

Energy Explorer Professional Power & Harmonics Analyser

ENERGY EXPLORER, is an advanced Power Analyser, designed for use by electricians, plant engineers and energy professionals.

Energy Explorer provides fast and accurate measurement of all standard parameters characterizing the power consumption of electrical loads, such as the TrueRMS values of Voltage, Current, Frequency, Powers, Power Factor/CosPhi, Energy. Energy Explorer extends the analysis also to transient conditions of the load, thanks to the built-in Inrush Current function allowing voltage and current monitoring with pre-triggering.

The load's consumption can be kept under close control thanks to the availability of fully configurable Average and Maximum Demand functions, user-settable alarms and configurable tariff-band energy analysis.

Real-Time and Historical trend diagrams provide immediate understanding of how parameters change during a settable time frame.

In addition to the above, Energy Explorer provides also state-of-the-art analysis of dangerous and hidden phenomena such as Harmonics, Microinterruptions, Voltage Unbalance. The analysis of such phenomena is nowadays an indispensable troubleshooting tool, helping to minimize downtimes and malfunctions of increasingly complex electrical systems.



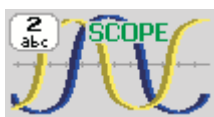
Main Functions:



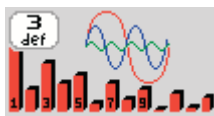
RMS Meter: 3-Phase TRMS measurements of all electrical parameters characterizing the load's supply and power consumption, such as: Voltages, Currents, Powers, Energies, Frequency, Power Factor, CosPhi, Crest Factor, THD-V, THD-I, etc.

RMS Measures can be displayed as instantaneous, Min/Max or Average values with configurable integration time and mode:

- Fixed:** fixed integration time-frame; the Average and MD values are updated at the end of each fixed time-frame.
- Sliding:** sliding integration time-frame; the Average and MD values are constantly updated on the basis of a sliding time-frame.
- Synchro:** synchronized time-frame; the time-frame is synchronized by external control-signals, such as provided by the energy utilities



Scope: Real-Time display of the measured voltages' and currents' waveforms, their instantaneous RMS values and Phase-Angles.



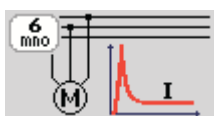
Harmo: Fully IEC61000-4-7 compliant measurement of voltage and current harmonics up to the 31st order.

The harmonics' data is displayed both graphically, as bar-graphs, and numerically. Each harmonic order is displayed as absolute value and percentage of the fundamental and includes the displacement angles between the harmonic voltage and currents, providing the power of the examined harmonic order.



Tarif-Band Management: Allows the configuration of up to 4 Tariff Bands with accounting of kWh, kVAh, cost and necessary reactive energy for PF correction.

Phase Vector Display: The Phase-Vector diagram provides a clear and immediate representation of the 3-Phase system's voltages, currents and phase angles, as well as the system's unbalance.



Inrush / Start-Up Current capture: Fully IEC61000-4-30 compliant capture and display of transient current events with pre-triggering functions. This function provides fast and reliable analysis of the start-up of motors / loads, connection of capacitor banks, etc.



Alarm Functions: Energy Explorer provides the possibility to set configurable alarm thresholds on any measured value, for immediate display and logging of the alarm conditions. Additionally, Energy Explorer is equipped with 2 Relay Outputs that can be linked to any of the set alarms or configured to become Pulse-Outputs.

Measurement Surveys / Datalogging: Energy Explorer's extremely flexible memory system, based on extractable and exchangeable Compact Flash cards, allows to perform long and detailed measurement surveys. The surveys can be started/stopped at any time or scheduled to start and stop at a later time. Measurement surveys can be of two types:

- RMS:** Surveys storing the RMS values of all measured parameters with a settable frequency.
- Waveform:** Surveys storing the actual digital samples of voltages and currents with a settable frequency. When analysing such a survey on PC, not only the RMS values but also the actual waveforms of the signals will be available.

Main Features:

Current & Voltage Measurement: Energy Explorer Kit includes a set of 3 flexible current probes with 5A-1000A measuring range and 41cm of length. Thanks to its special input circuit, Energy Explorer avoids the necessity of the usual external amplifier/integrator box for the flexible current probes. The elimination of the external circuit-box greatly improves the measurement accuracy, eliminates the short autonomy due to the amplifier's battery supply and enhances the natural ease-of-use of the flexible clamps.

For the voltage measurement Energy Explorer Kit includes a set of 6 measuring cables, color-coded and equipped with extractable crocodile clips.

Memory: Energy Explorer is already delivered with a massive 512Mb Compact Flash Card, allowing immediate use of Energy Explorer's survey capabilities.

PC Software: PESTudio, a powerful and easy-to-use PC Software, specially designed to for the complete analysis and reporting of all data recorded by Energy Explorer, is included with Energy Explorer Kit.

Power Supply: Energy Explorer Kit comes with a desktop power supply (for the supply of the instrument and recharge of the batteries) and a set of 10 rechargeable, heavy-duty NiMH batteries (AA type, overall capacity 2300mAh).

Transport & Protection:

Special care was taken to ensure both high-protection and high-transportability for the Energy Explorer Kit. Energy Explorer is supplied with a shock- and water-proof IP67 plastic carrying case, resistant to corrosion and suitable for airplane transport. The above case is equipped with an internal, detachable soft-bag containing all the Energy Explorer Kit.

Main Technical Data:

•Instrument / Dimensions:

Self-Extinguishing ABS case with rubber-coated grips
Alphanumerical rubber keyboard
Dimensions (mm): 290x210x55

•Display:

320x240 pixel, colour, graphic LCD screen (mm.115,2x 89,3)

•Power Supply:

Mains: Desktop Power Supply
Battery: 2 independent battery compartments, 5 rechargeable AA NiMH batteries each, 2300mAh

•Voltage Inputs:

3 Voltage Inputs: double scale 500/1000V; accuracy 0.2%rdg. ± 0.05%f.s.
Voltage Inputs rating: 600V / CAT III

•Current Inputs:

3 Current Inputs for exchangeable flexible current transducers without external amplifiers (1000Arms) or CT Clamps

(1000A/1Vac or 3000A/1Vac); accuracy : ±0.2%rdg ± 0.05%f.s. (± clamp error) 1 Auxiliary/Neutral Input Channel for CT Clamps with 0-1V; accuracy: ±0.2%rdg ± 0.05%f.s. (± clamp error).

•Fundamental Frequency Range:

From 40 to 80Hz. Harmonics/Interharmonics up to 31st order.

•Internal Software:

LINUX Operative System.
Software up-datable / up-gradable by user via Internet.

•Memory:

Removable Compact Flash (512Mb included, supports up to 4Gb and more according to available sizes)

•**Languages:** English, Italian, French, Spanish, German.

Standards & Regulations:

ENERGY EXPLORER conforms to Directive 73/23/CEE (LVD) and 2004/108/CE (EMC). 2002/95CE (RoHS), 2002/96/CE (RAEE) and later changes 2003/108/CE. It has been designed with reference to EN 61010-1, EN 61326 including append. A1/A2/A3, EN 61000-6-2, EN 61000-6-3, EN 61000-3-2, EN 61000-3-3, EN 61000-3-3/A1, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-5/A1, EN 61000-4-6, EN 61000-4-6/A1, EN 61000-4-8, EN 61000-4-8/A1, EN 61000-4-11, EN 61000-4-11/A1.