



User Manual

PCE-GPA 50 Power Analyser



User manuals in various languages (français, italiano, español, português, nederlands, türk, polski, русский, 中文) can be found by using our product search on: www.pce-instruments.com

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1 Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. Damage or injuries caused by non-observance of the manual are excluded from our liability and not covered by our warranty.

- The device must only be used as described in this instruction manual. If used otherwise, this can cause dangerous situations for the user and damage to the meter.
- The instrument may only be used if the environmental conditions (temperature, relative humidity, ...) are within the ranges stated in the technical specifications. Do not expose the device to extreme temperatures, direct sunlight, extreme humidity or moisture.
- Do not expose the device to shocks or strong vibrations.
- The case should only be opened by qualified PCE Instruments personnel.
- Never use the instrument when your hands are wet.
- Never touch live components during the measurement. There is a danger to life.
- Never touch the bare measuring tips, otherwise electric shocks may occur.
- Before each measurement, make sure that the correct measurement function is set and that the test leads are connected correctly.
- Resistance, capacitance and temperature measurements as well as diode tests (if any) must only be carried out in a de-energised state.
- Before replacing the batteries or the fuses, all test leads must be removed from the meter.
- You must not make any technical changes to the device.
- The appliance should only be cleaned with a damp cloth. Use only pH-neutral cleaner, no abrasives or solvents.
- The device must only be used with accessories from PCE Instruments or equivalent.
- Before each use, inspect the case for visible damage. If any damage is visible, do not use the device.
- Do not use the instrument in explosive atmospheres.
- The measurement range as stated in the specifications must not be exceeded under any circumstances.
- Non-observance of the safety notes can cause damage to the device and injuries to the user.

We do not assume liability for printing errors or any other mistakes in this manual.

We expressly point to our general guarantee terms which can be found in our general terms of business.

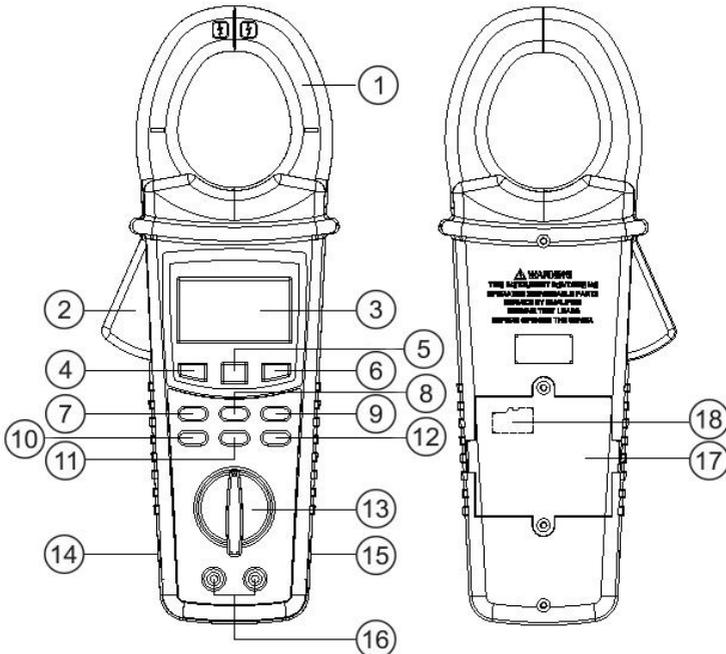
2 Specifications

Measuring function	Measurement range	Resolution	Accuracy
AC voltage	10 ... 600 V	0.1 V	±(0.5 % ... 3 digits)
AC V	peak-peak	0.1 V	±(5% ... 30 digits)
Alternating current	5 ... 2000 A	<100 A: 0.01 A	<200 A: ±(1 % + 0.5 A)
AC A		<1000 A: 0.1 A	>200 A: ±(1 % + 5 A)
	peak-peak	>1000 A: 1 A	±(5 % + 30 digits)
Power factor (PF)	0 ... 1	0.001	± 0.04
Phase angle	-180 ° ... 180 °	0.1 °	± 1° x PF
Frequency	45 ... 65 Hz	0.1 Hz	± 0.2 Hz
Active, reactive & apparent power	0 ... 9.999 M (W / VA / VAR)	0.1 ... 0.001 M (W / VA / VAR)	±(1.5 % + 20 digits)
Active, reactive & apparent energy	0k ... 9.999 M (WH / VAH / VARH)	0.001k ... 0.001 M (WH / VAH / VARH)	±(1.5 % + 20 digits)
Harmonics AC V	1. ... 20. order	0.1 V	±(2 % + 5 digits)
	21. ... 50. order	0.1 V	±(4 % + 5 digits)
Harmonics AC A	1. ... 20. order	<100 A: 0.01 A	±(2 % + 5 digits)
Alternating current		<1000 A: 0.1 A	
	21. ... 50. order	>1000 A: 1 A	±(4 % + 5 digits)
Harmonics AC V %	1. ... 20. order	0.10 %	±(2 % + 10 digits)
	21. ... 50. order	0.10 %	±(4 % + 20 digits)
Harmonics AC A %	1. ... 20. order	0.10 %	±(2 % + 10 digits)
	21. ... 50. order	0.10 %	±(4 % + 20 digits)
Absolute harmonic distortion	0 ... 20 %	0.10 %	±(2 % + 5 digits)
	20.1 ... 100 %	0.10 %	±(6% + 10 digits)
Temperature K-type thermocouple	-100 ... 199.9 °C	0.1 °C	±(1 % + 1 °C)
	200 ... 1300 °C	1 °C	±(1 % + 2 °C)
Display	graphic LCD		
AC V input impedance	10 MOhm		
Frequency range of current clamp	40 Hz ... 1 kHz		
Calibrated frequency of current clamp	45 ... 65 Hz		
Overload protection	AC V: 720 V RMS		
	AC A: 2100 A		
Data memory	micro SD card		
Display refresh rate	1 second		
Storage rate of data memory	2 ... 7200 s		
Storage format	XLS		
Interface	serial interface for live display on PC (SOFT-LUT-USB is required)		
Power supply	2 x 1.5 V AA battery		
	9 V / 800 mA mains adaptor		
Power consumption	60 mA DC		
Clamp opening	50 mm		
Operating conditions	0 ... 50 °C / 32 ... 122 °F, max. 80 % RH		
Weight	approx. 595 g / 1.3 lbs		
Dimensions	280 x 106 x 47 mm / 11 x 4.2 x 1.9 in		

3 Delivery scope

- 1 x current clamp PCE-GPA 50
- 1 x set of test leads
- 2 x alligator clips
- 1 x micro SD memory card
- 1 x mains adaptor 9 V / 800 mA
- 2 x 1.5 V AA battery
- 1 x carrying bag
- 1 x user manual

4 System description



- | | |
|-----------------------------------|---------------------------------------|
| ① Measuring clamp | ⑩ "◀" key |
| ② Opening key for measuring clamp | ⑪ "▼" key |
| ③ Display | ⑫ "▶" key |
| ④ "FUNC" key | ⑬ Rotary switch |
| ⑤ "HOLD" key | ⑭ Socket RS232 interface |
| ⑥ "REC" key | ⑮ Socket DC 9V mains adaptor |
| ⑦ "ENTER/SETUP" key | ⑯ Sockets test leads |
| ⑧ "▲" key | ⑰ Battery compartment |
| ⑨ "EXIT" key | ⑱ SD card slot in battery compartment |

4.1 Description of keys / switches

Rotary switch	Select the measuring function Meter on / off
"FUNC" key	Select the display indication
"HOLD" key	Freeze the current measured values
"REC" key	Record the measured values on the SD card
"Setup" key	Open the settings menu Confirm a selection
"EXIT" key	Exit the settings menu Backlight on / off
"▲" key	Move cursor up in the settings menu
"▼" key	Move cursor down in the settings menu
"◀" key	Move cursor to the left in the settings menu Harmonic analysis to the left
"▶" key	Move the cursor to the right in the settings menu Harmonic analysis to the right

5 Operation

5.1 Measurement preparation

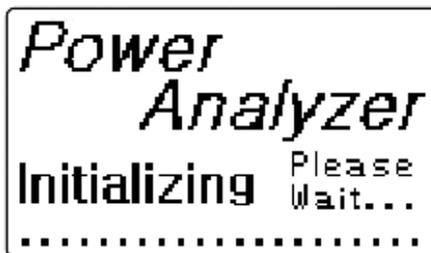
5.1.1 Inserting the battery and SD card

- Loosen the two fastening screws of the battery compartment at the rear side.
- Open the cover and insert two batteries (1.5 V AA) and a micro SD card.
- Close the compartment and fasten the screws.

5.1.2 Switch meter on/off

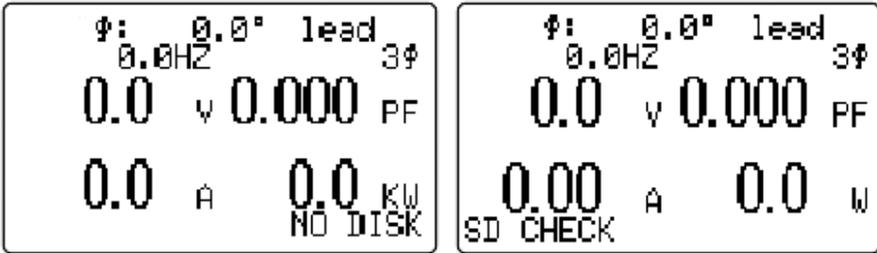
- Turn the rotary switch to the "3 phase" or "1 phase" position to switch on the meter.

The meter shows the following during the start-up phase:



- After using the meter, turn the rotary switch back to the "OFF" position.

5.1.3 Start screen



The flashing "NO DISK" indicator at the bottom right indicates that the SD card is missing or not inserted correctly.

During the brief display of "SD CHECK", it is read and checked.

5.1.4 Settings menu

Folder Name	Storage folder selection You can choose between 10 storage folders: WTA01 ... WTA10
File Name	File name selection You can choose between 50 file names
REC Date	Date / time of last storage
Sampling Time	Memory interval Setting the memory interval between 2 and 7200 seconds
Delete File	Delete file Deleting saved files on the SD card
SD Format	Format SD card Format the SD card
PT	Voltage transformer setting 1:1 to 1000:1
Beep	Control tone Switching on/off the control tone
MD	Peak load interval
Auto Power Off	Automatic power off Enabling/disabling automatic power off
Trans Ref	Nominal voltage as reference for overvoltage detection
SVDP	Limit value setting for overvoltage detection
Decimal	Decimal Decimal point setting USA =. / Europe =,
RS232 Out Sel	RS232 interface output options Selection of the values transmitted through the interface (max. 9 of 67)
Freq.	Frequency Selection between 50 Hz, 60 Hz or Auto
Temp. Unit	Temperature unit Selection between °C and °F
Start Time	Start time recording Setting the start time of data storage
Stop Time	Stop time recording Setting the end time of recording
Year	Year Setting current year
Month	Month Setting current month

Day	Day
	Setting current day
Hour	Hour
	Setting current hour
Minute	Minute
	Setting current minute
Second	Second
	Setting current second

5.1.5 Settings before the measurement

Press the "SETUP" key to enter the settings menu.

The current adjustable parameter flashes.

```
Folder Name: WTA01
File Name: 3P301001.XLS
REC Date: 2013/11/06
          11:00:05
Sampling Time: 2
Delete File: 0%
SD Format: 0%
PT: 1 : 1 1/3
```

```
Beep: ON MD: 60 MIN
AUTO POWER OFF: N
Trans Ref: 220.0 V
SDVP: 10%
Decimal: USA (.)
RS232 OUT SEL:
V I P S Q
PF 0 FREQ 2/3
```

```
Freq: AUTO
Temp. Unit: °C
START TIME: 00:00
STOP TIME: 00:00
Year/Month/Date
2013 11 06
Hour/Minute/Second
16 34 48 3/3
```

5.1.5.1 Selection of memory location

- Select "Folder Name" with the ▲ ▼ keys. "Folder Name" flashes.
- Press the ◀ or ▶ key. "WTAxx" flashes.
- Use the ▲ ▼ keys to select the desired memory location WTA01 ... WTA10.
- Press the ◀ or ▶ key. "Folder Name" flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.2 Memory number selection

- Select "File Name" with the ▲ ▼ keys. "File Name" flashes.
- Press the ◀ or ▶ key. Depending on the position of the rotary switch, one of the following memory pre-numbers flashes.
 - 1P201001 1P2 single-phase measurement
 - 3P301001 : 3P3 three-phase measurement
 - HAV01001 : HAV harmonic voltage measurement
 - HAA01001 : HAA harmonic current measurement
 - SIN01001 : SIN waveform current and voltage
 - TRA01001 : TRA harmonic measurement
 - TMP01001 : TMP temperature measurement
- Use the ▲ ▼ keys to select the desired memory number, e. g. 1P201001, 1P201050. Hold down the keys for fast scrolling.
NO FILE below the memory number indicates a free memory number.
- Press the ◀ or ▶ key. "File Name" flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.3 Storage interval

- Select "Sampling Time" with the ▲ ▼ keys. "Sampling Time" flashes.
- Press the ◀ or ▶ key. The currently set storage interval flashes.
- Use the ▲ ▼ keys to select the desired storage interval.
Press and hold the keys for fast scrolling.
Press the ◀ or ▶ key. "Sampling Time" flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.4 Delete memory contents

- Select "Delete File" with the ▲ ▼ keys. "Delete File" flashes.
- Press and hold the ◀ or ▶ key for 2 seconds. "Y" or "N" is displayed. "N" flashes.
- Use the ▲ ▼ keys to select "Y" to delete memory or "N" in order not to delete memory.
- Press the "SETUP / ENTER" key to confirm the selection. "Delete File" flashes.
Or hold down the ◀ or ▶ key for 2 seconds. No action is performed and "Delete File" flashes again.
Attention! If "Y" is selected, all data on the SD card will be deleted.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.5 Format SD card

- Select "SD Format" with the ▲ ▼ keys. "SD Format" flashes.
- Press and hold the ◀ or ▶ key for 2 seconds. "Y or N" is displayed. "N" flashes.
- Use the ▲ ▼ keys to select "Y" to format SD card or "N" in order not to format SD card.
- Press the "SETUP / ENTER" key to confirm the selection. "SD Format" flashes. Or press and hold the ◀ or ▶ button for 2 seconds. No action is taken and "SD Format" flashes again.
Caution! If "Y" is selected, all data on the SD card is deleted and the card is formatted.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.6 Voltage transformer ratio setting

- Select "PT" with the ▲ ▼ keys. "PT" flashes.
- Press the ◀ or ▶ key. The currently set transformer ratio flashes.
- Use the ▲ ▼ keys to select the transformer ratio.
Press and hold the keys for fast scrolling.
Press the ◀ or ▶ key. "PT" flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.7 Control tone

- Select "Beep" with the ▲ ▼ keys. "Beep" flashes.
- Press the ◀ or ▶ key. "ON" or "OFF" flashes.
- Use the ▲ ▼ keys to select "OFF" to disable the control tone or "ON" to enable the control tone.
- Press the ◀ or ▶ key. "Beep" flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.8 Peak load interval

- Select "MD" with the ▲ ▼ keys. "MD" flashes.
- Press the ◀ or ▶ key. The currently set interval time flashes.
- Use the ▲ ▼ keys to select the desired interval time.
Press and hold the keys for fast scrolling.
Press the ◀ or ▶ key. "MD" flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.9 Automatic power off

- Select "Auto Power Off" with the ▲ ▼ keys. "Auto Power Off" flashes.
- Press the ◀ or ▶ key. "Y" for Yes flashes.
- Use the ▲ ▼ keys to choose between "Y" for Yes or "N" for No.
Attention! If Yes is selected, the meter is automatically switched off after 10 minutes to save battery power.
- Press the ◀ or ▶ key. "Auto Power Off" flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.10 Rated voltage overvoltage detection

- Select "Trans Ref" with the ▲ ▼ keys. "Trans Ref" flashes.
- Press the ◀ or ▶ key. The currently set nominal voltage value flashes.
- Use the ▲ ▼ keys to select the desired nominal voltage value.
Press and hold the keys for fast scrolling.
Press the ◀ or ▶ key. "Trans Ref" flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.11 Limit value setting overvoltage

- Select "SDVP" with the ▲ ▼ keys. "SDVP" flashes.
- Press the ◀ or ▶ key. The currently set percentage value flashes.
- Use the ▲ ▼ keys to select the desired percentage value.
Deviation from the nominal voltage value in per cent
- Press the ◀ or ▶ key. "SDVP" flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.12 Decimal point

- Select "Decimal" with the ▲ ▼ keys. "Decimal" flashes.
- Press the ◀ or ▶ key. "Euro (,)" or "USA (.)" flashes.
- Use the ▲ ▼ keys to select between "Euro (,)" or "USA (.)".
Attention! Adjust the setting to the country setting of your PC. If the setting is not correct, the data will be interpreted incorrectly by your PC.
- Press the ◀ or ▶ key. "Auto Power Off" flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.13 RS232 interface output options

- Select "RS232 Out Sel" with the ▲ ▼ keys. "RS232 Out Sel" flashes.
- Press and hold the ◀ or ▶ key for 2 seconds. 4 pages are available for you to select the transferable parameters.
- Use the ▲ ▼ ◀▶ keys to select the parameters to be output via the interface.
- Press the "SETUP / ENTER" key to confirm the selection.
The selected parameters flash. The number of selected parameters is shown in the upper left corner of the display. When "Full" is displayed, the max. 9 transferable parameters have been exhausted.
- By holding the ▲ key for 2 s, you can delete the complete selection.
- To switch quickly between pages, press and hold the ▼ key for 2 s. The page number flashes in the upper right corner. Use the ◀▶ keys to select the pages. Press and hold the ▼ key for 2 s to return to the standard selection mode.
- Press and hold the ◀ key until "RS232 Out Sel" flashes. The selected parameters are displayed below "RS232 Out Sel".
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.14 Frequency

- Select "Freq." with the ▲ ▼ keys. "Freq." flashes.
- Press the ◀ or ▶ key. The set range flashes.
- Use the ▲ ▼ keys to select the desired range.
- Press the ◀ or ▶ key. "Freq." flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.15 Temperature unit

- Select "Temp. Unit" with the ▲ ▼ keys. "Temp. unit" flashes.
- Press the ◀ or ▶ key. The set temperature unit flashes.
- Use the ▲ ▼ keys to select the desired temperature unit.
- Press the ◀ or ▶ key. "Temp. unit" flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.16 Recording time (time slot)

- Select "Start Time" with the ▲ ▼ keys. "Start Time" flashes.
- Press the ◀ or ▶ key. The hour entry (recording start time) flashes.
- Use the ▲ ▼ ◀▶ keys to select the start time in hours and minutes.
Press and hold the ▲ ▼ keys for fast scrolling.
- Press the ◀ or ▶ key. "Start Time" flashes.
- Press the ▼ key to enter the time for the end of recording. "Stop Time" flashes.
- Press the ◀ or ▶ key. The hour entry (end of recording) flashes.
- Use the ▲ ▼ ◀▶ keys to select the time in hours and minutes.
Press and hold the ▲ ▼ keys for fast scrolling.
- Press the ◀ or ▶ key. "Stop Time" flashes.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

5.1.5.17 Date / Time

- Select "Year" with the ▲ ▼ keys. "Year" flashes.
- Press the ◀ or ▶ key. The year flashes.
- Use the ▲ ▼ keys to select the current year. Press and hold the ▲ ▼ keys for fast scrolling.
- Press the ◀ or ▶ key. "Year" flashes.
- Press the ▼ key to enter the month. "Month" flashes.
- Press the ◀ or ▶ key. The month number flashes.
- Use the ▲ ▼ keys to select the current month. Press and hold the ▲ ▼ keys for fast scrolling.
- Press the ◀ or ▶ key. "Month" flashes.
- Press the ▼ key to go to the day entry. "Date" flashes.
- When entering the number of the day, hour, minute and second, proceed in the same way as when entering the year and month.
- Press the ▼ key to move to the next setting parameter or the ▲ key to move to the previous setting parameter.

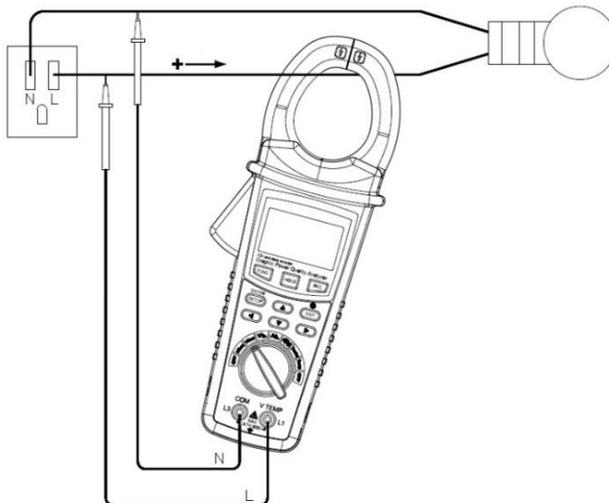
You can exit the settings menu from any position with the "EXIT" key.

5.2 Measurement

5.2.1 Single-phase measurement

- Turn the rotary switch to the position "1 phase".
- Use the test leads to contact the L1 and N conductors as described in the connection diagramme.
- Enclose the conductor L1 with the measuring clamp.

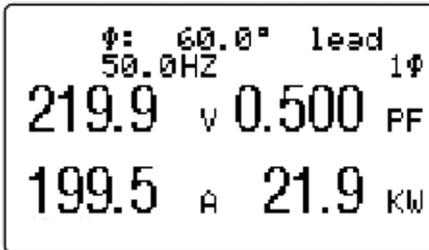
Wiring diagramme



- With the "FUNC" key you can call up 4 pages with the following measured values.
- Disable automatic power off for longer lasting measurements.

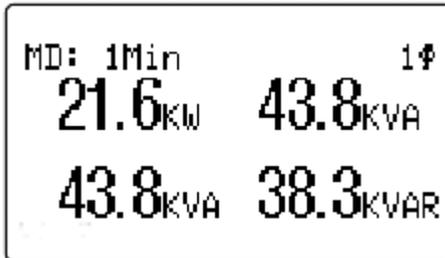
Page 1

Voltage (V), current (A), power factor (PF) active power (KW).



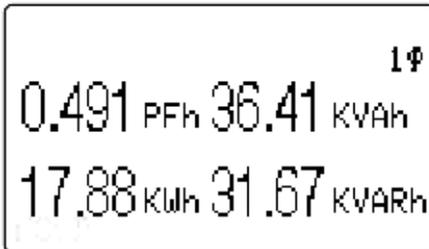
Page 2

Active power (KW) and apparent power (KVA) from the peak load interval (left side).
 The current apparent power (KVA) and the current reactive power (KVAR).



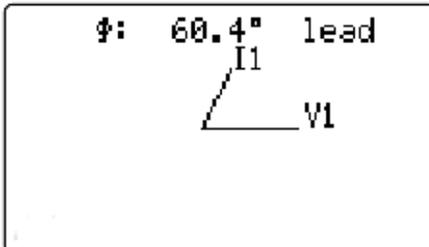
Page 3

Energy measurement (PFh, kWh, KVAh, kvarh)



Page 4

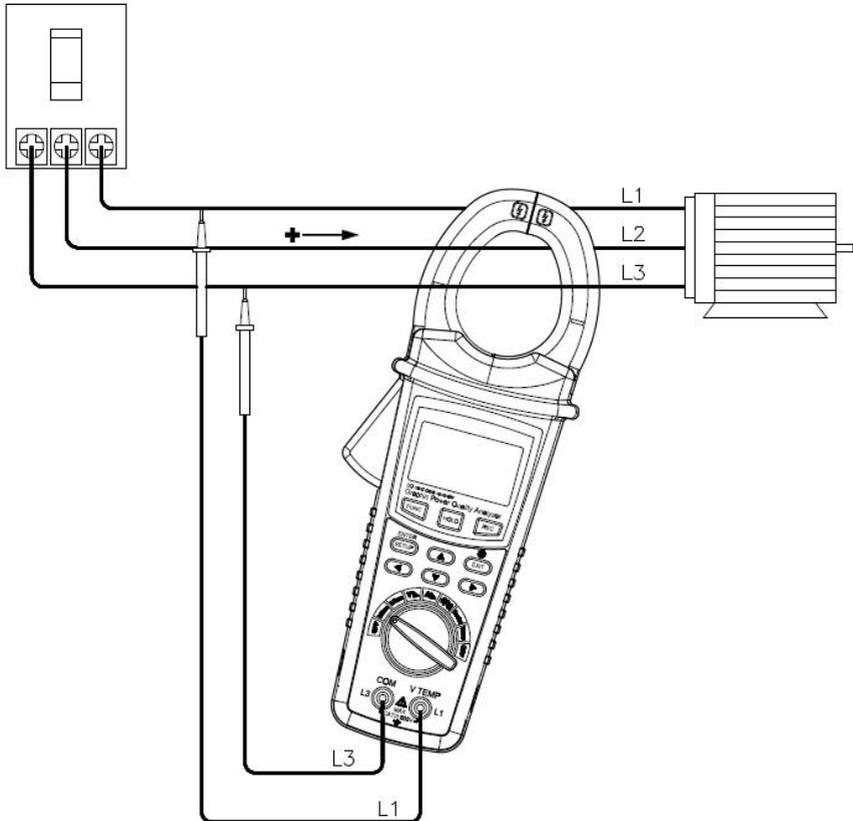
Graphical representation



5.2.2 3-phase measurement symmetrical network

- Turn the rotary switch to position "3 phase".
- Use the test leads to contact the conductors L1 and L3 as described in the wiring diagramme.
- Enclose the conductor L2 with the measuring clamp.

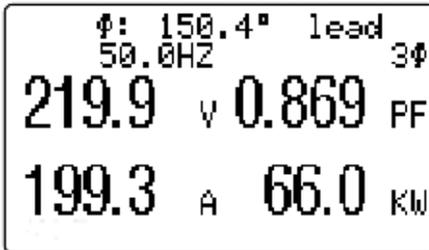
Wiring diagramme



- With the "FUNC" key you can call up 4 pages with the following measured values.
- Disable automatic power off for longer lasting measurements.

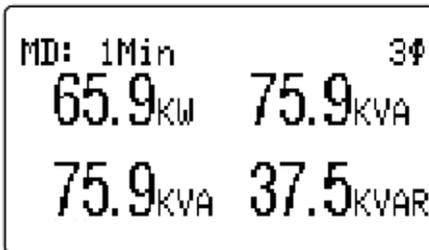
Page 1

Voltage (V), current (A), power factor (PF) Active power (KW).



Page 2

Active power (KW) and apparent power (KVA) from the peak load interval (left side).
 The current apparent power (KVA) and the current reactive power (KVAR)



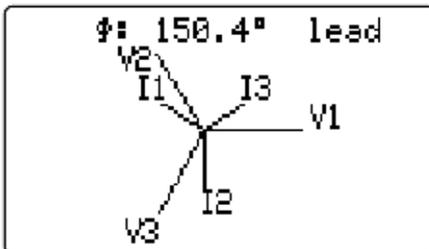
Page 3

Energy measurement (PFh, kWh, KVAh, kvarh)



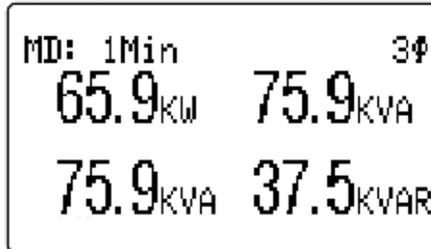
Page 4

Graphical representation



5.2.3 Reset peak load value

- Call up the following page in measuring mode with the "FUNC" key. Press and hold the "EXIT" key for more than 6 seconds.



5.2.4 Reset hourly output

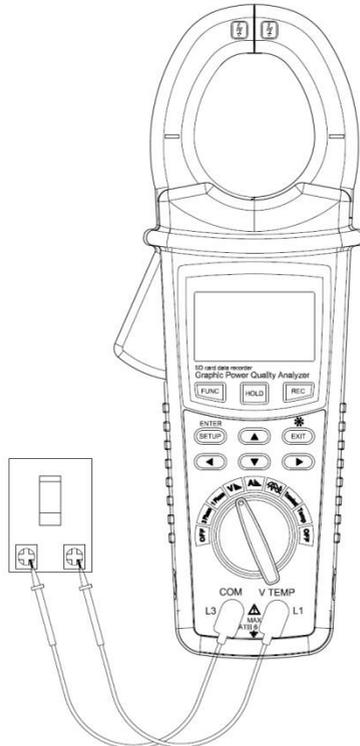
- Call up the following page in measuring mode with the "FUNC" key. Press and hold the "EXIT" key for more than 6 seconds.



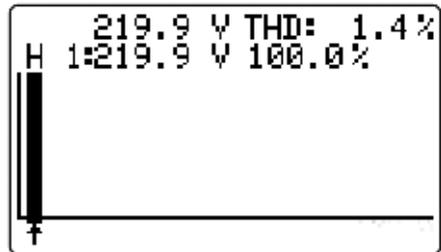
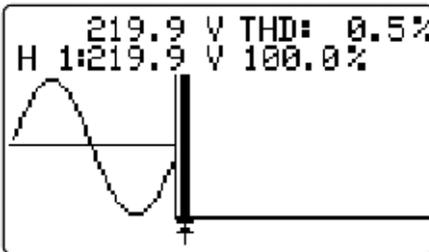
5.2.5 Measurement of voltage harmonics

- Turn the rotary switch to position "V_{THD}".
- Use the test leads to contact the L1 and N conductors as described in the wiring diagramme.

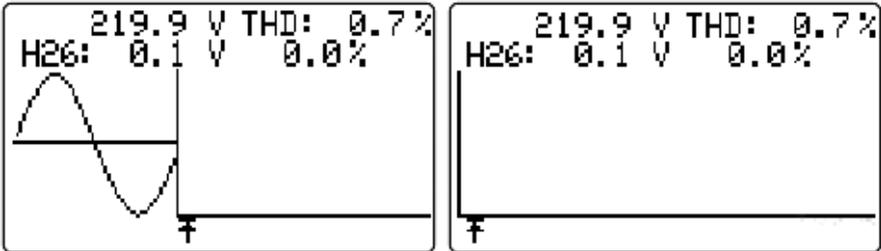
Wiring diagram



- With the "FUNC" key you can call up the following 2 pages.
Voltage harmonics with and without display of the waveform.



- Press and hold the ► key for more than 2 s to switch between the voltage harmonic 1 ... 25 and 26 ... 50 ranges.

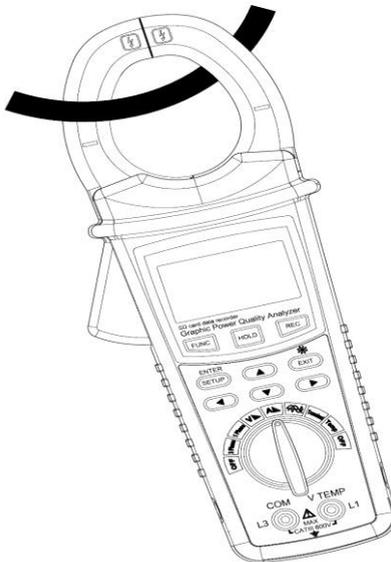


- Use the ◀ and ▶ keys to select between the individual voltage harmonics.

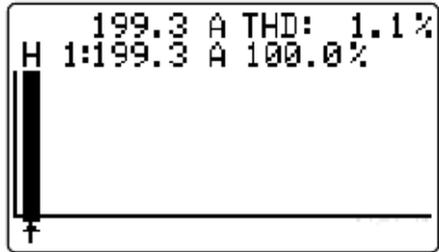
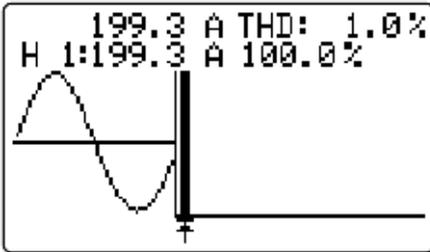
5.2.6 Measurement of current harmonics

- Turn the rotary switch to position "A \llcorner ".
- Enclose the conductor to be measured with the measuring clamp.
- Please ensure the correct frequency setting in the settings menu 5.1.5.14 or contact L1 and N with the test leads.

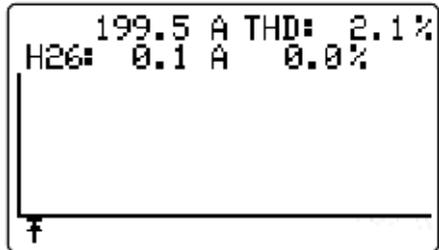
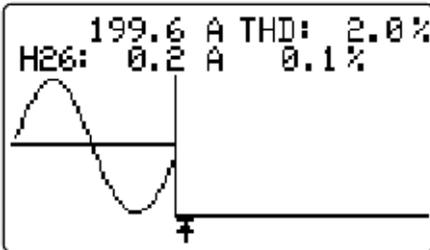
Wiring diagramme



- With the "FUNC" key you can call up the following 2 pages:
Current harmonic with and without display of the waveform.



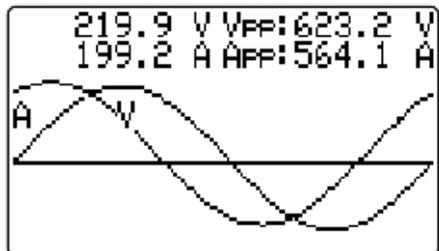
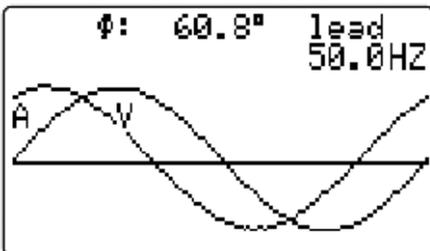
- Press and hold the ► key for more than 2 s to switch between the current harmonic ranges 1 ...25 and 26 ... 50.



- Use the ◀ and ▶ keys to select between the individual current harmonics.

5.2.7 Voltage and current waveform graph

- Turn the rotary switch to the "A" position.
- Enclose the conductor to be measured with the measuring clamp.
- Contact L1 and N with the test leads.
- With the "FUNC" key you can call up the following 2 pages:



5.2.8 Overvoltage measurement

- Turn the rotary switch to the "Transient" position.
- Use the test leads to contact the L1 and N conductors.

If the set limit values are met, "DIP" is displayed.

If the set limit values are exceeded, "SWELL" is displayed.

At a voltage $\leq 40.0V$, "DIP-OUTAGE" is displayed.

Any change, exceeded limit value or voltage $\leq 40.0V$ is saved with date and time.

```

SWELL: 242.0 V 00/99
DIP: 198.0 V
OUTAGE: 40.0 V
RECORD NUMBER: 00
RECORD DATE: 00/00/00
RECORD TIME: 00:00:00
STATUS: REC
  
```

```

SWELL: 242.0 V 03/99
DIP: 198.0 V
OUTAGE: 40.0 V
RECORD NUMBER: 03
RECORD DATE: 13/11/08
RECORD TIME: 16:16:50
STATUS: SWELL REC
  
```

```

SWELL: 242.0 V 04/99
DIP: 198.0 V
OUTAGE: 40.0 V
RECORD NUMBER: 04
RECORD DATE: 13/11/08
RECORD TIME: 16:16:57
STATUS: DIP REC
  
```

```

SWELL: 242.0 V 10/99
DIP: 198.0 V
OUTAGE: 40.0 V
RECORD NUMBER: 10
RECORD DATE: 13/11/08
RECORD TIME: 16:19:00
STATUS: DIP-OUTAGE REC
  
```

5.2.9 Temperature measurement

- Connect the optionally available temperature sensor to the sockets for the test leads, observing correct polarity.
- Turn the rotary switch to the "Temp" position.
- If necessary, change the temperature unit as described in item 5.1.5.15.

```

Type K
25.2 °C
  
```

```

Type K
77.6 °F
  
```

5.3 Logger function

5.3.1 Logging without a time slot

In the settings menu under item 5.1.5.16, no start and stop time must be set.

- Press the "REC" key to start or stop the logging function.

The data will be saved in the interval set under item 5.1.5.3. The enabled logging function is shown on the display at the bottom left by the indication "REC".

If there are more than 30000 records, a new file with a new storage name is automatically created.

5.3.2 Logging with time slot preset

- In the settings menu under item 5.1.5.16, set a start and stop time.
- Press the "REC" key to start or stop the logging function.

The meter starts the logging function with the interval given in item 5.1.5.3 when the start time is reached and ends the function when the stop time is reached. The logging function records the data daily at the set time by pressing the "REC" key meter it is switched off. When the logging function is switched on, "REC" is shown at the bottom left of the display.

- By holding down the "REC" key, you can also end the logging function during the active log phase.

If there are more than 30000 records, a new file with a new storage name is automatically created.

5.3.3 Spontaneous logging with time slot preset

- If the logging function is enabled, disable it by pressing the "REC" key.
- Press and hold the "REC" key for 2 seconds to start the logging function.

The meter starts the logging function with the interval set under item 5.1.5.3 directly and stops the function when the set stop time is reached. The logging function records the data daily at the set time by pressing the "REC" key until the meter is switched off. When the logging function is enabled, "REC" is shown at the bottom left of the display.

- >By holding down the "REC" key, you can also end the logging function during the active log phase.

If there are more than 30000 records, a new file with a new storage name is automatically created.

If "ChangeSD" is shown at the bottom left of the display, the SD card memory is exhausted or the SD card has an error.

If "NO DISK" is shown at the bottom right of the display after pressing the "REC" button, insert an SD card or check that it is correctly inserted.

5.4 Freezing the current measured values

- Press the "HOLD" key to freeze the currently displayed values.
- Press the "HOLD" key again to return to the current reading.

The enabled hold function is displayed at the bottom left by the indication "Hold".

5.4.1 Saving the frozen display view

- Press the "REC" key while the hold function is activated.

You can occupy a maximum of 50 memory locations.
The display view is saved 1:1 as an image (BMP file).

5.5 Backlight / Exit

- Press the "EXIT" key during the measurement to switch the backlight on or off.
- Press the "EXIT" key during the settings in the settings menu to return to measuring mode.

6 Read SD card

- Open the battery compartment on the back of the meter.
- Disconnect all test leads and the measuring clamp from the connected conductors before opening. Proceed as described in item 5.1.1.
- Remove the SD card and insert it directly or with the help of an adapter into the slot on the PC.
- Start the spreadsheet programme and open the file with the extension "XLS".

Make sure that the decimal point is set correctly for your region as described in item. Failure to do so may result in incorrect display of the measured values.

The saved values can also be displayed as a graph in the spreadsheet programme. Please refer to the help section or the instructions of your spreadsheet programme.

7 Battery replacement

Replace the battery as soon as the  icon (battery voltage low) appears at the top left of the display.

Disconnect all test leads and the measuring clamp from the connected conductors before opening. Proceed as described in item 5.1.1.

8 Plug-in mains adaptor

Always use the plug-in mains adaptor for measurements with the logging function. This will prevent the measurement from being interrupted due to exhausted batteries.

As soon as you connect the plug-in mains adaptor to the PCE-GPA 50, the battery supply is switched off. In the event of a power failure, the batteries serve as a backup.

9 RS232 interface

Via the RS232 interface, the parameters described in item 5.1.5.13 can be transferred directly to a PC.

A special cable with 3.5 mm jack plug and USB converter is required for this.

(PCE part number: SOFT-LUT-USB)

The software is made available for download after the purchase of the data cable.

The meter has an RS232 interface via a 3.5 mm socket. The output is a 16-digit data string that can be set up according to user-specific requirements. An RS232 cable with the following features is required to connect the meter to a PC:

The 16-digit data string is displayed in the following format:

D15 D14 D13 D12 D11 D10 D9 D8 D7 D6 D5 D4 D3 D2 D1 D0

The numbers stand for the following parameters:

D15	Start Word
D14	4
D13	1 ~ 9
D12 & D11	Annunciator for Display
	03=% B9 = MACA D0 = MW/Hr
	31=HZ C0 = MW D1 = GW/Hr
	32=DEGREE C1 = GW D2 = TW/Hr
	48=K WATT C2 = TW D3 = KVA/Hr
	50=ACV C3 = MVA D4 = MVA/Hr
	52=ACA C4 = GVA D5 = GVA/Hr
	64=KVA C5 = TVA D6 = TVA/Hr
	65=KW/Hr C6 = KVAR D7 = KVAR/Hr
	B6 = KACV C7 = MVAR D8 =MVAR/Hr
	B7 = MACV C8 = GVAR D9 = GVAR/Hr
	B8 = KACA C9 = TVAR E0 = TVAR/Hr
	F9 = PF G2 = PFH
D10	Polarity 0 = Positive 1 = Negative
D9	Decimal Point(DP), position from right to the left 0 = No DP, 1= 1 DP, 2 = 2 DP, 3 = 3 DP
D8 to D1	Display reading, D1 = LSD, D8 = MSD For example : If the display reading is 1234, then D8 to D1 is : 00001234
D0	End Word

Baud rate	9600
Parity	No parity
Data bit no.	8 Data bits
Stop bit	1 Stop bit

10 Contact

If you have any questions, suggestions or technical problems, please do not hesitate to contact us. You will find the relevant contact information at the end of this user manual.

11 Disposal

For the disposal of batteries in the EU, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations.

If you have any questions, please contact PCE Instruments.



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