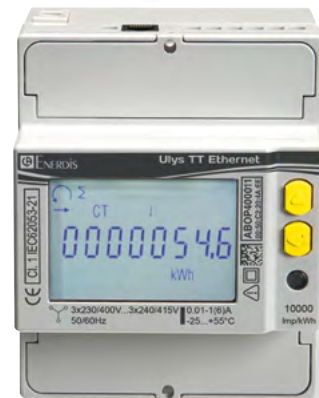# ENERGY INFORMATION SYSTEM

Software
Products
Services

Measure up

Measurement...

An Essential Function for Any Management System

This is a crucial part of any initiative to optimize consumption and improve energy efficiency, as it enables users to:

- **Take advantage of a reference framework** to draw up precise **energy diagnostics** and identify potential savings,
- **Monitor the progress of the energy-saving initiatives over time** and detect any abnormal drift of the performance indicators,
- Set up a **continuous verification process** in the context of an energy optimization policy and define **corrective action** if necessary.

Measurement: what for?

- **To ensure fair allocation of energy costs:** by tenant, boat owner, department, industrial cost centre, etc.
- **To comply with the standards, regulations or certifications:** ISO 14001, ISO 50001, HQE Operation, etc.
- **To steer a policy for optimization and sustainable reduction of energy consumption:**
  - allocation of consumption by utility, usage, type, building, process, etc.
  - calculation of energy performance ratios and indices
  - technical and economical analysis (tariff contracts) of consumption
  - identification of deviations
- **Energy Performance Contract (EPC) management:** contractual measuring tool agreed between the parties involved (client, facility management)

Measurement helps to **raise awareness** among the people concerned, highlight **energy-saving** behaviour and immediately identify any drift or abnormal consumption. Experience has shown that these initial steps can achieve consumption **savings of 7 % to 15 %.**

Regulations

The recent regulations on controlling and optimizing energy consumption and performance recommend the implementation of a **measurement plan** specially adapted to meet the objectives.

- **HQE* OPERATION certification**
  - Target 4: energy management (measurement, follow-up, analysis, monitoring and optimization)
  - Target 5: water management (measurement, follow-up, analysis, monitoring and optimization)
  - Target 7: availability of means for monitoring energy consumption

- **EN50001 certification** *(energy management systems)*
  - Implementation of a system to measure, analyze, monitor and optimize consumption
  - Detailed energy analyses and reports

* HQE is a French public label awarded for "high environmental quality"

An Overview of your Energy Use

Energy Supervision

E.online 3® software provides each user with functions for **monitoring consumption in real time**, printing out **energy dashboards** and distributing **information** and **alerts**.

E.online 3® takes full advantage of the high performance offered by the metering, measurement and data collection products from the ENERDIS® brand.

Generic drivers ensure interoperability with products from other brands.

E.online® 3

Data acquisition

CCT

ENERIUM 210

The **ELOG DATA LOGGER** is a **communicating data centralizer which automatically exports the data files in xml or csv format**. It continuously stores the data from any product connected to an RS485 ModBus or Ethernet ModBus TCP network. It can be configured and operated directly via web pages.

The CCT and ENERIUM 210 pulse concentrators and data collectors **continuously store** the information from **meters** (pulse output) or from temperature and flow-rate **sensors** (0-20 mA / 4-20 mA signals). The data can be retrieved remotely from these units, which are equipped as standard with an RS485 ModBus or Ethernet ModBus TCP output.

ELOG DATA LOGGER

Metering

The modular meters in the ULYS and MEMO ranges for single-phase and three-phase electrical networks are used as **submeters** for **consumption allocation** or **fair rebilling** of energy costs on private networks (MID certification).
Their standard features include pulse outputs and Modbus, M-Bus or Ethernet communication (Modbus TCP communication and built-in web server).

MEMO 4

ULYS TT Ethernet

Measurement

ENERIUM® power monitors include functions for **consumption measurement, realtime electrical network monitoring yond electrical power quality analysis**. They can be equipped with pulse, alarm and/or analog inputs/outputs. Usually installed at the headend of electrical distribution networks and general lowvoltage switchboards, they communicate via an RS485 output (Modbus protocol) or Ethernet output (Modbus TCP protocol).

ENERIUM

A Modular, Upgradable System Approach

DATA DISTRIBUTION & PROCESSING

Dashboards

Real-time monitoring and alarms

Energy analyses
Data distribution and reporting

eonline3

Analysis of drift

Energy reporting

CENTRALIZATION - SUPERVISION

Third-party database (ERP, TBM, etc.)

Manual input of statistical and energy data

TRANSMISSIONS

2G-3G **Radiofrequency** **Ethernet ADSL**

ACQUISITION AND MEASUREMENT

.XML .CSV

*ELOG
DATA LOGGER*

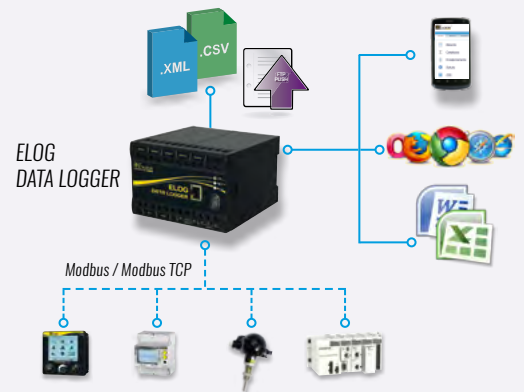*Modbus / Modbus TCP*

Power monitors | Submeters and tariff meters | Pulse concentrators & data collection units | PLCs

ENERGY AND UTILITIES

Electricity Water Gas Heat Cold Climatic parameters Physical parameters

Monitor, analyze and supervise consumption and energy performance

Used from a **web browser**, the E.online 3® software offers immediate, global monitoring of all the essential data and adapts the energy information to suit each user. **Automatic email distribution** of the energy **reports** and alarms facilitates regular analysis of the energy data and helps to identify any abnormal drift in consumption and energy performance as soon as it occurs.

Dashboards

- ❯ **Customizable dashboards covering each user's scope of action**
- ❯ Real-time display of the alarms log
- ❯ Direct access to **all the key energy reports**
- ❯ Tables and graphs updated in real time

Real-time monitoring

- ❯ **Instantaneous display** of all the measurements and meter values
- ❯ **Automatic detection of threshold overruns**
- ❯ **Instantaneous detection of communication faults** involving the equipment
- ❯ **Real-time aggregation** of all the data retrieved remotely

Energy analyses and reports

- ❯ **Library of graphs and tables for creating analyses**
- ❯ **Allocation of consumption**:
  - by usage (lighting, air-conditioning, heating, auxiliary, etc.)
  - by utility (electricity, water, gas, etc.)
  - by entity (company, service, production unit, etc.)
- ❯ Calculation of **energy and economic performance indices** (kWhoe or € /m²/year, kWh or € /manufactured item, kWh/degree days, eq TCO_2 , etc.)
- ❯ Financial evaluation of the consumption according to the **energy costs**
- ❯ **Customized automatic targeted email distribution** of the analyses and reports
- ❯ Zoom in / Zoom out function in the graphs

Alarms

- ❯ Definition of **threshold profiles used as templates** on the consumption and energy performance indices
- ❯ Email **distribution** of threshold overrun **alerts**
- ❯ **Alarms log** (date, time, values, overrun level, etc.)

Our Equipment

Current Transformers

TCR

For standard industrial installations

- Mounting on cable or busbar
- Primary rating from 5 to 5,000 A
- Accuracy class 0.5 or 1
- Double secondary
- 1 or 5 A secondary

TCRO

For existing installations up to 5,000 A

- Split core for mounting on cable or busbar
- Primary rating from 100 to 5,000 A
- Accuracy class 0.5 or 1
- Double secondary
- 1 or 5 A secondary

TC CLIP

Specially for renovation up to 600 A

- Split core for mounting on cable
- Primary rating: 60, 100, 250, 400 or 600 A
- Class 1
- Short-circuit integrated
- 1 A secondary

RENOV ENERGY

A solution for renovating, modernizing and adding metering points in existing installations or in cramped conditions.

- TC CLIP transformers used with Enerium® power monitors and ULYS meters

ELOG DATA LOGGER

Unit for remote retrieval, recording and storage of energy, climate and process data from communicating devices on RS485 ModBus and Ethernet ModBusTCP networks and devices with pulse output. The integrated web pages provide quick, intuitive access to the product's programming and allow supervision of the stored data. The automatic data file export functions (csv or xml format) can be used to supply data to the energy management and supervision solutions.

- 1 Ethernet ModBusTCP port
- 2 RS485 ModBus ports
- 5 pulse inputs
- 100 recorded variables
- DIN-rail mounting (7 modules)
- Web pages – built-in web server
- Data file export (csv, xml)
- Http, smtp, ftp and JSON/REST protocols
- Database access via Web Services
- Log of recordings covering 3 months

Pulse Receivers & Data Collectors

These provide continuous real-time recording of the information from meters and sensors (temperature, pressure, flow- rate, etc.) equipped with pulse and analog outputs (4-20 mA). The instantaneous values and data history can be accessed directly via the RS485, ModBus and Ethernet ModBusTCP digital outputs.

CCT

- 8 pulse inputs
- Time interval for calculated values: 1 to 60 minutes
- Memory depth per channel: 4,032 values (28 days with 10-minute interval)
- Communication: RS485 Modbus

ENERIUM® 210

- 8 pulse and/or analog inputs
- Time interval for calculated values: 1 to 60 minutes
- Memory depth per channel: 5,040 values (35 days with 10-minute interval)
- Communication: RS485 Modbus or Ethernet (Modbus TCP)

Energy Meters
for Single-Phase or Three-Phase Networks

MEMO 4

Compact single-phase meters ideal for applications in the tertiary sector: marinas, rented accommodation, outdoor accommodation, etc.

- Compact: 1 DIN module
- Current: 45 A
- Complies with MID (Measuring Instruments Directive)
- Built-in RS485 Modbus communication

Pulse output as a standard feature
Class 1 according to IEC 62053-21 (Memo 4)
Class B according to EN 50470-13 (Memo 4-M)
Sealable on phase/neutral terminals
Mounting on DIN rail

ULYS

Three-phase and single-phase meters ideal for industrial and tertiary applications.

- Compact: 2 (single-phase) or 4 DIN modules (three-phase)
- Direct 65/80 A single-phase connection
- Direct 80 A three-phase connection or on 1 A or 5 A CT
- Built-in RS485 Modbus/M-Bus/Ethernet Modbus TCP communication
- Recording of energy indices every 10 or 15 minutes over a 3-year period (using ULYSCOM Ethernet)
- Export of csv files (ULYS Ethernet)
- Direct reading of measurements by means of integrated web pages on a PC, smartphone or tablet (Android and iPhone) with ULYS Ethernet
- Sealable terminal covers

Class 1 according to IEC 62053-21 (single-phase and three-phase)
Class B (single-phase and three-phase) according to EN 50470-3 (MID)
1 or 2 pulse outputs (Ea, Eq, Es)
1 RS485 Modbus or Ethernet Modbus output

Power Monitors

ENERIUM®

Enerium® power monitors are useful for active monitoring and sizing of electrical installations, follow-up and optimization of energy consumption and power quality analysis.

- Measurement of all the electrical quantities (V, U, I, P, Q, S, FP, THD, Harmonics, etc.)
- Storage of 35-day consumption profiles (10-minute time interval)*
- Trend curves function* (cyclic, on threshold overrun, time/date-stamped)
- EN50160 quality functions
- One RS485 Modbus or Ethernet Modbus TCP digital
- Up to 8 inputs/outputs (pulse, analogue, alarm)*

They are equipped* with inputs/outputs:

- **pulse** for managing the utility meters and calculating consumption profiles
- **analog for continuously recording the signals from sensors (temperature, pressure, flow rate, etc.)**
- **on-off** for separation and time/date-stamping of status changes or alarms.

Connection to 1 A or 5 A current transformer – 552 Vac max. (permanent ph-ph)
Energy measurements on all 4 quadrants according to IEC 62053-22 and IEC 62053-23
Class 0.2s available as an option according to IEC 60557-12*
*Graphic representation of the Fresnel diagram, harmonics and load-factor gauges**

* depending on the versions and options

Our *Skills* & *Experience Serving* your need

ENERDIS proposes a global solution (products, communication, processing software and service) suitable for the most demanding sectors of activity (tertiary, industrial and local government).

PRIOR TO THE PROJECT

❯ Help in defining the technical specifications of the solution (metering plan, instrumentation, communication architecture, IT resources, etc.),

❯ Site surveys,

❯ Collaboration with the actors in the project.

DURING INSTALLATION

❯ Verification of the connections and confirmation that the products and communications solutions operate correctly,

❯ Implementation of the E.online 3® software on the owner's IT resources.

AT THE END OF THE PROJECT

❯ User training for the E.online 3® solution..

CONTINUOUS OR ON REQUEST

❯ Additional expert training,

❯ Remote intervention, upgrading,

❯ Maintenance contract (installation monitoring),

❯ Data hosting.

For *further information...*

Detailed product brochures to help you choose the night equipment.

Case studies to optimize the energy efficiency of your installations.

ULYS energy meters	MEMO 4 energy meters	E.ONLINE® 3 software	ELOG DATA LOGGER	ENERIUM® power monitors

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Your distributor

www.enerdis.com

ENERDIS
16, rue Georges Besse - Silic 44
92182 ANTONY Cedex - FRANCE
Tel.: +33 1 75 60 10 30
Fax: +33 1 46 66 62 54
export@enerdis.fr
www.enerdis.com

CHAUVIN ARNOUX GROUP