EnergyAxis® Gatekeeper

With an open network architecture and using a wide range of public and private communications networks, the EA_Gatekeeper is an ideal data collection solution for commercial, industrial, and residential smart metering as well as the smart grid.

Unparalleled flexibility, multiple deployment options coupled with a choice of meter or non-meter platforms make the EA_Gatekeeper a key part of Elster's market-leading system deployed for advanced smart grid and smart meter communications. The EA_Gatekeeper is the intelligent interface between the EnergyAxis Management System (EA_MS) and the EnergyAxis local area network (EA_LAN) which may include electric, water and gas endpoints, as well as smart grid sensing and control devices.

The EA_Gatekeeper communications module provides security, storage for the collected consumption and network data, the 900 MHz communications for the local area network (LAN) and multiple options for communication interfaces to wide area networks (WAN). In addition, distributed intelligence enables the gatekeeper to enhance network performance by setting and managing message priorities as well as filtering redundant and low priority messages.

The EA_Gatekeeper comes in two platforms:

- an A3 ALPHA® electricity meter with the EA_Gatekeeper module under the glass
- an EA_Gatekeeper in a ruggedized enclosure

To provide greater network design flexilbility, the EA_Gatekeeper also comes in a variety of power options and meter forms:

- enclosure with AC power
- enclosure with AC and battery power
- enclosure with solar power
- S-based electricity meter
- A-based electricity meter

Each gatekeeper manages a network of up to 2048 network elements by performing the following functions:

- optimizing communication routes to each service element based on communication performance and other dynamic factors
- designating certain devices as repeaters
- transmitting time synchronization signals to two-way EA_LAN network interface cards (NICs)
- collecting and storing consumption and interval data in nonvolatile memory
- providing smart meter and smart grid data to EA_MS

The gatekeeper also enables the EnergyAxis System to transmit commands to two-way network elements and return confirmation that the commands have

The EnergyAxis Gatekeeper delivers intelligent and highly effective management of the EA_LAN while giving the utility extensive tools to support value-added services.

been performed. For example, the EnergyAxis user is able to remotely disconnect or reconnect electric accounts, perform on-request reads, download new firmware, and diagnose smart service elements for possible tampering.

Deployment flexibility

Unlike other systems that offer only one type of collector or concentrator, EnergyAxis offers the choice of meter based or non-meter network gatekeepers along with an extensive range of powering and WAN connectivity options. EA_Gatekeepers are designed for easy mounting at a variety of locations such as a meter box, transformer, pole, tower, or building.

EA_Gatekeepers are designed for single or multi-service deployments and can be used in gas or water only service areas as well as electricity and combined electricity, water and/or gas service areas. For electricity service areas, electric-meter based gatekeepers using A3 ALPHA meters equipped with the EA_Gatekeeper module offer a convenient method of building a mesh network with deployment being as simple as installing a meter.

Utilities can select the gatekeeper style and options that meet the requirements for their geographies and their communications infrastructure.

WAN options

The EA_Gatekeeper is an open-architecture component able to work with a variety of public and private communication networks. EnergyAxis can be deployed using any one or a mixture of WAN solutions including PSTN, 1xRTT, GPRS, ADSL, satellite, fiber, WiFi, Ethernet, and private RF. This flexibility allows utilities to deploy systems with confidence that they can migrate to new and emerging WAN solutions as their networks evolve.

Robust network operations

EA_Gatekeepers provide support for electricity utility outage and restoration management and continued electric, gas, and water meter data collection even when power is lost. If a power failure occurs at the gatekeeper site, an optional backup battery enables the device to function within the mesh network to communicate with network elements. The EA_LAN reroutes communications around sites that lose power, thereby avoiding data collection disruptions from single points of failure that can affect tower-based systems. Elster smart meters provide a last-gasp notification further enhancing the utility's visibility of outages.

Unparalleled flexibility, multiple deployment options coupled with a choice of meter or non-meter platforms make the EA_Gatekeeper the best choice in advanced smart-grid and smart-meter communications for utilities.

About Elster Group

Elster, a global leader in smart metering and smart grid solutions has delivered over 2.5 million smart metering devices worldwide with systems located in North America, Europe, Central America, Australia, New Zealand and the Caribbean. Elster smart metering system solutions provide utilities with energy conservation capabilities via demand response programs, smart grid applications, and operational efficiencies resulting in significant value creation across the utility enterprise. Elster has over 7500 staff and operates globally in North America, South America, Europe, Africa, Middle East, and Asia.

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DS42-1002A