



BEYOND MEASURE

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The LM-3111 is a Form 2S/12S residential energy and power quality meter adapter recorder that simply plugs into a meter base to simultaneously record over 30 energy parameters along with harmonics, disturbance events, waveform capture, and flicker. Captive internal CT's make installation and current measurement easy. The unit can be programmed to send real time notification when a measured condition exceeds user-defined thresholds. Data is stored in non-volatile flash memory or SD data card format so that no data is ever lost. No battery maintenance is required to preserve recorded data.

LM-3111 ENERGY AND POWER QUALITY METER ADAPTER RECORDER



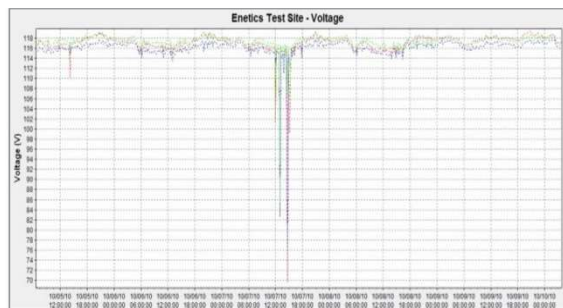
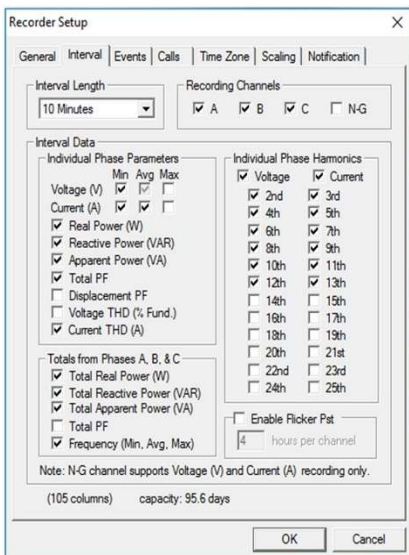
Energy Measurements: The unit records more than 30 energy parameters including voltage, current, kW, kVAR, kVA, line frequency, true and displacement power factors for each leg and total, and both the single-cycle minimum and maximum values for each user defined averaging interval. Time stamps are Internet synchronized.

Power Quality: The LM-3111 records voltage and current magnitudes, sag and swell events, individual phase harmonics, and total harmonic distortion (THD%). Easy to use software generates charts and reports in Excel format, eliminating software compatibility issues. Raw Excel data allows the user further flexibility for post processing and data analysis.

Flicker Measurements: When in flickermeter mode, the LM-3111 samples and calculates 1/2 cycle Vrms values, implements the proper filtering and processing per IEC 61000-4-15 standards to provide the requisite Pst and Plt perceptibility parameters for each phase of the line. These parameters provide a standardized, well adopted measure of flicker to assist in troubleshooting customer complaints.

A Versatile 2S Meter Base Plug-In Recorder

- Resolve billing and power quality complaints
- Record energy parameters, harmonics, disturbance events, wave-form captures, and flicker analysis
- Safely record at the meter with- out external boxes or wires
- Full database support with analysis software included
- Remote communication:
 - USB, RS-232 serial, Modbus RTU protocols
 - Optional:
 - GSM or CDMA cellular telemetry, Bluetooth 4.2
- Automatic alarm notifications via SMS to your cell phone
- Breaker panel mounting NEMA 4X enclosure also available



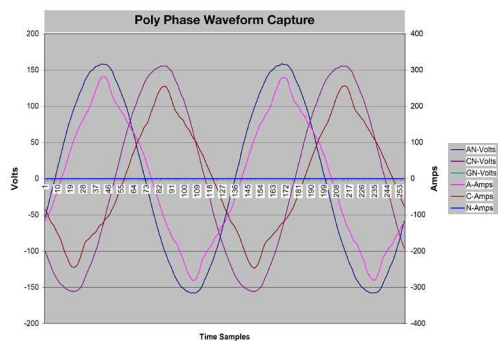
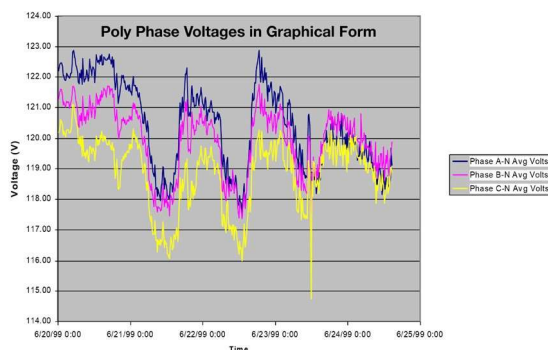
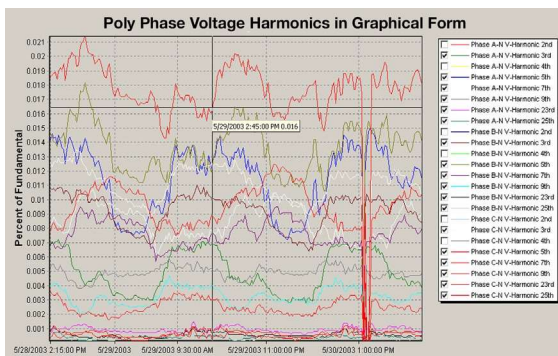
Delivering Energy Intelligence with precision instruments, data warehousing and management.

Software

The LM-3111 software consists of three components:

- **PowerScope™ Software** - for remote management of all recorders in the field; data is automatically retrieved from designated sites via cellular data communication.
- **The SQL Database** - built-in user query dialogues or file-based data archives available from within Excel are used to generate graphical and tabular data reports.
- **Excel Macros** - charting/reporting routines including drag, zoom and panning features to simplify and enhance visual presentation of collected data.

The combination of a SQL database and Excel spreadsheet data allows simple, well understood navigation of the data and facilitates simple data sharing among a wide range of users on this open platform.



Specifications

Form	Form 2S meter base
Channels Voltage Current	Simultaneous voltage and current sampling 2 channels, L1 & L2 2 channels, L1 & L2
Range Voltage Current	120 VAC L-N / 240 VAC L-L 200 amps, internal CT's
Memory	Non-volatile flash memory, 32Gb SD Card
Typical Data Storage Time	15 min intervals /16 parameters: 600 days minimum 15 min intervals /117 parameters: 100 days minimum Software calculates and reports available recording time during setup. Waveform and event capture storage is independent from interval data storage. Up to 3,000 events can be saved in non-volatile memory.
Sample Rate/ Response Time	32 samples/cycle for interval data 128 samples/cycle for harmonic analysis
End-to-End Accuracy: Voltage Current Power Power Factor THD Frequency	0.2% reading ± 0.2% FS 0.2% reading ± 0.2% FS 0.5% reading ± 0.01% FS ± 1% ± 1% ± 0.1% ; 0.01 Hz resolution
ANSI C12.1-2008 compliant IEC 61000-4-30 Class A voltage compliant	
Recording Interval	15 seconds to 1 hour
Flicker	IEC 61000-4-15 compliant
Harmonics	Voltage and Current through 25th Voltage THD (% fundamental) Current THD (% fundamental or RMS Amps)
Disturbance Events	Auto Trigger; 10,000 maximum events
Waveform Capture	Auto Trigger; 2 cycles pre-trigger; 6 cycles post-trigger
Communications	Native Open Protocol - Modbus RTU RS-232
Communication Options	Included: RS-232 serial port/USB serial port Optional: GSM cellular data modem CDMA cellular data modem Bluetooth 4.2
Storage Option	Removable secure digital (SD) card storage (32Gb)
Power	85 – 265 VAC L-L, 47 - 63 Hz Automatically line powered from service Real-Time Clock: battery backed during power loss. No data battery maintenance required.
EMC	EN55022 Class B Radiated
Environmental/Physical Certification	CE Certified, Enclosure approved by NYS Department of Public Service for Residential Applications
Operating Temp Size (HxWxD)	-20°C to +60°C (-4°F to +140°F) 10.5" x 9.25" x 5.5" (26.7 x 23.5 x 14 cm)
Weight	4.5 lbs. (2 kg)
Weather	IP65; Full conformal coating

