Aplab

Power Quality Analyzer

PQA2100/2100E

www.aplab.com

Brief Introduction

PQA2100/2100E Power Quality Analyzer is the professional portable device to measure and analyze the power system quality, supply the harmonics analysis and power quality data analysis, also provide big memory for the data storage, which is used to make the long term logger measuring to power system. The PC software can simply upload the data to PC for full analysis.

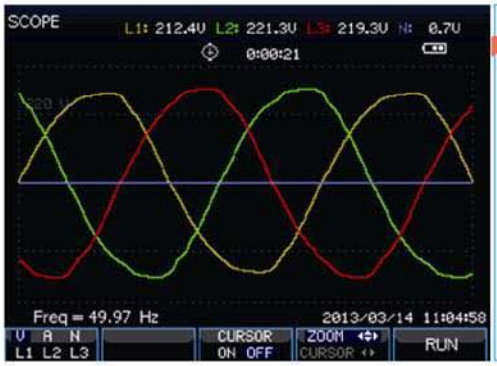
Selection Guide

Model	PQA2100	PQA2100E
Volts / Amps / Hertz	●	●
Dips & Swell	●	●
Power / Energy	●	●
Unbalance	●	●
Monitor	●	●
Scope	●	●
Harmonic	●	●
Inter-Harmonal	●	
Transient Voltage	●	
Inrush Current	●	
Fliker	●	
Interruption	●	●
400Hz	●	
Memory Card	8GB	8GB
Standard CT	Flexi. CT PY-3000A*4pcs	Flexi. CT PY-3000A*3pcs

USB High Speed Transfer

Isolated Interface to ensure safe operation

Measurement Modes

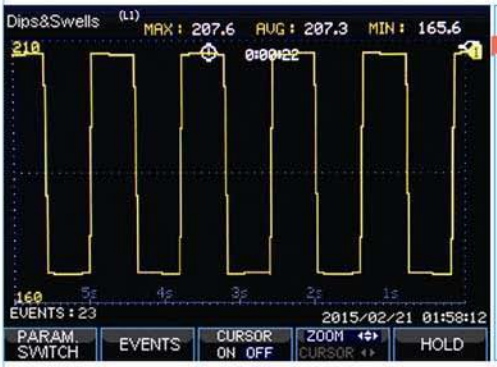


1 Scope

View the voltage/current waveform and readings. Cursor Zoom function

Voltage/Current/Frequency 2

Measure Voltage/Current/Frequency and Crest Factor

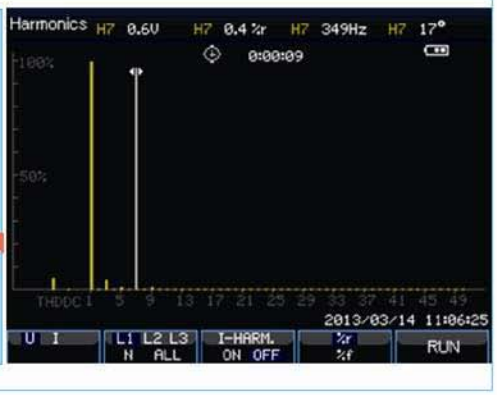


3 Dips & Swells

Capture the abnormal Event, such as Swells, Dips, Interruptions and Rapid Voltage Change

Harmonics 4

Harmonics and interharmonics measurement up to the 50th, parameter DC Compnent, THD, K-factor

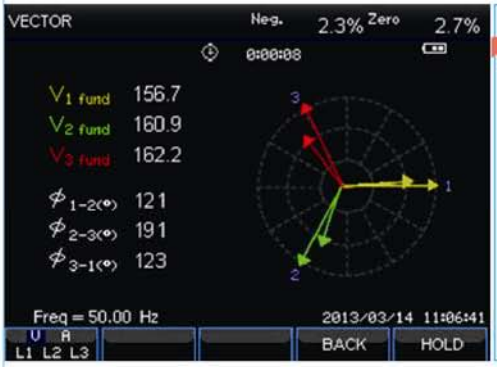


5 Power and Energy

Full power parameters measurement including Vrms/Arms/KW/KVA/KVAR/TPF/DPF and Energy data KWh/kVAh/kVARh

Fliker 6

Support measure the parameters Pst (<10 min), Plt(<2 hrs), also Pst(1 min) for quick feedback and Instant flicker Pinst in trend

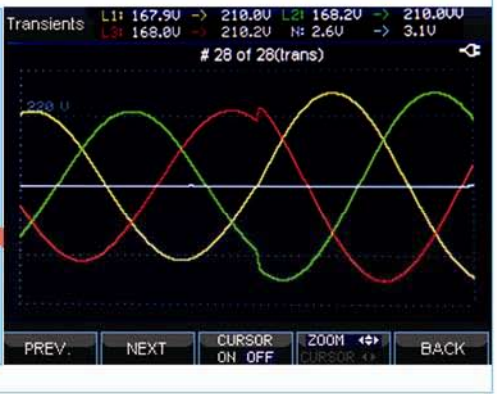


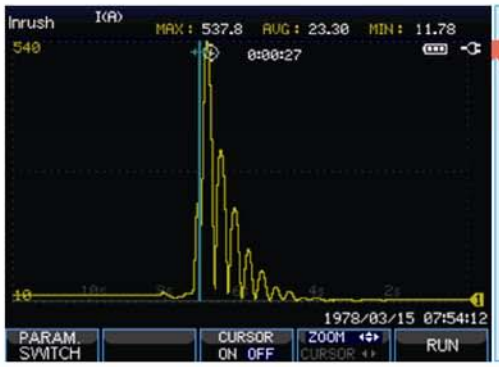
7 Unbalance

Check the unbalance in 3 phases based on IEC61000-4-30 standards

Transients 8

Capture waveforms at high-resolution during a variety of disturbances, maximum 100 events, sample rate 20Ks/s





9 Inrush Current

Capture the surge currents that occur in a large or low-impedance load comes on line.

Logger 10

Record the measuring data as selectable parameters and interval, duration. The saved data in TF card, which can be download to PC by USB and check by Power View Software.

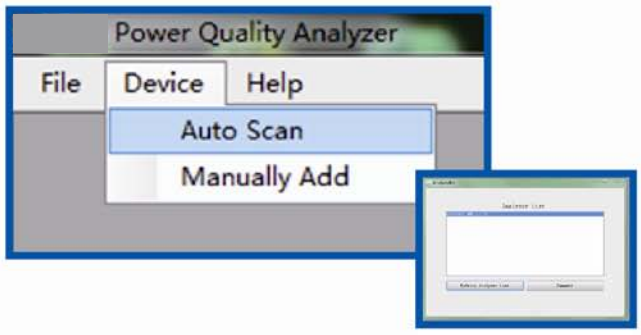
11 Monitor

Measure all the parameter Vrms, Arms, Harmonics, Flicker, Dip, Swell, Rapid Voltage Change, Interruption, Unbalance, frequency at the same time, check whether meet the requirements limited by users or default standards EN50160. The monitoring time lasts from 2 hours to 7 days.

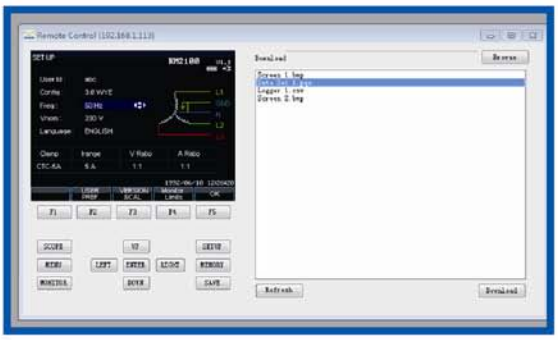
Power View Software

Power View is easy operation software to make the remote control to Analyzer and view the download data.

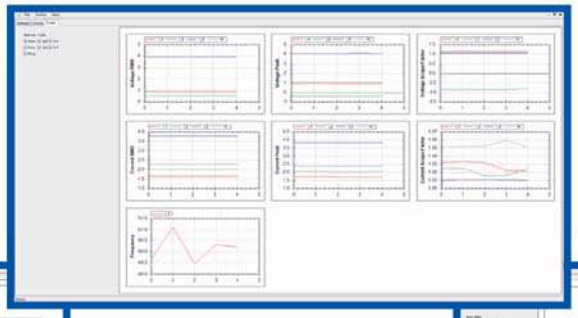
AUTO Scan the device connected to PC through LAN Interface



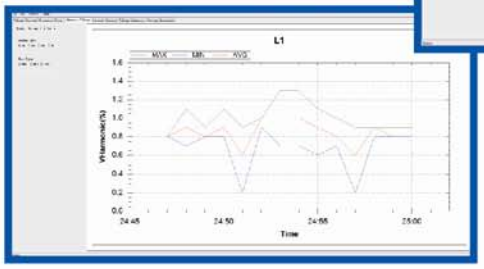
Remote Control Interface



Monitor the user-demanded parameters



Visual view of data trend (Max, Min, Average)



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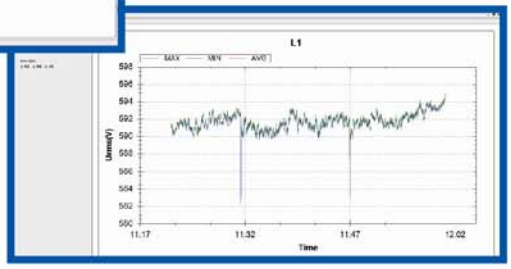

Input

Voltage Input				
Input Channels		4 (3 phase + neutral) DC coupling		
Max. Input Voltage		1000Vrms		
Range of nominal voltage		50 to 500V		
Max pulse peak voltage		6kV		
Bandwidth		>3kHz		
Input Impedance		4MΩ/5pF		
Current Input				
Numbers of Input		4 (3 phase + neutral) DC coupling		
Type		Clamp Current Sensor with mV output		
Input Range		1 to 3000Arms with supplied current clamp		
Input Impedance		50kΩ		
Bandwidth		>3kHz		
Sampling System				
Resolution		8 channels 16 bits AD		
Sampling Rate		20kS/s for each channel, 8 channels sample synchronously		
RMS Sampling		5000 points for 10/12 cycles (according to IEC 61000-4-30)		
PLL Sync		4096 points for 10/12 cycles (according to IEC61000-4-7)		
Measurement		**Measurement Range**	**Resolution**	**Accuracy**
Voltage/Current/Frequency				
Vrms(AC+DC)		1 ~ 1000Vrms	0.1Vrms	±0.5% of nominal voltage
Vpk		1 ~ 1400Vpk	0.1Vpk	±0.5% of nominal voltage
V(Crest Factor)		1.0 ~ >2.8	0.01	±5%
Arms (AC)	10mV/A	0~ 100A	0.1A	±0.5% ± 0.2A
	1mV/A	1~ 1000A	0.1A	±0.5% ± 0.2A
	50mV(65mV)/1000A	15~ 5000A	1A	±1% ± 2A
A(Crest Factor)		1 ~ 10	0.01	±5%
Frequency		42.5 ~ 57.5Hz (50Hz nominal)	0.01Hz	±0.01Hz
		51 ~ 69Hz (60Hz nominal)	0.01Hz	±0.01Hz
		340 ~ 460Hz (400Hz nominal)	0.01Hz	±0.1Hz
Dips & Swells				
Vrms1/2		0 ~ 200% of nominal voltage	0.1Vrms	±1%
Arms1/2		1 ~ 3000A	1A	±1% ±2A
Threshold levels		Threshold is settable according to nominal voltage percentage Detectable events type: Dips, Swells, Interruption, Voltage Rapid Change		
Duration		hour-minute-second-microsecond	0.5 cycle	1 cycle
Harmonic				
Harmonic Number		1 ~ 50		
Inter-Harmonic (PQA2100)		1 ~ 49		
Harmonic Voltage		0.0 ~ 100.0%	0.1%	±0.1% ± nx0.1%
Harmonic Current		0.0 ~ 100.0%	0.1%	±0.1% ± nx0.1%
THD		0.0 ~ 100.0%	0.1%	±2.5%
DC Relative		0.0 ~ 100.0%	0.1%	±0.2%
Frequency		0 ~ 3500Hz	1Hz	1Hz
Phase		-360° ~ 0°	1°	± nx1.5°
Power and Energy				
Active Power/Apparent Power/Reactive Power		1.0 ~ 20.00MW	0.1kW	±1.5±10 counts
KWh		0.00kWh ~ 200GWh	10Wh	±1.5±10 counts
Power Factor		0 ~ 1	0.01	±0.03
Flicker (PQA2100)				
Pst(1min),Pst,Plt,PF5		0.00 ~ 20.00	0.01	±5%
Unbalance				
Voltage		0.0 ~ 5.0%	0.1%	±0.5%
Current		0.0 ~ 20.0%	0.1%	±1%
Voltage Phase		-360° ~ 0°	1°	±2counts
Current Phase		-360° ~ 0°	1°	±5counts
Voltage Transient (PQA2100)				
Vpk		6000Vpk	1V	±15%
Vrms		10 ~ 1000Vrms	1V	±2.5%
Min. Test Time		50us		
Sampling Rate		20kS/s		

Measurement

	Measurement Range	Resolution	Accuracy
Inrush Current (PQA2100)			
Arms(AC+DC)	0~3000Arms	0.1	±1% ± 5counts
Inrush Duration	6s ~ 32min selectable	10ms	±20ms
Logger			
Recording	user-defined parameters for 4 phases at the same time		
Memory	Data stored in TF card, 8GB		
Duration Time	2 hrs to 1 year		
Interval	1s to 1 hrs		

Wire Combinations

1Ø+NEUTRAL	Single phase with neutral
1Ø SPLIT PHASE	Split phase
1Ø IT NO NEUTRAL	Single phase system with two phase voltages without neutral
3Ø WYE	3-phase 4-wire system, Y type
3Ø DELTA	3-phase 3-wire system delta (Delta)
3Ø IT	3-phase Y type without neutral
3Ø HIGH LEG	4-wire 3-phase delta system (Delta) with center tapped high leg
3Ø OPEN LEG	Open-delta (Delta) 3-wire system with two transformer windings
2-ELEMENT	3-phase 3-wire system without current sensor on phase L2/B (2 Watt meter method)
2 1/2-ELEMENT	3-phase 4-wire system without voltage sensor on phase L2/B

General Characterisctics

Display	
Screen	Color TFT LCD
Size	5.6 inch
Resolution	320×240
Brightness	Ajustable
Interface	
USB Host	Download file to PC by U disk for analyze with PC software
LAN	For remote control of the Analyzer and measurement data transmission.
Memory	
Flash Memory	128MB
TF Card	Standard 8G
Mechanical	
Dimension	262× 173 × 66mm
Weight	1.6kg
Enviroment	
Working temperature	0°C~ 40°C
Storage temperature	-20°C~ 60°C
Humidity	90% relative humidity
Power	
Adapter input	90~264V
Adapter output	12V 2A
Battery	Rechargeable NI-MH 7.2V 3.8Ah
Battery Working Time	> 7 hours
Battery Charge Time	6 hours
Standard	
Measurement Method	IEC61000-4-30 Class-S
Measurement Performance	IEC61000-4-30 Class-S
Power Quality Monitoring	EN50160
Flicker	IEC61000-4-15
Harmonic	IEC61000-4-7
Electrical Safety	
Comply with	IEC61010-1 ,Safety Degree: 600V CAT IV 1000V CAT III
Max. voltage at Voltage Input	600V CAT IV 1000V CAT III
Max. voltage at Current Input	42Vpk

Accessories

Voltage Test Leads Alligator Clips		(2m) × 5 pcs	Soft Carry Bag		1 pcs
Power Adapter		1 pcs	Hang Strap		1 pcs
Power Patch Cord		1 pcs	CD (Software, Manuals)		1 pcs

CT Clamps

Clamp Mode	KLC8C-5A	CTC0080	CTC0130	CTC1535
Apperance				
Measurement Range	5A	50A	100A	1A ~ 1000A
Output Voltage Ratio	10mV/A	10mV/A	1mV/A	1mv/A
Working Frequency	45Hz~55Hz	50Hz~400Hz	50Hz~400Hz	40Hz ~ 100KHz
Accuracy	0.2%	0.2%	0.2%	1%
Safety				CAT III 600V
Clamp Radius	8mm	8mm	13mm	52mm
Dimension(mm)	158 x 43 x 24	171 x 46 x 27	174 x 52 x 27	111 x 216 x 45

Flexible Probes Mode	PY-3000A	PY-5000A
Apperance		
Primary Current Rating	3000A	5000A
Output Voltage Ratio	65mV/1000A	50mV/1000A
Measurement Range	15A~3000A	20A~5000A
Accuracy	±1% + Position Error	±1% + Position Error
Maximum Allowable Input	100KA	100KA
Phase Error	<±1°	<±1°
Noise	<2mVrms (10Hz~10KHz)	<2mVrms (10Hz~10KHz)
Frequency Characteristic	10Hz~10KHz (-3dB)	10Hz~10KHz (-3dB)
Weight	130g	130g
Length	200cm	200cm
CT Perimeter	50cm	50cm
Measurement Position Error	±2%	±2%

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