Power Quality Logger
Model PQL 120

Power Quality Analysis Made Simple!



US Patent Number 6,424,277

The PQL 120 Series is a single phase Power Quality Logger designed to measure and log from a complete suite of electrical and power quality parameters. It is accompanied by an easy-to-use report compliant software package. We provide several report templates to facilitate your work.

The PQL 120 Series is designed for North American commercial, industrial and residential applications, and is plugged into a standard AC receptacle. In turn, any 120V load may be plugged into the Power Quality Logger: office equipment, data equipment, machinery, compressors, heaters, motors, etc.

In industrial, commercial and residential sites, power quality is critical and may induce many problems, the causes of which need to be identified. Outages reset clocks, timers and other sensitive devices; odd harmonics cause overheating in neutrals; harmonic energy causes motors and other devices to run improperly; spikes cause lighting to burn out prematurely; and surges and sags cause irritating flicker in lighting systems as well as inefficient machine operation.

The main advantage of the PQL 120 Series is its ability to perform a wide variety of recording tasks with high resolution and accuracy and easy, intuitive setup from a computer. The PQL 120 measures, records and stores selected parameters in its memory. Along with standard electrical parameters (V, A, W, Var, PF…), it also stores the Power Quality of the input waveforms (Harmonics, THD, Surge, Sag, K-Factor…). The recorded information is retrieved from a computer via an RS-232 serial link using the report compliant DataView® software package, which provides graphs, data and pre-configured reports. With the DataView® edition, measurements and waveforms may be viewed in “real time” on a computer monitor and stored directly into the computer memory. Custom views and reports can then be created.

The Power Quality Logger is line powered from the voltage source that it is connected to, with an internal battery to protect data integrity during power outages for up to one year.

Features

- Portable, compact unit — plugs into standard US 120V outlets
- Simple operation: Plug in, Record, Download and Read
- Measures and stores electrical parameters: V, A, Hz and more
- Measures and stores power parameters: W, VA, VAR, Demand, Peak Demand and more
- Measures and stores power quality parameters: Harmonics, THD (RMS and fundamental), K-Factor and more
- Automatically captures worst-case Surge, Sag and THD waveforms
- High accuracy and resolution: 128 samples/cycle, 16 bit resolution
- LEDs indicate mode of operation
- Records up to 12 data channels
- Powered from voltage input channel
- Battery backup data integrity during power outages for up to one year (configuration in non-volatile memory)
- Optically isolated RS-232 output for direct connection to a PC
- IEC 1010, 150V Cat. III
- Includes DataView® software for data storage, analysis and report generation

Applications

- Monitor power quality in North American commercial, industrial and residential application
- Monitor power quality at computer workstations
- Monitor power quality on laboratory equipment

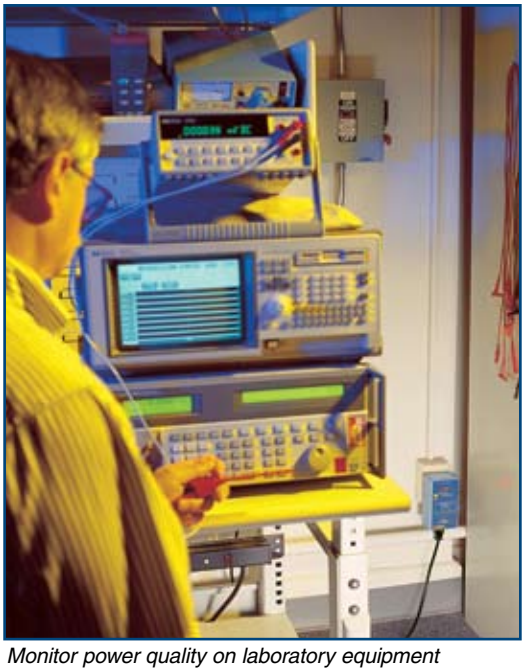
PARAMETER	UNIT	RMS	MIN	MAX	VALUE	WAVEFORM	SPECTRUM	TEXT	COMMENTS
Voltage	V	✔	✔	✔		✔	✔	✔	Waveforms & Spectrum in real time using DataView®
Current	A	✔	✔	✔		✔	✔	✔	Waveforms & Spectrum in real time using DataView®
Frequency	Hz	✔	✔	✔				✔	
Even Voltage Harmonics	V	✔	✔	✔				✔	
Odd Voltage Harmonics	V	✔	✔	✔				✔	
Even Current Harmonics	A	✔	✔	✔				✔	
Odd Current Harmonics	A	✔	✔	✔				✔	
Real Power	W	✔	✔	✔				✔	
Reactive Power	Var	✔	✔	✔				✔	
Apparent Power	VA	✔	✔	✔				✔	
Total Harmonic Distortion		✔	✔	✔		✔	✔	✔	IEEE (THDrms) or IEC (THDfund); Five worst waveforms for Voltage & Current
Power Factor		✔	✔	✔				✔	
Displacement Power Factor		✔	✔	✔				✔	
K-Factor		✔	✔	✔				✔	
Demand	VA, W				✔			✔	10/15/30 minutes or user-definable in one min. increments
Peak Demand	VA, W				✔			✔	Peak within the Demand Interval
Sag	V				✔	✔	✔	✔	
Surge	V				✔	✔	✔	✔	Five worst in Hi-Resolution – up to 256 single cycle RMS values & worst-case THD waveforms per event; Table of 100 worst-case events containing severity & time; Even counter for all triggered values

Specifications

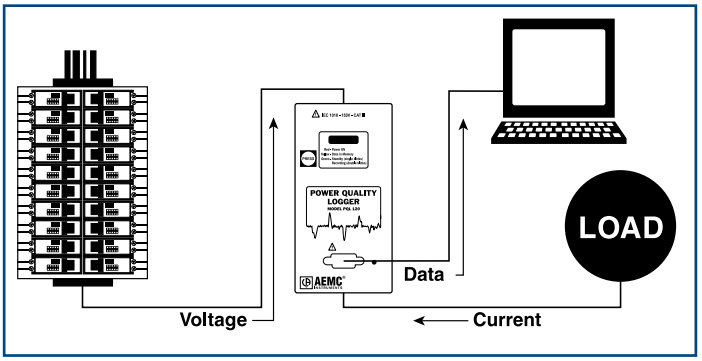
MODEL	PQL 120
ELECTRICAL	
Measurements	True RMS measurement. 128 samples are simultaneously taken for voltage and current channel.
VOLTAGE	
Range	0 to 140V
Resolution	0.1V
Accuracy	±(0.3% of Reading + 0.3V)
CURRENT	
Range	0 to 15A (70A peak maximum)
Resolution	0.01A
Accuracy	±(0.5% of Reading + 0.03A) @ 0.75A to 15A ±0.30A @ < 0.75A
FREQUENCY (Hz)	
Range	45 to 65Hz
Resolution	0.01Hz
Accuracy	0.1Hz
HARMONICS	
Range	Up to 50th for both Voltage & Current
Resolution	0.1V for Voltage & 0.1A for Current
POWER – WATT/VA/VAR	
Range	0 to 2,100 Watt, VA or Var
Resolution	0.1W, 0.1VA, 0.1Var
Accuracy	±(2.0% of Reading + 4x), where x is Watt or VA or Var
POWER & POWER FACTOR	
Resolution	0.01
Accuracy	±0.03% @ PF/DPF = 1
PROGRAMMABLE PARAMETERS	
	V, A, Hz, Odd & Even Harmonics (V & A), W, VA, Var, THD (V & A), PF, DF, K-Factor
Demand	VA, W (10/15/30 minutes or user-definable)
Peak Demand	Over demand period
Voltage Sag	User-definable magnitude
Voltage Surge	User-definable magnitude
INPUT	
Input Channels	One Voltage/One Current
Sample Rate	128 per cycle per channel
RECORDING	
Storage Rate	125ms to 7 days
Recording Session Length	15 minutes to 8 weeks (user programmable)
Total Memory	1MB
Date and Time	MM/DD/YY hh/mm/ss.sss
Surge and Sag and THD Waveform Storage	20 worst-case
ENVIRONMENTAL	
Operating Temperature	14° to 122°F (-10° to 50°C)
Storage Temperature	-4 to 140°F (-20° to 60°C)
Relative Humidity	0% to 85% @ 95°F (35°C), non-condensing
MECHANICAL	
Material	UL94V-0 ABS plastic
Dimensions	5.91 x 3.15 x 2.36" (150 x 80 x 60mm)
Weight	1 lb 7 oz (650g) including the batteries
SAFETY	
Safety Rating	IEC 1010-1, 150V Cat. III, Pollution Degree 2



Monitor power quality at computer workstations



Monitor power quality on laboratory equipment





LED s indicate mode of operation



RS-232 interface for easy connection to a PC

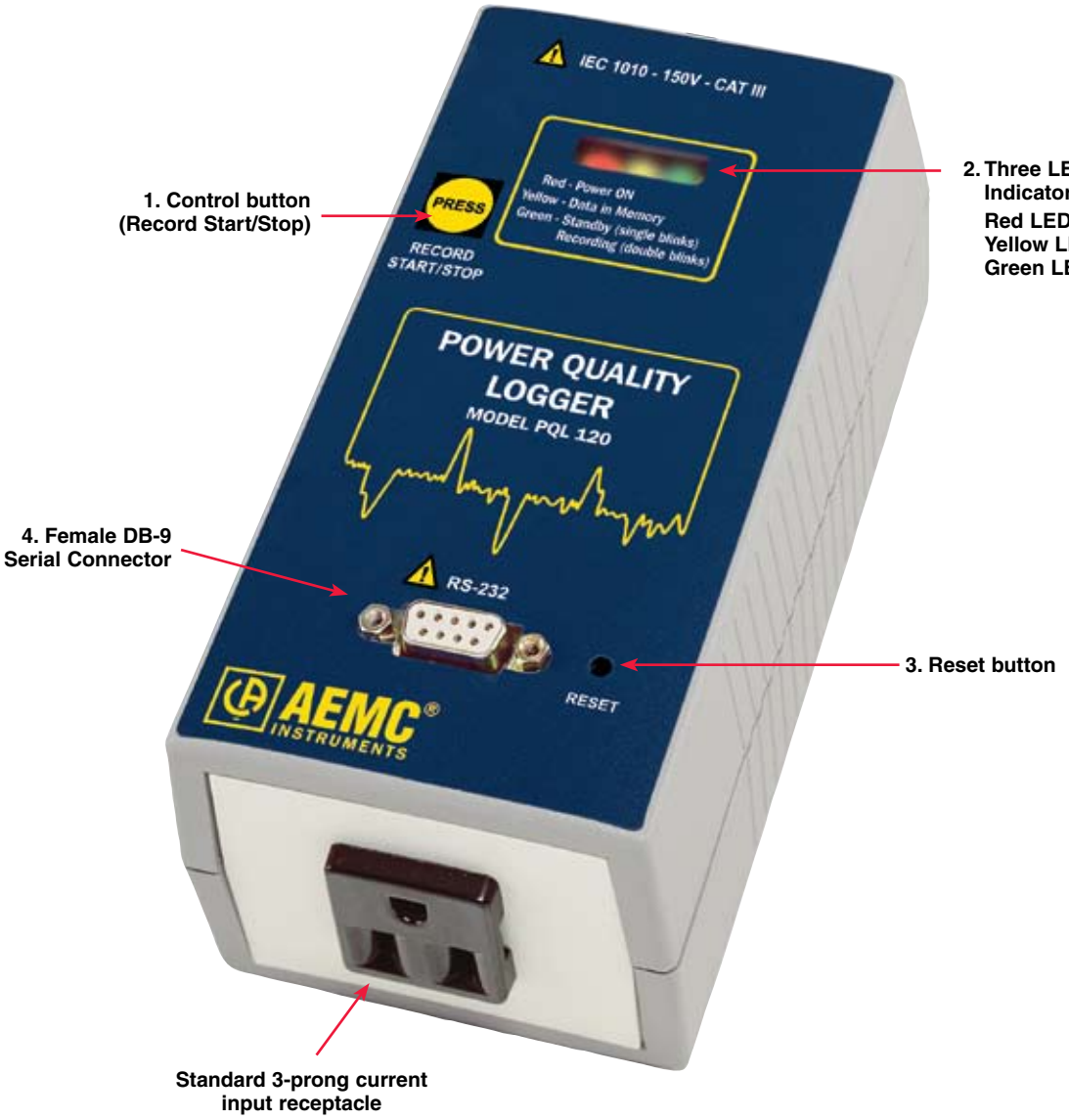


Standard three-prong current input receptacle



Model PQL 120 has standard three-prong plug on back of unit (shown). Also available with 6 ft power cable.

Construction



1. **Control Button (Record Start/Stop)**
   Used to start or stop recording and erase recording memory
2. **Three LED Indicators**
   - **RED LED:** Indicates the presence of AC line voltage. The logger turns ON when the input voltage > 75V
   - **YELLOW LED:** Indicates the status of the memory.
     LED OFF: No data in memory
     LED ON: Memory is partially filled
     LED Single Blink: Memory is full
   - **GREEN LED:** Indicates the status of the data logger (STANDBY or RECORDING)
     LED Single Blink: PQ Logger is in Standby Mode (and not recording)
     LED Double Blink: PQ Logger is in Record Mode

NOTE: When the AC line power is turned off and the PQ Logger is not recording in a ride-through mode, the GREEN LED is OFF. If the GREEN LED remains continuously ON without blinking, or OFF even when the RED LED is ON, a fault condition has occurred

3. **Reset Button**
   This button resets the CPU. The button is recessed and requires a small tool, such as a pen, to press it. Do not press the Reset Button under normal operation.
   If the Reset Button is pressed when the PQ Logger is recording, it will stop recording and data in the memory may be lost.
4. **Female DB-9 Serial Connector**

DataView® Software for Model PQL 120

Features

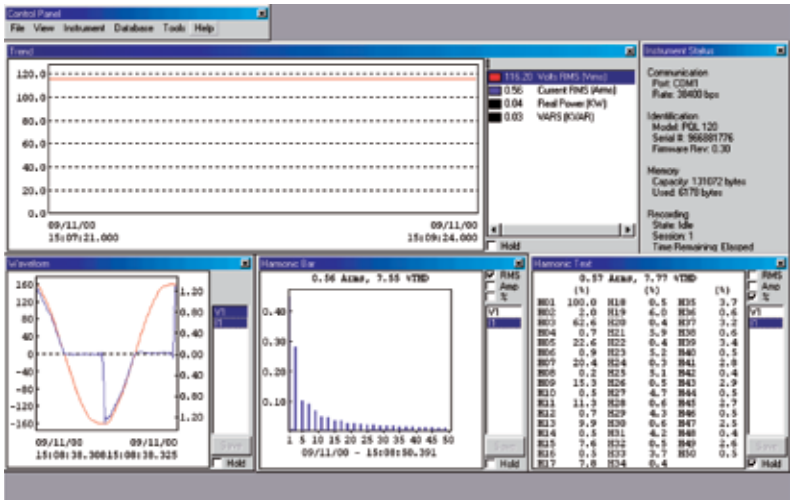
- Display and analyze real-time data on your PC
- Configure all data logger functions and parameters from your PC including sample rate, recording length, channel configuration and more
- Customize views, templates and reports to your exact needs
- Create and store a complete library of configurations that can be uploaded to the logger as needed
- Zoom in and out and pan through sections of the graph to analyze the data
- Download, display and analyze recorded data
- Display real-time data on your PC and download previously recorded data
- Display waveforms, trend graphs, harmonic spectrums and text summaries
- Display surge and sag events in high-resolution waveforms and as tabular listings
- Print reports using standard or custom templates you design

Minimum System Requirements:

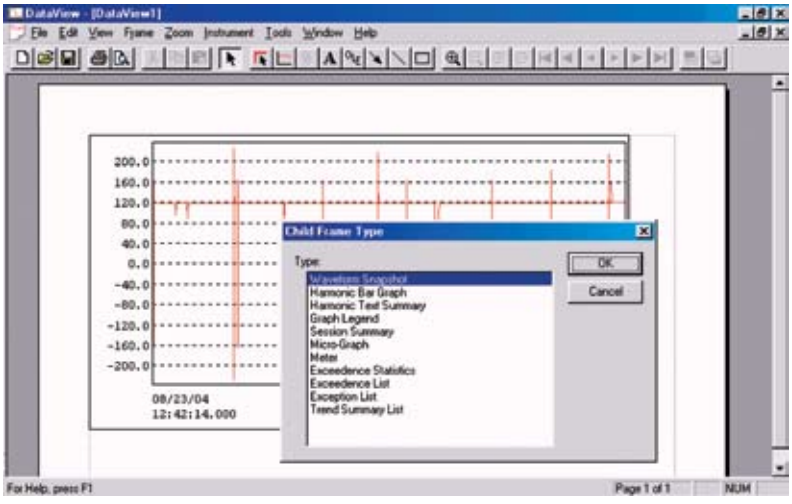
- Windows® 2000/XP/Vista
- 128MB of RAM for Windows® 2000 (256MB of RAM recommended)
  256MB of RAM for Windows® XP
  512MB of RAM for Windows® Vista
- 35MB of hard disk space (200MB recommended)
- CD-ROM drive



DataView® is included with the Power Quality Logger.



View data in real time on your PC. Customize the layout to include what's important to you.



A comprehensive set of tools lets you customize templates and reports to your specific needs.



Configure your logger from your computer. Select record length, sample rate, channel information to be recorded and more.

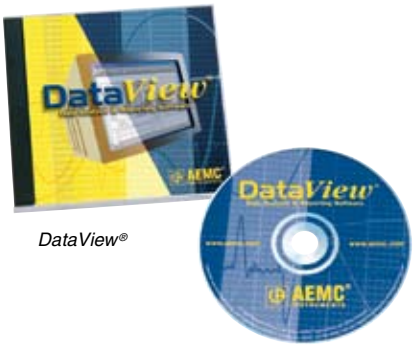
Accessories



Model PQL 120
Catalog #2125.04



Model PQL 120 with DataView® software and
6 ft DB-9 M/F serial PC cable
Catalog #2125.03



DataView®



Soft Carrying Case
Catalog #2119.02

ORDERING INFORMATION	CATALOG NO.
Power Quality Logger Model PQL 120 (1MB)	**Cat. #2125.04**
PQL is supplied with DataView® software (CD ROM), 6 ft DB-9 M/F serial PC cable, and a user manual.	
Accessories (Optional)	
Soft Carrying Case	Cat. #2119.02

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CHAUVIN ARNOUX GROUP

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