Information

PQA820 is a power quality analyzer performing an easy and wide analysis of the most significant parameters of the electrical system. Thanks to an innovative project, the instrument can be interfaced to smart phones, tablets and PDAs (iOS and/or Android) meeting the requests of the most demanding professionals. All the electrical parameters can be displayed in both numerical and graphical mode, by waveforms, histograms and phasors. The vector diagram shows the phase angle between any voltage and the related current, revealing the inductive or capacitive nature of the loads connected.

The large built-in memory allows to log up to 383 parameters, granting a recording lasting more than one month with an integration period of 10 minutes.

PQA820 records all parameters by default so avoiding any failure. The user will never miss recording the parameters he needs, since PQA820 records everything while selecting one of the three predefined settings (single phase, 3-phase without neutral, 3-phase with neutral).

PQA820 is powered by an internal rechargeable Li-Ion battery with a built-in user-selectable L-N or L-L power supply. The Wi-Fi and the USB interfaces grant connection to smart phones, tablets, PDAs and PCs for instrument setting, recording start and stop, data downloading, and data analysis. Its IP65 waterproof hard carrying case allows PQA820 to work outdoors under critical environmental conditions

Function

- DC voltage
- TRMS voltage with 4 inputs for line(s) and neutral (if any)
- DC current
- TRMS current with 4 inputs for line(s) and neutral (if any)
- DC power
- Active, reactive and apparent power
- Active, reactive and apparent energy

- Power factor and cos-phi
- Frequency
- Up to 383 parameters to be recorded at once
- Integration period selectable from 5 seconds to 60 minutes
- Voltage and current harmonic analysis up to the 49th order
- Voltage anomalies (sags, swells) with 10ms resolution
- Numerical data analysis (DMM function)
- Graphical display of voltage and current (scope)
- Harmonic histogram
- Vectorial diagram of voltages and currents
- Voltage unbalance
- Predefined recording settings
- Built-in memory for data logging
- Wi-Fi and USB interfaces
- Android/iOS/Windows software
- Rechargeable Li-Ion battery with built-in power supply
- Waterproof IP65 hard carrying case

Accessories

STANDARD

- KITMPPACW : Set of 4 cables for AC voltage measurement, 2m
- KITMPPACC : Set of 4 alligator clips for AC voltage measure
- 606-IECN : Adapter with magnetic tip, 4 pcs
- HTFLEX33L : Flexible clamp 1000A AC, 174mm, 4 pcs
- TOPVIEW2007 : Windows software + USB cable C2007
- BORSA2051 : Carrying bag for accessories
- ISO9000 calibration certificate
- Quick reference guide
- User manual on CD-ROM

OPTIONAL

- HT96U : Rigid clamp 1-100-1000A AC, diameter 54mm
- HT97U : Rigid clamp 10-100-1000A AC, diameter 54mm
- HP30C2 : Rigid clamp 200-2000A AC, diameter 70mm
- HT98U : Rigid clamp 1000A DC, diameter 50mm
- HP30D1 : Rigid clamp with wide jaws up to 1000A DC
- ACONBIN : Adapter for connection of rigid clamps
- HT903 : Accessory for connection to external CTs

Standards

- EMC 2004/108/CE Directive
- CE MARK
- EN50160
- IEC/EN 61010-032
- IEC/EN 61010-1
- IEC/EN61187
- LVD 2006/95/CE Directive

1 - ELECTRICAL SPECIFICATIONS

Accuracy indicated as ± [%rdg + (no. dgts * resolution)] at 23 °C ± 5 °C, <75%HR

DC Voltage

Range [V]	Resolution [V]	Accuracy
10.0 ÷ 265.0	0.1	±(0.7% rdg + 0.4V)

Voltage values <10.0V are zeroed

AC TRMS Voltage – Phase to Neutral

Range [V]	Frequency [Hz]	Resolution [V]	Accuracy
10.0 ÷ 265.0	42.5 ÷ 69.0Hz	0.1	±(0.5% rdg + 0.2V)

Max Crest Factor =1.5, Voltage values <10.0V are zeroed

AC TRMS Voltage – Phase to Phase

Range [V]	Frequency [Hz]	Resolution [V]	Accuracy
50.0 ÷ 460	42.5 ÷ 69.0Hz	0.1	±(1.0%rdg + 0.2V)

Max Crest Factor =1.5, Voltage values <10.0V are zeroed

Voltage Anomalies – Phase to Neutral

Range [V]	Resolution Voltage [V]	Resolution Time	Accuracy Voltage	Accuracy [ms]
15.0 ÷ 265.0	0.2	10ms	±(1.0%rdg + 2dgt)	± ½ cycle

DC TRMS Current by external clamp transducer – STD clamps

Range [mV]	Resolution [mV]	Accuracy	Overload protection
5.0 ÷ 219.9	1	±(0.7%rdg + 1mV)	10V
220.0 ÷ 999.9		±0.7% rdg	

Current values correspondent to a voltage < 5mV are zeroed

AC TRMS Current by external clamp transducer – STD clamps

Range [mV]	Frequency [Hz]	Resolution [mV]	Accuracy	Overload protection
5.0 ÷ 219.9	42.5 ÷ 69.0Hz	1	±(0.5%rdg + 0.6mV)	10V
220.0 ÷ 999.9			±0.5% rdg	

Current values correspondent to a voltage < 5mV are zeroed

AC TRMS Current by external clamp transducer – Flex (100A AC range – 85uV/A)

Range [mV]	Frequency [Hz]	Resolution	Accuracy	Overload protection
0.085 ÷ 8.50	42.5 ÷ 69.0Hz	8.5µV	±(0.5%rdg +0.007mV)	10V

Max Crest Factor =1.5, Current values <1A are zeroed

AC TRMS Current by external clamp transducer – Flex (1000A AC range – 85uV/A)

Range [mV]	Frequency [Hz]	Resolution	Accuracy	Overload protection
0.425 ÷ 85.0	42.5 ÷ 69.0Hz	85µV	±(0.5%rdg + 0.15mV)	10V

Max Crest Factor =1.5, Current values <5A are zeroed

Frequency

Range [Hz]	Resolution [Hz]	Accuracy
42.5 ÷ 69.0	0.1	±(0.2% rdg + 0.1Hz)

DC Power – (Vmeas>200V)

Clamp FS [A]	Range [W] [Wh]	Resolution [W] [Wh]	Accuracy
1< FS ≤ 10	0.000k ÷ 9.999k	0.001k	±(1.0%rdg + 5W)
	10.00k ÷ 99.99k	0.01k	±(1.0%rdg + 50W)
10< FS ≤ 200	0.00k ÷ 99.99k	0.01k	±(1.0%rdg + 50W)
	100.0k ÷ 999.9k	0.1k	±(1.0% rdg + 500W)
200< FS ≤ 1000	0.0k ÷ 999.9k	0.1k	±(1.0%rdg + 0.5kW)
	1000k ÷ 9999k	1k	±(1.0% rdg + 5kW)

Vmeas = Voltage in which the power is measured

Power/Energy – (Vmeas>200V, Pf=1)

Clamp FS [A]	Range [W] [Wh]	Resolution [W] [Wh]	Accuracy
1< FS ≤ 10	0.000k ÷ 9.999k	0.001k	±(0.7%rdg + 3W/Wh)
	10.00k ÷ 99.99k	0.01k	±(0.7%rdg+30W/Wh)
10< FS ≤ 200	0.00k ÷ 99.99k	0.01k	±(0.7%rdg+30W/Wh)
	100.0k ÷ 999.9k	0.1k	±(0.7%rdg+300W/Wh)
200< FS ≤ 1000	0.0k ÷ 999.9k	0.1k	±(0.7%rdg+0.3kW/kWh)
	1000k ÷ 9999k	1k	±(0.7%rdg+3kW/kWh)

Vmeas = Voltage in which the power is measured

Power factor (Cosφ)

Range (cosφ)	Resolution	Accuracy (°)
0.20 ÷ 0.50	0.01	0.6
0.50 ÷ 0.80		0.7
0.80 ÷ 1.00		1.0

Harmonics (Real time values available only up to 32th harmonics)

Range	Maximum resolution	Base accuracy
DC ÷ 25th	0.1V / 0.1A	±(5.0% rdg + 2dgt)
26th ÷ 33th		±(10% rdg + 2dgt)
34th ÷ 49th		±(15% rdg + 2dgt)

Harmonics will be zeroed:

- DC harmonics: DC value <0.5% 1st Harmonic value or if DC value < 0.5% Clamp FS
- 1st Harmonic: 1st Harmonic value <0.5% Clamp FS
- 2nd ÷ 49th Harmonics: 2nd ÷ 49th values <0.5% 1st Harmonic value or <0.5% Clamp FS

2. GENERAL SPECIFICATIONS

ELECTRICAL SYSTEMS

- Single Phase,
- 3 Phase without Neutral
- 3 Phase with Neutral

CHANNELS RECORDED SIMULTANEOUSLY

- Phase to Neutral and Phase to Phase voltages
- Voltage anomalies (sags, swells, breaks)
- Voltage unbalance
- Phase currents, neutral current
- Voltages and currents harmonics (DC,1,2,…49)
- Phase and Total Active, Reactive, Apparent power
- Phase and Total Power factor and Cosφ
- Phase and Total Active energy (Class 2 EN61036), Reactive energy (Class 3 IEC1268)
- All channels concerning Powers, Pf, cosφ and Harmonics are automatically managed as generated and consumed.
- Max N of pararmeters recorded: 383
- Max number of voltage anomalies: 65530
- Integration Period: 5, 10, 30s, 1, 2, 5, 10, 15, 60min.
- Recording autonomy: > 30 days with integrated period of 10 minutes
- Memory capacity: 8Mbyte

POWER SUPPLY:

Internal rechargeable battery: Li-ION battery, battery life approx. 1 hour

External power supply: By mean Red/Yellow plugs, 100V ÷ 415V, 50/60Hz

COMMUNICATION INTERFACE

PC (Windows), Tablet/Smartphone(iOS, Android): USB (PC only) / WiFi

MECHANICAL FEATURES:

Dimensions (L x W x H):	245 x 210 x 110mm
Weight:	1.5kg

WORKING ENVIRONMENTAL CONDITIONS:

Reference temperature:	23°C ± 5°C
Working temperature:	0° ÷ 40°C
Allowed relative humidity:	<80%HR
Storage temperature:	-10 ÷ 60°C
Storage humidity:	<80%HR

POWER/ENERGY MEASUREMENTS REFERENCE GUIDELINES:

Features of voltage supplied by public utilities:	EN50160 (flicker and frequency analysis not performed)
Active energy static counters for AC current	EN61036 (Class 2)
Reactive energy static counters for AC current	IEC1268 (Class 3)

GENERAL REFERENCE GUIDELINES:

Safety of measuring instruments:	IEC/EN61010-1
Insulation:	double insulation
Pollution degree:	2
Encapsulation:	IP65 (case board closed)
Measurement category:	CAT IV 300VAC to ground, max 460V between Inputs
Max height of use:	2000m

This instrument complies with the prescriptions of the European directive on low voltage 2006/95/EEC (LVD) and EMC directive 2004/108/EEC

Technical specifications are subject to change without notice

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