

Energy Brain software

Monitoring and management for energy, environmental and process parameters

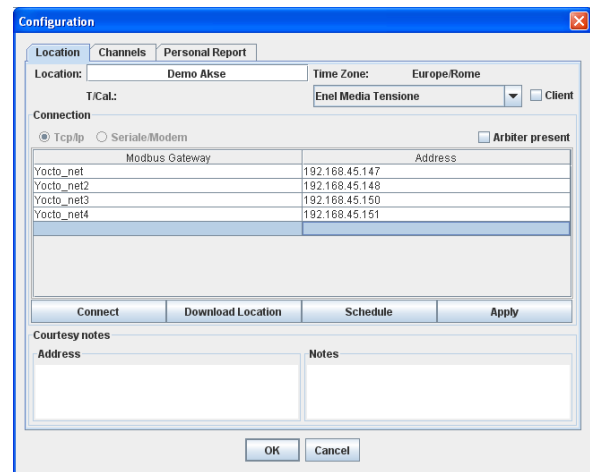
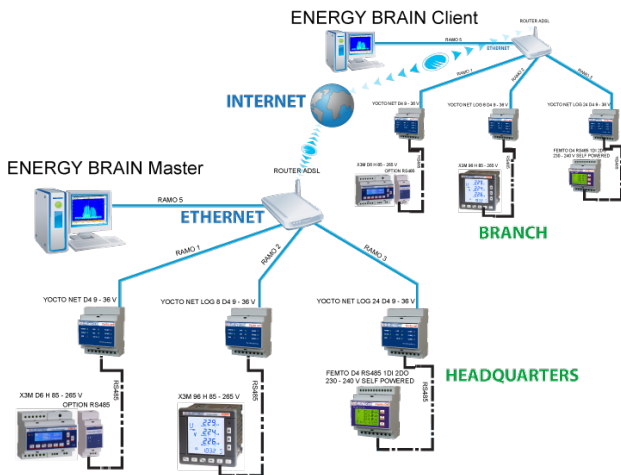
Energy Brain is the software package designed to monitor and manage consumptions and production of electrical energy and other kind of energies (gas, water, steam, etc.), environmental parameters (light level, temperature, calories, compressed air, etc.) and process parameters. It allows to manage historical data (graphical and numerical reports), center costs, on-line measures, energy quality, calendars, surveys, log events, alarms, data export, etc. It is the starting point to detect wastes, to define a correct energy saving plan (that means also a competitive advantage due to a reduction of costs) and to monitor the profitability of production plants, e.g. photovoltaic power stations.



Communication

The software communicate with Electrex devices through the following connections :

- Local (Ethernet, rs232)
- Remote (Internet, GSM)
- Both, contemporary Local and Remote



To each location can be associated a different way of communication with their specific personalization. The data download may be manual or automatic through the definition of the agenda. You can activate a password to enter the configuration menu in order to protect it for external unauthorized use.

Standard graphs

This section allows to see load/production profiles daily and energy demand/offer profiles weekly, monthly and annually. Some of the graphs available are:

The four graphs fully independent for comparisons

Functions

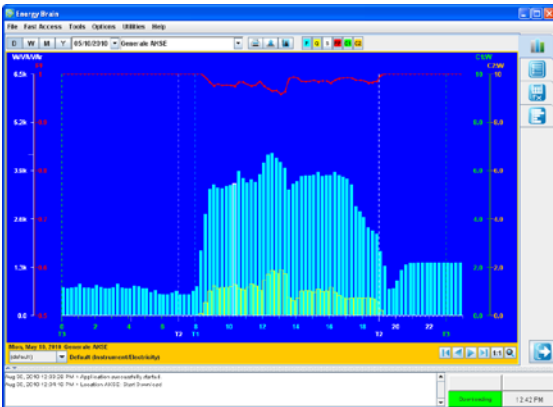
- The main functions of Energy Brain software are:
- Configuration of Electrex devices and Agenda
 - Standard, Real time and Customized graphs
 - Custom Formulas
 - TOU Tariffs and Calendar setup
 - Selectable Multiple Measures Page
 - Software and Instruments Events log

Configuration of Electrex devices and Agenda

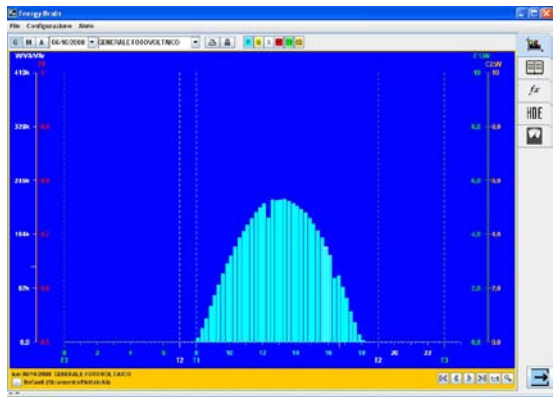
This function allows to setup the networks of Electrex devices and the parameters of each Electrex device ("channel" for Energy Brain) for example the communication speed, Modbus address, CT ratio, etc. The network of instruments can be local (e.g. Ethernet, RS232), remote (Internet, GSM) or both contemporary.



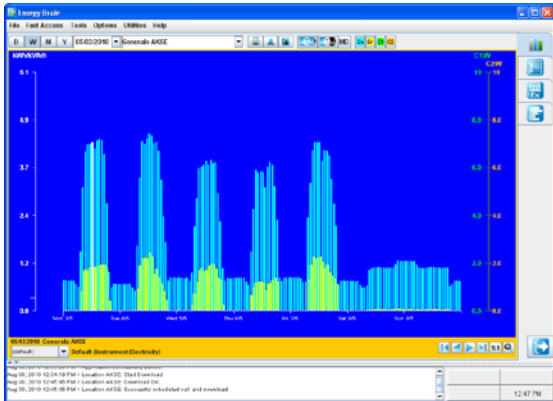
- Daily load profile of electrical energy (15 minutes intervals)



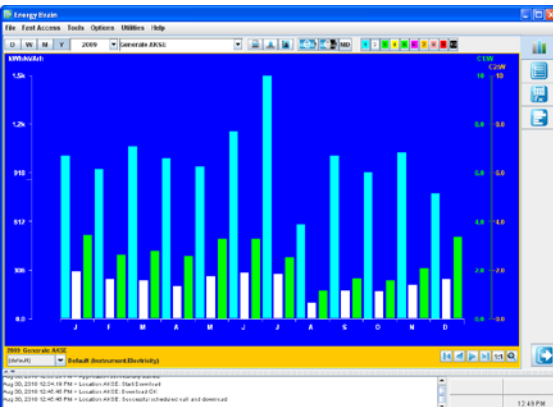
- Daily production profile of electrical energy (15 minutes intervals)



- Weekly demand/offer of electrical energy hourly based



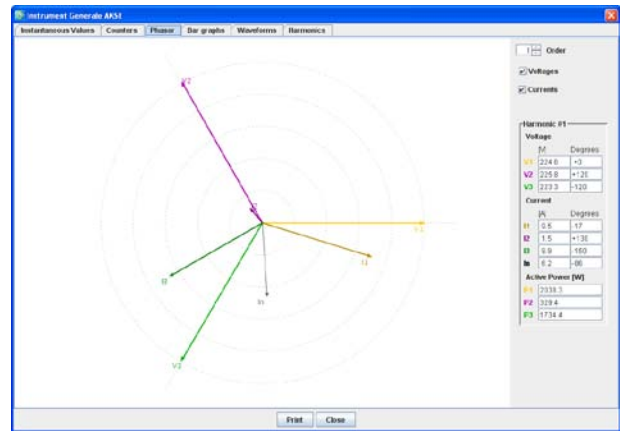
- Monthly or annually demand/offer per tariff of electrical energy daily or monthly based



Real time graphs

It shows the graphs of instruments with FFT harmonics option activated. The graphs are available when the meters are on-line connected.

- Vectorial diagrams of voltages and currents



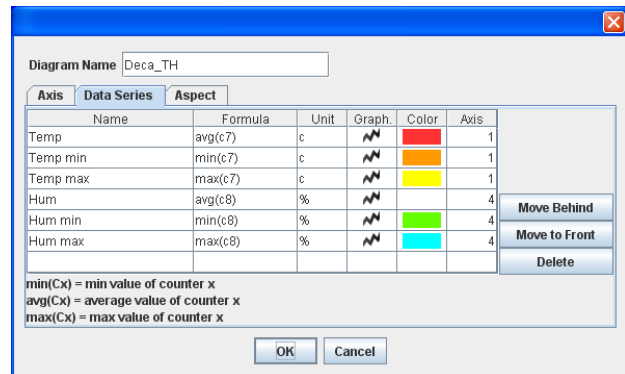
- Bargraphs of harmonic distortions



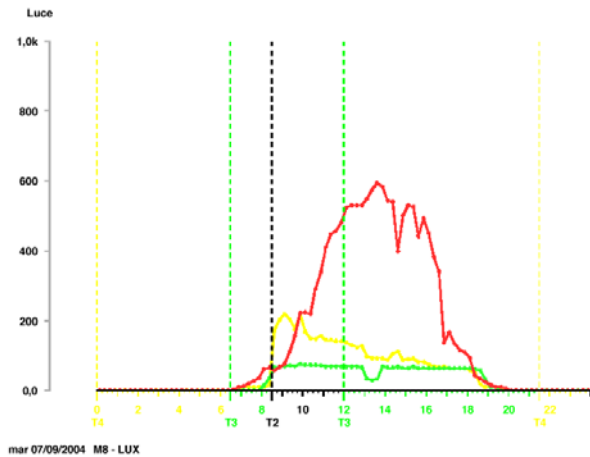
Customized graphs

Energy Brain allows to manage special graphs configurable with custom unit of measure. This function can be used to show measures generated from several transducers (e.g. gas, water, light, temperature, humidity, steam, calories, pressure, ecc.). Some Electrex devices are equipped with inputs (or can add the input option) to which you can connect these transducers.

- Example of special graph configuration

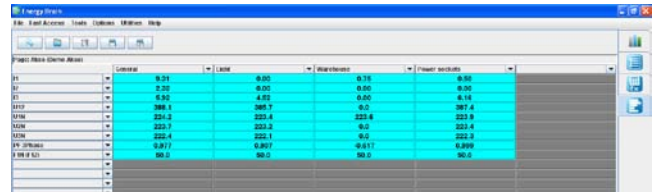


Graph with the daily luminosity level of three different locations



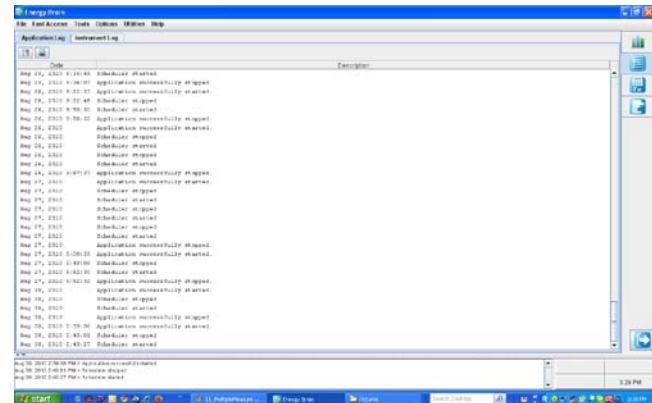
Selectable Multiple Measures Page

It consists in creating pages with measures from several Electrex devices selecting the needed parameters. This is especially useful for having a complete panorama of your electrical network.



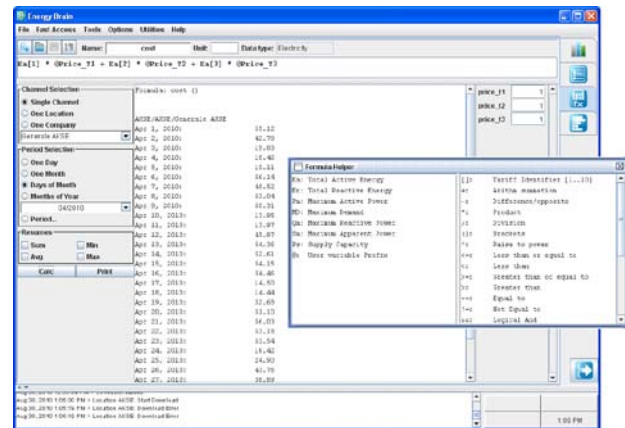
Software and Instruments Events log

This function allows you to display the history of the operations performed by the software and by the instruments. Very useful for finding failures.

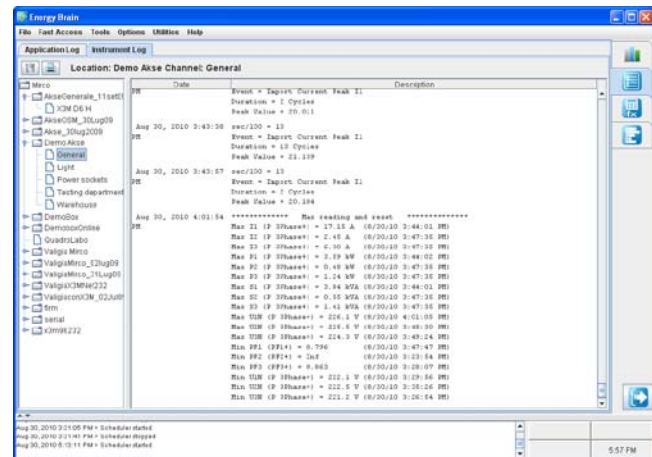


Custom Formulas

This function is used to generate different formulas to automatically calculate for example consumption/production, cost/revenues of energy daily, monthly or annually based or in a specific period. Formulas allows also to simulate the cost with a different TOU tariff structure to evaluate the convenience of different suppliers. One of the most important uses is relative to the allocation of cost by department or by process, to evaluate the impact of energy costs and identify any waste.

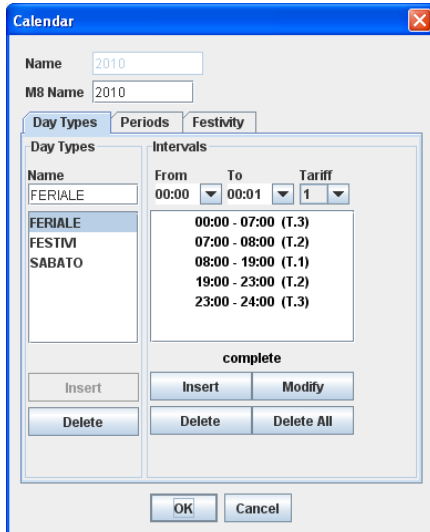


You can visualize parameters detected by instruments with memory, like: short or long interruptions, voltage swells / sags, etc.



TOU Tariffs and Calendar setup

Energy Brain allows to create and use calendars with different daily or annually TOU tariffs. It is possible to choose a calendar for each location or for each channel.



Example of TOU Tariffs

Function modality

Energy Brain is available in **Master** and **Client** function modalities.

If there are more than one PC, with Energy Brain, monitoring the network only one must be a **Master**.

The **Energy Brain Client** version cannot configure the devices and the calendar/clock. It is suitable for data displaying.

The **Energy Brain Client** can be used in the modality:

- *Instrument Client*: It allows to setup the network (not the instrument parameters) and automatically or manually download data from Electrex devices. It generates its own data base independent from the Master data base. The structure of the network configured can be like the Master's or a part of it;
- *Data Base Client*: can be used for data displaying on different PCs connected through an Ethernet network. The Clients collect the data from the Master's data base.

Types of Data Base

Energy Brain software uses three types of data base depending on the quantity of the data managed:

- Access
- PostgreSQL
- MySQL

Versions

Energy Brain is available in different versions depending on the maximum numbers of channels to manage (the channels can be real instruments but also virtual instruments – see the Energy Brain manual for more details):

- **Energy Brain 4**: to manage up to 4 channels;
- **Energy Brain 8**: to manage up to 8 channels;
- **Energy Brain 16**: to manage up to 16 channels;
- **Energy Brain 32**: to manage up to 32 channels;
- **Energy Brain 300**: to manage up to 300 channels;
- **Energy Brain >300**: contact Akse – Electrex for more details.

Product code

| Type | Code |
|---------------------------------------------|------------|
| Energy Brain Configurator | PFSW300-00 |
| Energy Brain 4 | PFSW312-00 |
| Energy Brain 8 | PFSW310-00 |
| Energy Brain 16 | PFSWEBF-E0 |
| Energy Brain 32 | PFSW200-00 |
| Energy Brain 300 | PFSW190-00 |
| Upgrade EB 4-8 | PFSW332-00 |
| Upgrade EB 8-16 | PFSWEBG-EN |
| Upgrade EB 16-32 | PFSWEBH-EP |
| Upgrade EB 32-300 | PFSW350-00 |
| Upgrade Energy Brain to DB PostgreSQL | PFSWEBP-00 |
| Upgrade Energy Brain to DB MySQL | PFSW390-00 |
| Energy Brain 8 Client | PFSW320-00 |
| Energy Brain 32 Client | PFSW250-00 |
| Energy Brain 300 Client | PFSW240-00 |
| Upgrade EB Client 8-32 | PFSW340-00 |
| Upgrade EB Client 32-300 | PFSW355-00 |

Subject to modification without prior notice Data-sheet Energy Brain software 2010 09 02-ENG

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