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TOOLS & EQUIPMENT

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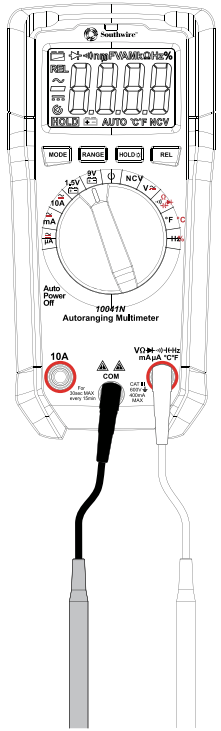
10041N manual/manuel

Southwire™

TOOLS & EQUIPMENT

Operating Instructions

10041N Auto Ranging Digital Multimeter



CAT III
600V
ULG1010-1
SAFETY RATED

c UL us
LISTED
TESTING EQUIPMENT
E361819

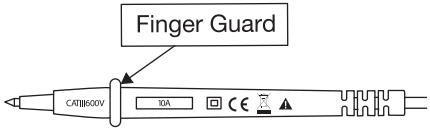
Introduction

The Southwire 10041N multimeter measures AC and DC voltage, AC and DC current, resistance, capacitance, frequency, duty cycle, and temperature. It also tests 1.5V and 9V batteries, continuity, diodes, and has a built-in non-contact AC voltage detector. Readings are displayed on a large backlit LCD display. Flip the meter over and on the back side there are several features to make your life easier such as test lead storage, an integrated kickstand, and the ability to add a Southwire magnetic hanging strap (Model # 60151R).

This meter is fully tested and calibrated and, with proper use, will provide many years of reliable service.

⚠WARNINGS

- Read, understand, and follow the safety rules and operating Instructions in this manual before using this meter.
- The meter's safety features may not protect the user if not used in accordance to the manufacturer's instructions.
- Ensure that the test leads are fully seated in the input jacks and keep fingers behind the finger guards when taking measurements.



- Before changing functions using the rotary function switch, always disconnect the test leads from the circuit under test.
- Use only UL listed test leads with the proper safety category rating.

- Comply with all safety codes. Use approved personal protective equipment when working near live electrical circuits - particularly with regard to arc-flash potential.
- Use caution on live circuits. Voltages above 30 VAC RMS, 42 VAC peak, or 60 VDC pose a shock hazard.
- Do not use meter or test leads if they appear damaged.
- Do not use the meter if it operates incorrectly. Protection may be compromised.
- Verify operation before using meter by measuring a known live voltage.
- Do not use the meter in wet or damp environments or during electrical storms.
- Do not use the meter near explosive vapors, dust or gasses.
- Do not operate the meter while the Low Battery warning is on. Replace the battery immediately.
- Do not apply voltage or current that exceeds the meter's maximum rated input limit.

Input Limits

Function	Maximum Input
Voltage AC or DC	600V AC RMS / 600V DC
µA/mA AC or DC	0.5A fast acting fuse 660V AC/DC
10A AC or DC	10A fast acting fuse 660V AC/DC (<5A 30 seconds maximum every 15 minutes, >5A 10 seconds maximum every 15 minutes)
Resistance, Continuity, Diode Test, Capacitance, Frequency, Duty Cycle	600V AC RMS /600V DC
Battery Test	600V AC/DC
Temperature	600V AC RMS

General Specifications

Insulation	Class 2, Double insulation.
Display	4000 count LCD backlit display
Polarity	Automatic. Minus symbol "-" is displayed for negative polarity
Over Range Indication	"OL" is displayed
Continuity	Audible signal will sound if the resistance is approximately 30 Ω or less
Diode Test	Test current approx. 1.2mA, open circuit voltage approx. 3V
Battery Test Current	1.5V battery test approximately 29mA. 9V battery test approximately 6mA
Low Battery Indication	" " is displayed if battery voltage is too low for normal operation
Measurement Rate	3 times per second, nominal
Auto Power Off	Meter automatically turns off after approximately 15 minutes of inactivity
Input Impedance	AC/DC voltage: ≥10MΩ
AC Response	Average responding
AC Bandwidth	45Hz to 400Hz
Battery	One 9V battery (NEDA 1604)
Fuses	Qty 1: 10A/660V Φ1/4"×1 ¼" Qty 1: 0.5A/660V Φ1/4"x 1 ¼"32°F to 122°F (0°C to 50°C)
Operating Temperature	32°F to 122°F (0°C to 50°C)
Storage Temperature	14°F to 122°F (-10°C to 50°C) 7000 feet maximum (2133 meters maximum)
Relative Humidity	Maximum, non-condensing: 95% up to 82°F (28°C), 75% to 104°F (40°C), 45% to 122°F (50°C)
Operating Altitude	7000 feet (2133 meters)
Weight	0.55 pounds (249 grams) includes 9V battery
Dimensions	6.0" x 2.9" x 2.0" (152 x 74 x 51mm)
Safety	UL: 61010 - 1:2012、61010-2-030: 2012、61010-2-033: 2014 EMC: EN61326-1:2013、EN61326-2-2:2013

International Safety Symbols

	Potential danger. Indicates the user must refer to the manual for important safety information.
	Indicates hazardous voltages may be present
	Equipment is protected by double or reinforced insulation.
	Indicates the terminal(s) so marked must not be connected to a circuit where the voltage with respect to earth ground exceeds the maximum safety rating of the meter.
	Indicates the terminal(s) so marked may be subjected to hazardous voltages.

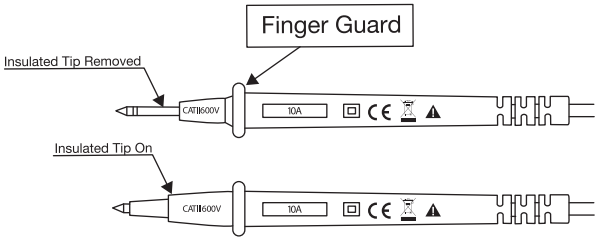
Safety Category Ratings

Category Rating	Brief Description	Typical Applications
CAT II	Single phase receptacles and connected loads	- Household appliances, power tools - Outlets more than 30ft (10m) from a CAT III source - Outlets more than 60ft (20m) from a CAT IV source
CAT III	Three phase circuits and single phase lighting circuits in commercial buildings	- Equipment in fixed installations such as 3-phase motors, switchgear and distribution panels - Lighting circuits in commercial buildings - Feeder lines in industrial plants - Any device or branch circuit that is close to a CAT III source

The measurement category (CAT) rating and voltage rating is determined by a combination of the meter, test probes and any accessories connected to the meter and test probes. The combination rating is the LOWEST of any individual component.

⚠**WARNING:** Operation is limited to CAT II 600V applications when the insulated tips are **removed** from one or both test probes. Refer to Input Limits section of this manual for maximum voltage ratings.

General Specifications cont.



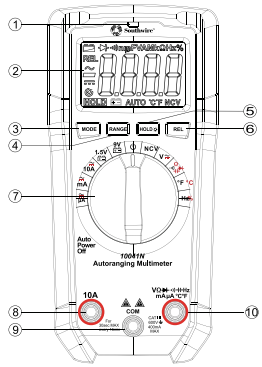
Maintenance

- This Multimeter is designed to provide years of dependable service, if the following care instructions are performed:
- KEEP THE METER DRY. If it gets wet, wipe it off.
- USE AND STORE THE METER IN NORMAL TEMPERATURES. Temperature extremes can shorten the life of the electronic parts and distort or melt plastic parts.
- HANDLE THE METER GENTLY AND CAREFULLY. Dropping it can damage the electronic parts or the case.
- KEEP THE METER CLEAN. Wipe the case occasionally with a damp cloth. DO NOT use chemicals, cleaning solvents, or detergents.
- USE ONLY FRESH BATTERIES OF THE RECOMMENDED SIZE AND TYPE. Remove old or weak batteries so they do not leak and damage the unit.
- IF THE METER IS TO BE STORED FOR A LONG PERIOD OF TIME, the battery should be removed to prevent damage to the unit.

Meter Description

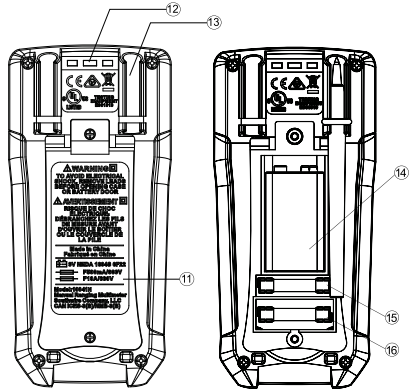
FRONT VIEW

1. **Non-Contact (AC) Voltage (NCV) Detector location and indicator LED**
2. **Backlit LCD Display**
3. **MODE button**
4. **RANGE Button**
5. **HOLD button and LCD Display Backlight button**
6. **Relative (REL) button**
7. **Rotary function switch**
8. **10A (positive) input jack. Plug the red test lead into this input jack when measuring current up to 10A**
9. **COM input jack. Plug the black test lead into this input jack**
10. **V/Ω/))) /⊣⊢/mA/µA/°F/Hz input jack. Plug the red test lead into this input jack when measuring voltage, resistance, diode, continuity, capacitance, current up to 200mA, temperature and frequency**



REAR VIEW

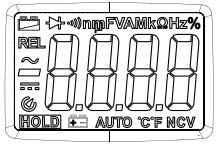
11. **Battery/Fuse Cover (shown below with integrated kickstand removed)**
12. **Test Lead Storage**
13. **Magnetic Hanging Strap bracket**
14. **9V battery**
15. **Fuse 0.5A/660V Φ1/4" x 1 1/4**
16. **Fuse 10A/660V, Φ1/4" x 1 ¼"**



With Battery Cover Attached

With Battery Cover Removed

Symbols Used on LCD Display



V	Volts
A	Amps
~	AC voltage or current
⎓	DC voltage or current
Hz	Hertz (frequency)
%	Duty Cycle
Ω	Ohms
•ıl))	Continuity
⯈|	Diode Test
F	Farads (capacitance)
	Battery test
°F	Degrees Fahrenheit
°C	Degrees Celsius
NCV	Non-contact AC voltage detector
-	Minus sign
OL	Overrange
n	nano (10-9)
µ	micro (10-6)
m	milli (10-3)
k	kilo (103)
M	mega (106)
REL	Relative
HOLD	Display hold
	Auto Power Off
AUTO	Autoranging mode
	Low battery indicator

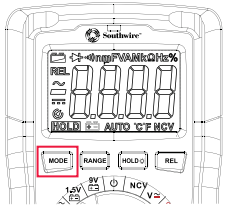
Operation

Auto Power Off

To extend battery life, the multimeter will automatically turn off after 15 minutes of inactivity. The meter will beep 5 times after 14 minutes of inactivity to warn you that the meter is approaching Auto Power Off. After 15 minutes of inactivity, the meter will beep once and then turn off. To restore operation after the meter has been turned off, momentarily press the HOLD button.

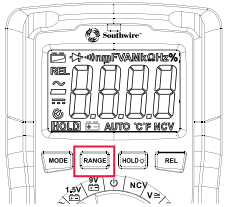
Anytime you change the meter dial position or press the HOLD button, the APO timer is reset to 15 minutes. The Auto Power Off (APO) symbol is displayed on the LCD screen when the APO function is active.

MODE Button



The MODE button is used to activate secondary functions of the multimeter. Secondary functions are those which are shown in red lettering on the meter dial. To use a secondary function, turn the meter dial to the function location and press the MODE button until the function symbol is displayed on the LCD screen. Use the MODE button to select DC voltage, DC current, Resistance (Ω), Diode Test, Capacitance, °C, or Duty Cycle (%).

RANGE Button

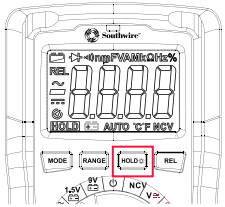


The RANGE button does not operate in Continuity, Capacitance, Diode, Temperature, Frequency, Duty Cycle or in the battery measurement mode. The 10041N multimeter is an autoranging multimeter which means that the meter automatically selects the best measurement range. Autoranging is the default mode for the multimeter and it is recommended for most applications.

For measurement situations requiring that a range be manually selected, perform the following:

1. Momentarily press the **RANGE** button. The **"AUTO"** display indicator will turn off.
2. Momentarily press the **RANGE** button to step through the available ranges until the desired range is achieved.
3. To return to the Autoranging mode, press and hold the **RANGE** button until the **"AUTO"** symbol re-appears on the LCD display.

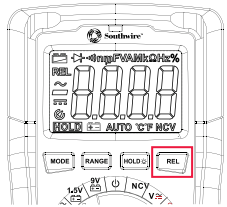
HOLD/Backlight Button



To freeze the reading on the LCD display, momentarily press the **HOLD** button. The **HOLD** indicator will appear on the LCD display. Momentarily press the **HOLD** button again to return to normal operation. The HOLD value will be lost if the position of the meter dial is changed or the meter is turned off.

The backlight button illuminates the LCD display and allows you to view the display in dimly lit areas. To conserve battery voltage, the meter defaults with the backlight off. To turn the backlight on, press and hold the **HOLD** button until the backlight turns on. To turn the backlight off, press and hold the **HOLD** button until the backlight turns off.

REL Button



The REL or Relative button stores whatever reading is currently displayed on the LCD display and then resets the display to zero. It then maintains the stored reading as a reference point for subsequent readings. Subsequent readings will be displayed as the difference between the stored reference value and the current reading. For example… you are measuring voltage and the reading on the multimeter is 3.1V. If you press the REL button, the multimeter will store the 3.1V reading and reset the LCD display to zero. If you continue to measure voltage and you measure a value of 3.8V, then the meter will display the difference between the current reading (3.8V) and the stored reference value (3.1) or 0.7V.

To activate, press the **REL** button. The "REL" indicator will appear on the LCD display along with the relative reading. Press the REL button again to return to normal operation.

NOTE: The meter does not Autorange when the Relative mode is active. The display will read "OL" if the difference exceeds the range. When this occurs, exit REL and use the **RANGE** button to select a higher range. REL does not work on Continuity, Diode Test, Temperature, Frequency and Duty Cycle. REL can also not be activated when the HOLD function is active.

Non-Contact (AC) Voltage (NCV) Detector: (Detection range 50V to 600V, 50Hz/60Hz)

WARNINGS:

- Read, understand and follow safety rules and operating Instructions in the manual before using the non-contact voltage detector feature of this multimeter. The non-contact voltage detector simply detects the presence

of voltage – it will not measure and display the voltage on the LCD screen.

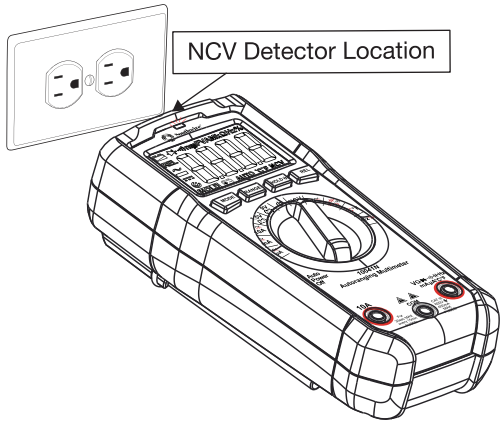
- The multimeters safety features may not protect the user if not used in accordance with the manufacturer's instructions.
- Test operation of the NCV detector on a known live source within the rated AC voltage range of the detector before use to ensure it is working correctly.
- Insulation type and thickness, distance from the voltage source, shielded wires, and other factors may affect reliable operation. Use other methods to verify live voltage if there is any uncertainty.
- Do not use if the meter appears damaged or if it is not operating properly.
- Do not use on voltages that are outside of the 50-600V range.
- Use caution with voltages above 30 volts AC as a shock hazard may exist.
- Comply with local and national safety requirements – particularly with regard to arc-flash potential.
- Do not operate the NCV detector if the multimeter Low Battery indicator is displayed. Replace the batteries immediately.
- Do not use detector if there is evidence that the meter batteries have leaked. Detector may be compromised.
- Use approved personal protective equipment when working on live circuits.
- The detector will not detect voltage if;
    - The wire is shielded
    - The operator is not grounded or is isolated from an effective earth ground
    - The voltage is DC
- The detector may not detect voltage if:
    - The user is not holding the multimeter
- The user's hand is insulated from the multimeter with a glove
    - The wire is partially buried or in a grounded metal conduit
    - The magnetic field being created by the voltage source is being blocked or interfered with
    - The frequency of the voltage being detected is not a perfect sine wave and distorted

The tester is outside of the operating specifications (see General Specifications section below)

- The LED indicator may not be visible in direct sunlight or bright light conditions.

Non-Contact (AC) Voltage (NCV) Detector

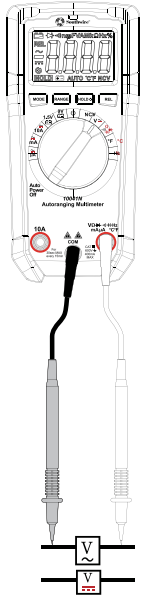
1. Set the rotary function switch to the NCV position. (The detector does not operate when Auto Power Off turns the meter off or when the rotary function switch is set to any other position. The NCV function only operates when the function switch is turned to NCV position. NCV will be shown on the LCD display indicating the detector is ready for use.
2. Hold the meter close to the AC voltage source.
3. If AC voltage within the specified range is present, the indicator light will illuminate and the beeper will sound.



AC & DC Voltage Measurements

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

1. Set the rotary function switch to the **V~** position.
2. Pressing the **MODE** button will toggle between AC ~ and DC ⎓ voltage.
   ~ or ⎓ will appear on the LCD display.
3. Insert the black test lead into the negative **COM** input jack and the red test lead into the positive **V** input jack. (see image below)
4. Touch the test lead probes in parallel to the circuit under test. For DC measurements, touch the red test probe to the positive side of the circuit and the black test probe to the negative side of the circuit. If DC polarity is reversed, the display will show (-) minus before the reading.
5. Read the voltage on the LCD display.



AC and DC Current Measurements

⚠WARNING: Observe all safety precautions when working on live circuits. Do not measure current on circuits that exceed 600V. Measurements in the 10A range should be limited to 30 seconds maximum every 15 minutes when the current is under 5A and should be limited to 10 seconds maximum every 15 minutes when the current is equal to or greater than 5A.

1. Insert the black test lead into the negative **COM** input jack.
2. For current measurements up to 10A, set the rotary function switch to the 10A position and insert the red test lead into the positive **10A** input jack. **(see image A)**
3. For current measurements up to 400mA, set the rotary function switch to the mA position and insert the red test lead into the positive mA input jack. **(see image B)**
4. For current measurements up to 4000µA, set the rotary function switch to the µA position and insert the red test lead into the positive µA input jack. **(see image C)**
5. Momentarily press the MODE button to select AC or DC current. “AC” or “DC” will appear on the LCD display.
6. Remove power from the circuit under test, then open up the circuit at the point where you wish to measure current.
7. Connect the test lead probes in series with the circuit being tested. For DC measurements, connect the red test probe to the positive side of the circuit and the black test probe to the negative side of the circuit.
8. Apply power to the circuit.
9. Read the current on the LCD display. If the polarity is reversed, the display xwill show (-) minus before the reading.

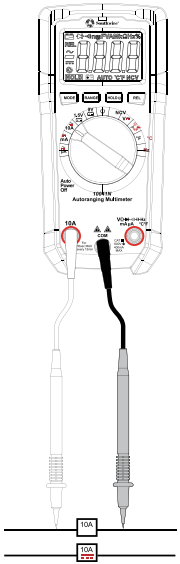


IMAGE A

10A measurements – Notice that the red test lead is plugged into the 10A input jack

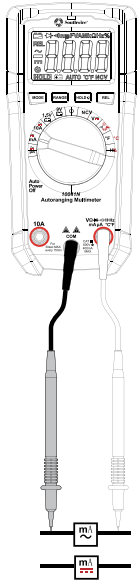


IMAGE B

mA Measurements – Notice that the red test lead is plugged into the mA input jack

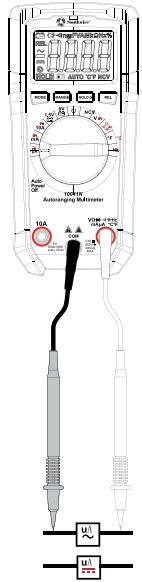


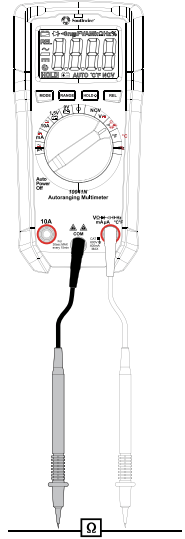
IMAGE C

µA measurements – Notice that the red test lead is plugged into the µA input jack

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 "MΩ" appears on the LCD display.
3. Insert the black test lead into the **COM** input jack Insert the red test lead into the Ω input jack. (**see image**)
4. Touch the test lead probes across the circuit or component under test. It is best to disconnect one side of the device under test so the rest of the circuit will not interfere with the resistance reading.
5. Read the resistance on the LCD display.



Continuity Test

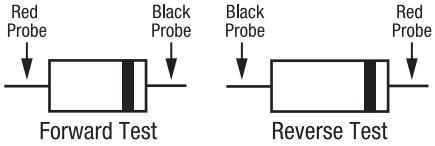
⚠WARNING: Never test continuity on a live circuit.

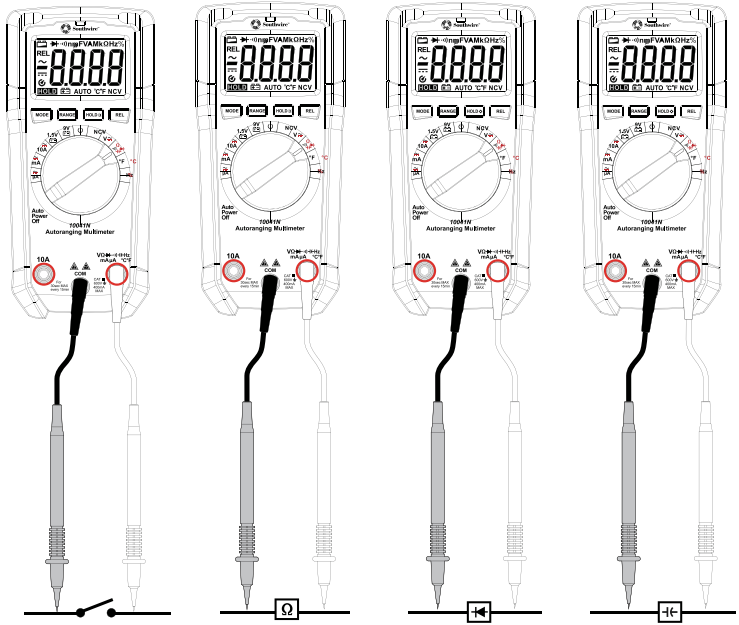
1. Set the rotary function switch to the ⊣⊢ Ω ▶| ·ı)) position.
2. Press the **MODE** button until the " ·ı)) " symbol appears on the LCD display.
3. Insert the black test lead into the **COM** input jack
   Insert the red test lead into the ·ı)) input jack.
4. Touch the test lead probes to the component or wire you wish to check.
5. If the resistance is approximately 30Ω or less, an audible tone will sound.
   If the circuit is above 420Ω, the LCD display will indicate "**OL**". The resistance will be shown on the display if it is below 420Ω.

Diode Test

⚠WARNING: Never test diodes in a live circuit.

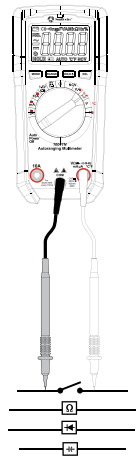
1. Turn the rotary function switch to the ⊣⊢ Ω ▶| ·ı)) position.
2. Press the **MODE** button until the " ▶| " symbol appears on the LCD display.
3. Insert the black test lead into the COM input jack and the red test lead into the ▶| input jack.
4. Touch the test lead probes to the diode under test. Forward voltage will indicate 0.4 to 0.7V. Reverse voltage will indicate **"OL"**. Shorted devices will indicate near 0mV and an open device will indicate **"OL"** in both polarities.





Capacitance Measurements

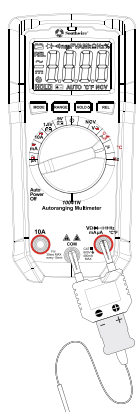
⚠WARNING: Safely discharge capacitors before taking capacitance measurements.



1. Set the rotary function switch to the ⊣⊢ Ω ▶ ·ıı)) position.
2. Press the **MODE** button until "**nF**" 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 capacitor to be tested.
5. Read the capacitance value on the LCD display. The meter will automatically adjust ranges between nF and µF. It may take several seconds to get a stable reading.

Temperature Measurements

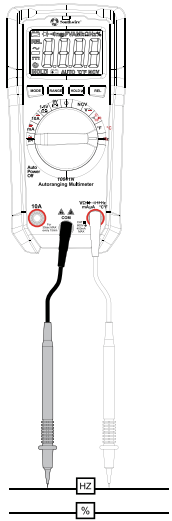
⚠WARNING: Do not touch the temperature probe to live circuits.



1. Set the rotary function switch to the **°F °C** position.
2. Press the **MODE** button to toggle between °F and °C.
3. Connect the Temperature Probe to the Banana Plug Adapter. Insert the adapter into the **COM** and the **°C °F** input jacks, making sure to observe the correct polarity. The "+" or positive plug should be plugged into the **°F** input jack and the "-" or negative plug should be plugged into the **COM** input jack.
4. Touch the tip of the Temperature Probe to the part you wish to measure. Keep the probe touching the part under test until the reading stabilizes (about 30 seconds).
5. Read the temperature on the LCD display.

Frequency and % Duty Cycle Measurements

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

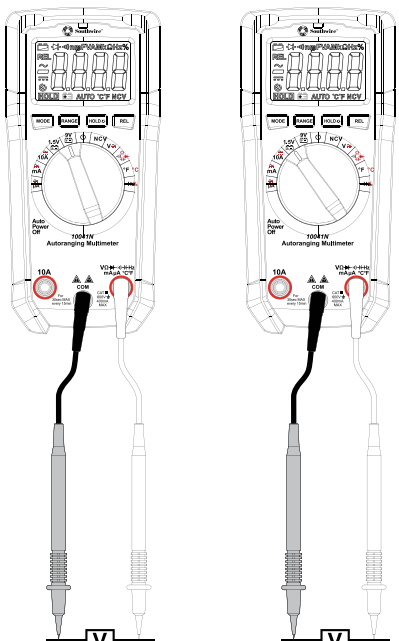


1. Set the rotary function switch to the **Hz%** position.
2. Insert the black test lead into the **COM** input jack and the red test lead into the **Hz** input jack.
3. Press the **MODE** button to toggle between frequency and duty cycle. "**Hz**" or "**%**" will appear on the LCD display.
4. Touch the test lead probes to the circuit under test.
5. Read the frequency or % duty cycle on the LCD display.

Testing Batteries

Your Southwire 10041N multimeter can be used to test the remaining voltage capacity in common household batteries.

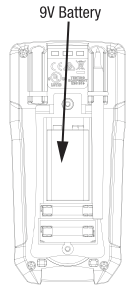
1. Set the rotary function switch to the **1.5V BATT** or **9V BATT** position.
2. Insert the black test into the negative **COM** input jack and the red test lead into the positive **V** input jack.
3. Touch the red test lead probe to the positive (+) side of the battery and the black test lead probe to the negative (-) side of the battery.
4. Read the voltage in the display.



Replacing the Multimeter Battery

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

1. When the low battery symbol appears on the LCD display, replace the battery immediately.
2. Remove the two Phillips screws from the battery/fuse cover located on the back of the meter. (Lift up the kickstand to access the bottom screw.)
3. Remove the battery cover.
4. Replace battery with a fresh 9V battery.
5. Install battery cover and tighten screws. Be careful not to over tighten the screws



Battery Cover Removed

Replacing the Fuses

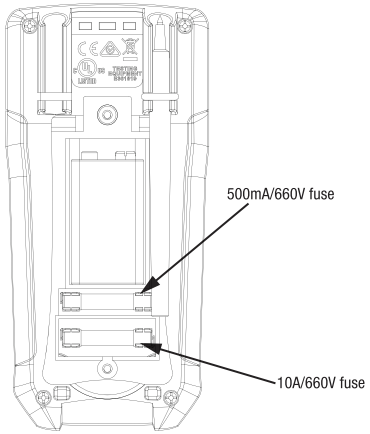
⚠WARNING: To avoid electric shock, remove test leads from the meter before removing the battery/fuse cover..

If you believe one or both fuses in the multimeter have been damaged, you can remove the fuse(s) and use your multimeter to verify whether it is good or bad. Measure the resistance of the fuse by setting the meter dial position to the MΩ position. Put the test leads on opposite sides of the fuse and observe the resistance reading. If the resistance is very low, (close to 0 ohms), the fuse is still good. If it's very high or the meter displays “OL” (open circuit), then the fuse is probably not usable.

Your Southwire multimeter has been designed to allow fuses to be easily replaced. The fuses are located in the battery compartment

Operation cont.

1. Remove the two Phillips screws from the battery/fuse cover located on the back of the meter. (Lift up the kickstand to access the bottom screw.)
2. Remove cover.
3. Remove the old fuse from its holder by gently pulling it out. A small pair of needle nose pliers are a useful tool for removing old fuses. Grip the fuse tightly and pull it straight out.
4. Install the new fuse into the fuse holder.
5. Always replace a blown fuse with a new fuse of the identical size and rating. Fuse 1: UL rated 500mA/660V fast blow fuse, Fuse 2: UL rated 10A/660V fast blow fuse. Notice that the size of the fuse is printed on the circuit board beneath the fuses.
6. Install battery/fuse cover and tighten screws. Do not overtighten the screws.



Specifications cont.

Function	Range	Resolution	Accuracy (% of reading + digits)
AC Voltage	4.000V	1mV	±(1.2% + 5 digits)
	40.00V	10mV	±(1.5% + 5 digits)
	400.0V	0.1V	
	600V	1V	±(2.0% + 5 digits)
	All ranges are specified for a sinewave from 10% to 100% of range		
	Bandwidth: 45Hz to 400Hz		
DC Voltage	400.0mV	0.1mV	±(0.8% + 8 digits)
	4.000V	1mV	±(1.2% + 5 digits)
	40.00V	10mV	
	400.0V	0.1V	
	600V	1V	±(1.5% + 5 digits)
	All ranges are specified from 10% to 100% of range		
AC Current	400.0uA	0.1uA	±(1.5% + 5 digits)
	4000uA	1uA	±(1.8% + 5 digits)
	40.00mA	10uA	
	400.0mA	0.1mA	
	10.00A	10mA	±(3.0% + 7 digits)
	All ranges are specified for a sinewave from 10% to 100% of range		
	Bandwidth: 45Hz to 400Hz		
DC Current	400.0uA	0.1uA	±(1.0% + 5 digits)
	4000uA	1uA	±(1.5% + 5 digits)
	40.00mA	10uA	
	400.0mA	0.1mA	
	10A	10mA	±(2.5% + 5 digits)

Specifications

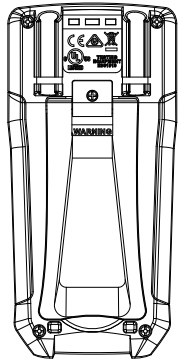
Function	Range	Resolution	Accuracy (% of reading + digits)
Resistance	400.0Ω	0.1Ω	±(1.2% + 5 digits)
	4.000kΩ	1Ω	±(1.0% + 5 digits)
	40.00kΩ	10Ω	±(1.2% + 5 digits)
	400.0kΩ	100Ω	
	4.000MΩ	1kΩ	
	40.00MΩ	10kΩ	±(2.0% + 5 digits)
Capacitance	40.00nF	10pF	±(5.0% + 7 digits)
	400.0nF	0.1nF	±(3.0% + 5 digits)
	4.000uF	1nF	
	40.00uF	10nF	
	100.0uF	0.1uF	±(5.0% + 5 digits)
Frequency	10.00Hz	0.01Hz	±(1.0% + 5 digits)
	100.0Hz	0.1Hz	
	1.000kHz	1Hz	
	10.00kHz	10Hz	
	100.0kHz	100Hz	
	1.000MHz	1lHz	
	10.00MHz	10kHz	
Duty Cycle	10% to 90%	0.1%	±(1.5% + 5 digits)
	Bandwidth: ≤100kHz		
	Sensitivity: ≥8V RMS		
Temperature (Type K)	-30°C~760°C	1°C	±(3% + 5°C)
	-22°F~1400°F	1°F	±(3% + 9°F)

NOTE: Accuracy is stated at 64°F to 82°F (18°C to 28°C) and less than 75% RH.

Specifications cont.

Test Lead Storage

Your Southwire 10041N multimeter was designed with test lead holders on the back of the multimeter. You can conveniently store your test leads by inserting them in the test lead holders. You can also use one of the test lead holders as a "third hand". This allows you to hold the multimeter and one of the test leads in one hand while you hold the second test lead in the other hand. Then you don't need three hands.



Magnetic Hanging Strap

A convenient accessory is available for your multimeter called the Magnetic Hanging Strap. The strap attaches to the back of your multimeter allowing you to hang your multimeter on metal surfaces. Contact your retailer or electrical distributor to order the Magnetic Hanging Strap, Southwire Model # 60151R.

Accessories

To view available accessories for your new meter, visit southwiretools.com

Customer Service

For technical questions related to your multimeter or information on how to purchase fuses or Southwire accessories, contact Southwire Customer Service at 1-855-SW-TOOLS

Professional Meter Calibration

For information on Southwire's meter calibration service, visit our website at southwiretools.com. Once there, click on the Test and Measurement page. Then find the product page for your meter. There you'll find a link to our Meter Calibration service.

PRODUCT COMPLIANCE

Users of this product are cautioned not to make modifications or changes that are not approved by Southwire Company, LLC. Doing so may void the compliance of this product with applicable laws and regulatory requirements and may result in the loss of the user's authority to operate the equipment.

UNITED STATES AND CANADA
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions; (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- *Reorient or relocate the radio or television receiving antenna.*
- *Increase the separation between the computer equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the radio or television receiver is connected.*
- *Consult the dealer or an experienced radio television technician for help.*

CAUTION: To comply with the limits of the Class B device, pursuant to Part 15 of the FCC Rules, this device is to comply with Class B limits. All peripherals must be shielded and grounded. Operation with non-certified peripherals or non-shielded cables is likely to result in interference and reception of the device.

Canadian Digital Apparatus Compliance
CAN ICES-3(B)/NMB-3(B)
EUROPEAN UNION
In accordance with CE requirements, the Declaration of Conformity may be found at www.southwiretools.com.

REGISTER YOUR PRODUCT

Register your product purchase at **www.southwiretools.com.**
At Southwire, we are dedicated to providing you with the best customer experience. By following a few quick steps to register, you can experience quicker service, more efficient support, and receive information on our future products. Simply provide your model number, serial number, and just a few pieces of information about yourself – it is that quick and easy.

LIMITED WARRANTY AND LIMITATION OF LIABILITY ON SOUTHWIRE METERS & TESTERS

Southwire Company, LLC. warrants this product to be free from defects in material and workmanship for five years from the date of purchase. This warranty does not cover fuses, disposable batteries, or damage arising from an accident, neglect, misapplication, contamination, modification, improper maintenance or repair, operation outside of specifications, or abnormal handling of the product. Southwire's sole liability, and the purchaser's exclusive remedy, for any breach of this warranty is expressly limited to Southwire's repair or replacement of the product. Whether Southwire repairs or replaces the product will be a determination that Southwire makes at its sole discretion.

SOUTHWIRE MAKES NO WARRANTY THAT THE PRODUCT WILL BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. SOUTHWIRE MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, OTHER THAN THE WARRANTY SPECIFICALLY SET FORTH HEREIN. SOUTHWIRE WILL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES FOR ANY BREACH OF THIS WARRANTY.

This warranty is void if this product is used for rental purposes. No product reseller is authorized to extend any other warranty on Southwire's behalf relating to this product, and no such reseller warranty will be binding on Southwire. If you have a warranty claim, or if the product needs to be serviced during or after the warranty period set forth above, please contact the Customer Service Department at 855-SWTOOLS (855-798-6657). The sender is responsible for all shipping, freight, insurance, and packaging costs associated with sending a product to Southwire. Southwire will not be responsible for lost or damaged products returned pursuant to this warranty.

All products returned to Southwire under this warranty should be mailed to:

Southwire Company, LLC.
Attention: Tool Warranty Return
840 Old Bremen Road
Carrollton, GA 30117