



POWER PROBE DM600MAX High Performance Multimeter User Manual

[Home](#) » [POWER PROBE](#) » POWER PROBE DM600MAX High Performance Multimeter User Manual 

POWER PROBE DM600MAX High Performance Multimeter User Manual

POWER PROBE®

DM600MAX

User Manual



UK
CA



2
YEARS
LIMITED
WARRANTY

EN High Performance Multimeter

Read First

Safety Information

Understand and follow operating instructions carefully. Use the meter only as specified in this manual; otherwise, the protection provided by the meter may be impaired.












WARNING

This identifies hazardous conditions and actions that could cause BODILY HARM or DEATH. To avoid possible danger, follow below guidelines


- Use the meter only as specified in this manual or the protection by the meter might be impaired.
- Never operate the meter with the cover removed or the case opened.
- To avoid false readings that can lead to electric shock and injury, replace battery as soon as low battery indicator blinks.
- Use caution with voltages above 30VAC rms, 42VAC peak, or ± 30 VDC. These voltages pose a shock hazard.

- When using test leads or probes, keep your fingers behind the finger guards.
- Remove test lead from meter before opening the battery door or meter case.
- Always use proper terminals, switch position, and range for measurements.
- Do not apply more than the rated voltage, as marked on meter, between terminals or between any terminal and earth ground.
- Do not use the High Frequency Rejection (Low Pass Filter) option to verify the presence of hazardous voltages. Voltages greater than what is indicated may be present. First, make a voltage measurement without the filter to detect the possible presence of hazardous voltage. Then select the filter function.
- To avoid possible electric shock or personal injury, never attempt an in-circuit current measurement where the open circuit reference to earth is greater than 1000V.
- Replace the fuse as soon as the meter shows blown fuse screen.
- Only replace the blown fuse with the proper rating as specified in this manual.
- Do not use the meter around explosive gas, vapor or dust.
- To reduce the risk of fire or electric shock do not expose this product to rain or moisture.
- Do not attempt a current measurement when the open voltage is above the fuse protection rating. Suspected open voltage can be checked with voltage function.
- Never attempt a voltage measurement with the test lead inserted into the A input terminal.

Symbols as marked on the Meter and Instruction manual

	Risk of electric shock
	See instruction card
	DC measurement
	AC measurement
	Bluetooth
	Low battery
	Fuse
	Earth
	Conforms to EU directives
	Do not discard this product or throw away
	IP Rating

Unsafe Voltage

To alert you to the presence of a potentially hazardous voltage, when the Tester detects a voltage ≥ 30 V or a voltage overload (OL) in Voltage mode. The  symbol is displayed.

Maintenance

Do not attempt to repair this Meter. It contains no user service-able parts. Repair or servicing should only be performed by qualified personnel.

Cleaning

Periodically wipe the case with a dry cloth and detergent. Do not use abrasives or solvents.

Contents

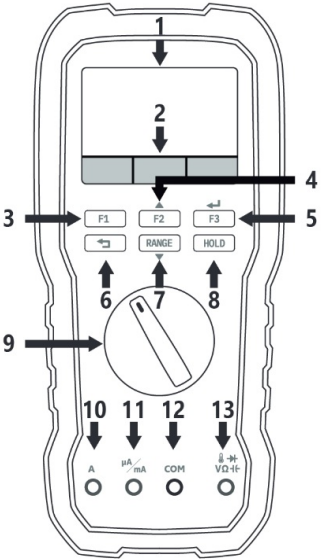
- [1 Introduction](#)
- [2 Attention](#)
- [3 Rotary switch](#)
- [4 MENU BAR](#)
- [5 Making Basic Measurements](#)
- [6 Measuring AC Voltage and DC Voltage](#)
- [7 Measuring Voltage in LoZ Mode](#)
- [8 Measuring AC and DC Current](#)
- [9 Measuring Frequency](#)
- [10 Make High Frequency Rejection Measurement \(HFR\)](#)
- [11 Duty Cycle and Pulse width Measurement](#)
- [12 Measuring Resistance](#)
- [13 Continuity Check](#)
- [14 Testing Diodes](#)
- [15 Measuring Capacitance](#)
- [16 Measuring Temperature](#)
- [17 Fuse Replacement](#)
- [18 Low Battery and Battery Replacement](#)
- [19 Accessories \(standard\)](#)
- [20 Environmental Conditions](#)
- [21 Specification](#)
 - [21.1 Voltage Measurement](#)
 - [21.2 LoZ Voltage Measurement](#)
 - [21.3 Current Measurement](#)
 - [21.4 30A Current Measurement with 30A Probe
Accessory](#)
 - [21.5 HFR Measurement](#)
 - [21.6 Peak Hold Measurement](#)
 - [21.7 Frequency Measurement](#)
 - [21.8 Duty Measurement](#)
 - [21.9 Pulse Width Measurement](#)
 - [21.10 Resistance Measurement and Continuity Test](#)
 - [21.11 Diode Measurement](#)
 - [21.12 Capacitance Measurement](#)
 - [21.13 Temperature Measurement](#)
- [22 Power Source](#)
- [23 Safety and Standard](#)
- [24 Limited Warranty](#)
- [25 Documents / Resources](#)
 - [25.1 References](#)

Introduction

The Meter Description





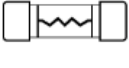


Front Panel Illustration

- 1. LCD display
- 2. MENU BAR
- 3. F1
- 4. F2/UP
- 5. F3/Enter
- 6. BACK
- 7. Range/DOWN
- 8. HOLD
- 9. Rotary switch



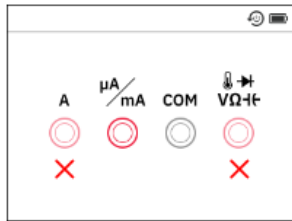
- 10. Input terminal for 0 to 10A current measurement
- 11. Input terminal for 0 to 400mA/ μ A current measurement
- 12. COM input terminal for ground
- 13. Input terminal for voltage, frequency, resistance, continuity, diode, capacitance and temperature measurements

Attention

Message	Description
<div><div></div><div>Low Battery</div></div>	Low battery, please replace the battery.
<div><div><div><div>Fuse 1 (F1)</div></div><div><div>Fuse 2 (F2)</div></div></div><div><div><div>Fuse 1 (F1)</div></div><div><div>Fuse 2 (F2)</div></div></div><div><div><div>Fuse 1 (F1)</div></div><div><div>Fuse 2 (F2)</div></div></div></div>	<p>Fuse blew. Replace the blown fuse as soon with the proper rating specified as follows.</p> <p>F1: Fast-acting fuse 11A/1000V</p> <p>F2: Fast-acting fuse 440mA/1000V</p>



APO setting time reached. Meter go to sleep mode.
Press any button or switch rotary to wake up meter.

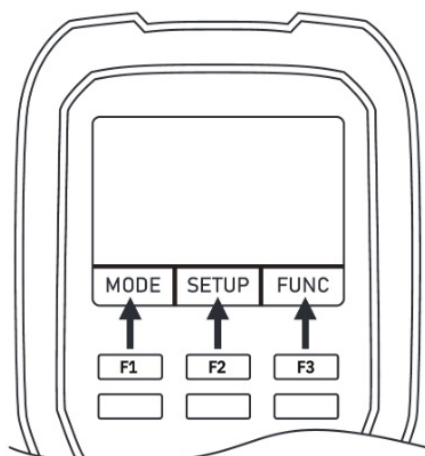


Test probe alert.
Follow the screen instructions to insert the test probe before continuing with the measurement.

Rotary switch

Rotary Switch Position	Measurement Functions
AC Voltage	ACV
	HFR(Low Pass Filter)
	Frequency
	Frequency with HFR
DC Voltage	DCV
	Duty Cycle
	Pulse Width
Loz	Low Impedance Voltage
Mini Voltage	ACmV
	DCmV
	Temperature
	HFR (Low Pass Filter)
	Frequency
	Frequency with HFR
Resistance	Resistor
	Continuity
Diode	Diode
	Capacitance
Ampere/mini Ampere (Auto-detection)	ACA/ACmA
	DCA/DCmA
	HFR(Low Pass Filter)
	Frequency
	Frequency with HFR
Micro Ampere	AC μ A
	DC μ A
	HFR(Low Pass Filter)
	Frequency
	Frequency with HFR

MENU BAR

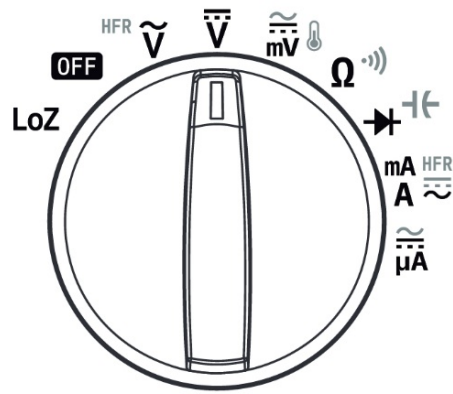


MENU Bar is used to switch the measurement mode and activate functions. Press F1, F2, and F3 to execute the corresponding function or enter the sub-level of MENU Bar.

Pressing BACK button can switch the MENU Bar back to the top level.

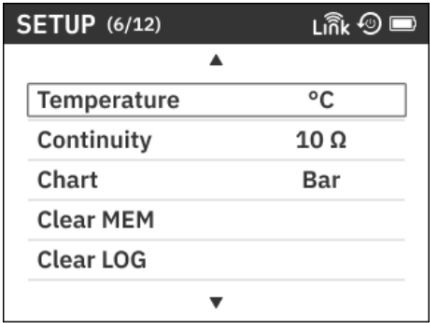
1. Mode

The multifunction on the rotary switch can be toggled by pressing the MODE button. In DCV mode, pressing the MODE button allows measurement of the Duty cycle and Pulse Width.



2. SETUP

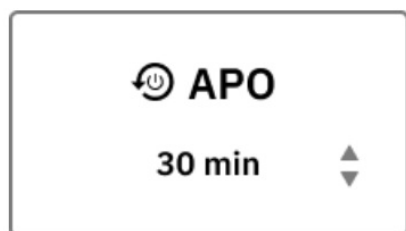
After entering SETUP mode, use the up and down keys to select the item you want to modify. Press ENTER to enter the item and use the up and down keys to adjust the settings. After making the changes, press ENTER to save. Pressing the BACK button will exit without saving the modified settings.



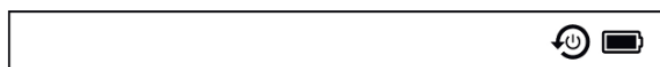
Setup Options	
APO	1min to 30min, or OFF
Brightness	1 to 5
BEEP	Buzzer ON or OFF
Wireless Link	ON or OFF
Resolution	High or Low
Temperature	Temperature default unit: °C or °F
Continuity	Continuity threshold: 10Ω to 50Ω
Chart	Chart graph: Trend or BAR
Clear MEM	Clear save data: YES or NO
Clear LOG	Clear LOG data: YES or NO
RESET	Reset setting: YES or NO
Version	Display the current version

● APO

If you don't operate the rotary switch or buttons for a specified time, the meter will turn off automatically to save the power of batteries. The default APO timer is 10 minutes. In setup mode, you can change the APO timer.



When you open this function, the status will be displayed in the top right corner of the screen.



● Buzzer

The meter equip a 2.7kHz tone buzzer. Valid button press: Beep once. And invalid button press: Beep twice. In setup mode, you can turn on or off the buzzer. But the buzzer in continuity check cannot be turn off.

When you close this function, the status will be displayed in the top right corner of the screen.



● Display Resolution

This meter have two display resolution: low resolution (3¾-digit mode) and high resolution (4¾-digit mode). The

low resolution is set to default. You can setup the resolution in setup mode.
In high resolution function, the status will be displayed on the screen



● Wireless Link

You can connect the meter to Android and iOS device with our App to show the reading remotely and download LOG / MEMORY data.

When you open this function, the status will be displayed in the top right corner of the screen.



PowerProbe Link
on App Store



PowerProbe Link
on Google Play

App Store: <https://apps.apple.com/us/app/powerprobe-link/id6476737385>

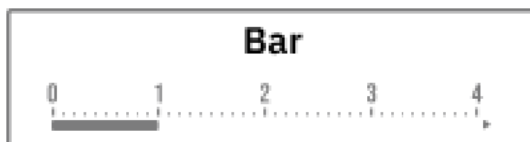
Google Play: <https://play.google.com/store/apps/details?id=com.powerprobe.app.powerprobelink>

• Chart

The chart under the screen can be selected.

Bar graph

Before displaying the numerical value, quickly show an approximate value within the range.



Trend graph

Check the stability status of the readings within the range.



3. Function

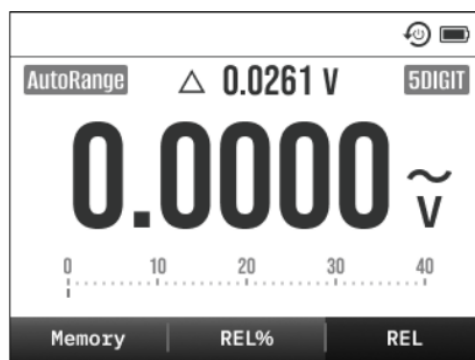
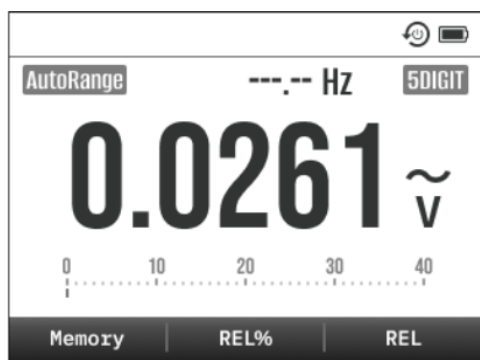
When you press the FUNCTION key, the MENUBAR will display three options.



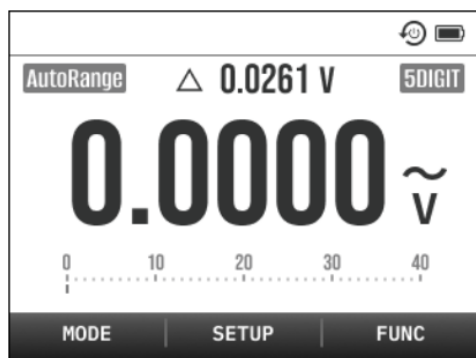
• Relative Δ

When measuring, you can use the relative (Δ) mode to subtract the offset.

Pressing the REL key activates the REL function, displaying the Δ symbol at the secondary display. The number following the Δ symbol represents the offset that has been subtracted on the main display. The REL key, once activated, will change color, and pressing it again will deactivate the function.



Even after activating the function, you can still press the BACK key to return to the default MENUBAR state.

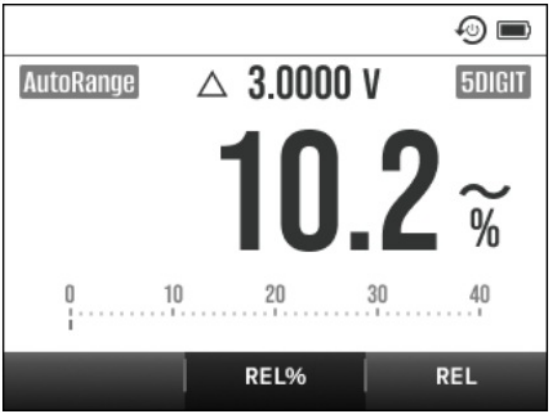


• Relative %

When measuring, you can use the relative (%) mode to calculate the relative percent value. The relative percent value is defined as below:

Relative % = [(Reading – Ref) ÷ Ref] × 100.0%

In this mode, meter records the present reading as reference and shows it on the secondary display. The relative (%) mode calculate the relative percent value from each reading, and shows result on the main display.

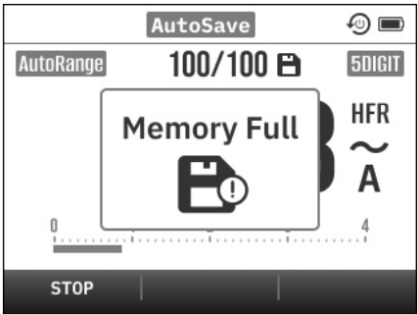
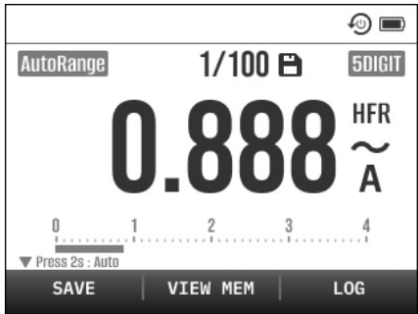


• Memory

Memory Options		
Function	DATA Location	Capacity
SAVE	MEM Record	100
Auto-Saving		
LOG	LOG Record	40000

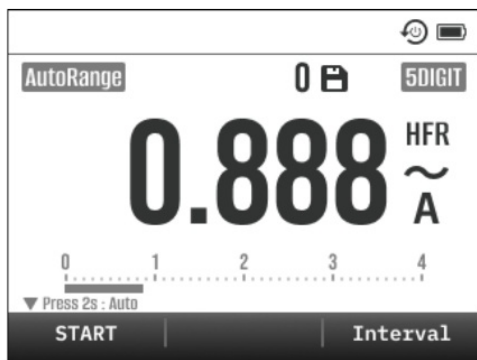
• SAVE/Auto-Saving

SAVE function can let you store the current primary reading into the meter. Press SAVE to store the reading. You can also operate the Auto-Saving mode to automatically save new reading by long press SAVE. When you use the probes to measure a new stable reading that is higher than the minimum trigger threshold, the meter will automatically save it. OL Reading won't be saved. You can see the current number of data entries by the number displayed above. When the maximum data storage limit is reached, a “Memory FULL” warning will appear.

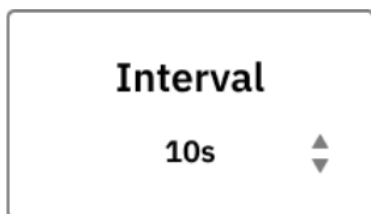


• Data Logger

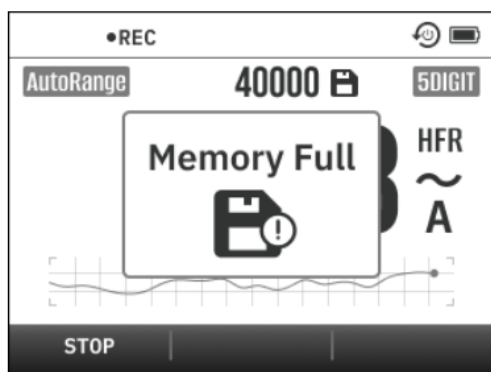
You can record a lot of reading to memory in a long time, then analyze and plot graph. The meter can store maximum 40,000 data in memory. The recorded data amount shows on the secondary display. When the LOG function starts recording, a ● REC icon will appear in the top left corner of the screen.



In LOG function, You can setup the record rate of logger. Press the INTERVAL button to adjust using the UP and DOWN buttons. The record rate can be set from 1 sec and 600 sec. The error of timer is less than 3 seconds per hour.

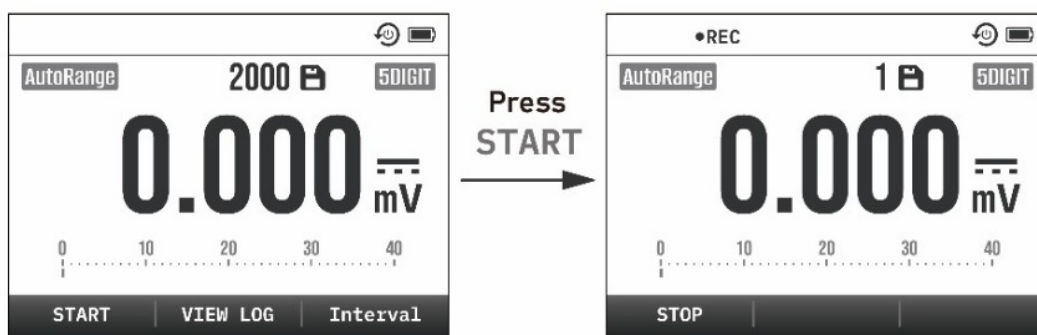


You can see the current number of data entries by the number displayed above. When the maximum data storage limit is reached, a "Memory FULL" warning will appear. Press any button to exit.

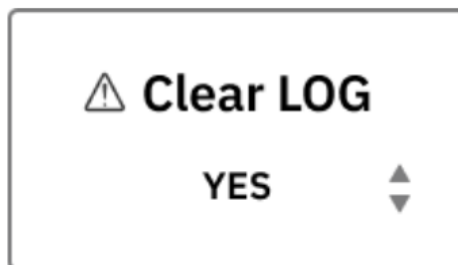
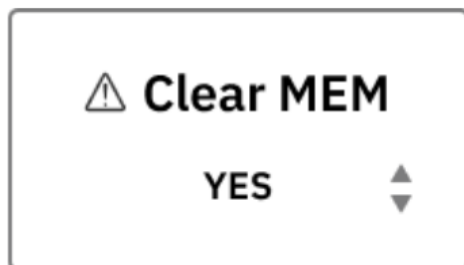


⚠ Warning

Each time a new log is recorded, the previously saved data will be deleted.









When "Memory FULL" appears, you can enter SETUP to clear data.



• View the records

Press VIEW MEM or VIEW LOG to show the stored data. Long-press UP and DOWN allows for quick screen scrolling. Press F1 allows you to quickly jump to the first data entry, while F3 allows you to quickly jump to the last data entry. Press BACK to exit.

LOG Record		Link   
(2/40000)		AC
00:00:00	0.0080 V	
00:00:01	0.0081 V	
00:00:02	0.0081 V	
00:00:03	0.0081 V	
00:00:04	0.0080 V	
00:00:05	0.0080 V	

MEM Record			Link   
(2/100)			
1	0.984 mV	DC	
2	0.716 mV	DC	
3	0.345 mV	DC	
4	0.665 mV	DC	
5	1.733 mV	DC	
6	1.681 mV	DC	

Making Basic Measurements

Preparation and Caution Before Measurement

Observe the  rules Warnings and  Cautions.

CAUTION

- When connecting the test leads to the DUT (Device Under Test) connect the common test leads before connecting the live test leads; when removing the test leads, remove the live test leads before removing the common test leads.

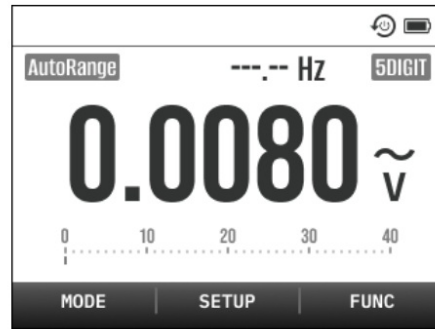
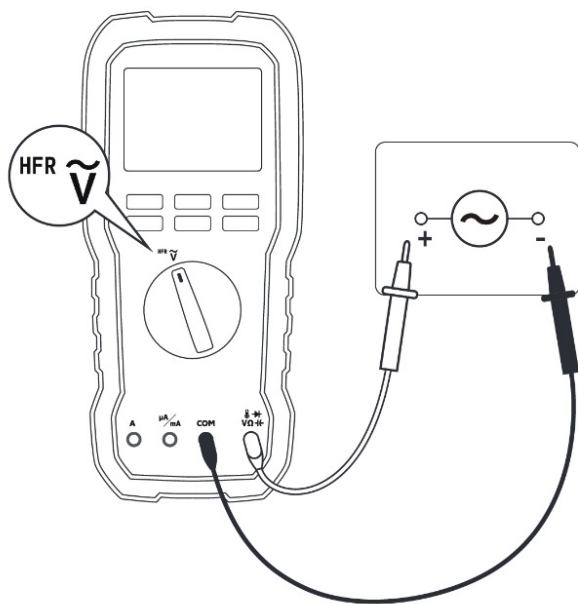
Measuring AC Voltage and DC Voltage

This meter have true rms readings, which are accurate for distorted sine waves and other waveforms (with no dc offset) such as square waves, triangle waves, and staircase waves.

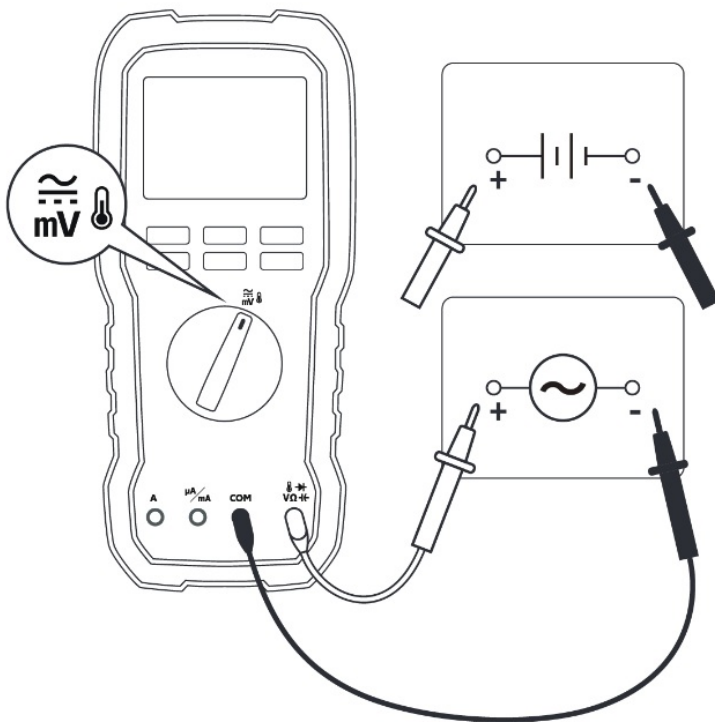
The ranges of measuring voltage are 40mV, 400mV, 4V, 40V, 400V and 1000V. To select the mV range, turn the rotary switch to mV position.

For best accuracy when measuring the DCmV, touch the probe tips together and read the DC offset. If necessary, you can use the relative (Δ) mode to automatically subtract this value.

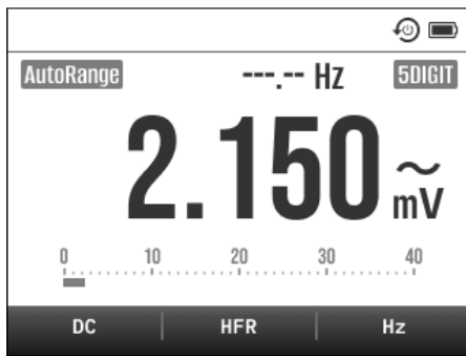
ACV



mV



In AC mode, the frequency may be show dashes if the signal is smaller than the min. sensitivity and trigger level. Please see "Sensitivity and Trigger level" table in the specification section of Frequency.



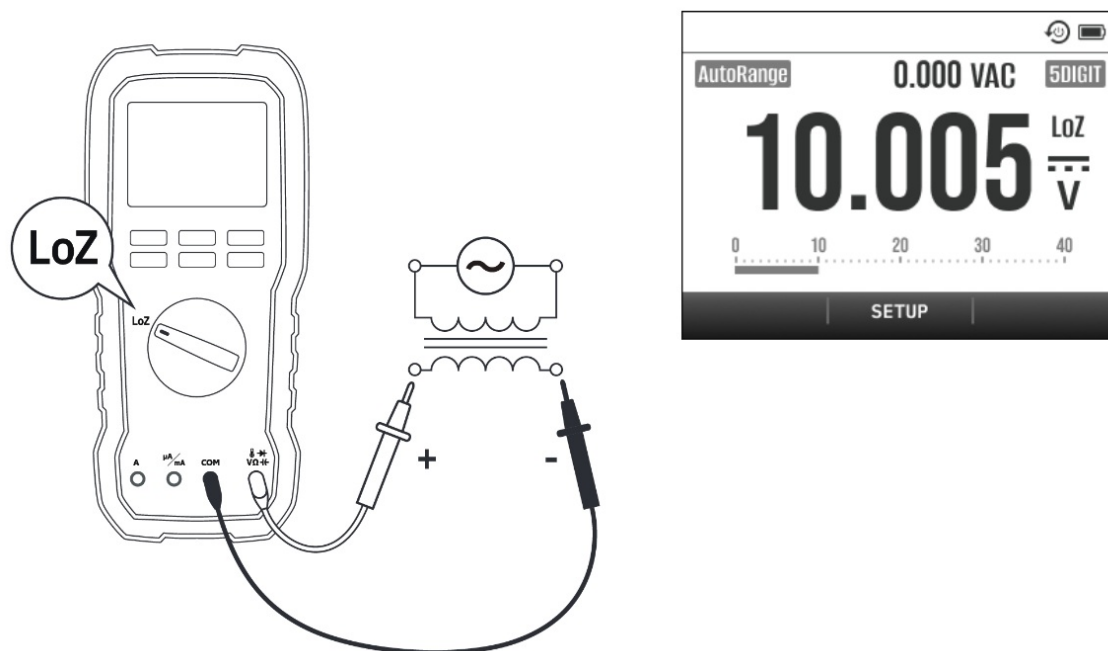
Measuring Voltage in LoZ Mode

⚠ CAUTION

- Do not use the LoZ mode to measure voltages in circuits that could be damaged by this mode's low impedance.

To eliminate ghost voltages, the meter's LoZ mode presents a low impedance across the leads to obtain a more accurate measurement. In this mode, meter will automatic measure input signal which is AC or DC and determine range.

To use the LoZ mode, turn the rotary switch to LoZ position



Measuring AC and DC Current

⚠ WARNING

- Always use proper terminals, switch position, and range for measurements.
- To avoid possible electric shock or personal injury, never attempt an in-circuit current measurement where the open circuit potential to earth is greater than 1000V.
- Only replace the blown fuse with the proper rating as specified in this manual.

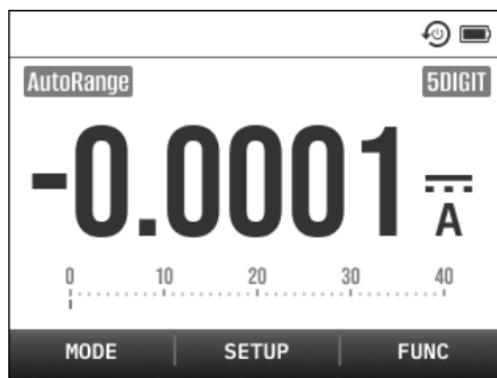
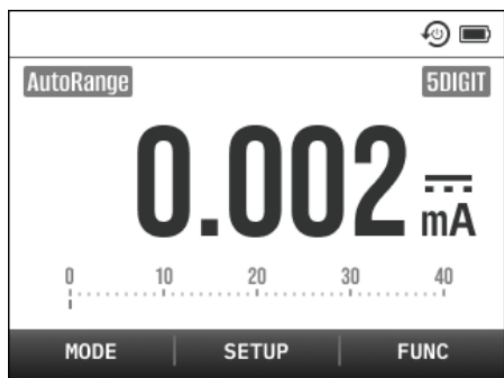
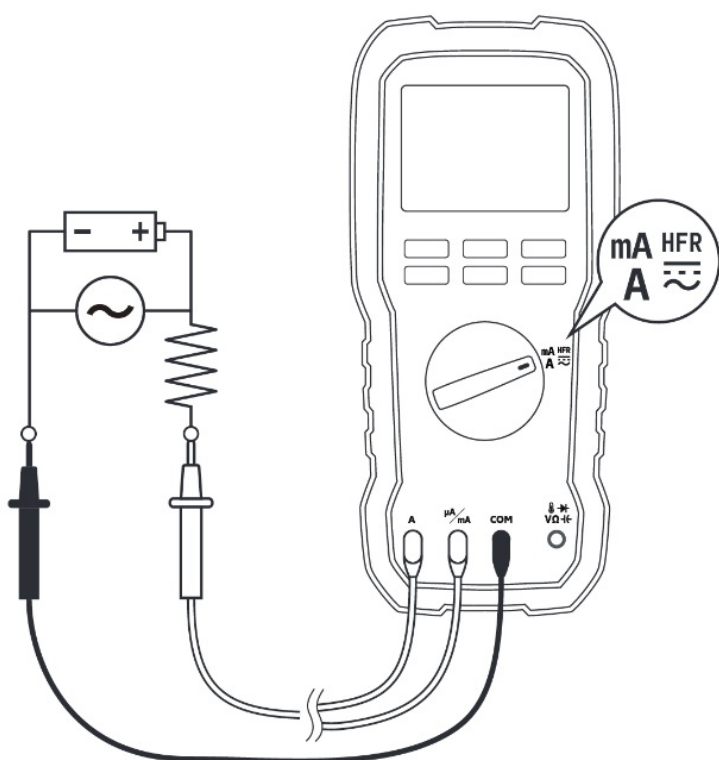
⚠ CAUTION

- Replace the fuse as soon as the indicator (FUSE) appears.

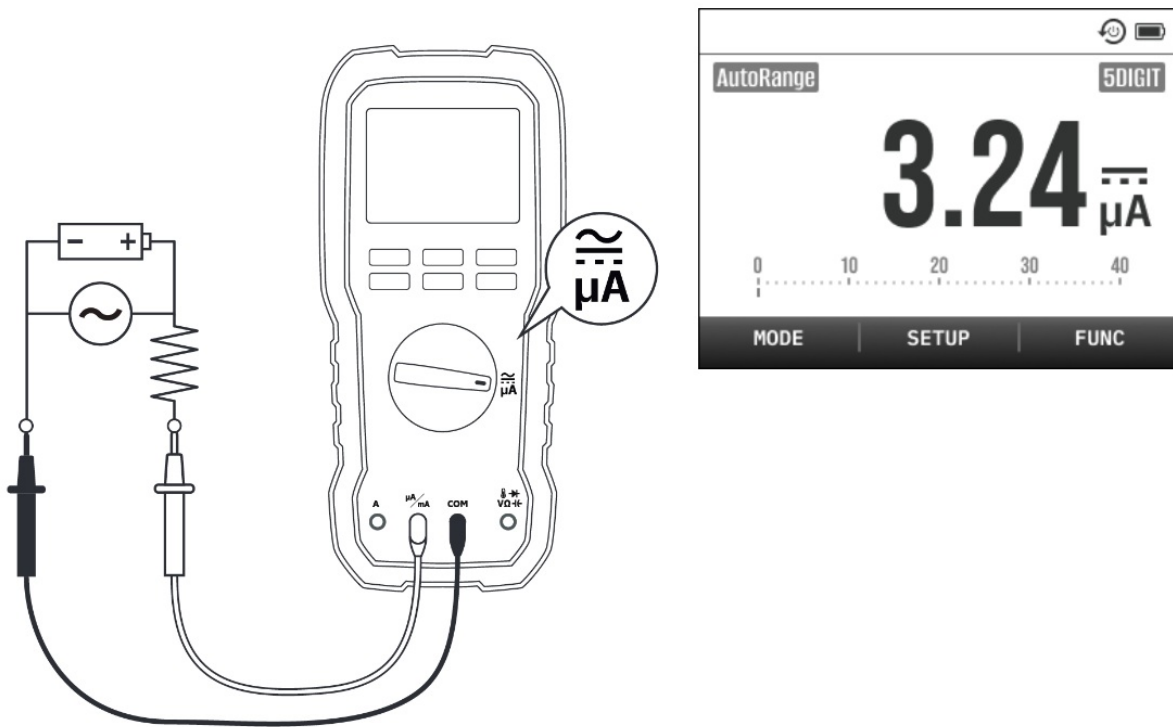
To measure current, you must break the circuit under test, then place the meter in series with the circuit.

The ranges of measuring current are 40mA, 400mA, 4A and 10A. AC current is displayed as an rms value. Insert the black lead into the COM terminal. For currents less than 400 mA, insert the red lead into the mA/μA terminal. For currents above 400 mA, insert the red lead into the A terminal.

A/mA

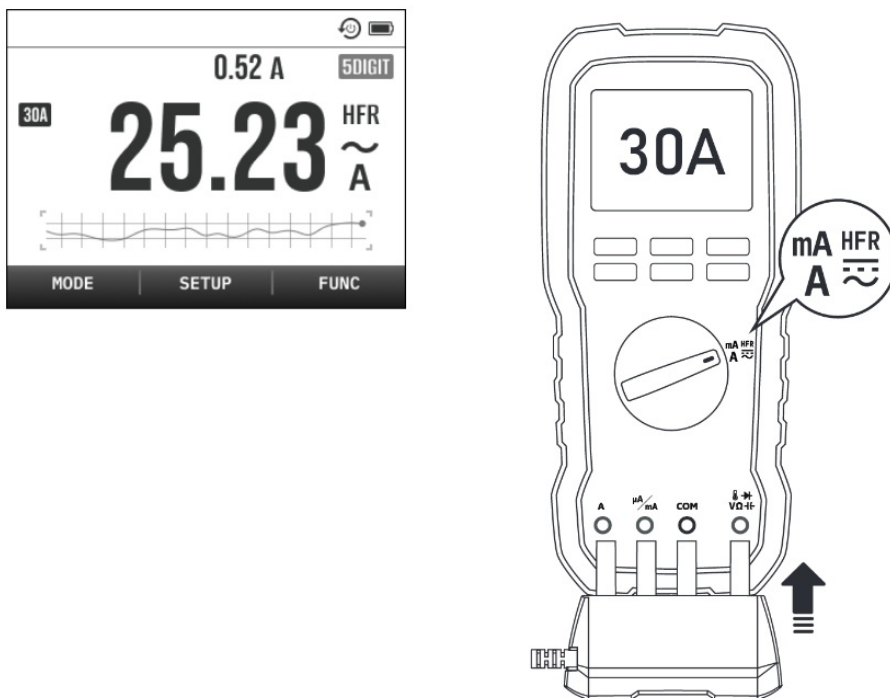


A/mA



In AC mode, the frequency may be show dashes if the signal is smaller than the min. sensitivity and trigger level. Please see “Sensitivity and Trigger level” table in the specification section of Frequency.

Plugging 30A probe to measure up to 30A current.



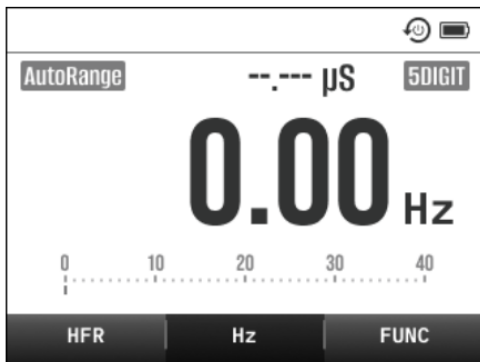
Measuring Frequency

The meter measures the frequency of a voltage or current signal by counting the number of times the signal crosses a threshold level each second.

This function only can be operated in AC voltage and current measurements. The ranges of measuring frequency are 400Hz, 4kHz, 40kHz and 100kHz.

If a reading shows as 0 Hz or is unstable, the input signal may be below or near the trigger level. The detail of frequency trigger level refer to the electrical specifications.

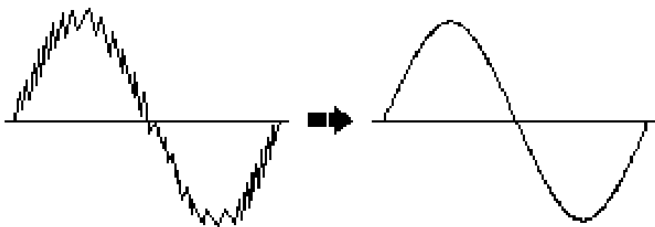
To use the frequency function, press MODE in the AC measurements, and press Hz key, once activated, will change color, and pressing it again will deactivate the function.



Make High Frequency Rejection Measurement (HFR)

WARNING

- Do not use the High Frequency Rejection (Low Pass Filter) option to verify the presence of hazardous voltages. Voltages greater than what is indicated may be present. First, make a voltage measurement without the filter to detect the possible presence of hazardous voltage. Then select the filter function.



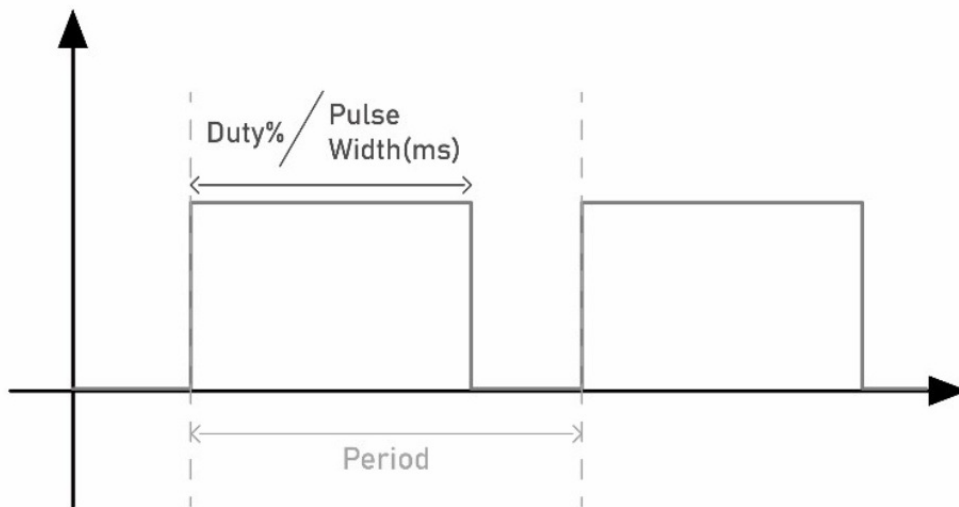
The High Frequency Rejection mode equip a Low Pass Filter in the AC measurements. The cut-off frequency (-3dB point) of Low Pass Filter is 800Hz.

To use the frequency function, press MODE in the AC measurements, and press HFR key, once activated, will change color, and pressing it again will deactivate the function.

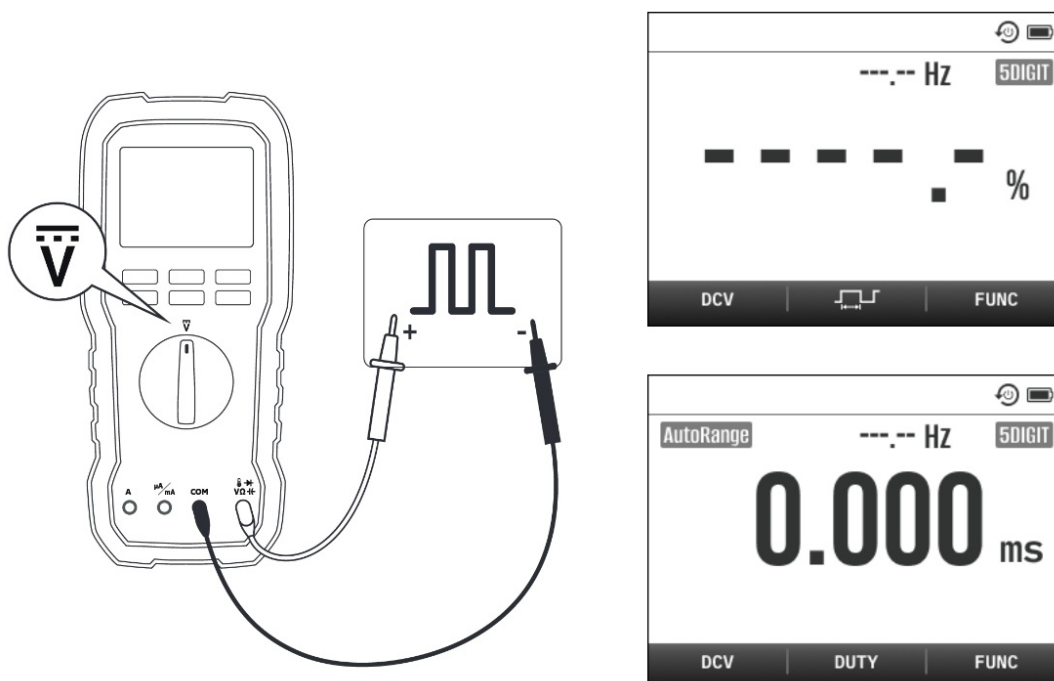


Duty Cycle and Pulse width Measurement

The meter measures the positive half-cycle of a square wave, Display the ratio(%) of the positive half-cycle to the entire period or seconds(ms) as the main readings of Duty Cycle and Pulse Width. The secondary reading show the frequency of the waveform at the same time. If a reading shows as 0% , 0ms or is unstable, the input signal may be below or near the trigger level. The detail of frequency trigger level refer to the electrical specifications.



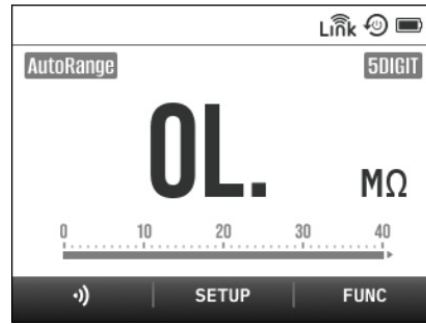
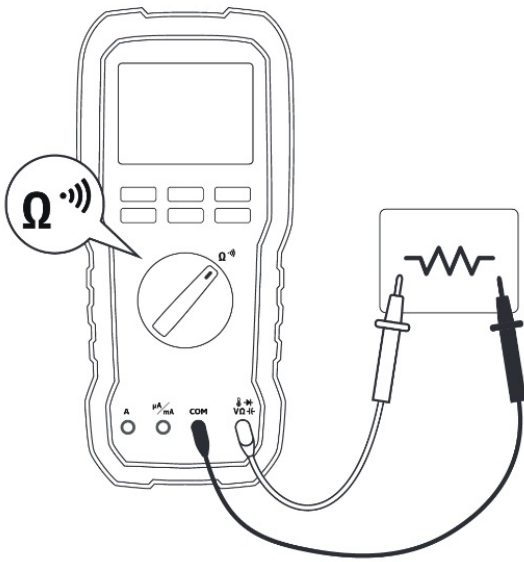
To use Duty cycle function, turn the rotary switch to the DCV position, then press F1 to change measuring mode.



Measuring Resistance

⚠ CAUTION

- To avoid possible damage to the meter or to the equipment under test, disconnect circuit power and discharge all high voltage capacitors before measuring resistance.



The ranges of measuring resistance are 400 Ω , 4k Ω , 40k Ω , 400k Ω , 4M Ω , and 40M Ω .

The test leads may add 0.1 Ω to 0.2 Ω of error to resistance measurements. To test the leads, touch the probe tips together and read the resistance of the leads. For best accuracy, you can use the relative (Δ) mode to automatically subtract this value.

High-resistance (>10M Ω) readings are susceptible to electrical noise. To smooth out most noisy readings, enter the MAX/MIN recording mode; then step to the average (AVG) reading.

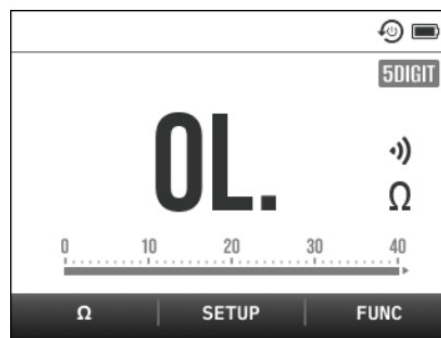
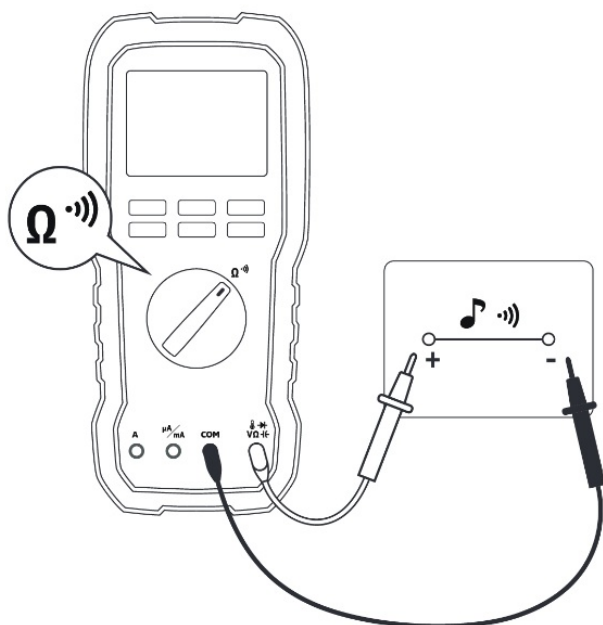
Continuity Check

⚠ CAUTION

- To avoid possible damage to the meter or to the equipment under test, disconnect circuit power and discharge all high voltage capacitors before testing continuity.

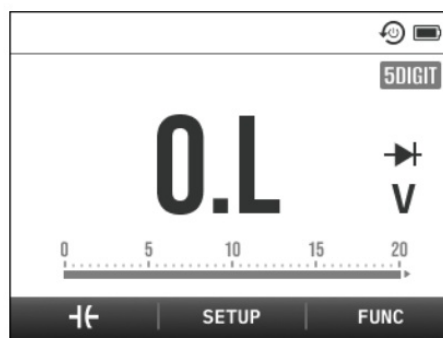
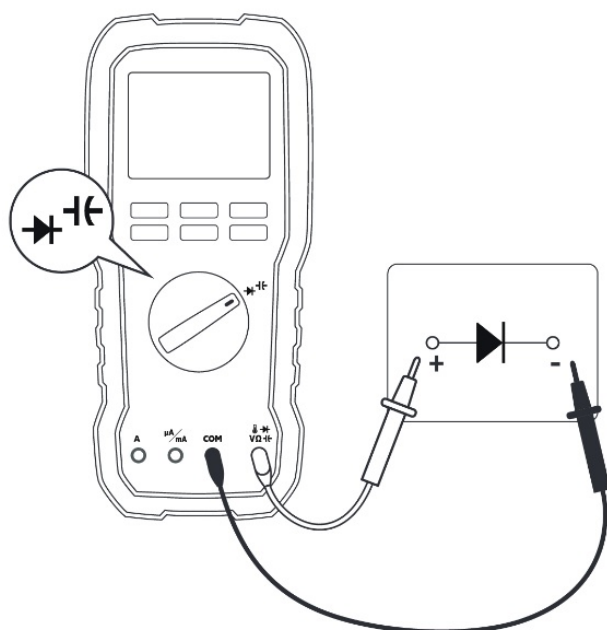
The continuity check features a buzzer that sounds as long as a circuit is complete. The buzzer allows you to quick continuity checks without watching the display.

When measuring resistance is less than threshold, the buzzer sounds. You can setup the threshold in setup mode. The continuity threshold is default 30 Ω .



To use continuity check, turn the rotary switch to resistance position, then press F1 to change measuring mode.

Testing Diodes



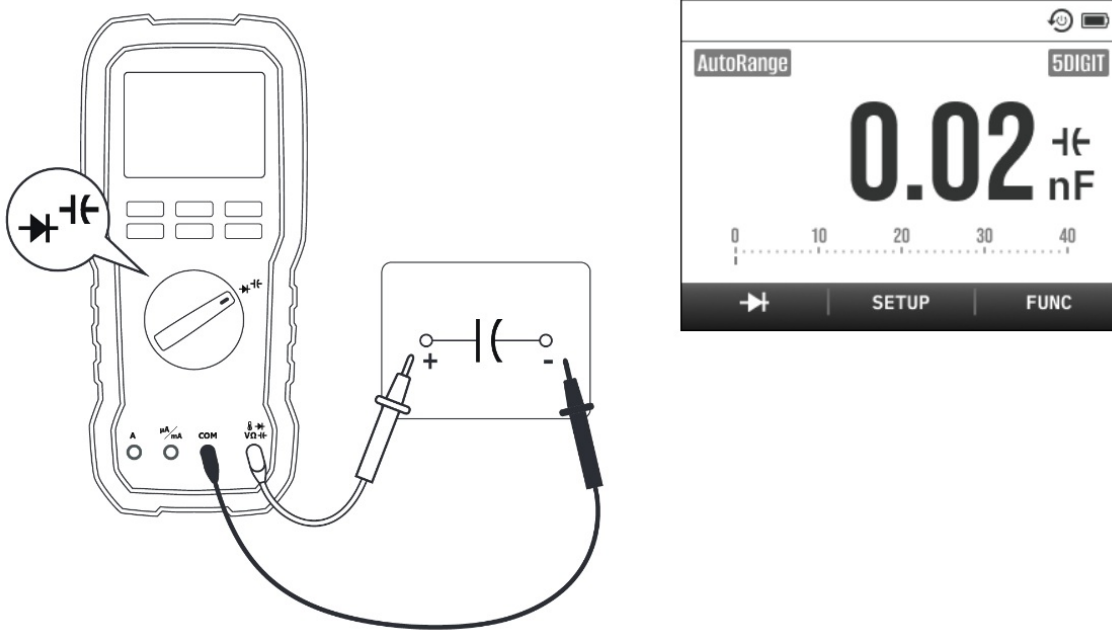
Use the diode test to check diodes, transistors, silicon controlled rectifiers (SCRs), and other semiconductor devices.

For forward-bias readings on any semiconductor component, place the red test lead on the component's positive terminal and place the black lead on the component's negative terminal. In a circuit, a good diode should still produce a forward-bias reading of 0.5V to 0.8V.

Measuring Capacitance

 **CAUTION**

- To avoid possible damage to the meter or to the equipment under test, disconnect circuit power and discharge all high-voltage capacitors before measuring capacitance. Use the dc voltage function to confirm that the capacitor is discharged.



To improve the accuracy of measurements less than 1000nF, you can use the relative (Δ) mode to subtract the residual capacitance of the leads.

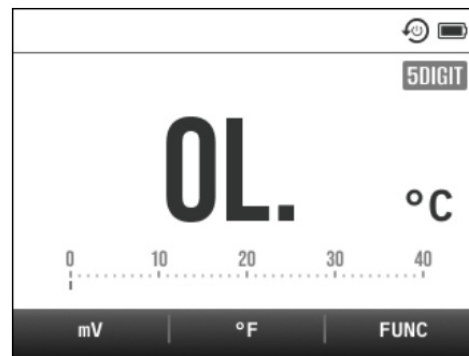
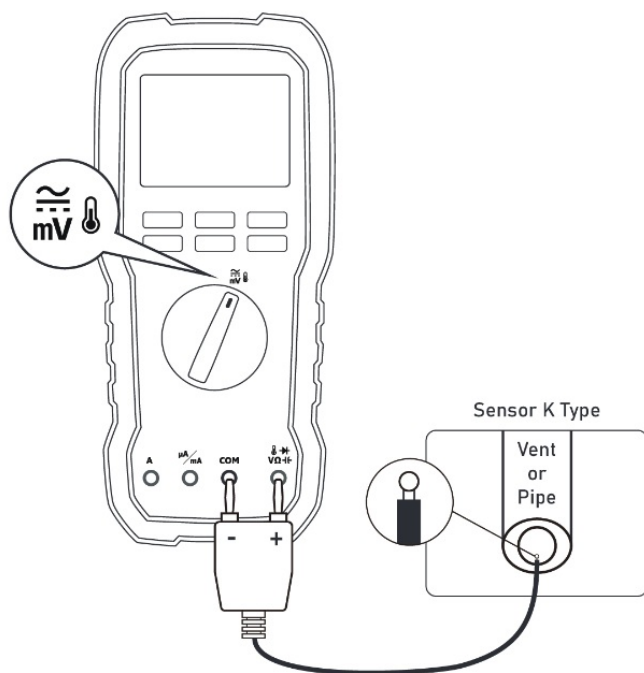
To use capacitance, turn the rotary switch to diode position, then press F1 to change measuring mode.

Measuring Temperature

CAUTION

The accuracy specifications are only applicable under lowest brightness within 15-minute operation time when the temperature is stable within $\pm 1^{\circ}\text{C}$ and the instrument has been left for more than 2 hours in OFF state.

The meter measures the temperature of a K-Type thermocouple. Readings outside of these ranges show “OL” on the display. When there is no thermocouple connected, the display also shows “OL”



To use temperature measurement, turn the rotary switch to mV position, then press MODE to select measuring mode.

HOLD

When you press the HOLD key, the MENUBAR will display three options. In the normal measurement mode, you can press the HOLD button to freeze the value on the screen.



• Auto-HOLD

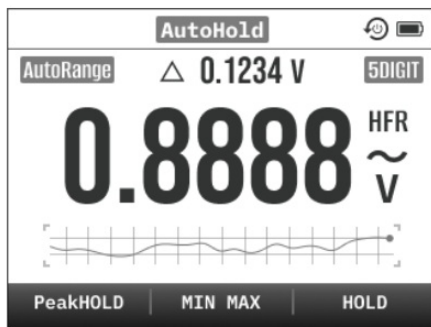
When measuring, in the HOLD function, you can press F3 to start the Auto-Hold mode. In this mode, the meter holds reading and shows it on the secondary display.

If the difference between new reading and hold reading is bigger than 5d (3¾-digit mode), and new reading is also stable, then meter automatically holds a new reading on the secondary display.

When reading is smaller than Auto-Hold limit, or reading is OL, the Auto-Hold mode is not working.

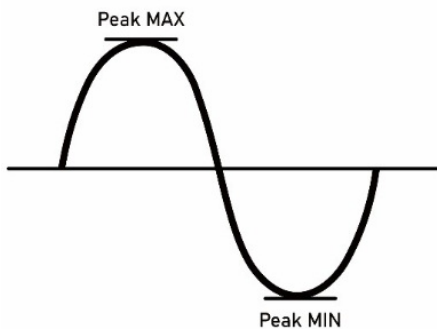
Function	Trigger level(>)	Update condition
V	1% of all range	Record the values once the variation exceeds $\pm 5D$ (Low resolution) and the readings have stabilized
A	0.1% of all range	
R	No limit	
C	1% of all range	
Hz	0.1% of all range	
Diode/Temperature	No limit	

To exit Auto-Hold mode, press F3 again. When Auto-Hold mode is disabled, the hold mode is not update any new reading.



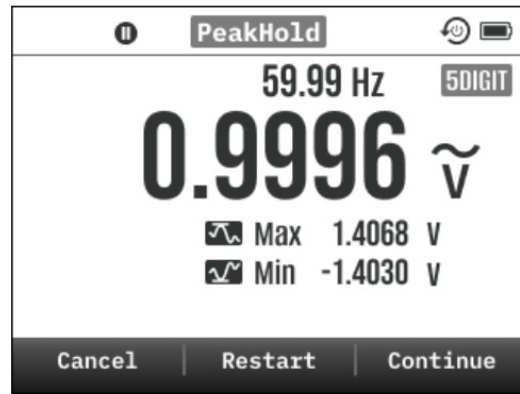
• Peak-HOLD

The Peak-Hold mode records wave peak maximum and minimum input values.



To use the Peak-Hold mode, in the HOLD function press the PeakHOLD button to enable the Peak-Hold mode in the AC or DC measurements. In this mode, you can see both peak MAX or MIN value. Each time the maximum or minimum value is exceeded, the value at the bottom will be updated.

You can press the Freeze button to pause updating the values at the bottom; an icon will appear in the top left corner.



Pressing the Restart button will update the values at the bottom to the latest readings.

To exit Peak-Hold mode, press cancel.

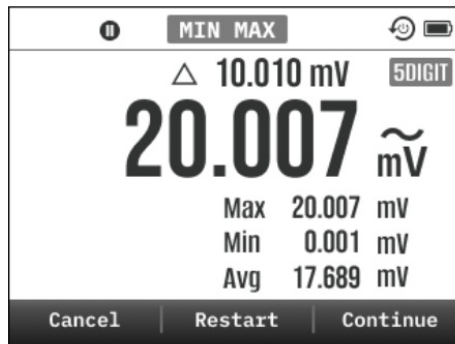
• Maximum / Minimum

When measuring, you can record the maximum, minimum and average value of reading.

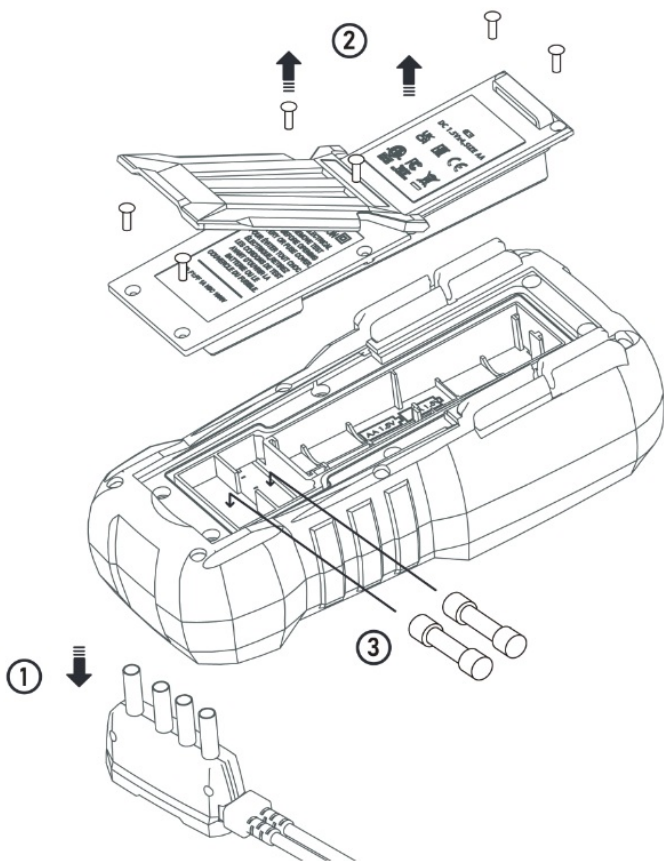
In the HOLD function and press MIN MAX to use maximum / minimum mode. In this mode, the meter records each data to compare the maximum and minimum value. Also, meter calculates the average of reading.

When maximum / minimum record mode running, if you wants to pause recording, press the Freeze button. Press again to continue.

To exit maximum / minimum record mode, press the CANCEL button.

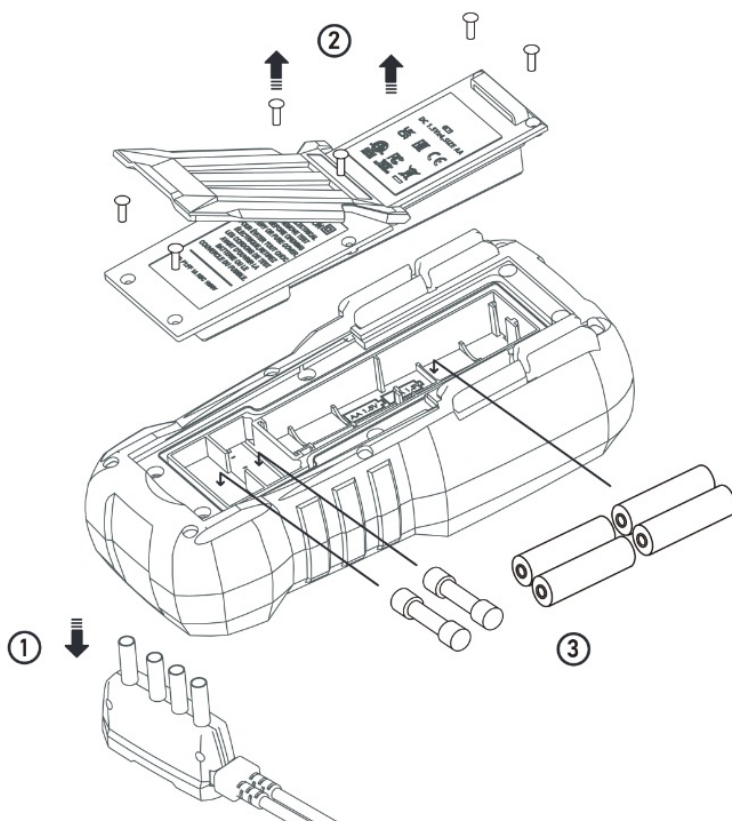


Fuse Replacement



Low Battery and Battery Replacement

Replace the battery as soon as the low battery indicator appears, to avoid false reading. Refer to the following figure to replace the batteries



CAUTION

- Remove test leads from Meter before opening the battery cover or Meter case

Accessories (standard)

1. Alligator clip set
2. Test lead set – CAT III 1000V, CAT IV 600V, 10A, 120cm cable length
3. K Type Thermocouple

Accessories (option)

1. 30A Test Probe with alligator clip and built-in 30A Fuse
CAT III 1000V, CAT IV 600V, 30A
30A 1000V Fast-acting fuse.
120cm cable length
2. RPM Trigger Pickup (inductive)

Environmental Conditions

1. The accuracy specification is given as \pm (% of reading + counts of least significant digit) at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$, with relative humidity less than 80% R.H., and is specified for 1 year after calibration.
2. Temperature Coefficient: $0.1 * (\text{Specified accuracy}) / ^{\circ}\text{C}$, $< 18^{\circ}\text{C}$, $> 28^{\circ}\text{C}$
3. Operating Temperature: -10°C to 30°C ($\leq 80\%$ R.H.)
 30°C to 40°C ($\leq 75\%$ R.H.)
 40°C to 50°C ($\leq 45\%$ R.H.)
4. Storage Temperature: -20°C to 60°C ($\leq 80\%$ R.H., no batteries)
5. Operating Altitude: 2000m (6562 ft)
6. Shock: 4 feet drop per EN 61010-1
7. Vibration: Random Vibration per MIL-PRF-28800F Class 2
8. For indoor use
9. Ingress Protection Ratings: IP67

Specification

For the 40000 digits (High resolution) mode, multiply the number of least significant digit (counts) by 10.
Additional Specifications of AC Function

1. ACV and ACA specifications are ac coupled, true RMS.
2. For non-sinusoidal waveforms: Add 1.0% for C.F. 1.0 to 2.0
Add 2.5% for C.F. 2.0 to 2.5
Add 4.0% for C.F. 2.5 to 3.0
3. Max. Crest Factor of Input Signal: 3.0 @ full scale.
4. Accuracy of AC function is valid from 2% to 100% of the range.
5. Accuracy of Frequency Response is specified for sine waveform only.

Voltage Measurement

• **DC mode**

Range	OL Reading	Accuracy
40.00mV	44.00mV	0.03% + 3D
400.0mV	440.0mV	0.03% + 1D
4.000V	4.400V	
40.00V	44.00V	
400.0V	440.0V	
1000V	1100V	

• **AC mode**

Range	OL Reading	Accuracy				
		15 to 40Hz	40 to 70Hz	70 to 1kHz	1k to 5kHz	5k to 20kHz
40.00mV	44.00mV	1.0% + 4D	0.5% + 2D	1.0% + 4D	2.0% + 4D	2.0% + 20D
400.0mV	440.0mV					
4.000V	4.400V					
40.00V	44.00V					
400.0V	440.0V				Unspecified	Unspecified
1000V	1100V					

- Below 10% of range of AC mode, add 2D to the accuracy.
- Below 5% of range of AC mode and the frequency is higher than 1kHz, the accuracy is unspecified.
- Input Impedance: 10MΩ, < 100pF
- CMRR / NMRR (Common / Normal Mode Rejection Ratio):
VAC: CMRR > 60dB at DC, 50Hz / 60Hz
VDC: CMRR > 100dB at DC, 50Hz / 60Hz

The reading may deviate more than 0.04mV due to the heat of the backlight. The accuracy specifications of 40mV and 400mV range are applicable after REL function is used.

LoZ Voltage Measurement

Range	OL Reading	DC Accuracy	AC Accuracy
4.000V	4.400V	1% + 3D	2% + 5D (15Hz to 1kHz)
40.00V	44.00V		
400.0V	440.0V		
1000V	1100V		

- Input Impedance: Approx. 3.5kΩ.

Current Measurement

• **DC mode**

Range	OL Reading	Accuracy
400.0μA	440.0μA	0.2% + 4D
4000μA	4400μA	0.2% + 2D
40.00mA	44.00mA	0.2% + 4D
400.0mA	440.0mA	0.2% + 2D
4.000A	4.400A	0.2% + 4D
10.00A	11.00A	0.2% + 2D

• **AC mode**

Range	OL Reading	Accuracy		
		40 to 70Hz	70 to 1kHz	1k to 3kHz
400.0μA	440.0μA	1.0% + 2D	1.5% + 2D	2.0% + 4D
4000μA	4400μA			
40.00mA	44.00mA			
400.0mA	440.0mA			
4.000A	4.400A			5.0% + 4D
10.00A	11.00A			

- Below 10% of range of AC mode, add 2D to the accuracy.
- Max. Continuous Measuring Time
 - No limit @ mA input terminal.
 - Max. 1 minutes for 10A measurement with 10 minutes rest time @ 10A input terminal.
- Overload Protection: Fast-acting fuse 440mA/1000V @ mA inputs
Fast-acting fuse 11A/1000V @ 10A inputs

30A Current Measurement with 30A Probe Accessory

Range	OL Reading	Accuracy
30.00A	33.00A	3% + 5D

- 4000 digits (Low Resolution) mode only.
- Frequency Response: 40Hz to 1kHz, DC
- Accuracy specification includes the accuracy of 30A probe accessory.
- Max. Measurement Time: 1 minute with 10 minutes rest time. (30A)
- Overload Protection: Fast-acting fuse 30A/1000V in the 30A probe accessory.

HFR Measurement

- Below < 200Hz, add 1% to AC accuracy.
- When > 200Hz, HFR accuracy is unspecified.

3. Cut-off Frequency (-3dB): about 800Hz.

Peak Hold Measurement

1. Add 3% + 200D to AC accuracy.
2. For capture > 500µs repetitive peak signal.
3. Peak Hold accuracy is unspecified for < 1ms non-repetitive peak.

Frequency Measurement

Range	OL Reading	Accuracy
400.0Hz	440.0Hz	5D for high resolution mode. 1D for low resolution mode.
4.000kHz	4.400kHz	
40.00kHz	44.00kHz	
100.0kHz	110.0kHz	

1. Minimum Frequency: 0.5Hz.
2. Sensitivity and Trigger Levels

Function	Sensitivity (RMS)	
	5 to 10kHz	> 10kHz
40.00mV	3.50mV	3.50mV
400.0mV	35.0mV	35.0mV
4.000V	0.350V	0.350V
40.00V	3.50V	3.50V
400.0V	35.0V	35.0V
1000V	350V	Unspecified
400.0µA	35.0µA	35.0µA
4000µA	350µA	350µA
40.00mA	3.50mA	3.50mA
400.0mA	35.0mA	35.0mA
4.000A	0.350A	0.350A
10.00A	3.50A	3.50A

Duty Measurement

Range	Accuracy
1.0% to 99.9%	(2D per kHz + 1D)

1. 4000 digits (Low Resolution) mode only.

2. Frequency Range: 3Hz to 100kHz.
3. The accuracy specification is applicable for the signal with rise time $< 1\mu\text{s}$ and pulse width $> 5\mu\text{s}$.
4. Trigger Levels: $> 1\text{V}$.

Pulse Width Measurement

Range	Accuracy
40.00ms	(2D per kHz + 1D)
400.0ms	
4000ms	

1. Frequency Range: 3Hz to 100kHz.
2. The accuracy specification is applicable for the signal with rise time $< 1\mu\text{s}$ and pulse width $> 5\mu\text{s}$.
3. Trigger Levels: $> 1\text{V}$.

Resistance Measurement and Continuity Test

Range	OL Reading	Accuracy
400.0 Ω	400.0 Ω	0.2% + 5D
4.000k Ω	4.000k Ω	0.2% + 1D
40.00k Ω	40.00k Ω	
400.0k Ω	400.0k Ω	
4.000M Ω	4.000M Ω	1.0% + 1D
40.00M Ω	40.00M Ω	2.0% + 5D

1. The accuracy specifications are applicable only when the offset is compensated by REL function.
2. 40.00M Ω range is always in Low Resolution (4000 digits) mode.
3. Max. Open Circuit Voltage: -1.3V @ 400.0 Ω , -0.5V @ other ranges.
4. Max. Short Test Current: Approx. 0.1mA
5. Continuity Threshold: Adjustable from 10 to 50 Ω , default $< 30\Omega$
6. Continuity Indicator: 2.7kHz Buzzer

Diode Measurement

Range	OL Reading	Accuracy
2.000V	2.000V	1.5% + 2D

1. Low Resolution mode only.
2. Maximum Open Circuit Voltage: Approx. 2.5V
3. Maximum Short Test Current: Approx. $\pm 1\text{mA}$

Capacitance Measurement

Range	OL Reading	Accuracy
40.00nF	40.00nF	1.2% + 20D
400.0nF	400.0nF	0.9% + 10D
4.000μF	4.000μF	0.9% + 2D
40.00μF	40.00μF	
400.0μF	400.0μF	
4.000mF	4.000mF	
40.00mF	40.00mF	2.0% + 20D

1. Low Resolution (4000 digits) mode only.
2. The accuracy specifications are applicable only when the offset is compensated by REL function.

Temperature Measurement

Range	OL Reading	Accuracy
-328.0°F to 2192°F	-364.0°F and 2408°F	1.0% + 54D
-200.0°C to 1200°C	-220.0°C and 1320°C	1.0% + 30D

1. The accuracy specifications are only applicable under lowest brightness within 15-minute operation time when the temperature is stable within $\pm 1^{\circ}\text{C}$ and the instrument has been left for more than 2 hours in OFF state.
2. The accuracy specifications don't include the error of the thermocouple probe.
3. Low resolution mode only.

Power Source

1. Battery

Battery Type: AA LR6 1.5 X 4

Low Battery Voltage: Approx. 4.8V

OFF indication Voltage: Approx. 4.5V

Battery Life: 50 hours typical with alkaline

2. Auto Power Off

The instrument automatically turns off if the rotary switch is not dialed or a button is not pressed for 10 minutes (Default value. The time is adjustable in SETUP mode).

The current consumption in APO mode is $< 15\mu\text{A}$

Safety and Standard

1. Safety Standards

IEC / EN 61010-1, IEC / EN 61010-2-033, CAT. III 1000V CAT. IV 600V, Pollution Degree 2

2. Electromagnetic Compatibility Standards (EMC)

Limited Warranty

This meter is warranted to the original purchaser against defects in material and workmanship for 2 year from the date of purchase. During this warranty period, Manufacturer will, at its option, replace or repair the defective unit, subject to verification of the defect or malfunction.

This warranty does not cover fuses, disposable batteries, or damage from abuse, neglect, accident, unauthorized repair, alteration, contamination, or abnormal conditions of operation or handling.

Any implied warranties arising out of the sale of this product, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the above. The manufacturer shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim or claims for such damage, expense or economic loss. Some states or countries laws vary, so the above limitations or exclusions may not apply to you.



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SKU Number : PPDM600MAXCBINT

Documents / Resources



[POWER PROBE DM600MAX High Performance Multimeter](#) [pdf] User Manual
DM600MAX, DM600MAX High Performance Multimeter, High Performance Multimeter, Perform
ance Multimeter, Multimeter

References

- User Manual

[Manuals+, Privacy Policy](#)

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