AC Response: 50 … 60 Hz

Function	Range	Resolution	Accuracy ±(% of reading + digits)
DC voltage	400.0 mV	0.1 mV	±(1.0 % + 8)
	4.000 V	1 mV	±(1.0 % + 3)
	40.00 V	10 mV	
	400.0 V	0.1 V	
	600 V	1 V	±(1.2 % + 3)

Input protection: 600 V DC or 600 V AC RMS
Input impedance: 10 M

Function	Range	Resolution	Accuracy ±(% of reading + digits)
Low Z DC voltage	400.0 mV	0.1 mV	±(1.5 % + 5)
	4.000 V	1 mV	
	40.00 V	10 mV	
	400.0 V	0.1 V	

Input protection: 300 V AC RMS or 300 V DC
Input impedance: approx. 3k

Function	Range	Resolution	Accuracy ±(% of reading + digits)
AC current	4.000 A	1 mA	±(2.5 % + 3)
	10.00 A	10 mA	

Overload protection: 10 A/600 V fuse
AC response: 50 … 60 Hz

Function	Range	Resolution	Accuracy ±(% of reading + digits)
DC current	4.000 A	1 mA	±(2.0 % + 3)
	10.00 A	10 mA	

Overload protection: 10 A/600 V fuse

Function	Range	Resolution	Accuracy ±(% of reading + digits)
Resistance	400.0 Ω	0,1 Ω	±(1.5 % + 5)
	4.000 kΩ	1 Ω	
	40.00 kΩ	10 Ω	
	400.0 kΩ	100Ω	
	4.000 MΩ	1 kΩ	±(2.0% +10)
	40.00 MΩ	10 kΩ	

Input protection: 600 V AC RMS or 600 V DC

Function	Range	Resolution	Accuracy ±(% of reading + digits)
Capacitance	40.00 nF	10 pF	±(5.0 % + 35)
	400.0 nF	100 pF	±(3.0 % + 5)
	4.000 µF	0.001 µF	
	40.00 µF	0.01 µF	
	400.0 µF	0.1 µF	
	4000 µF	1 µF	±(5.0 % + 5)

Input protection: 600 V AC RMS or 600 V DC

Function	Range	Resolution	Accuracy ±(% of reading + digits)
Frequency	9.999 Hz	0.001 Hz	±(1.0 % + 5)
	99.99 Hz	0.01 Hz	
	999.9 Hz	0.1 Hz	
	9.999 kHz	1 Hz	
	99.99 kHz	10 Hz	
	999.9 kHz	100 Hz	±(1.2 % + 5)
	9.999 MHz	1 kHz	

Input protection: 600 V AC RMS or 600 V DC
Sensitivity: >8V RMS

Function	Range	Resolution	Accuracy ±(% of reading + digits)
Duty cycle	1.0 … 99.9 %	0.1 %	±(1.2 % + 2)

Input protection: 600 V AC RMS or 600 V DC
Pulse width: 0.1 … 100 mS
Frequency range: 5Hz … 10kHz
Sensitivity: >8 V RMS

Function	Range	Resolution	Accuracy ±(% of reading + digits)
Temperature	-18 … 760 °C	0.1 °C	±(2.0 % + 5 °C)
	0 … 1400 °F	0.1 °F	±(2.0 % + 9 °F)

Input protection: 300 V AC RMS or 300 V DC

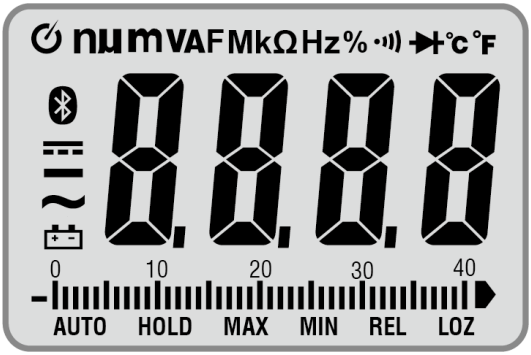
3 Device description

Meter

1- LCD
2- MAX/MIN button
3- MODE button
4- Rotary function switch
5- 10 A input jack
6- COM input jack
7- V/Ω/⏚/))) /CAP Hz%/Temp input jack
8- HOLD/Backlight button
9- Bluetooth/Flashlight button
10- Flashlight

Display

V	Volts
A	Amperes
~	Alternating current
⎓	Direct current
-	Negative reading
Hz	Hertz (frequency)
%	Percent (duty cycle)
Ω	Resistance
•))	Continuity
⊣▶	Diode test
F	Farads (capacitance)
N	Nano (10-9)
° F	Degrees Fahrenheit
° C	Degrees Centigrade
µ	Micro (10-6)
M	Milli (10-3)
k	Kilo (103)
M	Mega (106)
OL	Overload
	Auto Power Off
	Low battery
AUTO	Autoranging
HOLD	Display hold
LOZ	Low Z (impedance)
MAX/MIN	Maximum/Minimum
	Bluetooth



3.1 Delivery contents

1 x multimeter PCE-HDM 7
1 x test lead
1 x storage bag
1 x K-type thermocouple
1 x temperature adaptor
1 x user manual
2 x AAA 1.5 batteries
1 x seal

4 On / off

To switch on the device, turn the rotary switch to the desired measuring function. The meter will power on immediately. To turn off the meter, turn the rotary function switch to “OFF”. The meter will switch off automatically.

5 Measuring functions

5.1 AC/DC voltage measurements

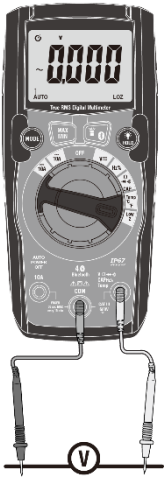
WARNING: Observe all safety precautions when working on live voltages.

1. Set the rotatory function switch to the V ⎓ position.
2. To select AC or DC voltage, press the MODE-button until the AC “~” or DC “ ⎓ ”symbol appears on the LCD.
3. Insert the black test lead into the COM input jack and the red test lead into the V input jack.
4. Touch the test lead probes to the circuit under test. If 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.
5. Read the voltage on the display.

5.2 Low Z AC/DC voltage measurements

WARNING: Observe all safety precautions when working on live voltages. Do not connect to circuits that exceed 300 V AC RMS or 300 V DC when the meter is set to Low Z.

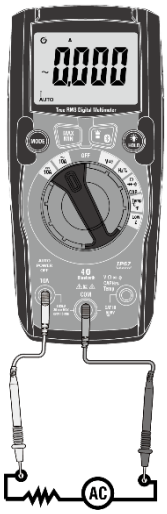
Low Z is used to check for “ghost” voltage. Ghost voltages are present when non-powered wires are in close proximity to powered wires. Capacitive coupling makes it appear that non-powered wires are connected to a real source of voltage. The Low Z setting places a load on the circuit, which greatly reduces the voltage reading when connected to ghost voltage.



1. Set the rotary function switch to the Low Z position.
2. To select AC or DC voltage, press the MODE button until the AC “~” or DC “ ⎓ ” symbol appears on the LCD.
3. Insert the black test lead into the COM input jack and the red test lead into the V input jack.
4. Touch the test leads to the circuit under test. If 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.
5. Read the voltage on the LCD.

5.3 AC current measurements

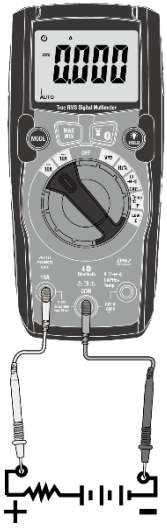
WARNINGS: Observe all safety precautions when working on live circuits. Do not measure current on circuits that exceed 600 V. Measurements in the 10 A range should be limited to 30 seconds maximum every 15 minutes.



1. Set the rotary function switch to the 10 A~ position.
2. Insert the black test lead into the COM input-jack and the red test lead into the 10 A input jack.
3. Remove power from the circuit under test, then open up the circuit at the point where you wish to measure current.
4. Touch the test lead probes in series with the circuit being measured.
5. Apply power to the circuit.
6. Read the current on the LCD.

5.4 DC current measurements

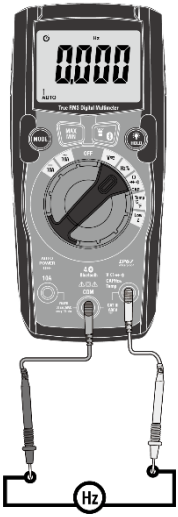
WARNINGS: Observe all safety precautions when working on live circuits. Do not measure current on circuits that exceed 600 V. Measurements in the 10 A range should be limited to 30 seconds maximum every 15 minutes.



1. Set the rotary function switch to the 10 A position.
2. Insert the black test lead into the COM input jack and the red test lead into the 10 A input jack.
3. Remove power from the circuit under test, then open up the circuit at the point where you wish to measure current.
4. Touch the test lead probes in series with the circuit being measured. Touch the red probe to the positive side of the circuit and touch the black probe to the negative side of the circuit.
5. Apply power to the circuit.
6. Read the current on the display.

5.5 Frequency and % duty cycle measurements

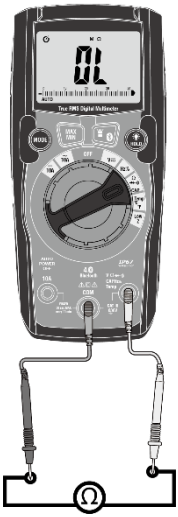
WARNING: Observe all safety precautions when working on live circuits.



1. Set the rotary function switch to the Hz % position.
2. To select Frequency or % Duty Cycle, press the MODE button until the “Hz” or “%” symbol appears on the LCD.
3. Insert the black test lead into the COM input jack and the red test lead into the V input jack.
4. Touch the test lead probes to the circuit under test.
5. Read the frequency or % duty cycle on the LCD.

5.6 Resistance measurements

WARNING: Never test resistance on a live circuit.

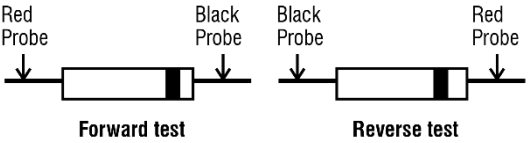


1. Set the rotary function switch to the Ω position.
2. Press the MODE button until the “Ω” symbol appears on the LCD.
3. Insert the black test lead into the COM input jack and the red test lead into the V input jack.
4. Touch the test lead probes to the component under test. If the component is installed in a circuit, it is best to disconnect one side before testing to eliminate interference with other devices.
5. Read the resistance on the display.

5.7 Diode test

WARNING: Never test diodes in a live circuit.

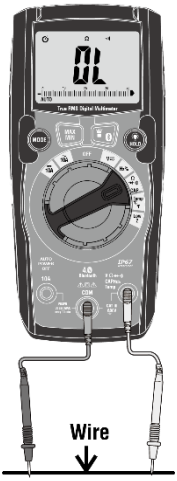
1. Set the rotary function switch to the Ω position.
2. Press the MODE button until the symbol appears on the LCD display.
3. Insert the black test lead into the COM input jack and the red test lead into the ? input jack.
4. Touch the test lead probes to the diode under test.
5. Forward voltage will indicate 0.4 to 0.7 on the display. Reverse voltage will indicate “OL”. Shorted devices will indicate near 0 and an open device will indicate “OL” in both polarities.



5.8 Continuity

WARNING: Never test continuity on a live circuit.

1. Set the rotary function switch to the Ω position.
2. Press the MODE button until the “ ” symbol appears on the display.
3. Insert the black test lead into the COM input jack and the red test lead into the Ω input jack.
4. Touch the test lead probes to the device or wire under test.
5. A beeper will sound if the resistance is approximately 50 Ω or less and the resistance value will be shown on the LCD.



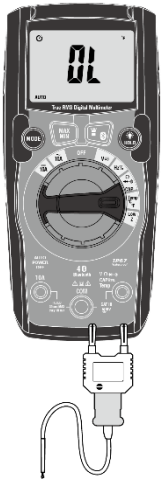
5.9 Capacitance measurements

WARNING: Safely discharge capacitors before taking capacitance measurements.

1. Set the rotary function switch to the Ω position.
2. Insert the black test lead into the COM input jack and the red test lead into the Ω input jack.
3. Press the MODE button until the “nF” symbol appears on the LCD.
4. Touch the test lead probes to the capacitor under test.
5. Read the capacitance value on the LCD. It may take up to a minute to get a stable reading on large capacitors.

5.10 Temperature measurements

WARNING: Do not touch the temperature probe to live circuits.



1. Set the rotary function switch to the °F °C position.
2. Press the MODE button to select readings in °C or °F.
3. Connect the Temperature Probe to the banana plug adaptor. Note the – and + markings on the adaptor. Connect the adaptor to the meter, making sure the – side goes into the COM input jack and the + side goes into the °F °C input jack.
4. Touch the tip of the temperature probe to the object being measured. Keep the probe touching the object until the reading stabilizes (about 30 s).
5. Read the temperature on the LCD.

6 Operation

6.1 Auto Power Off

The meter automatically turns off after 15 minutes of activity. To reset the meter after it shuts off, turn rotary function switch to the off position and then set the switch to the desired function. To disable Auto Power Off, turn the rotary function switch to the off position. Press and hold the MODE button and set the rotary function switch to the desired function. Release the MODE button when the “ ” symbol disappears from the display. Auto Power Off is now disabled. Auto Power Off will be restored when the meter is turned off and back on.

6.2 MODE button

Used to select AC or DC voltage, Hz or % duty cycle, ohms, diode Test, continuity or capacitance, and ° C and ° F.

6.3 MAX/MIN button

1. Momentarily press the MAX/MIN button to activate MAX/MIN mode. The “MAX” indicator will appear on the LCD. The meter will display and hold the maximum reading and will update when a higher “max” occurs.
2. Momentarily press the MAX/MIN button again to view the lowest reading. The “MIN” indicator will appear on the LCD display. The meter will display and hold the minimum reading and will update when a lower “min” occurs.
3. Press and hold the MAX/MIN button to end MAX/MIN mode and return to normal operation.

NOTE: MAX/MIN does not work with frequency, duty cycle, diode test, continuity and capacitance.

6.4 Bluetooth/Flashlight button

Momentarily press the Bluetooth/Flashlight button to turn the flashlight on and off. Bluetooth allows readings to be displayed and stored on mobile devices. To activate Bluetooth, press and hold the Bluetooth/Flashlight button until the “ ” symbol appears on the display. Bluetooth should be disabled when not connected to a mobile device in order to conserve battery power.

To turn off Bluetooth, press and hold the Bluetooth/Flashlight until the “ ” symbol no longer appears on the display. Use the “Meterbox Pro” app from your Android or iOS store to connect the meter to your phone..

6.5 HOLD/Backlight button

To freeze the reading on the display, momentarily press the HOLD button. “HOLD” will appear on the LCD while the reading is being held. Momentarily press the HOLD button again to return to normal operation. The backlight illuminates the LCD when the ambient light is too low to view the displayed readings. To switch on the backlight, press and hold the HOLD button until the backlight turns on. To turn it off, press and hold the HOLD button until the backlight turns off.

7 Battery and fuse replacement

Battery replacement

WARNING: To avoid electric shock, remove the test leads from the meter before removing the battery/fuse cover.

1. Lift up the tilt stand.
2. Loosen the two Phillips screws on the battery/fuse cover.
3. Remove the battery/fuse cover.
4. Replace the batteries with three AAA batteries.
5. Observe proper polarity as shown inside battery compartment.
6. Install the battery cover and tighten the screws.

WARNING: To avoid electric shock, do not operate meter until the battery/fuse cover is securely fastened to the meter.

Fuse replacement

WARNING: To avoid electric shock, remove the test leads from the meter before removing the battery/fuse cover.

1. Lift up the tilt stand.
2. Loosen the two Phillips screws on the battery/fuse cover.
3. Remove the battery/fuse cover.
4. Gently remove fuse and install new fuse into the holder.
5. Always use a UL recognized fuse of the proper size and value: 10 A/600 V (5 x 20 mm) fast blow.
6. Install the battery cover and tighten the screws.

WARNING: To avoid electric shock, do not operate meter until the battery/fuse cover is securely fastened to the meter.

8 Warranty

You can read our warranty terms in our General Business Terms which you can find here: https://www.pce-instruments.com/english/terms.

9 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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