

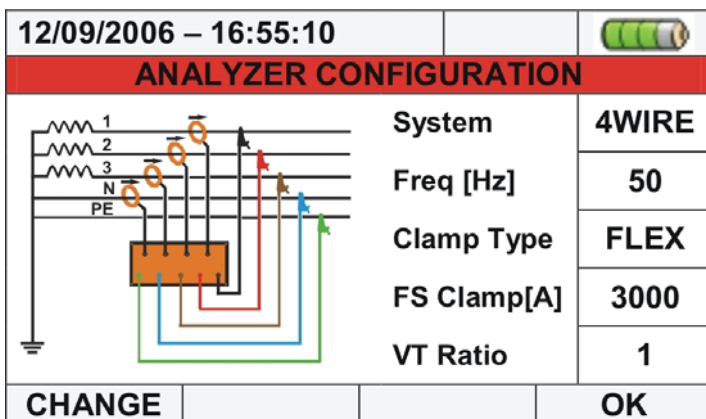
1. PQA82X INNOVATIVE FEATURES



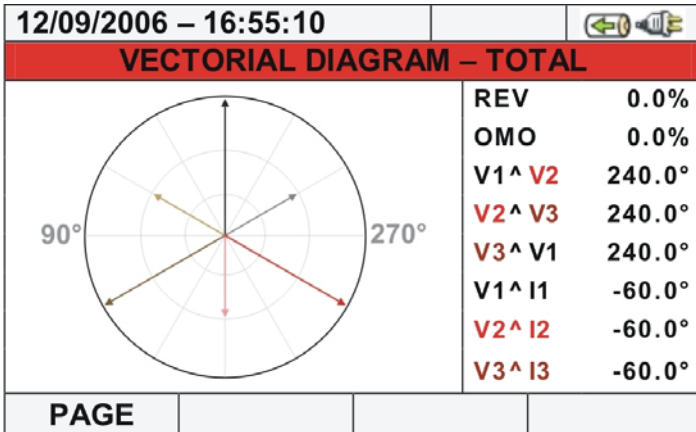
A wide (320x240pxls) graphical color TFT display with “touch screen” to surf the internal functions by using the supplied pointer pen



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 th order | ✓ | ✓ |
| Current harmonics up to the 49 th 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 th | 0.1V / 0.1A | ± (5% rdg + 2 dgt) |
| 26 th ÷ 33 rd | | ± (10% rdg + 2 dgt) |
| 34 th ÷ 49 th | | ± (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 > 0.5 and measured voltage > 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