



#61-605

Digital Multimeter Instruction Manual

WARNING

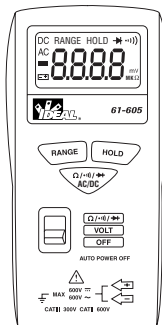
! Read First: Safety Information

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

To avoid possible electric shock, personal injury or death follow these guidelines:

- Do not use if meter appears damaged. Visually inspect the meter to ensure case is not cracked and back case is securely in place.
- Inspect and replace leads if insulation is damaged, metal is exposed, or probes are cracked. Pay particular attention to the insulation surrounding the connectors.
- Do not use meter if it operates abnormally as protection maybe impaired.
- Do not use during electrical storms or in wet weather.
- Do not use around explosive gas, dust, or vapor.
- Do not apply more than the rated voltage to the meter.
- Do not use without the battery and the back case properly installed.
- Remove the test leads from the circuit prior to removing battery cap.
- Do not attempt to repair this unit as it has no user-serviceable parts.



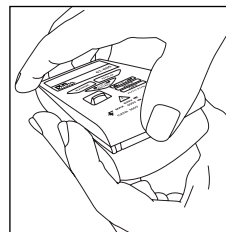
CAUTION

To protect yourself, think "Safety First":

- Voltages exceeding 30VAC or 60VDC pose a shock hazard so use caution.
- Use appropriate personal protective equipment such as safety glasses, face shields, insulating gloves, insulating boots, and/or insulating mats.
- Before each use:
 - Perform a continuity test by touching the test leads together to verify the functionality of the battery and test leads.
 - Use the 3 Point Safety Method. (1) Verify meter operation by measuring a known voltage. (2) Apply meter to circuit under test. (3) Return to the known live voltage again to ensure proper operation.
- Never ground yourself when taking electrical measurements.
- Connect the black common lead to ground before applying the red test lead to voltage. Disconnect the red test lead from the voltage first.
- Always work with a partner.
- When using the probes, keep fingers as far behind the probe tips as possible.

Features:

- Auto/manual ranging meter
- Measures AC/DC Voltage and Resistance
- Audible continuity
- Diode Test
- Data hold
- Auto Power Off
- Low Battery Indicator
- Compact case with built-in test leads
- Electronic overload protection on all ranges



Open case to access
test leads.

**Test Equipment
Depot**

1-800-517-8431

99 Washington Street
Melrose, MA 02176
Fax 781-665-0780
TestEquipmentDepot.com

OPERATION:

Auto Ranging Mode

The meter defaults to autoranging mode when powered on. In this mode, the meter automatically selects the best range to display the measurement.

Manual Ranging Mode

By pressing the Range button on the meter, the manual range mode will override the autoranging feature of the meter. "RANGE" appears in the the display. Continue pressing the Range button until the desired range is obtained. The ranges will cycle from lowest to highest. Use this mode to lock in a specific range for repeated measurements.

To return to the autoranging mode, either depress the Range button for greater than 2 seconds or turn the meter off and then back on again.

Data Hold Feature

Press the Hold button on the meter to toggle in and out of the data hold mode. "HOLD" appears in the display when data hold is active. Use the data hold feature to lock a measurement reading on the display. Press the Hold button again to unlock the display and obtain a real-time reading.

Mode Switch (AC/DC) & (Ω / \cdot) / \rightarrow Feature

Press this button to switch between AC and DC in the voltage measurement mode of the function switch. Press this button to toggle between ohms, continuity, and diode functions when in the Ω / \cdot) / \rightarrow position of the function switch. The meter display will indicate which function is selected.

Auto Power Off (APO) Feature

The meter automatically powers itself down after about 10 minutes of no use. Press any button, and the meter will wake up and display the last reading taken before power down. This feature can be overridden by holding the Range button while sliding the function switch from Off to any other position. Turning the meter off will restore the APO default.

Measuring Voltage:

- Slide the function switch to the **Volt** position.
Note: The measurement mode defaults to AC voltage.
- If measuring DC voltage, use the AC/DC button to toggle to DC voltage. The meter display will confirm the active mode (AC or DC) on the left side of the display.
- Hold the test leads behind the finger guards and apply the lead tips in parallel to the circuit under test.
- The meter will sense the level of voltage, automatically range to obtain the best resolution, and accurately display the measurement.
Note: To measure millivolts, use "RANGE" button to manually select mV range.

CAUTION: For maximum safety, do not hold the meter in your hands while measuring higher voltages.

If the meter displays zero or low volts, ensure that the meter is properly set to measure AC or DC volts and verify on a known live source.

Measuring Resistance (Ohms):

- Verify the circuit is de-energized to obtain accurate measurements.
- Slide the function switch to the Ω / \cdot) / \rightarrow position.
Note: The measurement mode defaults to Ohms (Ω).
- Hold the test leads behind the finger guards and apply the lead tips to the component or circuit under test.
- The meter will sense the level of resistance, automatically range to obtain the best resolution, and accurately display the measurement.

Verifying Continuity (\cdot) / \rightarrow :

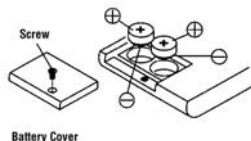
- Verify the circuit is de-energized.
- Slide the function switch to the Ω / \cdot) / \rightarrow position.
Note: The measurement mode defaults to Ohms (Ω).
- Press the Ω / \cdot) / \rightarrow button once to toggle to Continuity. The meter display should show the \cdot) / \rightarrow in the upper right corner.
- Hold the test leads behind the finger guards and apply the lead tips to the component or circuit under test.
- The meter will sense the level of resistance and beep if the resistance is less than 25 Ω to confirm that continuity is present.

Testing Diodes (→) / (←):

- Slide the function switch to the Ω (→) / (←) position.
Note: The measurement mode defaults to Ohms (Ω).
 - Press the Ω (→) / (←) button twice to toggle to the Diode test mode. The meter display should show the (→) / (←) in the upper right corner.
 - Ensure the circuit is de-energized to prevent inaccurate readings.
 - Apply the red test lead to the anode of the diode and the black lead to the cathode (gray ring). Verify the forward voltage drop is about 0.6V for silicone.
 - Reverse the test lead connections. Verify an "OL" reading in the display.
 - If the diode is shorted, 0mV will be displayed.
 - If the diode is opened, "OL" will be displayed both directions.
- Note: Audible indication occurs at <0.25V.

Battery Replacement:

- Ensure test leads are disconnected from any circuit or components.
- Remove the screw from the battery cover.
- Remove the battery cover.
- Replace batteries with two 1.5V button cell batteries.
- Assemble the back case on the meter and re-tighten the screw.



Maintenance:

- Clean the case with a damp cloth and mild detergent. Do not use abrasives or solvents.

Service, and Replacement Parts:

No user-serviceable parts.

For replacement parts or to inquire about service information contact IDEAL INDUSTRIES, INC. at 1-877-201-9005 or visit our website www.testersandmeters.com.

Specifications:

Display:	3-1/2 digit LCD with 2000 counts
Polarity:	Automatic, positive implied, (-) polarity indication.
Overrange:	"OL" indication in display.
Measurement Rate:	2 times per second, nominal.
Auto Power Off:	Approximately after 10 minutes of non-use
Battery Life:	70 hours continuous with alkaline
Low Battery Indication:	The "⊖" is displayed when battery voltage drops below operating level.
Altitude:	6561.7 ft. (2000m)
Accuracy:	Stated accuracy at 23°C ±5°C, < 75% R.H.
Power Supply:	(2) 1.5V button cell batteries (NEDA 1166A, IEC LR-44).
Operating Environment:	32°F to 122°F (0°C to 50°C) at < 70% R.H.
Storage Environment:	-4°F to 140°F (-20°C to 60°C) at < 80% R.H.
Dimensions:	4.9"H x2.4"W x0.9"D (125mm H x60mm W x24mm D)
Weight:	3.9 oz (110g)
Accessories included:	Built-in Test Leads, (2) 1.5V button cell batteries, operating instructions.
Safety:	Complies with UL 61010B-1, UL61010B-2-031, EN 61010-1, EN61010-2-031, Cat II-600V,Cat III-300V



Ranges & Accuracies:

Function	Range and Resolution	Accuracy	Overload Protection
AC Voltage (50/60 Hz)	200.0mV/2.000V/20.00V/200.0V/600V	4.0% + 5 digits	600 VDC or AC rms
DC Voltage	200.0mV/2.000V/20.00V/200.0V/600V	2.0% + 2 digits	600 VDC or AC rms
Resistance	200.0 Ω	2.0% + 5 digits	450 VDC or AC rms
	2.000k Ω /20.00k Ω /200.0k Ω	2.0% + 4 digits	
	2.000M Ω	3.0% + 4 digits	
	20.00M Ω	5.0% + 5 digits	
Continuity	Audible indication < 25 Ω	N/A	450 VDC or AC rms
	Response time: 500ms		
Diode	Test current: \sim 1.2mA Open circuit volt: 3.0 VDC typical	3.0% + 3 digits	

Input Impedance is 9.1M Ω (20-600V AC/DC), 10M Ω (2V AC/DC), 100M Ω (0-200mV AC/DC)

Double Insulation

Instrument has been evaluated and complies with insulation category II (overvoltage category II). Pollution degree 2 in accordance with IEC-644. Indoor use.

Warranty Statement:

This tester is warranted to the original purchaser against defects in material and workmanship for the lifetime of the product. During this warranty period, IDEAL INDUSTRIES, INC. will, at its option, replace or repair the defective unit, subject to verification of the defect or malfunction. This warranty does not apply to defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use of the instrument.

Any implied warranties arising out of the sale of an IDEAL 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, expenses or economic loss.

State laws vary, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.