support.

advantis is a complete advanced metering solution that has been designed to cater for the special needs of liberalised energy markets. It extends over the whole value chain from the meter to the billing interface, and is designed for large-scale residential metering systems. It provides all of the user-friendly tools you need for handling data for large numbers of customers.

advantis revolutionises the traditional value chain of the energy market and adds value to your processes for metering data collection, supplier change, tariffification, meter management and energy supply. In liberalised energy markets you will benefit from maximum efficiency and greater customer satisfaction.



advantis solution: meters and system

ADVANCED METERING WITH LOWEST RISK

With the implementation of advanced metering, utilities are exchanging an entire population of meters within a very short time. The meters are intended to remain in the field for more than 15 years. Long term reliability is essential to fulfill the legal accuracy requirements and to pass the sample tests.

PROVEN METERING SOLUTIONS FROM LANDIS+GYR

Thousands of utilities worldwide rely on our metering technology. More than 220 million Landis+Gyr metering devices have been installed in the field, and each year over 7 million meters are added. Over 300 utilities trust our system solutions for handling sensitive customer data.



REDUCED COMPLEXITY - REDUCED RISKS

Complex systems introduce greater risks. Our modular approach for communications allows you to handle the complexity you need today with minimum risk. Future extensions are easily implemented.

DATA ACQUISITION WITH MAXIMUM RELIABILITY & FLEXIBILITY

Metering data is the basis for your revenue, and must be acquired and processed with this in mind. You need to implement the most accurate, reliable and efficient solutions for measurement and acquisition of the data. This is the only guaranteed way to maintain and extend your competitive advantage in a fiercely fought market.

QUALITY YOU CAN RELY ON

Accuracy, reliability and long lifetime have always been a watchword for Landis+Gyr, where the strictest quality assurance policies are maintained. This quality extends from the meters, through the infrastructure, to the central system, reducing maintenance effort and letting you concentrate on issues important to you.

THE MOST EFFICIENT COMMUNICATION MEDIUM

With *advantis*, modularity ensures optimal adaptation to your local communications infrastructure. You can select the most effective communication medium for each metering site. Replaceable modules permit you to change the communications technology later with minimum disruption.

THE PLC CHANNEL - A MEDIUM MADE SUITABLE FOR SMART METERING

The *advantis* power line carrier (PLC) solution adapts to varying network conditions using Spread Frequency Shift Keying (SFSK) modulation. SFSK overcomes the narrow-band interference often encountered on low-voltage networks. Each meter in the network acts as a self-configuring repeater, passing messages to and from the concentrator, permitting efficient communication over longer distances. Autonomous data acquisition tasks in the concentrator ensure optimum usage of the channel even under changing conditions.

THE GPRS/GSM CHANNEL WHERE PLC IS NOT COST-EFFECTIVE

In rural environments, it may not be economically feasible to install a PLC concentrator. Here you can install a GPRS/GSM module as an alternative. The GPRS service is constantly monitored and, in case of transmission difficulties, the system switches automatically over to GSM.



ZMF meter with PLC and GSM modules

LOWEST INSTALLATION AND OPERATIONAL COSTS

Although the initial costs of purchasing the meters and infrastructure are important, what really counts are the overall lifetime costs, including installation and operation. *advantis* from Landis+Gyr optimises all these aspects, delivering to you the most cost-effective solution.

Here are a few examples where *advantis* reduces your installation and operating costs.

PLUG & PLAY INSTALLATION FOR PLC

You require no special systems engineering work. Network addresses are assigned fully automatically. The concentrator registers the meter nodes according to their serial number and assigns a network address to each. Newly installed meters are automatically registered in the central system with their serial numbers and configuration definitions.

AUTOMATIC TRANSFER FROM ONE CONCENTRATOR TO THE OTHER

If part of the low-voltage network is temporarily supplied by a neighbouring transformer (e.g. due to repair work), the associated meters are automatically transferred from one concentrator to the other. You do not need to take any special action.

DEFINITIONS TAKEN OVER FROM YOUR ERP OR CRM SYSTEM

Through a seamless process interface the *advantis* solution allows you to download and to update basic configuration data in the central system automatically and at any time. This integration works with any kind of enterprise resource planning (ERP), customer relationship management (CRM) and work order management system of a local installer company.

EFFICIENT IN CLASSICAL AND SMART APPLICATIONS

During the transition from a classical solution to *advantis*, you need to handle both new and existing metering installations. *advantis* is optimised for very large numbers of residential customers equipped with advanced metering, but is equally at home with traditional metering installations.

BILLING DATA WHEN YOU NEED IT

advantis meters record the billing data, consisting of import/export totals and rated totals, daily at midnight. These daily billing values cover your basic needs in the liberalised energy market, supporting monthly multi-rate billing and supplier or tenant change. Automatic processes periodically acquire the metering data and make it available for your enterprise applications. Your call-center operators can acquire spontaneous meter readings via the user interface, permitting immediate answers to customers' questions.

CONSUMPTION DATA FOR FLEXIBLE BILLING

advantis meters record the consumption values periodically (15 min – 60 min), provide them with a timestamp and store them over several months. These profiles form the basis for a flexible tariff structure. They give you the means to offer customer-specific contracts and market-based pricing.

QUALITY-OF-SUPPLY DATA

The meters store comprehensive quality-of-supply data in an internal logbook: power outage/return events per phase, over-/undervoltage per phase, etc. Based on this data your customers can be compensated according to the rules set by the market regulator – or you can offer contracts with quality-of-supply components.

CONTRACT MANAGEMENT

An optional circuit-breaker allows you to introduce maximum-power contracts and to actively manage maximum consumption. Additionally, you can deactivate and reactivate the installation during change of tenants. Bad payers can be managed by direct disconnection or by limiting their maximum consumption. Emphasis is placed on safety issues, with protection features to prevent unintentional operation of the breaker.



ZMF meter with optional breaker



Activating/deactivating button

RATE AND LOAD MANAGEMENT

You can control rates and local loads by a scheduler built into the meter, with downloading of scheduler tables from the *advantis* central system. In emergency situations, you are able to switch loads directly from the central system.

CUSTOMER AWARENESS

You can use the *advantis* solution to investigate the potential of smart metering to influence your customer's consumption behaviour. Close interaction with your customer is made possible by a local display.

MULTI-UTILITY CAPABILITIES

The *advantis* solution integrates the acquisition of electricity, gas, water, heat and cold data to give you maximum value from the system. This optimises and simplifies your whole meter reading process. You can even combine *advantis* with commercial, industrial and grid applications, using one central system for all levels.

AUTOMATED BUSINESS PROCESSES

Comprehensive interface possibilities permit you to interconnect simply with third-party applications, such as enterprise resource planning or work order management systems. This optimises your business processes throughout the entire value chain. It supports you with all the functionality, integration, and scalability required to be well prepared for future challenges and customer needs.

PROTECTION OF INVESTMENTS

advantis has built-in protection against stranded investments, due to the use of non-proprietary interfaces and the flexibility to integrate changes in communications technology. Modularity and scalability guarantee the ability to meet future expansion needs and adaptation to market requirements.

STRICT USE OF IEC STANDARDS

Landis+Gyr complies strictly with published international standards. Detailed specifications of interfaces and communication protocols are publicly available, and there are no proprietary rights attached to any interface or protocol. This gives you the assurance of manufacturer-independence; i.e. any manufacturer may offer components compatible to the international standards employed in *advantis*.



MODULARITY AND SCALABILITY THROUGHOUT THE SYSTEM

- You can optimise meter functionality according to today's needs, and extend in future when new requirements are known.
- Exchangeable communication modules give you the possibility to easily adapt your system to the latest communication technology, without replacing the meter.
- Modular central system software permits you to add newly available or newly required functions at the appropriate time.
- Your central system can be expanded by increasing the number of servers, e.g. for communication extensions and additional processing power.
- You can easily extend the number of registered users and metering points.
- With Internet Explorer as the user interface, you can expand simply by adding local or remote operator workstations to your network infrastructure.

OUR ENVIRONMENTAL AND QUALITY POLICIES

Fulfilling your needs lies at the heart of our business. Your requirements and those of your customers define the quality standards of our business and its processes at all levels throughout the company. To support these high standards, we maintain a management system meeting EN ISA 9001 and EN ISO 14001 as a minimum requirement.

ENVIRONMENT AND SAFETY

Our environmental and safety policies reflect our group's responsibility towards the environment and society. Protection of the environment, dealing carefully with resources and meeting technical safety requirements are right at the forefront. As a result, we avoid unnecessary risks and accept responsibility for our actions. By continually striving for improvement, we contribute to sustainable development for the benefit of future generations.

QUALITY

Our success is built on competence, reliability and innovation. These form the basis for the quality of our products, which in turn helps you to increase your competitive advantage. All our employees guarantee the high quality of our products and services. We further and develop their expertise within a framework of targeted training and educational programmes. We thus ensure that we can meet future tasks and challenges efficiently and professionally.



ADVANTIS SOLUTION OVERVIEW



1. CORE PROCESSES

The core processes acquire, store and process metering data, preparing it for your enterprise applications, such as customer relationship management (CRM) and billing systems:

Metering

The *advantis* range of meters covers all residential and commercial / industrial applications, and displays outstanding quality and performance. You can equip the meters with a full range of exchangeable communication units. Optional functionality includes external controls, e.g. for boiler control or load shedding, and the connection of third-party meters with standard interfaces and protocols.

Data Collection

The meters communicate either directly with an *advantis* central system, or with a data concentrator that handles the link to the central system. The concentrator stores the metering data and sends it to the central system on request. Additionally, the concentrator detects new meters connected to its PLC network. A new meter is registered, and its configuration data sent to the central system. A data concentrator is typically located at a transformer station, and utilises GPRS/GSM, the PSTN, or an Ethernet link to communicate with the central system.

Data Management

The *advantis* central system has a full range of features, configured according to the requirements of your particular solution. These features include data acquisition, data normalisation and storage, data validation and substitution, tariffication and reporting. Specific modules tailor the user interface to the needs of different types of task, such as system administration, network management, maintenance and call centers.

Data Exchange

In *advantis*, web Services support the direct interaction with third party systems by using XML-based messages through the exchange of Internet based protocols and guarantee an effective interoperability with other applications.

2. INFRASTRUCTURE SERVICES

Infrastructure services aid deployment and management of a large network of meter nodes. A full range of infrastructure services is available to you from Landis+Gyr for *advantis*, including project consulting, planning and engineering, installation management, training, and system maintenance and support.

3. VALUE ADDED SERVICES

Value-added services use the *advantis* infrastructure to provide you with value beyond delivery of the metering values. Optional load management functionality provides control outputs in the meter for control of external equipment, such as boilers, according to switching tables; a power-limiter function can control an external breaker or contact if a predefined limit is exceeded. You can switch one output on request from the central system, e.g. to shed loads at critical times via a broadcast command.

You can define and download tariff switching tables from the *advantis* central system, so that a new tariff is defined in the same way for both the meters and the central system. Information exchange with customers can be provided via a local display, permitting you to influence consumption behaviour.

4. ENTERPRISE APPLICATIONS

advantis represents a powerful, highly automated solution from the meter to the central system based on reliable communication technologies. The interoperability with existing billing, ERP and Work order Management systems has been one of the key design elements and its seamless realization guarantees a high degree of investment protection of your existing IT – environment.

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