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# Technical Data Logger PCE-PA 8300

**3 phases, measures power and analyses harmonics and system incidents / up to 3000 A AC / with SD memory / graphic display / various current clamps**

The PCE-PA 8300 power and harmonics analyser stands out due to its simple handling. The Clamp on Tester saves all the measured data on a SD memory card. The PCE-PA 8300 Clamp on Tester can be used to measure the capacity as well as to perform an analysis on the network. The power analyser PCE-PA 8300 can measure power up to 9999 MW. For analysis on the network the PCE-8300 exactly determines the power and network as well as harmonics up to the 50th order. All measured values are indicated on the graphic LCD display. Thus it is an easy task for the power analyser to detect distortions. For an exact analysis of the netwrk and its power the measurement data can be stored on the SD memory card with any back-up interval of your choice. Thus the Clamp on Tester facilitates long-term measurements. The Clamp on Tester can be purchased in two different kits. It can be either purchased with current clamps or with flexible rogowski coils.

- 3-phase Clamp on Tester
- measures up to 3000 A AC
- power clamps or rogowski coils
- harmonics analyser
- apparent, effective and reactive power
- measures efficiency power
- power clamps of various manufacturers
- SD memory
- adjustable back-up interval
- measures up to 600 V AC
- measures delay angle and frequency
- graphic display with display of harmonics
- robust enclosure
- auto- setting of measurement range (AC V)

## Technical specifications of the Clamp on Tester PCE-PA 8300

## Electrical Specifications

Voltage measurement (AC V)

| Measurement range | Resolution | Accuracy |
|---|---|---|
| 10 V ... 600 V (phase to neutral) | 0.1 V | ± (0.5 % + 0.5 V) |
| 10 V ... 600 V (phase to phase | 0.1 V | ± (0.5 % + 0.5 V) |

Current measurement (AC A) Set 1

| Measurement range | Resolution | Accuracy |
|---|---|---|
| 20 A | 0.001 A (< 10 A)<br>0.01 A (≥ 10 A) | ± (0.5 % + 0.1 A) |
| 200 A | 0.01 A (< 100 A)<br>0.1 A (≥ 100 A) | ± (0.5 % + 0.5 A) |
| 1200 A | 0.1 A (< 1000 A)<br>1 A (≥ 1000 A) | ± (0.5 A + 5 A) |

Current measurement (AC A) Set 2

| Measurement range | Resolution | Accuracy |
|---|---|---|
| 30 A | 0.001 A (< 10 A)<br>0.01 A (≥ 10 A) | ± (0.5 % + 0.1 A) |
| 300 A | 0.01 A (< 10 A)<br>0.1 A (≥ 10 A) | ± (0.5 % + 0.5 A) |
| 3000 A | 0.1 A (< 1000 A)<br>1 A (≥ 1000 A) | ± (0.5 A + 5 A) |

Effective power

| Measurement range | Resolution | Accuracy |
|---|---|---|
| 0 KW ... 9.999 KW | 0.001 KW | ± (1 % + 0.008 KW) |
| 10 KW ... 99.99 KW | 0.01 KW | ± (1 % + 0.08 KW) |
| 100 KW ... 999.9 KW | 0.1 KW | ± (1 % + 0.8 KW) |
| 1 MW ... 9.999 MW | 0.001 MW | ± (1 % + 0.008 MW) |

Apparent Power

| Measurement range | Resolution | Accuracy |
|---|---|---|
| 0 KVA ... 9.999 KVA | 0.001 KVA | ± (1 % + 0.008 KVA) |
| 10 KVA ... 99.99 KVA | 0.01 KVA | ± (1 % + 0.08 KVA) |
| 100 KVA ... 999.9 KVA | 0.1 KVA | ± (1 % + 0.8 KVA) |
| 1 MVA ... 9.999 MVA | 0.001 MVA | ± (1 % + 0.008 MVA) |

Reactive Power

| Measurement range | Resolution | Accuracy |
|---|---|---|
| 0 KVAR ... 9.999 KVAR | 0.001 KVAR | ± (1 % + 0.008 KVAR) |
| 10 KVAR ... 99.99 KVAR | 0.01 KVAR | ± (1 % + 0.08 KVAR ) |
| 100 KVAR ... 999.9 KVAR | 0.1 KVAR | ± (1 % + 0.8 KVAR ) |
| 1 MVAR ... 9.999 MVAR | 0.001 MVAR | ± (1 % + 0.008 MVAR) |

Active Energy

| Measurement range | Resolution | Accuracy |
|---|---|---|

| | | |
|---|---|---|
| 0 KWH ... 9.999 KWH | 0.001 KWh | ± (2 % + 0.008 KWh) |
| 10.00 KWH ... 99.99 KWH | 0.01 KWh | ± (2 % + 0.08 KWh) |
| 100.0 KWH ... 999.9 KWH | 0.01 KWh | ± (2 % + 0.8 KWh) |
| 1 MWH ... 9.999 MWH | 0.001 MMh | ± (2 % + 0.008 MWh) |

Apparent Energy

| Measurement range | Resolution | Accuracy |
|---|---|---|
| 0 KVARH ... 9.999 KVARH | 0.001 KVARh | ± (2 % + 0.008KVARh) |
| 10.00 KVARH ... 99.99 KVARH | 0.01 KVARh | ± (2 % + 0.08KVARh) |
| 100.0 KVARH ... 999.9 KVARH | 0.01 KVARh | ± (2 % + 0.8KVARh) |
| 1 MVARH ... 9.999 MVARH | 0.001 MVARh | ± (2 % + 0.008MVARh) |

Power Factor

| Measurement range | Resolution | Accuracy |
|---|---|---|
| 0 ... 1 | 0.01 | ± 0.04 |

Delay Angle

| Measurement range | Resolution | Accuracy |
|---|---|---|
| -180 ° ... +180 ° | 0.1 ° | ± 1 ° |

Frequency

| Measurement range | Resolution | Accuracy |
|---|---|---|
| 45 Hz ... 65 Hz | 0.1 Hz | ± 0.1 Hz |

Harmonic of AC Voltage at 50 / 60 Hz

| Measurement range | Resolution | Accuracy |
|---|---|---|
| 1 ... 20th order | 0.001 ... 1 A<br>0.1 % | ± (2 % + 0.5 A)<br>± (2 % + 10 Digit) |
| 21 ... 30th order | 0.001 ... 1 A<br>0.1 % | ± (2 % + 0.5 A)<br>± (2 % + 10 Digit) |
| 21 ... 50th order | 0.001 ... 1 A<br>0.1 % | not specified |

## General Specification of the Clamp on Tester PCE-PA 8300

| | |
|---|---|
| Display | 3.7 " point-matrix LCD (320 * 240 pixel) with LED background lights |
| Safety standards | IEC1010CAT III 600V |

| | | |
|---|---|---|
| Input resistance AC V | 10 MOhm | |
| Operating frequency of current clamp | 40 Hz ... 1 kHz | |
| Tested operating frequency of current clamp | 45 Hz ... 65 Hz | |
| Overload protection | AC V<br>AC A | 720 V RMS<br>1300 A with current clamp |
| Data Storage | SD memory card | |
| Recording interval | 1 second | |
| Data logging function | logging with real-time speed on SD memory card | |
| Filing interval | 2 ... 7200 seconds | |
| Data output (only for live display on computer) | per USB or RS232, depending on connection cable | |
| Operating temperature | 0 °C ... +50 °C | |
| Surrounding humidity | < 80 % RH | |
| | 8 x 1.5 V AA batteries | |
| Voltage supply | 9 V adapter | |
| Current drain | measurement device: 300 mA DC<br>current clamp: 34 mA DC | |
| Maximum wire diameter | 50 mm | |
| Weight | measurement device: 948 g (incl. battery)<br>current clamp: 467 g (incl. cable) | |
| Dimensions | device: 225 x 125 x 64 mm<br>current clamp: 210 x 64 x 33 mm<br>clamp jaw: 86 mm (exterior) | |

Caution while using the power analyser PCE-PA 8300 / Safety measures:

- Do not operate with the power analyser, the clamps or the cables, if they show visible damages.
- Be especially cautious while measuring on blanc wires and bus bars.
- In order to prevent any damages, perform measurements only within the ranges that are specified (avoid measurements close to the specified limits. Always consider all safety measures)
- Do not use the device under extreme temperatures, in direct sunlight, under extreme humidity or exposed to water.
- Avoid exposing the device to extreme shocks and always handle it with care.
- Before turning on the device, allow it to acclimatize to the environment it will be used in. This is particularly important when the device is taken from cold environments to warmer ones, and vice versa.
- This device should only be repaired by qualified technicians of PCE-instruments.
- Do not place the device with its display faced down on a surface to avoid damaging the keypad.
- Use the Power Analyser inside buildings. If it must be used outside, then use only under dry conditions.
- Do not expose the device to direct sunlight, high temperatures, high humidity or condensation when it is in use.
- This device is not protected against exposure to dust or exposure to water.
- Do not expose this device in corrosives areas or to explosive gases.
- Never use the Power Analyser with wet hands.
- Always wear a safety suit when handling the power analyser.
- Before connecting the test cables or clamps, always disconnect the device first.
- To avoid damage or a short circuit, leave the object being measured without a current before connecting the Power Analyser or the clamps.

- The inputs are not separated from each other.
- Remove all lines being measured that are no being used by the installation.
- First connect the test cable the the Power Analyser and then to the object being measured.
- Put down the test cables carefully when you are not using them.

## Delivery Contents of the Clamp on Tester PCE-PA 8300

1 x PCE-PA 8300 Clamp on Tester, 3 x amp clamps - depending on the ordered set, 4 x insulated alligator clips, 4 x safety test lines, 6 x 1.5 V AA batteries, 1 x 9 V mains adapter, 1 x carrying case, 1 x 2 GB SD memory card, 1 x instruction manual