

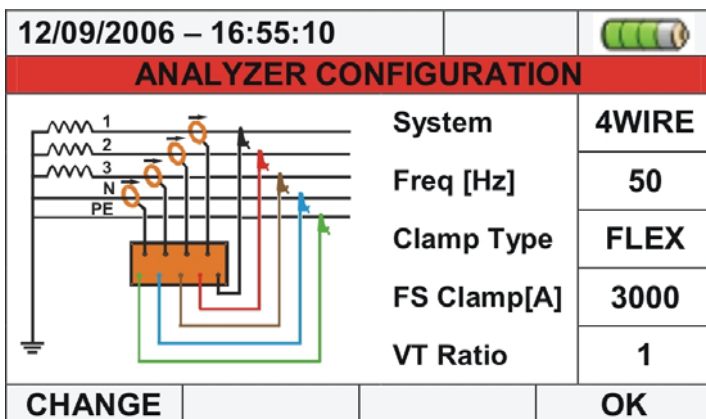
## 1. PQA82X INNOVATIVE FEATURES



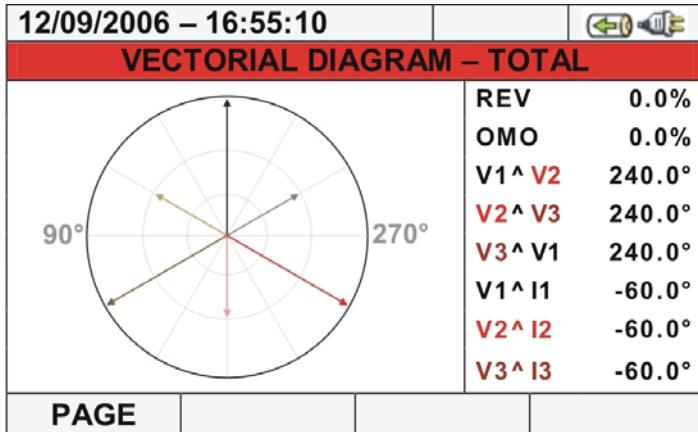
A wide (320x240pxls) graphical color TFT display with “touch screen” to surf the internal functions by using the supplied pointer pen



User friendly icon type interface



A synoptic connection scheme on the display helps the user while connecting the instrument to the installation under test



The “Vectorial Diagram” shows the mutual phase angles between voltages and currents vectors



The internal memory (15Mbytes) can be expanded by using the compact flash cards. The instrument has also an USB type A socket to drive USB peripherals like pen drives

## MENU GENERAL



**Real Time Values** icon permits to open the screens of real time values of each measured parameters



**Recording Results** icon permits the access to all saved recordings and the erasable of internal memory it's possible



**Meter Information** icon permits the access to a section dedicated to general information of meter



**Analyzer Settings** icon permits to define the simple and advanced configurations relative to the connection of meter to the installation

By pressing **HELP** key on the keyboard an help on line appears on the display to support the user

## 2. MODELS AND FEATURES

Measurements	PQA823	PQA824
Phase-Phase, Phase-Neutral, Phase-Ground voltages	✓	✓
Phases and neutral currents	✓	✓
Power factor	✓	✓
Active, reactive and apparent powers and energies	✓	✓
Voltage harmonics up to the 49 <sup>th</sup> order	✓	✓
Current harmonics up to the 49 <sup>th</sup> order	✓	✓
Voltage anomalies	✓	✓
Flicker	✓	✓
Voltage unbalance	✓	✓
Inrush currents	✓	✓
Voltage spikes and fast transients (5μs resolution)		✓

## 3. ELECTRICAL SPECIFICATIONS(\*)

Accuracy is indicated as ± (% readings + no. of digits) at 23°C ± 5°C, con relative humidity <60%HR

### TRMS AC/DC phase - neutral / phase - ground voltage, single / three phase systems

Range (V)	Crest factor	Resolution (V)	Accuracy	Input impedance
2.0 ÷ 600.0	≤ 2	0.1	± (0.5% rdg + 2 dgt)	10MΩ

The meter could be connected to external VTs with selectable ratio from 1 to 3000

### TRMS AC/DC phase - phase voltage, three phase systems

Range (V)	Crest factor	Resolution (V)	Accuracy	Input impedance
2.0 ÷ 1000.0	≤ 2	0.1	± (0.5% rdg + 2 dgt)	10MΩ

The meter could be connected to external VTs with selectable ratio from 1 to 3000

### Phase - neutral voltage anomalies, single / three phase systems

Range (V)	Voltage resolution (V)	Voltage accuracy	Time resolution (ms)	Time accuracy
2.0 ÷ 600.0	0.2	± (1.0% rdg + 2 dgt)	10	± 10ms

Maximum crest factor: 2

The meter could be connected to external VTs with selectable ratio from 1 to 3000

The voltage threshold can be set from ±1 to ±30%

### Phase - phase voltage anomalies, three phase systems

Range (V)	Voltage resolution (V)	Voltage accuracy	Time resolution (ms)	Time accuracy
2.0 ÷ 1000.0	0.2	± (1.0% rdg + 2 dgt)	10	± 10ms

Maximum crest factor: 2

The meter could be connected to external VTs with selectable ratio from 1 to 3000

The voltage threshold can be set from ±1 to ±30%

### TRMS AC current with standard STD transducer clamp

Range (mV)	Crest factor	Resolution (mV)	Accuracy (*)	Input impedance	Overload protection
1.0 ÷ 1000.0	≤ 3	0.1	± (0.5% rdg + 0.06 CFS)	510kΩ	5V

(\*) Accuracy of the transducer excluded

CFS = Clamp Full Scale

## TRMS AC current with flex FlexINT transducer – 300A full scale

Range (A)	Crest factor	Resolution (A)	Accuracy (*)	Input impedance	Overload protection
1.0 ÷ 49.9	≤ 3	0.1	± (0.5% rdg + 0.12 CFS)	510kΩ	5V
50.0 ÷ 300.0			± (0.5% rdg + 0.06 CFS)		

(\*) Accuracy of the transducer excluded

## TRMS AC current with flex FlexINT transducer – 3000A full scale

Range (A)	Crest factor	Resolution (A)	Accuracy (*)	Input impedance	Overload protection
5.0 ÷ 3000.0	≤ 3	0.1	± (0.5% rdg + 0.06 CFS)	510kΩ	5V

(\*) Accuracy of the transducer excluded

## Frequency (voltmetric and amperometric inputs)

Range (Hz)	Resolution (Hz)	Accuracy
42.5 ÷ 69.0	0.1	± (0.2% rdg + 1 dgt)

## Voltage and current harmonics

Range (Hz)	Resolution	Accuracy
DC ÷ 25 <sup>th</sup>	0.1V / 0.1A	± (5% rdg + 2 dgt)
26 <sup>th</sup> ÷ 33 <sup>rd</sup>		± (10% rdg + 2 dgt)
34 <sup>th</sup> ÷ 49 <sup>th</sup>		± (15% rdg + 2 dgt)

## Active, reactive and apparent power and energy

Range (W, VAR, VA)	Resolution (W, VAR, VA)	Accuracy (*)
Range (Wh, VARh, VAh)	Resolution (Wh, VARh, VAh)	Accuracy (*)
0 ÷ 999	1	± (1.0% rdg + Vmeas x 0.04% CFS)
1.000 ÷ 9.999 k	0.001 k	
10.00 ÷ 99.99 k	0.01 k	
100.0 ÷ 999.9 k	0.1 k	
1.000 ÷ 9.999 M	0.001 M	
10.00 ÷ 99.99 M	0.01 M	
100.0 ÷ 999.9 M	0.1 M	
1000 ÷ 9999 M	1 M	

(\*) Accuracy granted for power factor &gt; 0.5 and measured voltage &gt; 60V

## Power factor (cosφ)

Range	Resolution	Accuracy
0.20 ÷ 0.50	0.01	± 1.0
0.50 ÷ 0.80		± 0.7
0.80 ÷ 1.00		± 0.6

## Flicker Pst1', Pst, PLt

Range	Resolution	Accuracy
0.0 ÷ 10.0	0.1	Compliance to EN50160

## 4. GENERAL SPECIFICATIONS

### DISPLAY:

Features:	graphic TFT with backlight, ¼ VGA (320 x 240)
Touch screen:	present
Colours:	65536
Contrast:	adjustable

### POWER SUPPLY:

Internal power supply:	Li-ION, 3.7V rechargeable battery
Battery life:	> 3 hours
External power supplier:	AC/DC adapter
Auto power off:	after 5 minutes without using the instrument (no external power)

### MEMORY AND PC INTERFACE

Every parameter could be stored into the memory, the instrument saves the MIN, AVG and MAX value of the parameters each integration period which could be: 1, 2, 5, 10, 30 seconds, 1, 2, 5, 10, 15, 30, 60 minutes

Maximum parameters to be stored:	251
Memory:	> 3 months @ 251 parameters and integration period = 15 min
Internal memory:	15 Mbyte
External memory:	USB pen drive
External memory:	compact flash card
Operative system:	Windows CE
PC communication port:	USB

The instrument could store **SIMULTANEOUSLY** the following parameters:

- voltages, currents, power factors, powers, energies, etc.
- ingoing and outgoing power
- voltage anomalies
- voltage unbalance
- voltage and current harmonics
- flicker
- voltage spikes (PQA824 only)

### MECHANICAL FEATURES

Dimensions:	235 (W) x 165 (L) x 75 (D) mm
Weight (batteries included):	1.0 kg
IP degree:	IP50

### ENVIRONMENTAL CONDITIONS:

Reference temperature:	23°C ± 5°C
Working temperature:	0° ÷ 40°C
Working humidity:	< 80% UR
Storage temperature (batt. not included):	-10 ÷ 60°C
Storage humidity:	< 80% UR

### GENERAL REFERENCE STANDARDS:

EMC:	89/336/EEC guideline amended with 93/68/EEC (IEC61326)
LVD:	73/23/CEE guideline (IEC61010)
Insulation:	class 2 (double insulation)
Pollution degree:	2
Overvoltage category:	CAT IV 600V to ground, max 1000V between inputs
Use:	max altitude 2000m
Power Quality:	EN50160
Quality of electrical power:	EN61000-4-30 class B
Flicker:	EN61000-4-15, EN50160
Unbalance:	EN61000-4-7, EN50160

(\* ) Technical specification should be revised without notice