USER MANUAL

CLAMP METER

PCE-DC 25

ENGLISH



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

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.
- 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.
- No voltage must be applied to the meter when the resistor function is selected.
- Switch off the meter when not in use.
- Select the measuring task before connecting the test leads to the meter.
- The rotary selector switch must not be moved during a measurement.
- When measuring current, the voltage applied must not exceed 600 V AC/DC.
- Before replacing the batteries, the test leads must be removed and the meter must be switched off.

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.

SPECIFICATIONS

Measurement range	Resolution	Accuracy
DC voltage		
600,0 mV DC	0,1 mV DC	±(0,5 % + 8 Digits)
6,000 V DC	0,001 V DC	±(1,5 % + 5 Digits)
60,00 V DC	0,01 V DC	±(1,5 % + 5 Digits)
600,0 V DC	0,1 V DC	±(1,5 % + 5 Digits)
1000 V DC	1 V DC	±(1,5 % + 5 Digits)
Input impedance: >10 MΩ Overvoltage protection: 1000 V AC/DC		
Alternating voltage		
6,000 V AC	0,001 V AC	±(1,5 % + 5 Digits)
60,00 V AC	0,01 V AC	±(1,5 % + 5 Digits)
600,0 V AC	0,1 V AC	±(1,5 % + 5 Digits)
1000 V AC	1 V AC	±(1,5 % + 5 Digits)
Peak value (PEAK) accuracy: ±10 %, peak value (PEAK) response time: 1 ms, Input impedance: >10 MΩ, overvoltage protection: 1000 V AC/DC The accuracy refers to a measurement range of 10 ... 100 % for a sine wave.		
Low-pass filter (LowZ) (50 ... 400 Hz)		
6,000 V AC	0,001 V AC	±(3,0 % + 40 Digits)
60,00 V AC	0,01 V AC	±(3,0 % + 40 Digits)
300,0 V AC	0,1 V AC	±(3,0 % + 40 Digits)
Input impedance<300 kΩ, overvoltage protection: 1000 V AC/DC The accuracy refers to a measurement range of 10 ... 100 % for a sine wave.		
AC with DC voltage (50 ... 400 Hz)		
6,000 V AC	0,001 V AC	±(2,5 % + 20 Digits)
60,00 V AC	0,01 V AC	±(2,5 % + 20 Digits)
600,0 V AC	0,1 V AC	±(2,5 % + 20 Digits)
1000 V AC	1 V AC	±(2,5 % + 20 Digits)
Input impedance>10 MΩ		

Measurement range	Resolution	Accuracy
Direct current		
600,0 A DC	0,1 A DC	±(2,5 % + 5 Digits)
1000 A DC	1 A DC	±(2,8 % + 5 Digits)
Overvoltage protection: 1000 A DC		
Alternating current (50 ... 60 Hz)		
600,0 A AC	0,1 A AC	±(2,5 % + 5 Digits)
1000 A AC	1 A AC	±(2,8 % + 5 Digits)
Overload protection: 1000 A AC/DC		
Flexible current clamp (50 ... 400 Hz)		
30,00 A AC	0,01 A AC	±(3,0 % + 5 Digits)
300,0 A AC	0,1 A AC	±(3,0 % + 5 Digits)
3000 A AC	1 A AC	±(3,0 % + 5 Digits)
Overload protection: 3000 A AC/DC The accuracy refers to a measurement range of 10 ... 100 % for a sine wave.		
Resistance		
600,0 Ω	0,1 Ω	±(1,0 % + 10 Digits)
6,000 kΩ	0,001 kΩ	±(1,5 % + 5 Digits)
60,00 kΩ	0,01 kΩ	±(1,5 % + 5 Digits)
600,0 kΩ	0,1 kΩ	±(1,5 % + 5 Digits)
6,000 MΩ	0,001 MΩ	±(2,5 % + 5 Digits)
60,00 MΩ	0,01 MΩ	±(3,5 % + 10 Digits)
Overvoltage protection1000 V AC/DC		
Continuity test		
Signal tone: <50 Ω Overvoltage protection: 1000 V AC/DC		
Diode test		
Test current: <1.5 mA Maximum voltage with open circuit: 3.3 V DC		

Measurement range	Resolution	Accuracy
Frequency measurement		
9,999 Hz ... 99,99 kHz	0,01 ... 10 Hz	±(1,2 % + 5 Digits)
Overvoltage protection: 1000 V AC/DC Sensitivity >5 Vrms with a duty cycle of 20 ... 80 %		
Duty cycle		
10,0 ... 90,0 %	0,1 %	±(1,2 % + 8 Digits)
Pulse range: 40 Hz ... 10 kHz Pulse amplitude: ±5 V (0.1 ... 100 ms)		
Capacity		
60,00 nF	0,01 nF	±(4,0 % + 20 Digits)
600,0 nF	0,1 nF	±(3,0 % + 8 Digits)
6,000 µF	0,001 µF	±(3,0 % + 8 Digits)
60,00 µF	0,01 µF	±(3,0 % + 8 Digits)
600,0 µF	0,1 µF	±(3,0 % + 8 Digits)
6000 µF	1 µF	±(5,0 % + 8 Digits)
60,00 mF	0,01 mF	±(5,0 % + 20 Digits)
100,0 mF	0,1 mF	±(5,0 % + 20 Digits)
Overvoltage protection1000 AC/DC		
Temperature measurement (K-type thermocouple)		
-40 ... 600,0 °C	0,1 °C	±(1,5 % + 5 Digits)
600 ... 1000 °C	1 °C	±(1,5 % + 5 Digits)
-40 ... 600,0 °F	0,1 °F	±(1,5 % + 9 Digits)
600 ... 1800 °F	1 °F	±(1,5 % + 9 Digits)
Overvoltage protection: 1000 V AC/DC The accuracy refers to the meter without temperature probe. Specifications based on a stable ambient condition of ±1 °C. The measured value rises by 2 °C during prolonged measurement.		

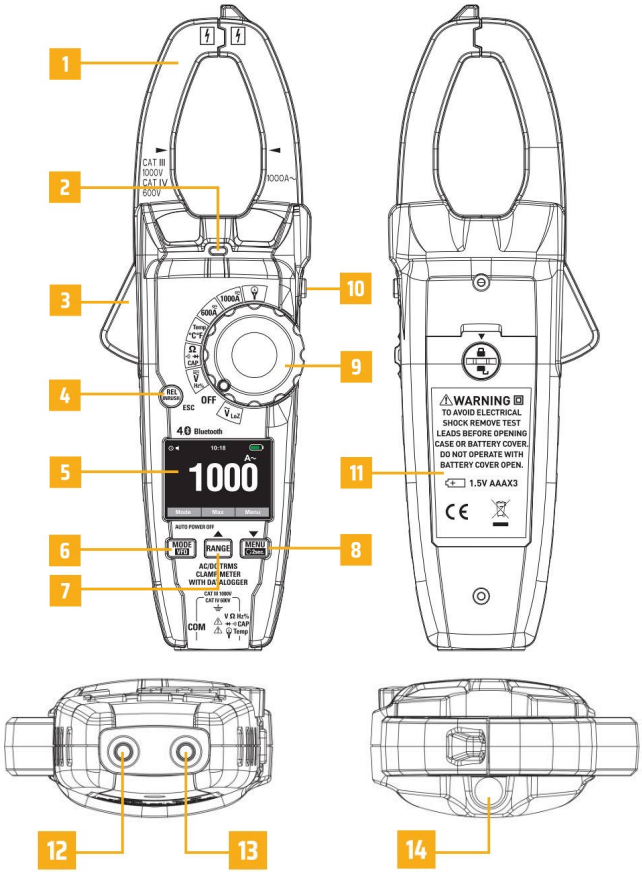
Further specifications	
Current clamp aperture	34 mm / 1,3 ``
NCV	>150 V AC
Display	LC colour display
Display when meas. range is exceeded	OL (Overload)
Measuring rate	3 measured values per second
Interface	Bluetooth
Operating conditions	5 ... 40 °C / 41 ... 104 °F <80 % RH, non-condensing at 31 °C / 87 °F linearly decreasing to 50 % RH, non-condensing at 40 °C / 104 °F
Storage conditions	-20 ... 40 °C / -4 ... 140 °F <80 % RH non-condensing
Maximum working height	2000 m / 7000 ft
Power supply	3 x 1.5 V AAA battery
Automatic power off	off, 15, 30, 45, 60 minutes
Dimensions	250 x 80 x 40 mm
Weight	365 g

DELIVERY SCOPE

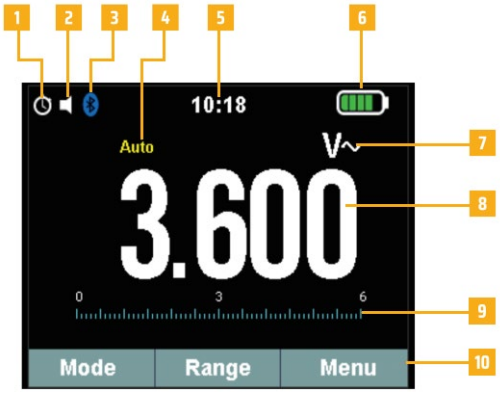
1 x clamp meter PCE-DC 25
1 x pair of test leads
1 x K-type thermocouple
1 x thermocouple adaptor
3 x 1.5 V AAA battery
1 x transport bag
1 x user manual

DEVICE DESCRIPTION

1 - Current clamp
2 - Non-contact voltage indicator (NCV)
3 - Switch for opening the current clamp
4 - Button for exiting the menu, measuring inrush current, and correlating the measured value
5 - Display
6 - Button for switching between sub-functions (mode) and switching to measurement on a variable frequency drive (VFD)
7 - Button for setting the measuring range
8 - Menu button
9 - Rotary selector switch
10 - Button for switching on the flashlight and freezing the displayed measured value
11 - Battery compartment cover
12 - Ground connection for measuring leads (-)
13 - Measuring input for measuring leads (+)
14 - Flashlight



Display description
1 - Indicator for active automatic switch-off
2 - Indicator for active key tone
3 - Indicator for active Bluetooth function
4 - Displayed measuring range is selected automatically or manually
5 - Display of the current time
6 - Battery status indicator
7 - Unit
8 - Measured value
9 - Measured value as bar chart
10 - Virtual keys



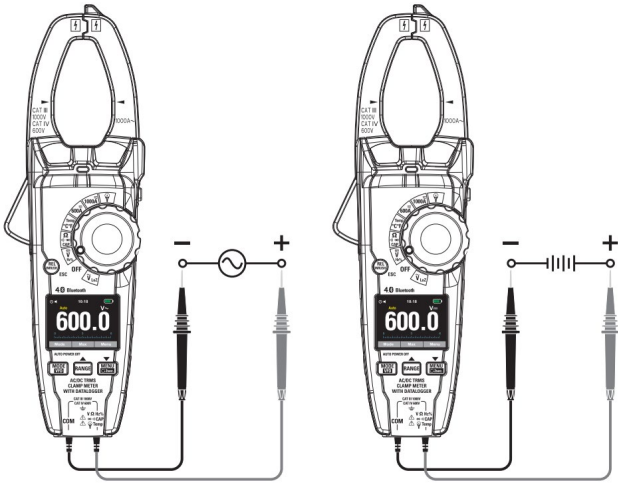
MAKING A MEASUREMENT

To carry out a measurement, always set the device to your measurement task before connecting it to your test specimen.

Carry out direct current / alternating current measurements
To carry out a direct current / alternating current measurement with the permanently installed current clamp, set the rotary selector switch to 600 A or 1000 A to carry out a current measurement up to a maximum of 600 or 1000 A. Use the MODE key to switch between alternating current (AC) and direct current (DC). Now open the current clamp and enclose the cable to be measured. Make sure that there is only one live wire inside the current clamp at any one time. Otherwise, a measurement will not be possible. The measured value is put in relation with the REL key.

Inrush current measurement
To carry out an inrush current measurement with the permanently installed current clamp, set the rotary selector switch to 600 A or 1000 A to carry out an inrush current measurement up to a maximum of 600 or 1000 A. Then press the INRUSH key for 2 seconds. Inrush appears on the display. Now open the current clamp and enclose the cable to be measured. Make sure that there is only one live wire inside the current clamp at any one time. Otherwise, a measurement will not be possible. Now switch on your test object. The inrush current is shown on the display.

Carry out DC voltage / AC voltage measurements
To perform a DC / AC voltage measurement, set the rotary selector switch to V Hz%
Use the MODE key to switch between DC and AC voltage. Then connect the test leads to the device. You can then connect the test leads to the test object.



Measure AC voltage with DC voltage component
To perform an AC voltage measurement with a DC voltage component, press the MODE key repeatedly until the symbol for V AC + DC is displayed.

Frequency measurement / duty cycle
To carry out a frequency measurement / determine the duty cycle of an AC voltage, first press the MENU key for two seconds to switch the virtual keys. You can then use the MODE key to switch between the frequency measurement and the duty cycle.

Voltage measurement on a frequency inverter (VFD)

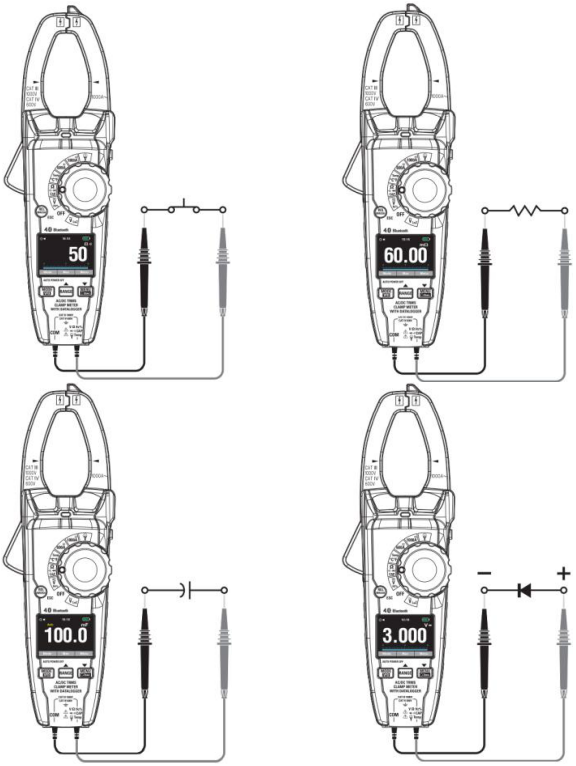
To carry out a voltage measurement on a frequency inverter (VFD), set the rotary selector switch $\tilde{\tilde{V}}$ Hz%
Set the measurement to AC voltage by repeatedly pressing the MODE key. Now press and hold the MODE key for at least two seconds to switch to frequency converter mode (VFD). You can then carry out your measurement.

Voltage measurement with low internal resistance of the device

To carry out a voltage measurement with a low internal resistance of the device, first set the rotary selector switch to V AC LoZ. Then connect the test leads to the meter. You can then connect the test leads to the device you want to test.

Capacitance, resistor, continuity, diode measurement

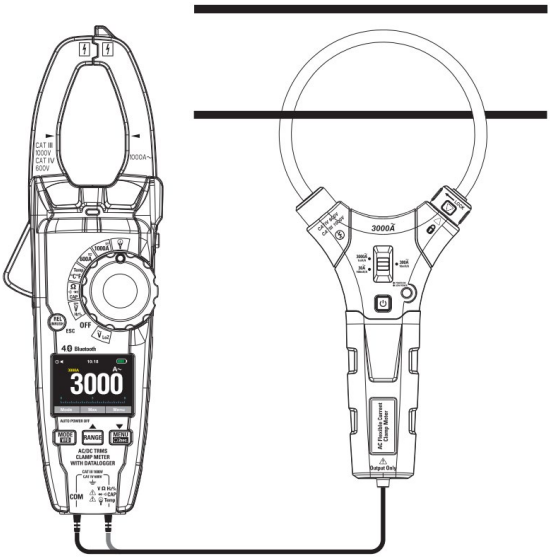
To determine the capacitance, measure the resistor, check the continuity or test a diode, set the rotary selector switch to Ω CAP
The MODE key can now be used to select between the individual functions. Then connect the test leads to the meter. The measurement can now be carried out.
Note: Before the capacitance measurement is carried out, it must be ensured that the capacitor is discharged. After the measurement, the capacitor is charged. If the resistance is <50 Ω during the continuity test, this is signalled by a sound.



Temperature measurement
To carry out a temperature measurement, set the rotary selector switch to TEMP °C °F. Then connect the thermocouple adaptor to the meter. A K-type thermocouple can then be connected. The temperature value can be read directly. The MODE key can be used to switch between the temperature units °C and °F.

Current measurement with additional current clamp

To carry out a current measurement with an additional current clamp, set the rotary selector switch to . Connect the optional current clamp to the device. Now set the measurement range using the RANGE key. This must always be the same as the measurement range on the optional current clamp. You can then carry out the measurement.
Note: Only AC voltage measurement is possible with this function.



Non-contact voltage measurement (NCV)
To carry out a non-contact voltage measurement (NCV), the meter only needs to be switched on. Then bring the tip of the current clamp into contact with the test object, for example a socket or a connecting cable. If an AC voltage is present, this is signalled by the signal lamp.
Note: The measurement result can be influenced by distances from the live cable and partitions, such as a housing. This function therefore does not guarantee the absence of voltage.

Set measurement range
To set the measurement range, press the RANGE key. To activate automatic mode, press and hold the RANGE key for two seconds. In automatic mode, the measurement range is set automatically. This function is not available when measuring diodes, continuity, duty cycle, temperature and current.

Hold measured value
To freeze the displayed measured value, press the HOLD key. This is located on the side. HOLD appears on the display. Press it again to resume the measurement. The virtual SAVE key can be used to save the displayed measured value and call it up again in the menu under Measurement.

Highest and lowest measured value
You can use this function to display the highest and lowest measured value of a measurement.
To activate this function, press and hold the MENU key for two seconds to switch the virtual keys.
Now press the virtual MAX key to activate this function. To cancel this function, press the key again.
Note: When the function is disabled, the values are reset.

Set measured value in relation
To set the measured value in relation, press the REL button. The displayed measured value is put in relation to the currently measured value. To disable this function, press the key again.

Determine peak values (PEAK)
To determine the peak value of a measurement, first press and hold the MENU key for two seconds to change the virtual keys. Now press the virtual PEAK key. The peak value and the lowest value are recorded directly. To exit this function, press the key again.
Note: This function is only available for AC voltage to determine the peak-to-peak value. When the function is disabled, the values are reset.

MENU

To make system settings, first open the menu with the virtual MENU key. You can use the arrow keys to change parameters and select between the individual menu items. Use the REL INRUSH key to go back one level. Press the virtual Enter key to accept the parameter and open the menu item.

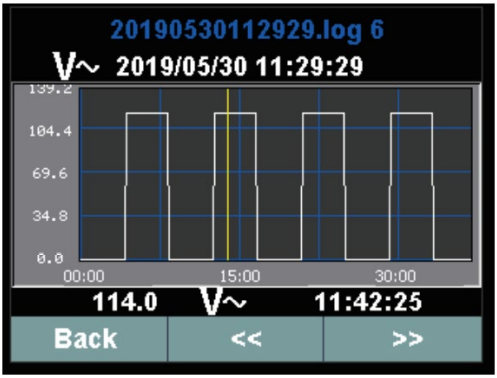
Menu item	Description
Setup	General settings
Time/Date	Setting the date and time
Measurement	Calling up individual saved measured values in the data memory and deleting them
Recording	Settings for recording measured values
Meter Info	The measuring device information can be read out here: hardware version, firmware, free memory space
Factory Set	Use this function to reset the meter to its factory settings
Exit	Exit menu

General settings (Setup)
In the general settings, the key sound can be switched on and off, the Bluetooth interface can be activated or deactivated, automatic power off and the time display (12 hours (A.M. / P.M.) / 24 hours) can be set.

Saved individual measured values (Measurement)
In this menu item, the individual saved measured values that were saved via the HOLD function can be recalled and deleted. Recall Measurements can be used to open and delete individual recordings. Delete Measurements can be used to delete all recordings simultaneously.

Data logger (Recording)
To use the data logger function, go to the menu under Recording.

Menu item	Description
Start Recording	Starting the data logger function: after recording, the recording must also be saved using the virtual SAVE key. Before you start recording, the device must be set to the measurement task.
Recall Recordings	The individual measurement files are displayed here. Press the virtual Trend key to open the displayed measurement file. Each individual measuring point can now be selected and read out using the arrow keys. Press the virtual BACK key to return.
Setup New Recordings	Settings for data recording. Storage rate and recording time
Delete Recordings	Delete all recordings



INSERTING/REPLACING BATTERIES

To insert or replace the batteries, the device must be switched off and all test leads must be disconnected from the meter. You can then open the battery compartment on the back and insert 3 x 1.5 AAA batteries or replace them if they are discharged. After replacing the batteries, you must close the battery compartment. You can now start making measurements with the measuring device again.

TORCH

To use the torch, press and hold the HOLD key when it is switched on. The torch switches on.
To switch the torch off again, press and hold the HOLD key again.

BLUETOOTH CONNECTION

To establish a Bluetooth connection, first download the free MeterBox Pro app from the App Store or Play Store. Then activate the Bluetooth connection of the clamp meter and your mobile device. Then open the app and establish a connection to the meter via the app.
Note: The connection must not be established via the Bluetooth setting of your mobile end device.

Android

iOS

DISPOSAL

For the disposal of batteries in the EU, the (EU) 2023/1542 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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