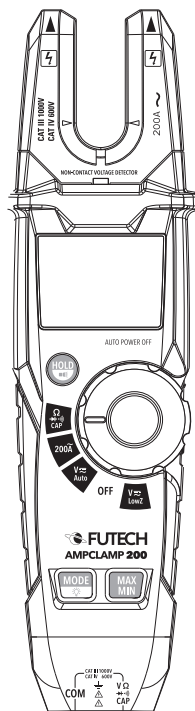


USER MANUAL

430.200 AMPCLAMP 200



EN ENGLISH

Manual
in your language?

Check the back cover



FUTECH
futech-tools.com



■ HOUSING

- 01 NCV tutpoints
- 02 Current fork
- 03 Non-contact voltage indicator
- 04 LCD display
- 05 Selector light
- 06 Rotary function selector
- 07 Function list with backlight
- 08 Data hold button / flashlight button
- 09 Mode button / LCD backlight button
- 10 MAX / MIN button
- 11 Flashlight
- 12 Battery cover
- 13 Negative / COM connector (black test probe)
- 14 Positive connector (red test probe)
- 15 Testprobes

■ LCD DISPLAY

- A Alternating voltage / current (AC)
- B Minus sign
- C Direct voltage / current (DC)
- D Auto power off
- E Auto range mode
- F Continuity symbol
- G Diode symbol
- H Low battery indicator
- I Unit list
- J Measured value
- K Maximum / minimum
- L Hold symbol
- M Low Impedance symbol



SAFETY

Please read the safety instructions provided as separate booklet with the device.

Do not exceed the maximum allowed input range of any function (e.g. circuit whose voltage exceeds 1.000 Volt).

Set function switch to the appropriate position before measuring. When changing ranges always disconnect the test probes [15] from the circuit under test.

Do not apply voltage to meter when resistance function is selected.

When measuring volts do not switch to current/resistance modes.

To avoid electrical shocks, disconnect the meter from any circuit. Remove the test probes [15] from the Negative/COM probe connector [13] and the positive probe connector [14]. Then, turn OFF the meter before opening the housing. Do not operate the meter with an open housing.

FIRST TIME USAGE

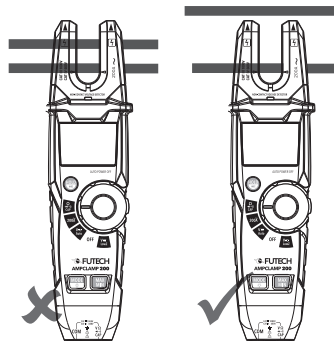
Remove all protection foils.

OPERATION

■ AC CURRENT MEASUREMENTS

- Turn the rotary function selector [06] to the position "200A".
- Place the current fork [02] around the line under measurement.

The LCD display [04] will show the measured current in the line.



WARNING

Ensure that the test probes [15] are disconnected from the meter before making current clamp measurements.



■ VOLTAGE MEASUREMENTS (AC OR DC)

- Insert the black test probe [15] into the Negative/COM probe connector [13] and the red test probe [15] into the positive probe connector [14].
- Turn the rotary function selector [06] to the position "Volt Auto". (The device will automatically select between AC or DC.)
- Connect the test probes [15] in parallel to the circuit under test.
- The Measured Value [J] will show the measured Voltage in the circuit under test. (In case of AC measurements, the device makes a TRUE RMS measurement.)

■ LOW IMPEDANCE (LOW Z) VOLTAGE MEASUREMENTS

NOTES

Observe all safety precautions when working on live circuits. Do not connect to circuits that exceed 600V AC/DC when the meter is set to Low Z.

Low Z is used when there is a suspicion of a "ghost" voltage. Ghost voltages are present when non-powered wires are close to wires powered by AC voltage.

Capacitive coupling between wires make it appear that non-powered wires are connected to a real source of voltage.

The Low Z setting places a load on the circuit, which dissipates and greatly reduces ghost voltage.

- Insert the black test probe [15] into the Negative/COM probe connector [13] and the red test probe [15] into the positive probe connector [14].
- Turn the rotary function selector [06] to the position "Volt Low Z".
- Press the MODE button to select between AC or DC voltage. The LCD display [04] shows the AC symbol [A] or DC symbol [C].
- Connect the test probes [15] to the circuit under test. (When measuring DC voltage, touch the red test lead to the positive side of the circuit and the black test lead to the negative side of the circuit.)
- The Measured Value [J] will show the measured Voltage in the circuit under test.

■ RESISTANCE MEASUREMENTS

- Insert the black test probe [15] into the Negative/COM probe connector [13] and the red test probe [15] into the positive probe connector [14].
- Turn the rotary function selector [06] to the position "Ohm - Diode - Continuity - Cap".
- Press the MODE button [09] until the Ohm-symbol Ω is shown in the Unit List [I].
- Connect the test probes [15] to the circuit or component under test.
- The Measured Value [J] will show the measured resistance in the circuit or component under test.

■ CONTINUITY MEASURES

- Insert the black test probe [15] into the Negative/COM probe connector [13] and the red test probe [15] into the positive probe connector [14].
- Turn the rotary function selector [06] to the position "Ohm - Diode - Continuity - Cap".
- Press the MODE button [09] until the Continuity-symbol \rightarrow [F] is shown.
- Connect the test probes [15] to the circuit or component under test.

- If the measured resistance is at less than 50 Ohm, a tone will sound.

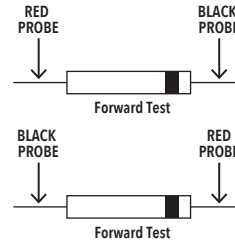
■ CAPACITANCE MEASUREMENTS

- Insert the black test probe [15] into the Negative/COM probe connector [13] and the red test probe [15] into the positive probe connector [14].
- Turn the rotary function selector [06] to the position "Ohm - Diode - Continuity - Cap".
- Press the MODE button [09] until the Capacity-unit (Micro Farad or Nano Farad) is shown in the Unit List [I].
- Connect the test probes [15] to the component under test.
- The Measured Value [J] will show the measured capacitance in the component under test. The display will indicate the proper decimal point and value. (When measuring very large values of capacitance, it can take several minutes before the final reading stabilizes.)



■ DIODE MEASUREMENTS

- Insert the black test probe [15] into the Negative/COM probe connector [13] and the red test probe [15] into the positive probe connector [14].
- Turn the rotary function selector [06] to the position "Ohm - Diode - Continuity - Cap".
- Press the MODE button [09] until the Diode-symbol $\rightarrow|+$ is shown in the Unit List [I].
- Connect the test probes [15] to the diode or semiconductor junction under test. Read the Measured Value [J].
- Reverse the test lead polarity by reversing the red and black test probes [15]. Read the Measured Value [J].
- The diode or junction can be evaluated based on your readings of the Measured Value [J]:
 - › If one reading displays a value (typically 0.400V to 0.900V) and the other reading displays "OL", the diode or junction is good.
 - › If both readings display "OL", the diode or junction is open.
 - › If both readings are very small or "0", the diode or junction is shorted.



■ NON-CONTACT AC VOLTAGE MEASUREMENTS (NCV)

IMPORTANT

Test the NCV detector first on a known live circuit before use.

- Hold the NCV Test Points [01] very close to the voltage source.
- If voltage is present, the Non-Contact Voltage Indicator [03] will light.

NOTE

Do not touch the top of the meter when using this function.

EXTRA BUTTONS

■ MODE & LCD BACKLIGHT BUTTON [09]

- Press MODE / LCD Backlight Button [09] to select the unit you need to measure. You will select between OHM, Diode, Continuity, Capacity, Low Z or AC/DC Voltage.
- Hold the MODE / LCD Backlight Button [09] for over 1 second to turn the Selector light [05] on.
- Hold the MODE and LCD Backlight Button [09] again for over 1 second to turn the Selector light [05] off.

■ MAX/MIN BUTTON [10]

- Press MAX/MIN Button [10] to activate the registration of maximum and minimum values during measurement.

The MAX/MIN modus cannot be activated for a continuity test, diode test, capacitance test or during Non-Contact AC Voltage measurements.

- Press the MAX/MIN Button [10] or turn the rotary function selector [06] to switch off the MAX/MIN Modus.

■ DATA HOLD & FLASHLIGHT BUTTON [08]

- In case you are measuring in a position where you have no direct view on the LCD Display [04], press the Data Hold / Flashlight button [08]. The HOLD symbol [L] lights up. The device will freeze the measured value on the LCD display [04] and stop measuring continuously.
- After reading the measured value, press the Data Hold / Flashlight button [08] again.

The device will restart measuring continuously and shows the actual measured voltage on the display.

- Hold the Data Hold / Flashlight button [08] for over 1 second to turn the flashlight [11] on.
- Hold the Data Hold & Flashlight button [08] again for over 1 second to turn the flashlight [11] off.



■ AUTOMATIC POWER OFF

In order to save battery life, this device will automatically switch off after approximately 15 minutes.

- To switch the meter on again, turn the rotary function selector [06] to the OFF position
- Then, turn the rotary function selector [06] to the desired function position.
- Hold the Data Hold & Flashlight button [08] to switch the device on and cancel the auto power off function.

MAINTENANCE

When using the voltage tester in compliance with this user manual and all safety instructions, no maintenance is required. If functional errors occur during normal operating, please contact our service center.

■ CLEANING

Prior to cleaning, remove the voltage tester from all measurement circuits. If the instrument is dirty after daily usage, it is advisable to clean it by using a damp cloth and a mild household detergent.

Never use acid detergents or dissolvents for cleaning.

After cleaning, do not use the voltage tester for approx. 5 hours.

■ BATTERY REPLACEMENT

If no signal sound is audible when short-circuiting the test probes, or the auto test shows that the battery voltage is too low, proceed with the battery replacement.

- Completely disconnect voltage tester from all electrical circuits or machines
- Open the battery cover [12] with an appropriate screwdriver.
- Replace by 2 new AA batteries, respecting the polarity.
- Close the battery cover [12] with an appropriate screwdriver.



SPECIFICATIONS

FUNCTION	RANGE	RESOLUTION	ACCURACY ±(% OF READING + DIGITS)
AC Current	200.A	100mA	±(3% + 5 digits)

Over range protection: Maximum input 200A; Frequency response: 50 to 60Hz

AC True RMS Voltage (Auto sense)	1000V - 6000V	1mV	±(1.2% + 5 digits)
	60.00V	10mV	±1.2% + 2 digits)
	600.0V	100mV	
	1000V	1V	±(1.5% + 2 digits)

Input impedance: 10M Ω ; Low input impedance test voltage: $\sim 3K\Omega$ MAX 600V AC;

Accuracy specified from +3.0% of rdg + 8 digits;

Over range protection: 1000V rms; Frequency response: 50 to 1000Hz (sine wave), 50/60 (all wave)

DC Voltage (Auto sense)	6.00V	1mV	±(0.9% + 5 digits)
	60.00V	10mV	±(1.0% + 2 digits)
	600.0V	100mV	
	1000V	1V	±(1.2% + 2 digits)

Input impedance: 10M Ω ; Low input impedance test voltage: $\sim 3K\Omega$ MAX 600V DC;

Accuracy specified from +3.0% of rdg + 8 digit;

Over range protection 1000V



FUNCTION	RANGE	RESOLUTION	ACCURACY ±(% OF READING + DIGITS)
Resistance	600.0 Ω	0.1 Ω	±(1. % + 4 digits)
	6.000k Ω	1 Ω	±(1.5% + 4 digits)
	60.00K Ω	10 Ω	
	600.0K Ω	100 Ω	
	6.000M Ω	1K Ω	±(2.5% + 4 digits)
	60.00M Ω	10K Ω	±(3.5% + 4 digits)

Over rang protection: 300V rms

Capacitance	60.00nF	0.01nF	±(3% + 5 digits)
	600.0nF	0.1nF	
	6.000μF	1nF	
	60.00μF	0.01μF	
	600.μF	0.01μF	±(3.5% + 10 digits)
	4000μF	1μF	±(5.0% + 10 digits)

*>6nF no specification; Over rang protection: 300V rms

FUNCTION	TEST CONDITION	READING
Diode	Test current of 1.5mA typical; Open circuit voltage <3VDC typical	Forward voltage drop of Diode
Conituity	Test current <0.35mA	Buzzer makes a long sound, while resistance is less than 50Ω.

Over rang protection: 300V rms



■ GENERAL SPECIFICATIONS

	430.200 AMPCLAMP
Clamp size	0.6" (16mm) approx.
Display	(6000 counts) LCD display
Continuity check	Buzzer sounds < 50Ω
Diode test	Test current of 3.35mA typical; Open circuit voltage <3VDC typical
Measurement rate	3 readings / Second
Input impedance	~10MΩ (VDC & VAC)
Low input impedance	~3kΩ (VDC and VAC)
Operating temperature	5 - 40°C (41 - 104°F)
Storage temperature	-20 - 60°C (-4 - 140°F)
Operating humidity	Max 80% up to 31°C (87°F) decreasing linearly to 50% at 40°C (104°F)
Storage humidity	<80%
Operating altitude	2000m (7000ft) max
Drop protection	2m (6.6ft)
Battery	2 x 1.5V AA batteries
Battery life	Capacitance ~2000mAh (Alkaline)
Work time	Without knob, rotary, button, flashlight backlight ~ 100h With knob, rotary, button, flashlight backlight ~40h
Auto power off	Approx. 15min





DECLARATION OF CONFORMITY

Futech (Belgium) declares under its own responsibility that this device:

- 430.200 AMPCLAMP 200

is in conformity with the standards

- EN 61326-1:2013

- EN 61326-2-1:2013

Under Electromagnetic Compatibility (EMC) Directive
2014/30/EU

Lier, Belgium,
December 22, 2023
Patrick WaÛters

Potential misprints are reserved. Images used are not strict. All features, functionality and other product specifications are subject to change without notice or obligation



NOTES



NOTES



USER MANUAL

other languages:



DA DANSK



DE DEUTSCH



ES ESPAÑOL



ET EESTI KEEL



FI SUOMEN KIELI



FR FRANÇAIS



IS ÍSLENSKA



IT ITALIANO



NL NEDERLANDS



NO NORSK



PT PORTUGUÊS



SL SLOVENŠČINA



SV SVENSKA



Facebook
@futechtools



LinkedIn
futechtools



World Wide Web
futech-tools.com



YouTube
@futechtools