PeakTech 4205 Flex Current Clamp User Manual

Contents

PeakTech®

PeakTech 4205 Flex Current Clamp

Safety precautions

This product complies with the requirements of the following European Union Directives for CE conformity: 2014/30/EU (Electromagnetic Compatibility), 2014/35/EU (Low Voltage), 2011/65/EU (RoHS). Overvoltage category CAT IV 600V; CAT III 1000V Pollution degree 2.

- **CAT I:** For signal level, telecommunication, electronic with small transient over voltage
- **CAT II:** For local level, appliances, main wall outlets, portable equipment
- **CAT III:** Supplied from a cable under earth; fixed installed switches, automatic cut-off or main plugs
- **CAT IV:** Units and installations, which are supplied overhead lines, which are stand in a risk of persuade of a lightning, i.e. main-switches on current input, overvoltage-diverter, current use counter.

To ensure the operational safety of the unit and to avoid serious injuries due to current or voltage surges or short circuits, the following safety instructions for operating the unit must be observed. Damage caused by non-observance of these instructions is excluded from claims of any kind. We hereby confirm that this product complies with the essential protection standards specified in the Council's Instructions for the Adaptation of Administrative Provisions for the United Kingdom of Electromagentic Compatibility Regulations 2016 and the Electrical Equipment (Safety) Regulations 2016.

General

- Read these operating instructions carefully and make them available to subsequent users.
- Be sure to observe the warning notices on the device; do not cover or remove them.
- Pay attention to the use of the current clamp and use it only in its appropriate overvoltage category.

- Familiarise yourself with the functions of the measuring device before you carry out the first measurement.
- Do not operate the measuring device unattended or only protected against unauthorised access.
- Use the current clamp only for its intended purpose and pay particular attention to warnings on the device and information on the maximum values.

Electric safety

- Voltages over 25 VAC or 60 VDC are generally considered dangerous voltages.
- Work on dangerous voltages only by or under the supervision of qualified personnel.
- When working on dangerous voltages, wear suitable protective equipment and observe the relevant safety rules.
- Do not exceed the maximum permissible input values under any circumstances (risk of serious injury and/or destruction of the device)
- Pay special attention to the correct connection of the test leads depending on the measuring function in order to avoid a short circuit in the device. Never apply a voltage in parallel to the current sockets (A, mA, µA).

Measurement environment

- Avoid any proximity to explosive and flammable substances, gases and dust. An electric spark could lead to an explosion or deflagration – danger to life!
- Do not carry out measurements in corrosive environments, the device could be damaged or contact points inside and outside the device could corrode.
- Avoid working in environments with high interference frequencies, high-energy circuits or strong magnetic fields, as these can negatively affect the device.
- Avoid storage and use in extremely cold, humid or hot environments, as well as long-term exposure to direct sunlight.
- Only use devices in damp or dusty environments in accordance with their IP protection class.
- If no IP protection class is specified, only use the device in dust-free and dry indoor rooms only.
- When working in damp or outside areas, pay particular attention to completely dry handles on the test leads and test probes.
- Before starting the measuring operation, the device should be stabilized at the ambient temperature (important when transporting from cold to warm rooms and vice versa)

Maintenance and Care

- Never use the device if it is not completely closed.
- Before each use, check the device and its accessories for damage to the insulation, cracks, kinks and breaks. If in doubt, do not take any measurements.
- Change the battery when a battery symbol is displayed to avoid incorrect rdg.s.
- Switch off the current clamp and remove the test leads from the multimeter before changing the batteries.
- Replace defective fuses only with a fuse that corresponds to the original value. Never short-circuit a fuse or fuse holder.
- Charge the battery or change the battery as soon as the battery symbol lights up. Insufficient battery power can lead to inaccurate measurement results. Electric shocks and physical damage can result.

- If you are not going to use the device for a longer period of time, remove the battery from the compartment.
- Maintenance and repair work on the current clamp may only be carried out by qualified personnel.
- Do not lay the device upside down on the workbench or work surface to avoid damaging the control elements.
- Clean the housing regularly with a damp cloth and a mild cleaning agent. Do not use any caustic abrasives.
- Do not make any technical changes to the device.

Introduction

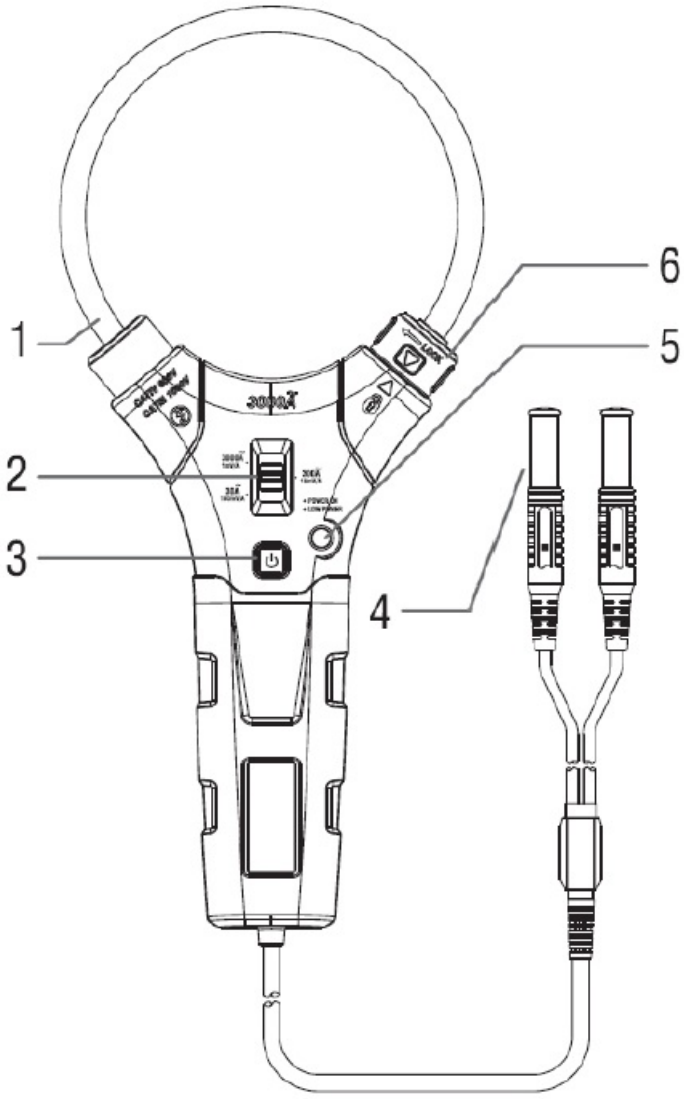
This innovative current clamp works on the principle of being able to carry out current measurements safely and quickly in conjunction with a multimeter. Due to the flexible design of the clamp opening, it is possible to insert small but also large cable diameters into the opening. By means of the slide switch, it is possible to set the measuring ranges of the current clamp between 30 / 300 and 3000 A AC. Due to the intuitive design of the device, this current clamp is suitable for all areas in which currents have to be measured, whether in the hobby area or for professional use in industry.

Safety Symbols

	Attention! Read the relevant section(s) in the operating instructions. Failure to do so may result in injury and/or damage to the appliance.
	The dangerously high voltage between inputs. Extreme caution during measurement. Do not touch inputs and measuring tips. O bserve safety instructions in the operating manual!
~	Alternating voltage-current (AC)
	Ground
	Double insulated

Attention: Possible source of danger. It is essential to observe the safety instructions. Failure to do so may result in injury or death and/or damage to the appliance.

Controls of the device



1. Flexible current coil
2. Range selector switch
3. On, off switch
4. 4 mm sockets for connection to a multimeter
5. Operating display
6. Latch to open and close the current clamp

Instructions for commissioning the device

Caution: Take measurements on circuits with high voltages with extreme caution and only in accordance with the relevant safety regulations. Always switch off the unit after finishing the measuring operation.

Operation of the current clamp

The Flexible Current Clamp P 4205 has been designed to enable the user to operate the unit easily and intuitively. To measure currents with the current clamp, a multimeter or a measuring device that can measure AC voltages is

required. The current clamp is connected to a multimeter via the 4 mm sockets located at the end of the permanently installed cable. To measure the current of the current-carrying line to be measured, open the latch of the current clamp. Insert the cable into the opening and close the current clamp again by inserting the flexible end of the current clamp into the lock and then closing the lock again (make sure that the cable to be measured is in the middle of the current clamp). Connect the current clamp to a multimeter. Now select the appropriate range for the expected current level. After successfully connecting the current clamp to a multimeter, you can now switch on the current clamp and start the measurement. After the measurement, make sure that the current clamp is switched off first before disconnecting it from the multimeter.

Note: If the range of the current to be measured is not known, switch the range selector switch of the current clamp to the largest measuring range first. It is possible to switch to a smaller measuring range during the measurement.

Technical Data

- **Display:** Green LED for operation indication
    - Red LED for battery indication
- **Operating temperature:** 5°C to 40 °C (41°F to 104 °F) at max. 80% RH
- **Storage temperature:** -20°C to 60 °C (-4°F to 140°F) at max. 80% RH
- **Max. operating Altitude:** 2000 meter
- **Power supply:** 2 x 1,5 AAA Batteries
- **Safety:** EN 61010-1
    - EN 61010-2-032
    - EN 61326-1

Specifications

Functions	Range	Measuring range	Output	Accuracy
A AC 50 – 400 Hz True RMS	30 A	0,30 A – 30,00 A	100 mV/A	± 3,0% + 5 mV
	300 A	30,0 A – 300,0 A	10 mV/A	± 3,0% + 3 mV
	3000 A	300 A – 3000 A	1 mV/A	± 3,0% + 3 mV

Note: Accuracy is expressed as ± (% of reading + the value of the lowest digit) at 23°C ± 5°C, at a relative humidity of less than 80%RH. The measured conductor is in the centre of the coil.

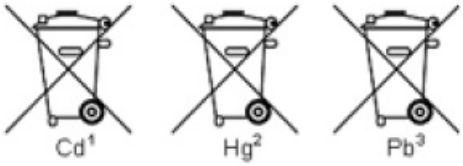
- **Output noise:** <5,5 mV
- **Max. output voltage:** 5,8 V

Replacing the batteries

1. Switch off the meter and remove all test leads from the input sockets
2. Remove the battery compartment screw on the back to open the battery compartment
3. Replace the 2 x 1.5V AAA batteries with new ones of the same type
4. put the battery compartment back on the unit and secure it by turning the screw clockwise

Notification about the Battery Regulation

The delivery of many devices includes batteries, which for example serve to operate the remote control. There also could be batteries or accumulators built into the device itself. In connection with the sale of these batteries or accumulators, we are obliged under the Battery Regulations to notify our customers of the following: Please dispose of old batteries at a council collection point or return them to a local shop at no cost. The disposal in domestic refuse is strictly forbidden according to the Battery Regulations. You can return used batteries obtained from us at no charge at the address on the last side in this manual or by posting with sufficient stamps. Contaminated batteries shall be marked with a symbol consisting of a crossed-out refuse bin and the chemical symbol (Cd, Hg or Pb) of the heavy metal which is responsible for the classification as pollutant

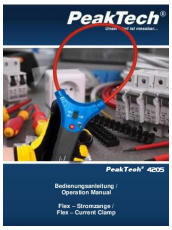


1. “Cd” means cadmium.
2. “Hg” means mercury.
3. “Pb” stands for lead.

PeakTech Prüf- und Messtechnik GmbH

- Gerstenstieg 4 – DE-22926 Ahrensburg / Germany
- +49 (0) 4102 97398-80
- +49 (0) 4102 97398-99
- **info@peaktech.de**
- **www.peaktech.de**

Documents / Resources

	PeakTech 4205 Flex Current Clamp [pdf] User Manual 4205 Flex Current Clamp, 4205, Flex Current Clamp, Current Clamp, Clamp

References

- Home
- Home