



ENERGYXpLORer

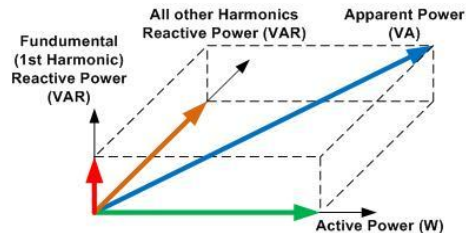
EX Series

Electric Power Consumption Analyzer



The **EnergyXplorer Electric Power Consumption Analyzer** is a new class of AC power measuring instrument that delivers comprehensive measurement capability to Product Development and Test Engineers.

Detailed, highly accurate load analysis allows engineers to measure their products electrical performance for the purpose of optimizing power consumption characteristics.



The EX8 samples and stores long-term data on up to 8 individual devices simultaneously. Capturing data on multiple devices can minimize test times and reveal interactions between individual system components.

Data is stored locally on removable flash disks in industry standard formats. The sampled data is processed and displayed as highly detailed time histories of power-related parameters. Alternatively, data can be exported to other software applications for more customized processing. Remote control of the EX8 makes integrating it into automated testing simple,

Integration of the EX8 into automated test is quick and simple, with all control functions available via GUI or serial port.

APPLICATIONS:

- Characterize Power Consumption of Multiple Loads
- Troubleshoot Power-related issues on larger interactive systems
- Study Turn-on and Long-term Use behaviors
- Burn-in Monitoring
- Energy Cost Analysis

MEASURED VALUES:

- Instantaneous Voltage & Current
- Peak Voltage & Current
- RMS Voltage & Current
- Line Frequency

CALCULATED VALUES:

- Apparent Power
- Real (Active) Power
- Power Factor
- Total Harmonic Distortion

Key Features

- Simple, fast, intuitive setup
- Comprehensive set of parameter measurements
- Real time monitoring
- Long term data logging to removable storage
- Remotely controllable for automated testing
- Network and Serial Port Controllable
- Standard CSV data file format
- Scope mode and charting for visualizing data
- 8 sockets support large system configurations
- Fully independent sockets to customize testing
- External Trigger In/Out for use with other test equipment
- Field upgradeable firmware
- Surge protected circuits / over current protection
- Meets or exceeds IEC 62053/ANSI C12.20 standards

Benefits

- Faster, more comprehensive tests
- Fully detailed Load Analysis
- Easily integrated into Automated Test
- Documentable Test Results can be Shared / Archived
- Accurate Product Energy Cost calculation

Preliminary



ANALYZE / CHARACTERIZE / OPTIMIZE

ANALYZE

Data to Information

The EX8 can capture and save highly accurate measurements of voltage and current over extended periods of time.

The stored data can then be analyzed and presented in meaningful time history displays.

CHARACTERIZE

Information into Insight

Time histories of both sampled and analyzed data provides powerful insights into device or system behaviors.

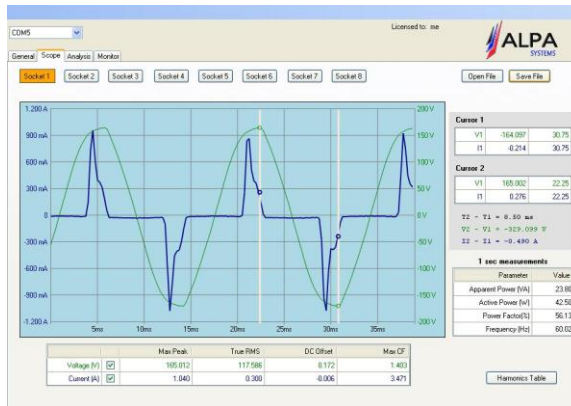
Specific changes can then be proposed and implemented based on those insights.

OPTIMIZE

Verification of Improvements

Results of engineering modifications to the device can be confirmed by comparing new data to that taken prior to the changes.

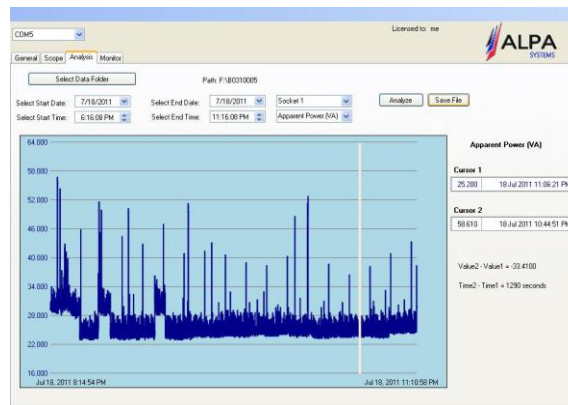
The EX8 can be automated along with other test tools to minimize test times, making the Test & Development process more efficient and cost effective.



Scope Mode presents the Instantaneous Voltage and Current data in a time waveform display for both active and stored data.

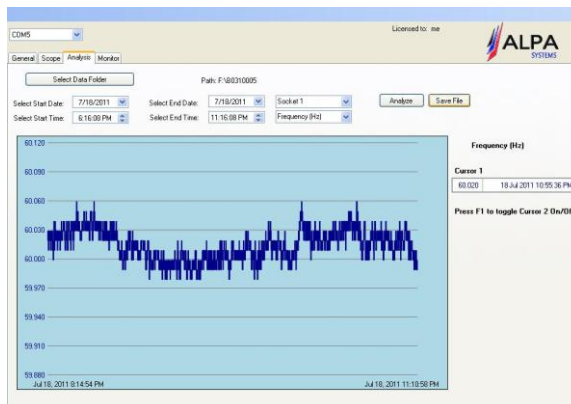
Split cursors provide Δ time, Δ voltage and Δ current measurements. In addition, Apparent Power, Active Power, Power Factor and Frequency are calculated and displayed.

Scope displays are available for each of the 8 sockets on the EX8 analyzer.



Analysis Mode provides detailed graphical displays of:

- Apparent Power
- Active Power
- Power Factor
- RMS Current
- RMS Voltage
- Peak Current
- Peak Voltage
- Frequency



Select previously logged data over any time span and the data will be graphed in time history format, complete with split cursors for time and amplitude measurements.

Resulting displays can be saved in .jpg format for inclusion in reports and presentations.

	Current			Voltage		
	THD _r = 134.24%	THD _f = 0.020%	% of THD _f	THD _r = 2.08%	THD _f = 0.00%	% of THD _r
DC	0.021			4.072		66.96%
Harmonic #1	0.234	100.00%	99.74%	372.84	100.00%	99.99%
Harmonic #2	0.000	0.74%	2.21%	0.00	0.00%	0.00%
Harmonic #3	0.182	86.96%	90.81%	1.78	3.84%	3.84%
Harmonic #4	0.000	0.00%	0.07%	0.00	0.00%	0.00%
Harmonic #5	0.180	86.96%	90.60%	4.67	2.56%	2.56%
Harmonic #6	0.000	0.00%	0.07%	0.00	0.00%	0.00%
Harmonic #7	0.180	86.96%	90.60%	0.00	0.00%	0.00%
Harmonic #8	0.005	2.34%	1.46%	0.00	0.00%	0.00%
Harmonic #9	0.046	20.72%	20.31%	0.00	0.00%	0.00%
Harmonic #10	0.003	1.40%	0.94%	0.00	0.00%	0.00%
Harmonic #11	0.000	0.00%	0.00%	0.00	0.00%	0.00%
Harmonic #12	0.002	0.93%	0.60%	0.00	0.00%	0.00%
Harmonic #13	0.000	0.00%	0.00%	0.00	0.00%	0.00%
Harmonic #14	0.002	0.93%	0.60%	0.00	0.00%	0.00%
Harmonic #15	0.040	19.80%	11.17%	0.00	0.00%	0.00%
Harmonic #16	0.002	0.93%	0.60%	0.00	0.00%	0.00%
Harmonic #17	0.020	11.88%	6.26%	0.00	0.00%	0.00%
Harmonic #18	0.002	0.93%	0.60%	0.00	0.00%	0.00%
Harmonic #19	0.016	7.91%	4.19%	0.00	0.00%	0.00%
Harmonic #20	0.002	0.93%	0.60%	0.00	0.00%	0.00%
Harmonic #21	0.012	6.81%	3.55%	0.00	0.00%	0.00%
Harmonic #22	0.002	0.93%	0.60%	0.00	0.00%	0.00%
Harmonic #23	0.007	3.37%	1.90%	0.00	0.00%	0.00%
Harmonic #24	0.002	0.93%	0.60%	0.00	0.00%	0.00%
Harmonic #25	0.000	0.00%	0.07%	0.00	0.00%	0.00%
Harmonic #26	0.001	0.01%	0.05%	0.00	0.00%	0.00%
Harmonic #27	0.000	0.00%	0.00%	0.00	0.00%	0.00%
Harmonic #28	0.001	0.01%	0.05%	0.00	0.00%	0.00%
Harmonic #29	0.000	0.00%	0.00%	0.00	0.00%	0.00%
Harmonic #30	0.001	0.01%	0.05%	0.00	0.00%	0.00%

Total Harmonic Distortion (THD) is calculated and presented in a spreadsheet display that provides the Absolute Value of Voltage and Current at each harmonic frequency.

Values for:

% of THD_f (Harmonic Power / Fundamental Power)

% of THD_r (Harmonic Amplitude/Fundamental Amplitude)

are also tabulated.

System Specifications

	Range	Resolution	Accuracy
Voltage			
Peak	130-200 V	10mV (Scope Mode) 100mV (Monitor Mode)	0.5% + 3 LSD 0.1% + 2 LSD
RMS	95-135 VAC RMS	10mVAC RMS (Scope Mode) 100mVAC RMS (Monitor Mode)	0.1% + 2 LSD
Current			
Peak	3mA – 23A	1mA	1% + 5 LSD
RMS	3mA – 16A RMS	1mA RMS	0.1% + 2 LSD
Power			
Apparent Power	0.5 – 2160 (VA,W)	0.1 (VA,W)	0.5% + 10 LSD
Active Power	0.5 – 2160 (VA,W)	0.1 (VA, W)	0.15% + 5 LSD (for PF = 99.99 and Range = 110-2160 (VA,W))
Power Factor	10 – 99.99% (per socket)	0.01%	0.5% + 10 LSD
Frequency			
	45 – 99.99 Hz	0.01 Hz	0.03% + 1 LSD
Physical			
	LxWxH = 13"x4.3"x2.5"	Weight = 3 lbs.	

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