

EMS100, 200: Energy Management Solution

How energy efficiency is improved

SAUTER EMS puts you in the picture, enabling you to initiate the right measures without delay and keep energy consumption under control with active SAUTER EMS.

Areas of application

SAUTER EMS is a professional energy data management solution which can be installed as a hosting solution or locally as a non-hosting or system solution. SAUTER EMS enables central management of the main key energy figures for your plants and buildings. This system also supplies comparisons with key figures for similar objects (benchmarks). The measured data are analysed and presented in the form of standardised reports, or via the web portal that is integrated into the SAUTER EMS server. This web portal gives you an overview of all relevant energy data.



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Features

- SAUTER EMS enables the central management and analysis of measurement data, key characteristics and reference variables.
- Measured data can be read in automatically via one or more SDCs (Software Data Connectors), or they can be entered manually via the web.
- Systems without a BMS can be integrated into the EMS via one or more EDL hardware modules (EDL = Energy Data Logger).
- Measurement data are analysed and presented in the form of predefined standard reports.
- As an option, the SAUTER EMS server enables seamless integration into facility management systems.
- Allocation of consumption and costs to internal cost centres and third-party tenants
- Optional connection of maintenance, CAFM and accounting systems
- Data acquisition, validation and automatic aggregation to daily, weekly, monthly and yearly values
- Time-dependent reference variables such as areas, operating and opening times, etc. are possible.
- Measured data, reference variables and key figures can be shown as time series in charts for any desired periods.
- Web-based graphic display of energy consumption including the basis for generating the Energy Performance Certificate
- Web-based graphic energy consumption comparisons with standardised benchmarks
- Alarm management
- As an option, reports can be created directly via the report module integrated in the SAUTER EMS server or through other commercially available reporting tools.

Technical description

- Alarm management
- Data point management
- Management of measurement data
- Aggregation of measurement data (compression)
- Presentation of measured values
- Benchmarking
- Standard reporting (monthly/annual energy report)
- User administration (one client)
- Data export
- Configurable heating degree days
- One software data connector (SDC) for novaPro Open, novaPro, novaPro 32, novaPro Web, novaPro Enterprise or EDL
- Five users (of which one user is for Service; when license is purchased)
- One user (for hosting solutions)
- Ten addresses for data acquisition
- With the hosting solution, the software maintenance contract is included in the licence costs
- With the EMS420F001 system solution, the software maintenance contract should be separately arranged. Duration: at least three years; this is then extended automatically every year by one year.

Products

Type	Description
EMS100F001	Basic system package including 10 addresses, 5 users (1 dedicated user for service) and 1 SDC for novaPro Open
EMS100F002	Basic system package including 10 addresses, 5 users (1 dedicated user for service) and 1 SDC for EDL
EMS100F003	Basic system package including 10 addresses, 5 users (1 dedicated user for service) and 1 SDC for novaPro
EMS100F004	Basic system package including 10 addresses, 5 users (1 dedicated user for service) and 1 SDC for novaPro 32
EMS100F005	Basic system package including 10 addresses, 5 users (1 dedicated user for service) and 1 SDC for novaPro Web
EMS100F006	Basic system package including 10 addresses, 5 users (1 dedicated user for service) and 1 SDC for novaPro Enterprise
EMS200F001	Basic hosting package including 10 addresses, 1 user and 1 SDC for novaPro Open
EMS200F002	Basic hosting package including 10 addresses, 1 user and 1 SDC for EDL

Products (continued)

Type	Description
EMS200F003	Basic hosting package including 10 addresses, 1 user and 1 SDC for novaPro
EMS200F004	Basic hosting package including 10 addresses, 1 user and 1 SDC for novaPro 32
EMS200F005	Basic hosting package including 10 addresses, 1 user and 1 SDC for novaPro Web
EMS200F006	Basic hosting package including 10 addresses, 1 user and 1 SDC for novaPro Enterprise

Technical data

Hardware		Software	
Processor	Dual Core CPU 32/64bit, x86, x64 compatible	Operating system ¹⁾	MS Windows XP (Professional or better), MS Windows XP (Business or better), MS Windows Server 2003 r (Standard or better), MS Windows Server 2008 (Standard or better)
Cycle frequency	> 2 GHz		
Operational memory	min. 3GB RAM; 2GB free for VMware		
Memory capacity	20 GB free disk space		

¹⁾ The SAUTER EMS server is supplied as a virtual machine (VMware).

Options

Type	Description
EMS110F999	Current software on DVD
EMS110F001	(Sys) each with 10 EMS data points from 11 to 30 DP
EMS110F002	(Sys) each with 10 EMS data points from 31 to 100 DP
EMS110F003	(Sys) each with 10 EMS data points from 101 to 200 DP
EMS110F004	(Sys) each with 100 EMS data points from 201 to 1000 DP
EMS110F005	(Sys) each with 200 EMS data points from 1001 to 2000 DP
EMS110F006	(Sys) each with 500 EMS data points from 2001 to 6000 DP
EMS110F007	(Sys) each with 1000 EMS data points from 6001 to 10000 DP
EMS120F001	(Sys) each with 5 additional users (local users on EMS server)
EMS140F001	(Sys) SDC for novaPro Open
EMS140F002	(Sys) SDC for novaPro Web
EMS140F003	(Sys) SDC for novaPro 32
EMS140F004	(Sys) SDC for novaPro
EMS140F005	(Sys) SDC for novaPro Enterprise
EMS140F006	(Sys) SDC for OPC Server (OPC V2 DA)
EMS140F008	(Sys) SDC for ASCII file
EMS140F009	(Sys) SDC for EDL
EMS210F001	(Host) each with 10 EMS data points from 11 to 30 DP
EMS210F002	(Host) each with 10 EMS data points from 31 to 100 DP
EMS210F003	(Host) each with 10 EMS data points from 101 to 200 DP
EMS210F004	(Host) each with 100 EMS data points from 201 to 1000 DP
EMS210F005	(Host) each with 200 EMS data points from 1001 to 2000 DP
EMS210F006	(Host) each with 500 EMS data points from 2001 to 6000 DP
EMS210F007	(Host) each with 1000 EMS data points from 6001 to 50000 DP
EMS220F001	(Host) 1 additional user (user access on host)
EMS240F001	(Host) SDC for novaPro Open
EMS240F002	(Host) SDC for novaPro Web
EMS240F003	(Host) SDC for novaPro 32
EMS240F004	(Host) SDC for novaPro
EMS240F005	(Host) SDC for novaPro Enterprise
EMS240F006	(Host) SDC for OPC Server (OPC V2 DA)

Options (continued)

EMS240F008	(Host) SDC for ASCII file
EMS240F009	(Host) SDC for EDL
EMS410F001	Option for generating customised reports (license)
EMS420F001	(Sys) software maintenance contract (18% p.a.)

Accessories

Type	Description
EDL500F001	Energy Data Logger including 10 DP for data capture and drivers for BACnet/IP, M-Bus and Modbus (TCP/IP)

Alarm management

Within SAUTER EMS, alarms and faults (plausibility checks) for your objects can be shown via a central web page. In this way, the hotline or the specialist staff obtain a rapid overview of the status of technical systems in all objects.

Additional functions:

- Display of pending or terminated unacknowledged alarms
- Display of alarm history
- Acknowledgement of alarms/malfunions by authorised users
- Documentation of remarks and measures
- Time-related alarm override

Data point management

Time-dependent reference variables such as areas, operating and opening times, uses, etc. can be stored for each object. Key figures for the objects are calculated automatically from the measurement data and their reference variables.

- Assignment to freely definable hierarchical data models.
- Automatic SDC data point upload with filtering criteria
- Display of current data point status
- Definition of manual input
- Definition of virtual data points (no license required) via formulae with basic mathematical operations
- Formation of cross-plant formulae
- Definition of aggregation algorithms
- Configurable heating degree days

Management of measurement data

The consumption meters are mapped in hierarchical structures for each medium. It is also possible to set up logical links. Consumption figures are calculated on the basis of predefined formulas. However, the measurement data model is not only designed to map meters and counters: any desired plant operating conditions (e.g. temperatures, pressure, switching operations) can be managed. The recorded measurement data are checked automatically on the basis of values for prior years and predefined rules. Any freak values can be corrected manually. A change protocol is kept and updated in case of corrections.

- Automatic adoption of measured values from the SDC or the EDL
- Manual input with predefined sequence
- Plausibility check of manual input via display and comparison with previous input
- Calculation of virtual data points
- Plausibility check for measurement series
- Input of measurement value corrections either individually or over a period of time
- Documentation of causes leading to corrections

Aggregation of measurement data (compression)

The measured values are automatically compressed into daily, weekly, monthly and yearly values. Various algorithms such as averages, minimum, maximum and integration, etc. are available for compression purposes.

- Compression to daily values
- Compression to weekly values
- Compression to monthly values
- Compression to yearly values
- Automatic or manual compression triggering

Presentation of measured values

- Tabular presentation of measurement values
- Direct comparison of measurement values
- Graphic presentation of measurement values
- Graphics with multiple curves
- Simultaneous presentation of multiple graphics
- Zooming within graphics
- Interactive display of measurement values and times in a graphic
- Pre-defined or self-defined portal pages

User administration

Groups and users, with their access authorisations, are defined in the user administration. The access authorisations can be assigned to the individual modules and sub-functions in a very flexible manner. Authorisations can also be assigned to different locations.

Data export

Data export to CSV or Office files is possible and is included in the basic package.

As options, interfaces with asset systems, CAFM and ERP systems are possible on request.

Standard reporting

The scope of supply already includes a series of standard reports. These reports already meet many customer requirements and are adequate for initial energy consumption analyses.

Benchmarks are components of the standard reports. SAUTER EMS provides the basis for issuing the Energy Performance Certificate.

Extended/advanced reporting

As an option, additional evaluations can be generated with an integrated reporting tool. This allows representations of measured values and key figures in both graphic and table form. This tool can also be used to implement drill-down functions. Other report generation tools are also possible on an optional basis (Crystal Report, Actuate, etc.). However, these tools have to be purchased separately.

- **Time series**

Measured data, reference variables and key figures can be shown as time series in charts for any desired periods. This makes it possible to display power consumption load profiles for individual or multiple buildings.

- **Energy Performance Certificate**

SAUTER EMS can be used to calculate the Energy Performance Certificate for the measured energy consumption automatically, and to display it in graphic form. The parameters required for this purpose, such as reference energy areas, primary energy factors and emission coefficients are stored as time-dependent reference variables for a building or use. The SAUTER EMS server takes account of the various specified use categories in a building. The key energy figure and the greenhouse gas emissions (CO₂ emission) are calculated from the consumption measurements for each use and each building.

- **Benchmarking**

The displayed values can be simultaneously shown and compared with official benchmark values in the graphic evaluations.

Note

The use of EMS in the hosting version requires an additional router with VPN capability in order to provide a reliable link to the hosting server.
