PeakTech 2040 20000 Counts Digital Handheld Multimeter Instruction Manual

PeakTech®

2040 20000 Counts Digital Handheld Multimeter Instruction Manual

Contents

Safety Precautions

This product complies with the requirements of the following directives of the European Union for CE conformity: 2014/30/EU (electromagnetic compatibility), 2014/35/EU (low voltage), 2011/65/EU (RoHS).
Overvoltage Category: CAT III 1000V / CAT IV 600V; 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: Distribution level, fixed installation, with smaller transient overvoltages than CAT IV.
CAT IV: Units and installations, which are supplied overhead lines, which stand at risk of persuasion of lightning, i.e. main switches on current input, overvoltage-diverter, current use counter.
To ensure the safe operation of the equipment and eliminate the danger of serious injury due to short circuits (arcing), the following safety precautions must be observed.
Damages resulting from failure to observe these safety precautions are exempt from any legal claims.

General:

- Read these operating instructions carefully and make them available to subsequent users.
- It is essential to observe the warning notices on the device, do not cover or remove them.
- Pay attention to the use of the multimeter and only use it in the suitable overvoltage category.
- Familiarize yourself with the functions of the measuring device and its accessories before you carry out the first measurement.
- Do not operate the measuring device unsupervised or only protected against unauthorized access.
- Use the multimeter only for the purpose of its determination and pay particular attention to warning notices on the device and information on the maximum input values.

Electric safety:

- Voltages over 25 VAC or 60 VDC are generally considered dangerous voltages.
- Only work on dangerous voltages 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).
- Current measurements are always carried out in series with the consumer, i.e. with the supply line

disconnected.

- Remove the test probes from the measurement object before changing the measuring function.
- Never touch the bare test probes during the measurement, only hold the test leads by the handle behind the finger guard. If applicable, discharge any capacitors before measuring the circuit to be measured.
- The thermocouple for temperature measurements is made of conductive material. To avoid electric shock, never connect it with a live conductor.

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 multimeter.
- Avoid storage and use in extremely cold, humid, or hot environments, as well as long exposure to direct sun.
- 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 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 readings.
- Switch off the multimeter before changing batteries or fuses and also remove all test leads and temperature probes.
- 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.
- Have maintenance and repair work on the multimeter carried out only by qualified specialists.
- 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.

1.1. Safety Symbols

The following symbols are imprinted on the front panel of the meter to remind you of measurement limitations and safety.

	Warning		DC
	High Voltage danger		AC
	Ground		AC and DC
	Dual insulation		In Accord with an order of the European Uni on
	Low battery Voltage		Fuse

1.2. Input Limits

Function	Terminal	Input limits
mV DC/AC	V/W/Hz+COM	250 V DC/ACrms
V DC/AC		1000 V DC/ACrms
W		250 V DC/ACrms
mA DC/AC	mA + COM	600 mA / 1000V DC/AC
10 A DC/AC	10 A + COM	10 A / 1000V DC/AC
	V/W/Hz/+COM	250 V DC/ACrms
Frequency		250 V DC/ACrms
Temperature	mA+COM	250 V DC/ACrms
Capacitance		250 V DC/ACrms

Introduction

The new PeakTech 2040 offers a multitude of measurement functions for electrical measured variables for every user from industry, craftsmanship, training, hobby, and the laboratory. Particularly noteworthy is the integrated data interface, which enables this model to record long-term data in combination with the PC software. It was manufactured
according to the latest development aspects and has a double-insulated injection-molded housing with rubber coating, and a service flap on the back, through which not only the battery but also the high-quality fuses can be replaced. The device runs on a battery and has an inverted LCD screen with a bar graph. The automatic range selection offers a very userfriendly operation and measured values can be easily read on the illuminated display.
The PeakTech 2040 can be used to measure DCV, ACV, DCA, ACA, resistance, capacitance, diode, continuity, temperature, and frequency, thus creating a wide range of applications. Due to the high overvoltage category CAT III up to 1000V, you can use this device safely on electrical installations and systems.
The following functions simplify the application in daily use:

- 20000 digits with high basic accuracy
- USB Interface for data recording with a PC
- HOLD, MIN/MAX, REL, Hz/Duty
- Overload and overvoltage protection
- Inverted LCD with backlight illumination

- The buzzer sounds at continuity tests
- Automatic Power Off

1. **General Characteristics**

Display	4 1/2 digits, Inverted LCD display, 20000 Counts
Overrange indication	OL
Reading time	3 reading per second
AC-Measurement	True RMS (40 Hz … 1 kHz)
Interface	USB (optical isolated)
Auto power off	after approx. 15 minutes
Operating temperature	0° C…+40° C < 75 % RH
Storage temperature	-20° C…+60° C < 85 % RH
Low battery indication	Battery symbol 
Battery Type	9V NEDA 1604 9V or 6F22
Dimensions	201 (L) x 101 (W) x 68 (D) mm
Weight	496 g (Battery incl.)

2.2 Accessories

- Test leads
- Battery (9V 6F22)
- Temperature- adaptor
- Thermocouple (-20°C … 250°C)
- Carrying case
- Operating manual
- USB Cable & Software CD

Functions and Ranges

Percentage values of the accuracy are calculated from the current measured value! Accuracy: ± (a% × rdg + dgt.)
Accuracy at ambient temperature: (23 ± 5) ° C Relative humidity <75%

3.1. DC Voltage

Range	Resolution	Accuracy
200 mV	0.01mV	±0,05% + 10 dgt.
2 V	0.0001V	
20 V	0.001V	
200 V	0.01V	
1000 V	0.1V	±0,1% + 10 dgt.

Input impedance:
> 1000 MΩin mV range
ca. 10 MΩin all V ranges
Overload protection:
250V DC/AC_{rms} in all mV ranges
1000V DC/AC_{rms} in all V ranges

3.2. AC Voltage

Range	Resolution	Accuracy
200 mV	0.01 mV	± 0,8% + 25 dgt.
2 V	0.0001V	
20 V	0.001V	
200 V	0.01V	
1000 V	0.1V	± 1,2% + 25 dgt.

⚠ Accuracy applies to 10% to 100% of the Range
Input impedance: > 1000 MΩ(mV) / ca.10MΩ(V)
Overload protection:
250V DC/AC_{rms} in all mV ranges
1000V DC/AC_{rms} in all V ranges
Frequency range:
40 … 1 kHz in all ranges
Meas. Type: True RMS
Crest factor: CF≤3, when CF≥2, add 1% error of reading
Measuring error with frequency (AC): 0.2% + 0.02Hz
Measuring scope with frequency (AC): 40Hz – 1kHz
Input sensitivity with frequency (AC): 80V – 600V

3.4. DC Current

Range	Resolution	Load Voltage	Accuracy
200 µA (< 20 µA)	0.01 µA	0.125 mV/µA	±2,5% + 25 dgt.
200 µA (> 20 µA)	0.01 µA	0.125 mV/µA	±1,5% + 25 dgt.
2000 µA	0.1 µA	125 mV/µA	±0,8% + 10 dgt.
20 mA (< 2 mA)	0.001 mA	3.75 mV/µA	±2,5% + 25 dgt.
20 mA (> 2 mA)	0.001 mA	3.75 mV/µA	±1,5% + 25 dgt.
200 mA	0.01 mA	3.75 mV/µA	±1,2% + 10 dgt.
2 A	0.0001 A	37.5 mV/µA	±2,0% + 25 dgt.
10 A	0.001 A	37.5 mV/µA	

Overload protection:
0,2A / 1000V: 6,3 x 32 mm fuse in mA-Input
10A / 1000V: 10,3 x 38 mm fuse in 10A-Input

⚠ 20A for max. 10 sec. every 15 min.

3.5. AC Current

Range	Resolution	Load Voltage	Accuracy
200 µA	0.01 µA	0.125 mV/µA	± 1,5% + 15 dgt.
2000 µA	0.1 µA	125 mV/µA	
20 mA	0.001 mA	3.75 mV/µA	
200 mA	0.01 mA	3.75 mV/µA	± 2,0% + 5 dgt.
2 A	0.0001 A	37.5 mV/µA	± 3,0% + 10 dgt.
10 A	0.001 A	37.5 mV/µA	

⚠ Accuracy applies to 10% to 100% of the Range Overload protection
0,2A / 1000V: 6,3 x 32 mm fuse in mA-Input
10A / 1000V: 10,3 x 38 mm fuse in 10A-Input

⚠ 20A for max. 10 sec. every 15 min.
Frequency – range: 40 … 1 kHz
Crest factor: CF≤3, when CF≥2, add 1% error of reading

3.6. Resistance

Range	Resolution	Short Circuit current (ca.)	Open Circuit V oltage	Accuracy
200 W	0.01W	1 mA	1 V	± 0,5% + 30 digit.
2 kW	0.1 W	100 µA		± 0,8% + 5 dgt.
20 kW	1 W	10 µA		
200 kW	10 W	1 µA		
2 MW	100 W	0.2 µA	0.5 V	
20 MW	1 kW	0.2 µA		± 2,0% + 25 dgt.
20 MW	10 kW			± 5% + 30 dgt.

Overload protection: 250V DC/ACrms

⚠ Measuring error does not include test lead resistance

3.7. Frequency

Range	Resolution	Accuracy
200 Hz	0.01 Hz	± 0,5% + 4 dgt.
2 kHz	0.1 Hz	
20 kHz	1 Hz	
200 kHz	10 Hz	
2 MHz	100 Hz	
20 MHz	1 kHz	

⚠ For a signal less than 3Hz, the reading should be zero

500mV ≤ input range ≤ 30V RMS

Overload protection: 250V DC/AC_{rms}

3.8. Temperature

Range	Resolution	Accuracy
-20… +1000°C	0.1°C	± 1,0% + 50 dgt.(< 620°C)
	1°C	± 1,5% + 15 dgt. (> 620 °C)
-20… +1832°F	0.1°F	± 1,0% + 50 dgt.(< 620°F)
	1°F	± 1,5% + 15 dgt. (>620 °F)

Overload protection: 250V DC or AC_{rms}
Sensor: K-Type Thermocouple (NiCr-NiSi)

3.9. Capacitance

Range	Resolution	Accuracy
20 nF	0.001nF	± 5,0% + 40 dgt.
200 nF	0.01nF	± 3,5% + 20 dgt.
2 µF	0.0001µF	
20 µF	0.001µF	
200 µF	0.01µF	± 5,0% + 10 dgt.
2 mF	0.0001 mF	
20 mF	0.001 mF	

⚠ Accuracy applies to 10% to 100% of the Range
Overload protection: 250V DC/AC_{rms}
Large capacitance response time:≥1µF about 3s
Measurement error does not include lead capacitance.

3.10. Diode

Range	Resolution	Accuracy	Test- current	Open circuits volts
2 V	1 mV	±5%	0.4 mA	ca. 3.3 V DC

Overload protection: 250V DC/AC_{rms}

⚠**Warning:** Do not input voltage in this function

3.11. Continuity check

Audible continuity threshold: Less than 50Ω (± 20Ω)
Test Current: ca. 0,4 mA
Open Circuit Voltage: ca. 1 V DC
Overload protection: 250V DC/AC_{rms}

⚠**Warning:** Do not input voltage in this function

Front Panel Description

1. 4 1/2 digits LCD (19999) with backlight illumination
2. Hz/Duty key for duty cycle measurement
3. MAX/MIN key for minimum/maximum value
4. Select key- function selector button
5. HOLD / BL key for data hold and backlight
6. RANGE key for manual range selection
7. REL/USB key for relative value and Interface
8. Rotary selector for measurement function
9. 10 A – Input jack
10. V/Ω/Hz/ /CAP/TEMP – Input jack
11. mA – Input jack
12. COM – Input jack

4.1 Description

1. **LCD display with function indicators**

The 4 1/2 digit LCD display is used for digital measurement display with automatic polarity selection and comma placement. The maximum display is 19999. The bar graph is a trend indicator, showing how far the measured value is in the current measurement range. The function symbols are chosen automatically depending on the range. When exceeding the measurement range, the overflow indication “OL” appears. The battery should be replaced promptly when a battery symbol appears in the left upper corner of the display.

2. **Hz** / **Duty Key**

   Pressing this button toggles the frequency measurement function to measure the duty cycle. The display shows the ratio of high to low pulse in percent.

3. **MIN** / **MAX Key**

   The Min / Max key is used to activate the minimum or maximum value holding function. Press the button once to hold only the highest reading on the display. If this value falls, still the highest indication remains on the display. Press it again to keep the smallest reading on the display. If this reading increases during the measurement again, still the minimum value remains in the display.

4. **Select Key**

   The Select key is used to switch the different modes. Press this key in the current and voltage ranges to switch between AC and DC voltage. Press this key also to switch between the diode and continuity test and the temperature range in °C or °F.

5. **Hold** / **Backlight Key**

   The Hold / Backlight key is used to activate the data hold function by pressing the key once. The current measured value is retained in the display until the button is pressed again. Keep the button pressed for a 2 seconds and the backlight of the LCD display is activated. This turns off automatically after about 20 seconds.

6. **Range Key**

   The Range button is for manual range selection. The unit has an auto-ranging, but it can sometimes be useful to select the measurement range manually. This increases the response time considerably since the search for the best measurement range is omitted. Exceeding the measuring range is displayed indicating an overflow symbol ”OL”.

7. **REL**/**USB Key**

   The relative value measurement function allows the measurement and display of signals considering a defined reference value. Press the REL key 1 x and the displayed value is set to 0. Wherein a reference value of 100V for example, and an actual measurement value of 90V, in the LCD display -010.0V appears. If the reference value and measured value are the same, the digital display shows the value of “0.”

   Press and hold the REL / USB button briefly, the data interface is activated and an RS-232 symbol is shown on the display. The device cannot transmit any measurement data without an activated interface.

8. **Rotary Selector**

   This function selector switch is used to switch between the different measurement functions. To select the desired measurement function, turn the switch to the appropriate position.

9. **10A Input Jack**

   The 10A jack is used for AC and DC currents up to 10A with measurements up to 30 seconds (20 A for 10 sec.) once every 15 minutes. Connect the red lead for current measurements with this jack. This range is protected by a 10A fuse against overload.

10. **V**/**Ω**/**Hz**/  /**CAP**/**TEMP Input Jack**

    To connect the red test lead for voltage, resistance, capacitance, and frequency measurements, as well as for the measurement functions diode and continuity tests.

11. **mA Input Jack**

    The mA jack is used for AC and DC currents up to 200mA, and temperature measurement. Connect mA current measurements with the red lead to this terminal and for temperature measurement the connector of the temperature sensor/adapter. This range is protected by a 200mA fuse against overload.

12. **COM Input Jack**

    To connect the black test lead (all measurement functions).

Preparation for Operation

5.1. Using the test leads

Use only the identical type of test leads supplied with your meter. These test leads are rated for 1000V.

Cautions!

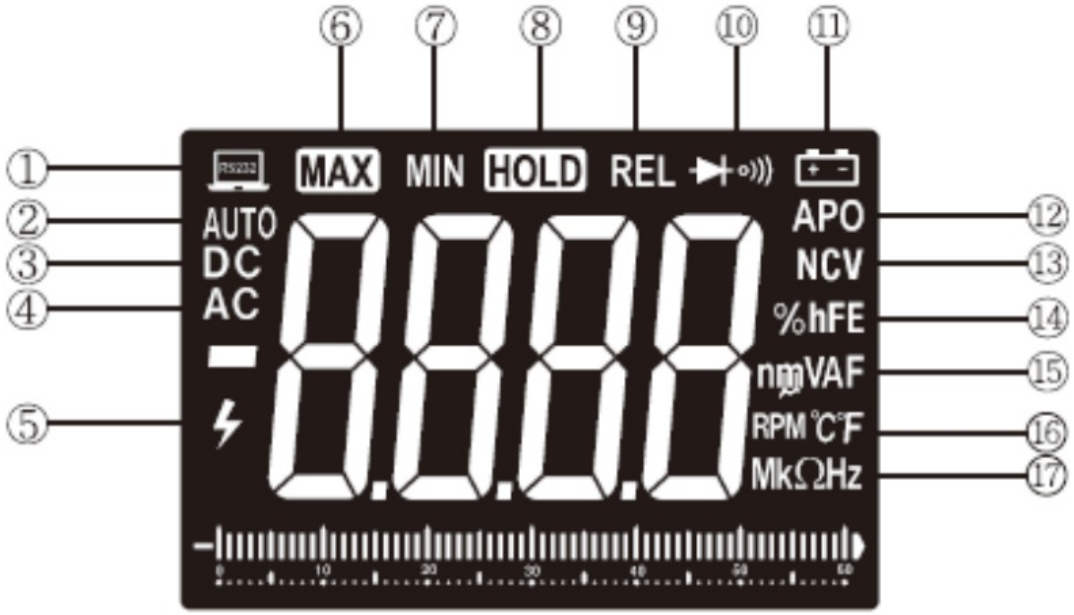
- The maximum rating of your meter is 1000V DC and AC. If you try to measure voltages above 1000V DC or AC, you might damage your meter and expose yourself to a serious shock hazard. Use extreme care when you measure high voltages.
- Never connect the probe you plug into the COM terminal to a source of voltage greater than 1000V DC/AC with respect to earth/ground. This creates a serious shock hazard.

5.2. Using the stand

Use your meter's stand to prop up the meter. If you prop your meter on a benchtop, the stand helps provide a better viewing angle.

To use the stand as a prop, just open it away from the meter and set it on a flat surface.

5.3. Display Symbols



1	RS-232 / USB Interface activated	2	Auto Range activated
3	DC Direct Current measurement	4	AC Alternating Current measurement
5	High Voltage warning!	6	Maximum value function activated
7	Minimum value function activated	8	Data Hold- function activated
9	Relative value function activated	10	Diode-/ Resistance measurement function
11	Low Battery warning!	12	Auto power off- function activated
13	NCV (not in use)	14	Duty cycle (%) or have function activated
15	Current & Capacitance symbols	16	Temperature °C / °F symbols
17	Resistance & Frequency symbols		

How to make measurements

6.1. Measuring AC/DC voltage

Understanding Phantom readings:

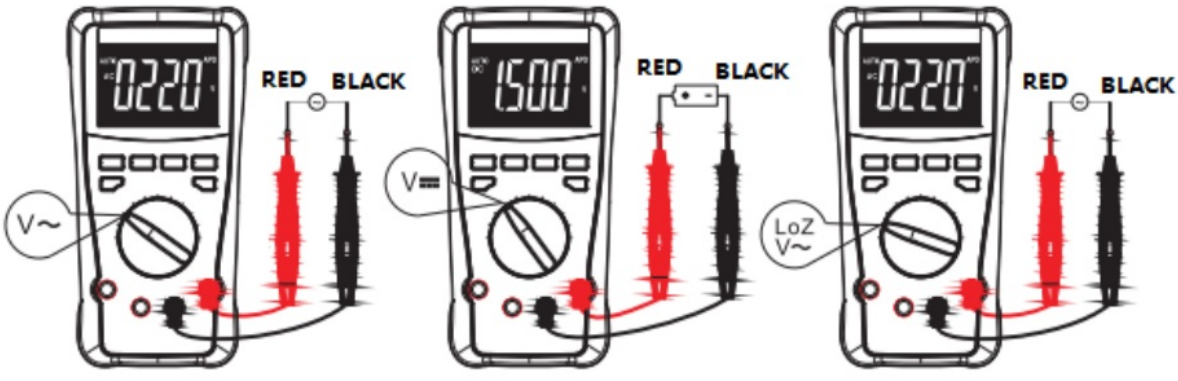
In some DC and AC voltage ranges, when the test leads are not connected to any circuit, the display might show a phantom reading. This is normal. The meter's high input sensitivity produces a wandering effect. When you connect the test leads to a circuit, accurate reading appears.

WARNING!

Do not try to measure a voltage greater than 1000V DC or AC. Do not use the rotation knob to switch functions with attached voltage.

Follow these steps to measure DC/AC Voltage.

1. Set the rotary selector to the desired position. Select the range as required for the voltage level to be measured. If you do not know the voltage level, start with the range switch set to the highest voltage position and reduce the setting as needed to get a reading.
2. Plug the black test lead into the meter's COM terminal and the red test lead into the V/Ω/Hz terminal.
3. Connect the test leads to the DC/AC voltage source you want to measure.



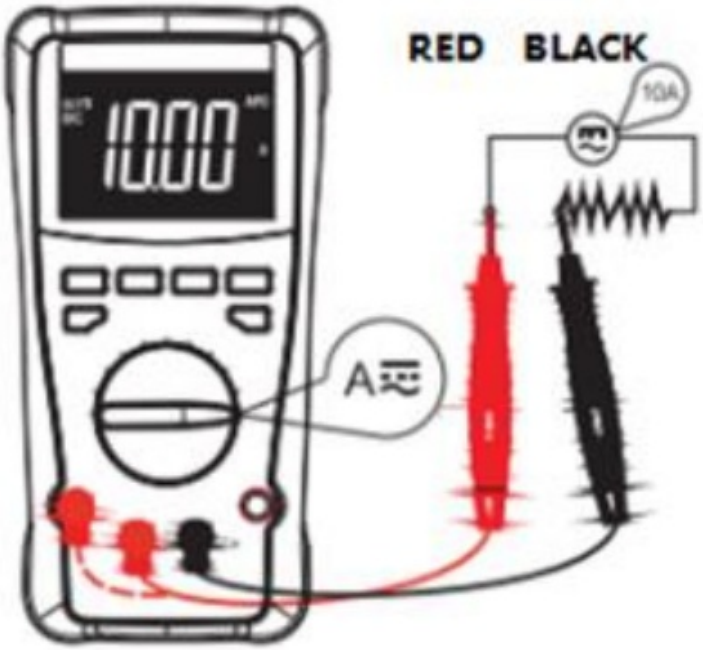
6.2. Measuring DC/AC Current

WARNING!

- Do not apply voltage directly across the terminals. You must connect the meter in series with the circuit.
- The 10A terminal is fused. A severe fire hazard and short circuit danger exist if you apply a voltage with high current capability parallel to this terminal. The meter can be destroyed under such conditions.

To measure current, break the circuit and connect the probes to two circuit connection points in series. Never connect the probes across a voltage source in parallel. Doing so can blow the fuse or damage the circuit under test.
Note: The maximum input current is 0,2 A or 10A depending on the terminal used. In the 10A range excessive current flow blows up the fuse, which must be replaced.

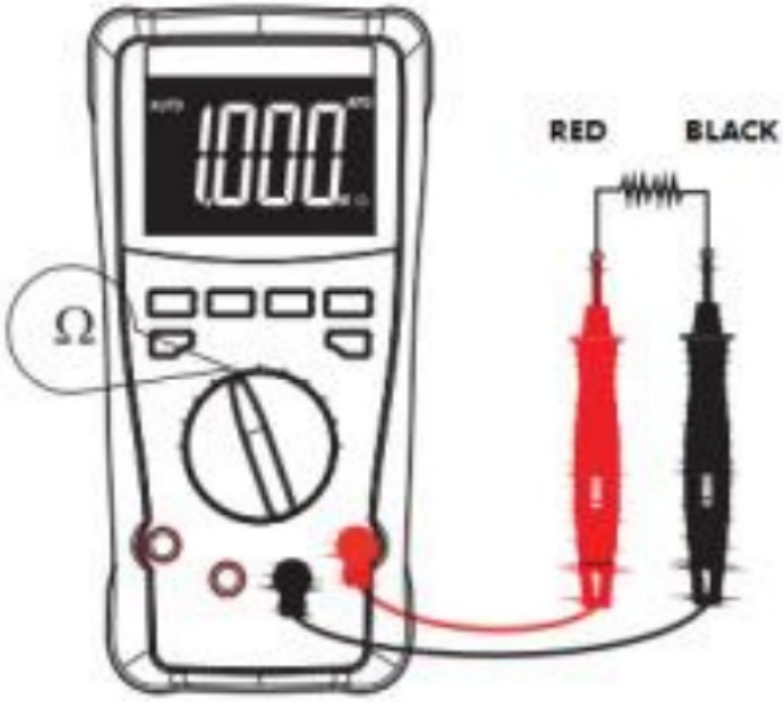
1. Set the rotary selector to the desired A range.
2. Use the SELECT key to switch between AC or DC measurement
3. Plug the black test lead into your meter's COM terminal and the red test lead into your meter's mA or 10A terminal.
4. Connect the test leads in series with the circuit and read the measurement value.



6.3. Measuring Resistance
WARNING!

- Never connect the test leads to a source of voltage when you have selected the OHMS function and plugged the test leads into the V/Ω /Hz-terminal.
- Be sure that the circuit under test has all power removed and that any associated capacitors are fully discharged before you make a resistance measurement.

1. Set the rotary selector to the desired OHM function.
2. Plug the black test lead into your meter's COM terminal and the red test lead into your meter's V/Ω/Hz terminal.
3. Connect the test leads to the device you want to measure and read the measurement value.
4. Remove all test leads after the measurement.



Notes:

- When you short the test leads in the 200Ω range, your meter displays a small value (no more than 0.3Ω). This value is due to your meters and the test leads to internal resistance. Press REL to subtract it from small resistance measurements for better accuracy.
- Always take care of a good connection, as a bad connection influences the resistance measurement.

6.4. Measuring Frequency

Warning! If you try to measure the frequency of a signal that exceeds 250V ACrms, you might damage your meter and expose yourself to a severe shock hazard.

Follow these steps to measure the frequency of a signal:

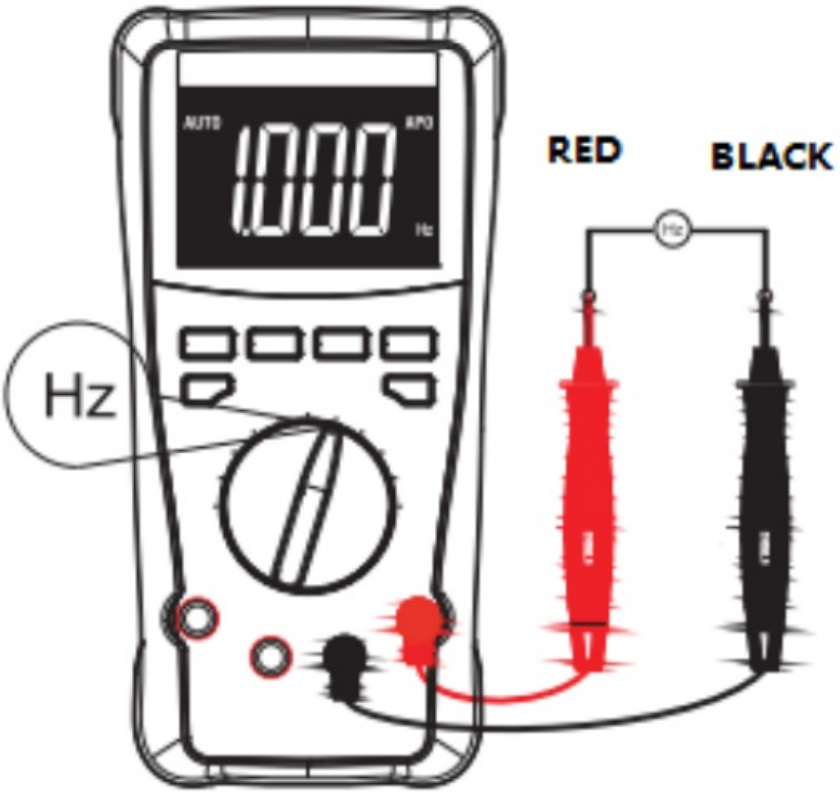
Note:

- In noisy environments, use shielded cable to measure small signals
- When measuring a high voltage circuit, any parts of your body should not touch the high voltage circuit, otherwise, it may hurt your body

Note: For the most accurate measurements, we strongly recommend you use a BNC cable with a ferrite core.

1. Set the rotary selector to Hz.
2. Plug the black test lead into your meter's COM terminal and the red test lead into your meter's V/Ω/Hz terminal.
3. Connect the test leads to the frequency source.

Warning! When you connect the test leads to an AC outlet, do not turn the function rotary selector to another range. It could damage the meter's internal components or injure you.

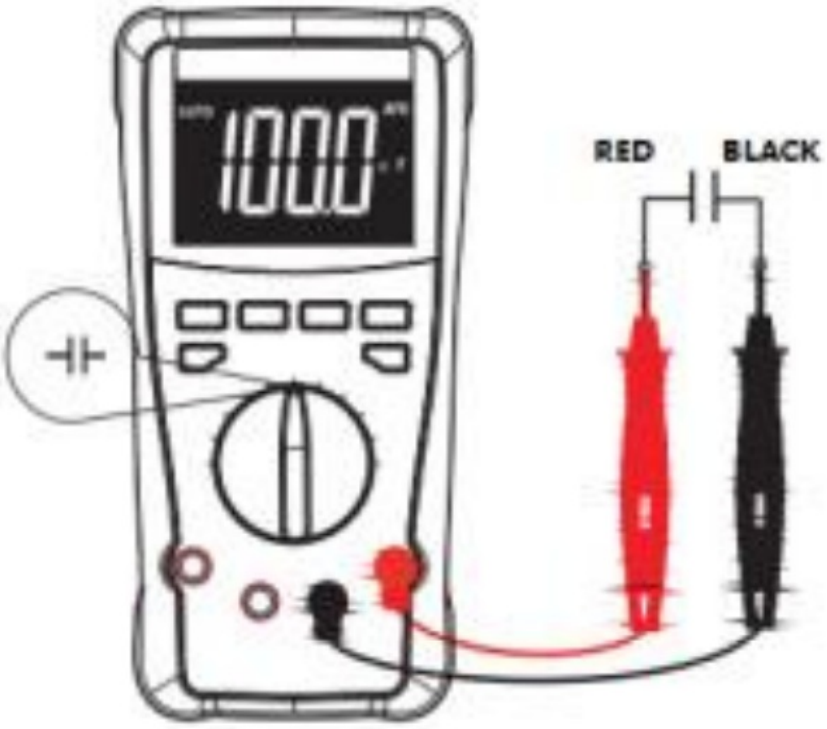


6.5. Capacitance measurements

Warning!

To avoid electric shock, disconnect power to the unit under test and discharge all capacitors before taking any capacitance measurements. To discharge the capacitor, short the pins of the capacitor. Avoid any contact with the pins of a charged capacitor (Danger of electrical shock). The multimeter can be seriously damaged when measuring charged capacitors.

1. Set the function switch to the CAP function.
2. Plug the black test lead into your meter's COM-terminal () and the red test lead into your meter's V/Ω/Hz –terminal(+).
3. Connect the test leads to the capacitor to be tested. Pay attention to the correct polarity of the capacitor.
4. Read the measurement value. The display will indicate the proper decimal point value.

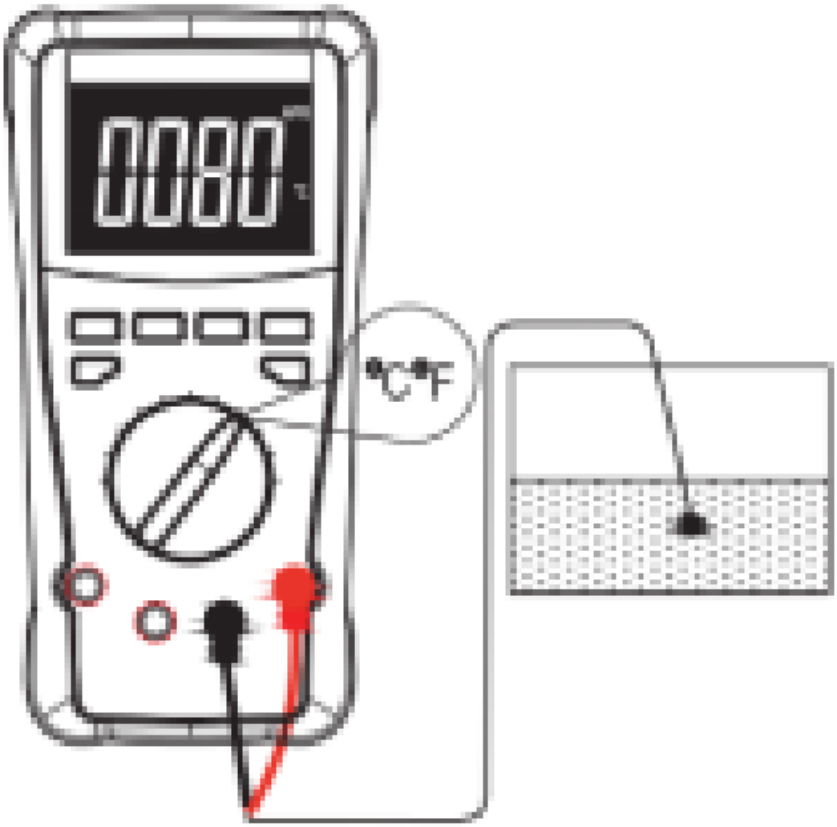


6.6. Temperature measurements

Warning!

To avoid electric shock, disconnect both test probes from any source of voltage before making a temperature measurement.

1. If you wish to measure temperature set the function switch to the °C-range
2. Insert the temperature probe to the input sockets V/Ω/Hz (+) and COM (-)
3. Connect the temperature probe to the measurement object. Keep the connection until the reading stabilizes (about 30 seconds).
4. Read the temperature in the display. The digital reading will indicate the proper decimal point and value.

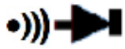


Warning!

To avoid electric shock, be sure, that the thermocouple has been removed before changing to another measurement function.

6.7. Checking diodes

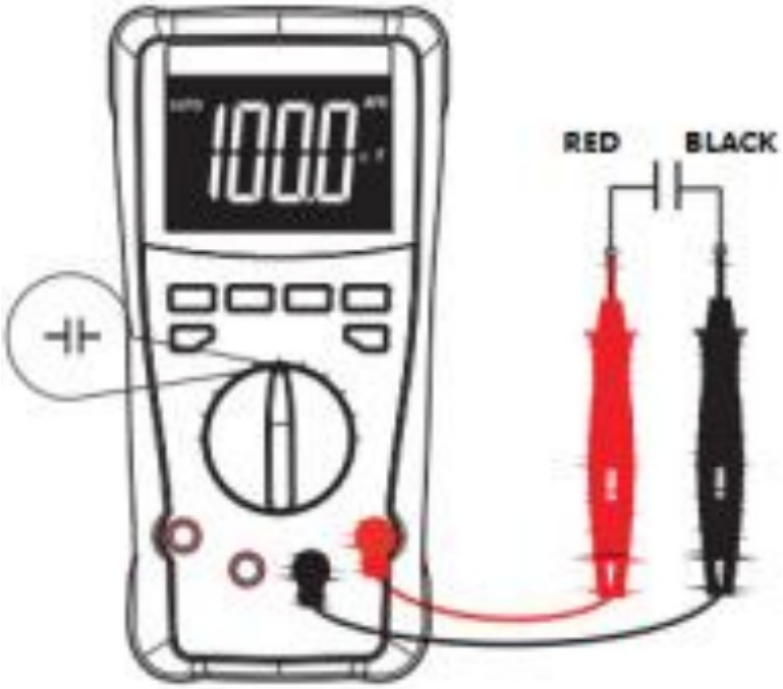
This function lets you check diodes and other semiconductors for opens and shorts. It also lets you determine the forward voltage for diodes.

1. Set the rotary selector to the diode  position.
2. Press the select key until the diode symbol  is shown
3. Plug the black test lead into your meter's COM terminal and the red test lead into the V/Ω/Hz/- terminal.
4. Connect the test leads to the diode and the reading is displayed

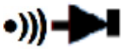
Notes:

- If the display shows a value for example 0.2 for a germanium diode or 0.5 for a silicon diode, reverse the diode. If the meter indicates an over range, the diode is good. The displayed number is the diode's actual forward voltage (up to 2.0V).

- If the display indicates an over-range condition, reverse the polarity of the connection. If the display shows a value, the device is good. The displayed value is the component's actual forward voltage (up to 2. V). If the display still indicates an over-range condition, the device is open.
- If the display shows a value both before and after you reverse the polarity, the device is shorted.



6.9. Checking Continuity
Follow these steps to check a circuit's continuity.

1. Set the rotary selector to 
2. Press select until the Continuity symbol  is shown
3. Plug the black test lead into your meter's COM terminal and the red test lead into your meter's V/Ω/Hz/- terminal.
4. Remove power from the circuit.
5. Connect the test leads to the circuit.

Note:
The buzzer sounds if the measured resistance is below about 50 Ω approximately.
Warning! Never perform a continuity measurement on a circuit that has power connected.

6.10. PC software
Install the enclosed PC software from the CD or download the more recent "PeakTech DMM Tool" from our homepage **www.peaktech.de** (recommended).

1. Activate the interface with the USB button until an RS-232 symbol appears on the display
2. Connect the USB cable to your PC.
3. Wait until Windows has automatically installed the corresponding driver and assigned a virtual COM port to the device in the device manager. You can check the number of the COM port in the device manager.
4. Start the PC software and connect the multimeter.
5. Measurement data can now be recorded live and saved for further processing

Care and Maintenance

7.1. Installing the battery

Your meter requires a 9V battery for power. The battery symbol appears when the battery voltage drops to certain limits. For proper operation, replace the battery as soon as possible. Continued use with a low battery will lead to abnormal readings.

Warning!

To avoid electric shock, disconnect both test leads from the equipment before you remove or install the battery.
Follow these steps to install the battery:

1. Turn off the power and disconnect the two test leads.
2. Remove the screw to open the battery cover.
3. Remove the battery.
4. Place the battery into the battery compartment.
5. Replace the battery cover and secure it with the screw.

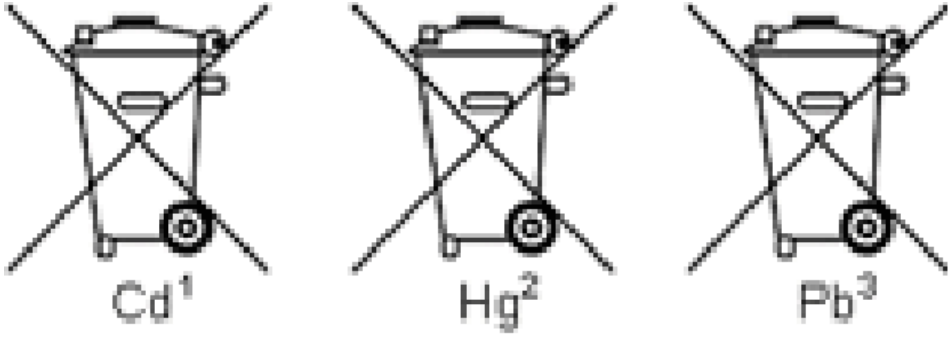
WARNING! Do not operate the meter until you replace the battery and close the battery compartment cover.

Notes:

Never leave a weak or dead battery in your meter. Even a leakproof battery can leak damaging chemicals. When you are not going to use your meter for a week or more, remove
the battery.

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 of 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 east side of 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 a pollutant:



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

7.2. Replacing the fuse

WARNING! To avoid electric shock disconnect the test leads before removing the battery or the fuse. Replace only with the same type of battery or fuse. Service should be performed only by qualified personnel.
Caution! For continued protection against fire or another hazard, replace only with a fuse of the specified voltage and current ratings.
F1 200mA / 1000V (FF): 6,3 x 32 mm
Breaking Capacity: 10 kA
F2 10A / 1000V F: 10 x 38 mm

Breaking Capacity: 50 kA (AC), 30 kA (DC)
Follow these steps to replace the fuse:

1. Turn off the meter and disconnect the test leads.
2. Remove the screw on the battery cover, remove the battery cover and remove the old battery, too.
3. Remove the defective fuse and replace it with a new one with the correct specified voltage and current ratings.
4. Replace the battery and replace the battery cover on the case and secure it with the screw.

Batteries, which are used up dispose of duly. Used-up batteries are hazardous and must be given in for this being a supposed collective container.

This manual considers the latest technical knowledge.
Technical changing which are in the interest of progress are reserved.
We herewith confirm that the units are calibrated by the factory according to the specifications as per the technical specifications.
We recommend calibrating the unit again, after 1 year.

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Documents / Resources

	PeakTech 2040 20000 Counts Digital Handheld Multimeter [pdf] Instruction Manual 2040, 20000 Counts Digital Handheld Multimeter, Digital Handheld Multimeter, Handheld Multi meter, 2040, Multimeter

References

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