

Power Quality Logger Models PQL 100 & PQL 120



The PQL 100 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 100 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 100 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 100 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® Lite software package, which provides graphs, data and pre-configured reports. With the DataView® Professional 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

- Selectable single-phase and three-phase settings
- 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
- EN 61010, 150V, Cat. III
- Includes DataView® Lite Analysis and Reporting Software

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® Professional
Current	A	✓	✓	✓		✓	✓	✓	Waveforms & Spectrum in real time using DataView® Professional
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); 5 worst waveforms for Voltage & Current
Power Factor		✓	✓	✓				✓	
Displacement Power Factor		✓	✓	✓				✓	
K-Factor		✓	✓	✓				✓	
Demand	VA, W				✓			✓	10/15/30 minutes or user-definable in 1 min. increments
Peak Demand	VA, W				✓			✓	Peak within the Demand Interval
Sag	V				✓	✓	✓	✓	
Surge	V				✓	✓	✓	✓	

Specifications

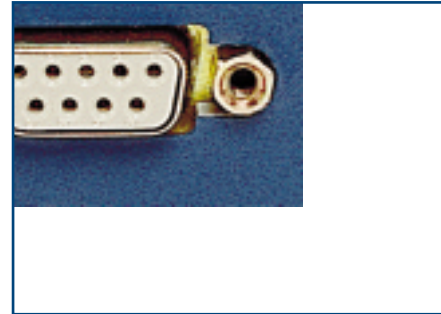
MODEL	PQL 100 (128k)	PQL 100 (1MB)	PQL 120 (128kB)	PQL 120 (1MB)
ELECTRICAL				
Measurements	True RMS measurement. 128 samples are simultaneously taken for voltage and current channel.			
VOLTAGE				
Range	0 to 140V			
Resolution	0.1V			
Accuracy	±(0.3% of Reading + 0.3V)			
CURRENT				
Range	0 to 15A (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	1 Voltage/1 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	128kB	1MB	128kB	1MB
Date and Time	MM/DD/YY hh/mm/ss.sss			
Surge & Sag & THD Waveform THD Waveform Storage (worst-case)	5 THD Waveform	20 THD Waveform	5 THD Waveform	20 THD Waveform
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				
	EN 61010-1, 150V, Pollution Degree 2, Cat. III			



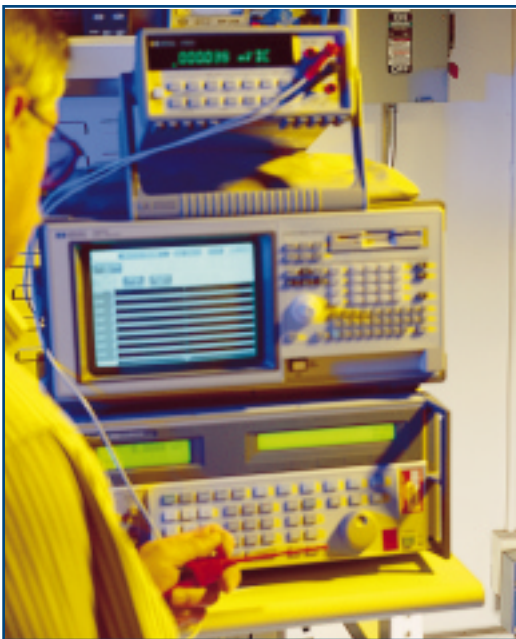
Monitor power quality at computer workstations



LED s indicate mode of operation



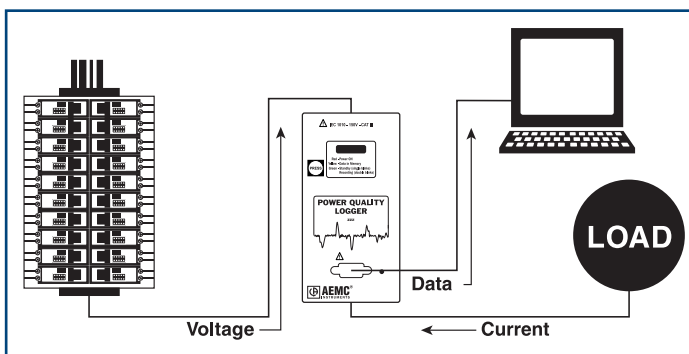
RS-232 interface for easy connection to a PC



Monitor power quality on laboratory equipment

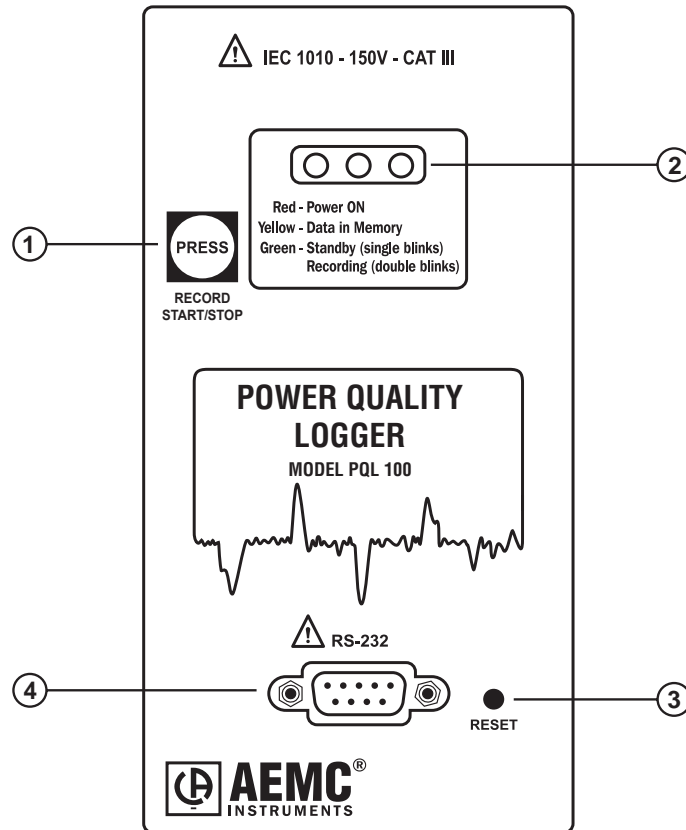


Standard 3-prong current input receptacle



Model PQL 100 has standard 3-prong plug on back of unit (shown). Model PQL 120 also available with 6' 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



Model PQL 100 with DataView® Lite software and 6 ft. DB-9 MF serial PC cable



Model PQL 100



Model PQL 120



Soft Carrying Case



DataView® Professional Edition

ORDERING INFORMATION

CATALOG NO.

Power Quality Logger Model PQL 100	Cat. #2125.01
Power Quality Logger Model PQL 120	Cat. #2125.02
Power Quality Logger Model PQL 100 (1MB)	Cat. #2125.03
Power Quality Logger Model PQL 120 (1MB)	Cat. #2125.04
DataView® Professional Software	Cat. #2125.10
Accessories (Optional)	
Soft Carrying Case	Cat. #2119.02

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