Safety

This symbol, adjacent to another symbol or terminal, indicates the user must refer to the manual for further information.

This symbol, adjacent to a terminal, indicates that, under normal use, hazardous voltages may be present

Double insulation

1. Improper use of this meter can cause damage, shock, injury or death. Read and understand this user manual before operating the meter.
2. Make sure any covers or battery doors are properly closed and ured.
3. Always remove the test leads before replacing the battery or fuses.
4. Inspect the condition of the test leads and the meter itself for any damage before operating the meter. Repair any damage before use.
5. Do not exceed the maximum rated input limits.
6. Use great care when making measurements if the voltages are greater than 25VAC rms or 35VDC. These voltages are considered a shock hazard.
7. Always discharge capacitors and remove power from the device under test before performing Diode, Resistance or Continuity tests.
8. Remove the battery from the meter if the meter is to be stored for long periods.
9. To avoid electric shock, do not measure AC current on any circuit whose voltage exceeds 250V AC.

Input Limits	
Function	Maximum Input
VDC, VAC	600V AC/600V AC
Resistance, Diode, Continuity	500V DC/AC
mA DC	200mA DC
10A DC	10A DC (15 seconds max. every 15 min.)
Frequency	250V DC/AC

Warranty

EXTECH INSTRUMENTS CORPORATION warrants this instrument to be free of defects in parts and workmanship for one year from date of shipment (a six month limited warranty applies on sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website at www.extech.com for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

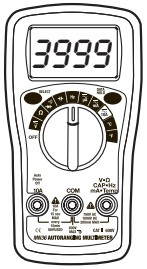
User's Manual

EXTECH INSTRUMENTS

MiniTec™ Series

Model MN36

Auto-Ranging Mini MultiMeter



Introduction

Congratulations on your purchase of Extech's MN36 Auto-Ranging Multimeter. This meter measures AC/DC Voltage, AC/DC Current, Resistance, Capacitance, Frequency, Temperature, Diode Test and Continuity. Proper use and care of this meter will provide many years of reliable service.

Specifications

Accuracy	Stated at 73°F ±10°F (23°C ±5 °C) and less than 70% RH
Diode Test	Test current of 0.6mA maximum, open circuit voltage 1.5V DC typical
Continuity Check	Audible signal will sound if the resistance is less than approximately <8Ω
Temperature sensor	Requires type K thermocouple
Input Impedance	10MΩ (V AC/DC)
Display	3999 count LCD
Overrange	"OL" is displayed
Polarity	Automatic (no indication for positive polarity); Minus (-) sign for negative polarity.
Measurement Rate	3 times per second, nominal
Low Battery	" " is displayed if battery voltage drops below operating voltage
Batteries	Requires (2) AAA batteries
Fuses	mA range; 250mA/250V fast blow 10A range, no protection
Operating Temp	32°F to 104°F (0°C to 40°C)
Storage Temp	-4°F to 140°F (-20°C to 60°C)
Relative Humidity	Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.
Operating Altitude	7000ft (2000 meters) maximum
Weight	5.4 oz. (153g).
Size	5.43" x 2.83" x 1.5" (138mm x 72mm x 38mm)
Safety	For indoor use and in accordance with Overvoltage Category II, Pollution Degree 2. Category II includes local level, appliance, portable equipment, etc., with transient overvoltages less than Overvoltage Category III

Specifications

Function	Range	Accuracy	
DC Voltage (V DC)	400.0mV	±(0.5% reading + 4 digits)	
	4.000V	±(0.8% reading + 4 digits)	
	40.00V		
	400.0V		
	600V		
AC Voltage (V AC)		50-60Hz	40-400Hz
	4.000V	±(0.8% rdg + 4 d)	±(2% rdg + 5 d)
	40.00V	±(1.2% rdg + 5 d)	
	400.0V		
	600V		
DC Current	400.0µA	±(1.2% reading + 4 digits)	
	4000µA		
	40.00mA		
	200.0mA		
	10A	±(2.5% reading + 4 digits)	
AC Current (40 to 400Hz)	400.0µA	±(1.5% reading + 5 digits)	
	4000µA		
	40.00mA		
	200.0mA		
	10A	±(3% reading + 5 digits)	

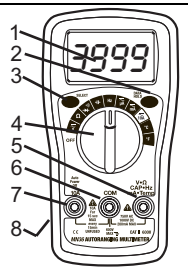
Resistance	400.0Ω	±(1.2% reading + 4 digits)
	4.000kΩ	
	40.00kΩ	
	400.0kΩ	
	4.000MΩ	
	20.00MΩ	±(3.0% reading + 5 digits)
Capacitance	4.000nF	Not specified
	40.00nF	±(3.0% reading + 10 digits)
	400.0nF	
	4.000µF	
	40.00µF	Not Specified
	100µF	
Frequency	10.00Hz	±(1.0% reading + 4 digits) 10Hz to 1MHz Sensitivity: 5.0Vrms
	100Hz	
	1.000kHz	
	10.00kHz	
	100.0kHz	
	1.000MHz	
	5.000MHz	Not specified
Temp °F Temp °C	-40 to 1400°F -20 to 750°C	-40 to 650°F; ±(1.0% rdg + 10 digits) 651 to 1400°F; ±(3% rdg + 10 digits) -20 to 400°C; ±(1.0% rdg + 10 digits) 400 to 750°C; ±(3% rdg + 10 digits) (probe accuracy not included)

Symbols

~	AC (voltage)
⎓	DC (direct current or voltage)
•))) ▶|	Continuity and Diode test
mV, V	millivolt, volt (voltage)
Ω, kΩ, MΩ	ohm, kilohm, megohm (resistance)
µA, mA, A	microamp, milliamp, Amp (current)
°F, °C	Degrees fahrenheit, centigrade (temperature)
▬	Low battery
H	Display hold

Meter Description

1. LCD Display
2. DATA HOLD button
3. SELECT button
4. Function switch
5. Positive input jack
6. COM jack
7. 10A jack
8. Rubber boot



Note: Tilt stand and battery access is on the rear of unit.

Operating Instructions

Voltage Measurements

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the positive **V** jack.
2. Turn the rotary switch to the **V** position.
3. Press the SELECT button to select either AC or DC.
4. Touch the test probes to the circuit under test and read the voltage on the display.

Current Measurements

> **CAUTION**: Do not make high current measurements on the 10A scale for longer than 15 seconds followed by a 15 minute cool down period. Exceeding 15 seconds may cause damage to the meter and/or the test leads.

1. Insert the black test lead banana plug into the negative **COM** jack.
2. For current measurements up to 200mA DC, set the function switch to the **µA** or **mA** position and insert the red test lead banana plug into the **mA** jack.
3. For current measurements up to 10A DC, set the function switch to the **10A** range and insert the red test lead banana plug into the **10A** jack.
4. Remove power from the circuit under test, then open up the circuit at the point where you wish to measure current.
5. Touch the black test probe tip to the negative side of the circuit. Touch the red test probe tip to the positive side of the circuit.
6. Apply power to the circuit.
7. Read the current in the display.

Resistance Measurements

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the positive **Ω** jack.
2. Set the function switch to the **Ω** position.
3. Touch the test probe tips across the circuit or part under test. It is best to disconnect one side of the part under test so the rest of the circuit will not interfere with the resistance reading.
4. Read the resistance in the display.

Capacitance Measurements

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the positive **CAP** jack.
2. Turn the rotary switch to the ⊣⊢ position.
3. Touch the test probes to the circuit or device under test and read the capacitance on the display.

Frequency Measurements

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the positive **HZ** jack.
2. Turn the rotary switch to the **Hz** position.
3. Touch the test probes to the circuit or under test and read the frequency or duty cycle on the display.

Temperature Measurements

> **WARNING:** To avoid electric shock, disconnect test leads from any source of voltage before making a temperature measurement. Be sure that the thermocouple has been removed before changing to any other measurement function.

1. Insert the type K thermocouple probe into the **Temp** and **COM** jacks.
2. Turn the rotary switch to the **°F** or **°C** position.
3. Read the temperature on the display.

Continuity Measurements

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the positive **V/Ω/mA** jack. Observe polarity.
2. Turn the rotary switch to the ▶\| **•)))** position.
3. Touch the test probes to the circuit or device under test. If the resistance is less than approximately 30Ω the buzzer will sound.

Diode Measurements

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the positive **V/Ω/mA** jack.
2. Turn the rotary switch to the ▶\| **•)))** position.
3. Touch the test probes to the diode under test. Forward voltage will indicate 0.4V to 0.7V. Reverse voltage will indicate "**OL**". Shorted devices will indicate near 0mV and an open device will indicate "**OL**" in both polarities.

Data Hold

Press the **Hold** button to freeze the reading in the display. "**H**" will appear in the LCD. Press the key again to release the display.

Low Battery

If the ▬ low battery icon appears in the display, replace the batteries to maintain proper operation.

Auto-Ranging

The meter will auto range to the optimum range to provide the best resolution and accuracy for the input signal.

Auto Power Off

1. This meter will automatically shut off after approximately 15 minutes of operation. If the meter shuts off, rotate the function switch to OFF and on again (or press the HOLD button) to resume operation.
2. To disable the auto power off, hold the SELECT button while turning power on or press the SELECT button after auto power off has turned the meter off.

Maintenance

> **WARNING:** To avoid electric shock, disconnect the test leads from any source of voltage before removing the battery/fuse cover.

> **WARNING:** To avoid electric shock, do not operate your meter until the battery/fuse cover is in place and fastened securely.

This Multimeter is designed to provide years of dependable service, if the following care instructions are performed.

1. Keep the meter dry.
2. Use and store the meter in mild ambient conditions. Temperature extremes can shorten the life of the electronic parts and distort or melt plastic parts.
3. Handle the meter gently. Dropping it can damage the electronic parts or the case.
4. Keep the meter clean. Wipe the case occasionally with a damp cloth. DO NOT use chemicals, cleaning solvents or detergents.
5. Use only fresh batteries of the recommended size and type. Remove old or weak batteries so they do not leak and damage the unit.
6. If the meter is to be stored for a long period of time, the batteries should be removed to prevent damage to the unit.

UL LISTED

The UL mark does not indicate that this product has been evaluated for the accuracy of its readings.

Battery and Fuse Replacement

> **WARNING**: To avoid electric shock, disconnect the test leads from any source of voltage before removing the battery/fuse cover.

1. Disconnect the test leads from the meter.
2. Remove the rubber holster (if in place).
3. Remove the two screws securing the rear cover using a Phillips head screwdriver.
4. Batteries:
   Lift the cover off and replace the batteries observing the correct polarity. Insert the new batteries into the battery holder.
5. Fuse:
   Remove the old fuse by gently pulling up on it. Install the new fuse by gently pushing it into the holder. Always use a fuse of the proper size and value; 250mA/250V fast blow.
6. Replace the rear cover and secure with the screws.

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Website: www.extech.com
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