

AM-34
3 3/4 DIGIT AUTO DIGITAL MULTIMETER
OPERATION MANUAL

SAFETY RULES

- λ This meter is designed and tested in accordance with IEC publication 1010, pollution degree II and installation category (overvoltage category) III 600V.
- λ This meter has been tested according to the following EC Directives
 - ◆ 89/336/EEC (EMC of Nov., 1992, Electromagnetic Compatibility)
 - ◆ 73/23/EEC (Product safety law of June 11, 1979, Low Voltage Directive of February 19, 1973)
- λ This meter is designed to be indoor use at temperature 41°F to 104°F (5°C to 40°C) and altitude up to 2,000m.
- λ To ensure that the meter is used safely, follow all safety and operating instructions in this operation manual. If the meter is not used as described in this operation manual, the safety features of this meter might be impaired.
- λ Do not use the meter if the meter or test leads look damaged, or if you suspect that the meter is not operating properly.
- λ When using the probes, keep your fingers behind the finger guards on the probes.
- λ Disconnect the live test lead before disconnecting the common test lead.
- λ Make sure power is off before cutting, unsoldering, or breaking the circuit. Small amount of current can be dangerous.
- λ Do not apply more than 600Vdc or 600Vac rms between a terminal and earth ground.
- λ To avoid electrical shock, use CAUTION when working above 60Vdc or 25Vac rms. Such voltages pose a shock hazard.
- λ Never make measurements with the battery cover or bottom case off.
- λ To avoid electrical shock or damage to the meter, do not exceed the input limits.

INTERNATION SYMBOLS



FEATURES

- λ One rotary switch operation.
- λ Auto polarity with engineering units annunciator
- λ Dual polarity A-D converter.
- λ Auto voltage ranges selection: DCV: 1mV - 600V, ACV: 1mV - 600V
- λ Auto ampere ranges selection: DCA: 40mA - 10A, ACA: 40mA - 10A
- λ Auto resistance ranges selection: 0.1Ω - 40MΩ
- λ Diode & continuity test

3.1 General Specifications

Display	: 3 3/4 digit LCD, 3999 counts with decimal point and engineering units annunciator display
Polarity	: Automatic, (-) negative polarity indication.
Zero adjustment	: Automatic.
Measuring Method	: Dual slop integration A to D converter system.
Over range indication	: Only the "OL" is displayed.
Power	: Two, standard 1.5 volt (AAA) battery, UM4 or equivalent.
Dimension	: 70 (H) x 144 (W) x 40 (D) mm.
Weight	: Approx. 280gm. (including batteries and packaging)

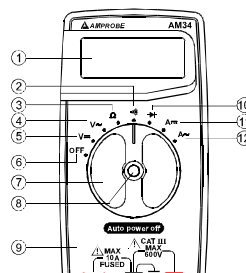
3.2 Electrical Specifications

Accuracies are ± (% of reading + number of least significant digits) at 23°C ± 5°C, <75% RH.

DC Voltage	Range	Resolution	Accuracy	Input Impedance	Overload Protection:
	4V	1mV	±(0.8%+1)	10MΩ	600V DC/AC rms
	40V	10mV			
	600V	1V			
AC Voltage	Range	Resolution	Accuracy	Frequency (Hz)	Input Impedance: 10MΩ
	4V	1mV	±(1.2%+3)	40-400	Overload Protection: 600V rms
	40V	10mV			
	400V - 600V	1V			
DC Current	Range	Resolution	Accuracy	Input resistor	Overload Protection:
	10A	10mA	±(1.8%+5)	0.01Ω	10A/600V fuse
AC Current	Range	Resolution	Accuracy	Input resistor	
	10A	10mA	±(3.0%+5)	0.01Ω	
Resistance	Range	Resolution	Accuracy	Measurement Voltage/Current	Response time: 5 sec. max. on 40MΩ range
	400Ω	100mΩ	±(1.0%+2)	VDDA 1.2mA or less	3 sec. on all other range
	4kΩ	1Ω		0.7V(TYP)	
	40kΩ	10Ω		0.7mA or less	
	400kΩ	100Ω		0.47V(TYP)	
	4MΩ	1kΩ		0.7mA or less	
	40MΩ	10kΩ			
			±(1.5%+2)		
Diode Test		Range	Resolution	Open short or Normal Range	
		0~3.999V	1mV		
Continuity Test		Range	Resolution	Buzzer sound generation resistance	
		400Ω	100mΩ		

PANEL DESCRIPTIONS

- 1) 3 3/4 digit LCD display
- 2) Continuity test
- 3) Resistance range
- 4) AC voltage range
- 5) DC voltage range
- 6) Power off
- 7) Rotary switch
- 8) Data hold / power resume button
- 9) Case
- 10) Diode range
- 11) DC current range
- 12) AC current range



OPERATION WARNING

- 1) When measuring voltage ensure that the instrument is not connected or switched to a current or resistance or temperature or to the diode check/continuity range. Always ensure that the correct terminals are used for the type of measurement to be made.
- 2) Use extreme care when measuring voltage above 50V, especially from sources where high energy exists.
- 3) Avoid making connections to "live" circuits whenever possible.
- 4) When making current measurements ensure that the circuit is not "live" before opening it in order to connect the test leads.
- 5) Before making resistance measurements or continuity / diode test, ensure that the circuit under test is de-energised.
- 6) Always ensure that the correct function and range is selected. If in doubt about the correct range, start with the highest and work downwards.
- 7) Extreme care should be taken when using the instrument to conjunction with a current transformer connected to the terminals. High voltage may be produced at the terminals if an open circuit occurs.
- 8) Ensure that the test leads and prods are in good condition with no damage to the insulation.
- 9) Take care not to exceed the over-load limits as given in the specifications.
- 10) Fuse for replacement must be of the correct type and rating.

5.1 DC and AC Voltage measurement

- 1) Connect the black test lead to the "COM" socket and red test lead to the " Ω" socket.
- 2) Set the selector switch to DC V or AC V position and connect the test prods across the source or load under measurement.

5.2 DC and AC Current measurement

- 1) Connect the black test lead to the "COM" socket and red test lead to the "10A" socket for measurement up to 10A.
- 2) Set the selector switch to the DC current or AC current position.
- 3) Connect the prods in series with the current source to be measured.

5.3 Resistance measurement

- 1) Connect the black test lead to the "COM" socket and red test lead to the " Ω" socket.
- 2) Set the selector switch to resistance Ω position.
- 3) Connect the prods across the circuit to be tested.

CAUTION: Ensure that the circuit to be tested is "dead".
Max. input over-load : 600V rms < 10sec.

5.4 Diode test

- 1) Connect the black test lead to the "COM" socket and red test lead to the " Ω" socket.
- 2) Set the selector switch to position.
- 3) Connect the black and red test prods to the cathode (-) and anode (+) ends of the diode to be tested respectively.
- 4) Read the forward voltage drop (junction) value from the display. If reverse connected the prods to diode, display shows over-load.

5.5 Continuity test

- 1) Connect the black test lead to the "COM" socket and red test lead to the " Ω" socket.
- 2) Set the selector switch to position.
- 3) Connect the prods across the circuit to be tested, if the resistance less than approx. 50Ω, buzzer will be activated.

5.6 Data hold

A push switch at the middle of rotary switch is used to hold data during measurement. Pressing the key, reading is held and "H" appears on display. Resume active reading by pressing switch gently once.

5.7 Auto power off

The meter will turn off automatically to extend the battery life after approx. 15 minutes without operation. Resume power by pressing data hold push switch gently once.

6. MAINTENANCE

CAUTION

BEFORE ATTEMPTING BATTERY AND FUSE REMOVAL OR REPLACEMENT, DISCONNECT TEST LEADS FROM ANY ENERGISED CIRCUITS TO AVOID SHOCK HAZARD.

6.1 Fitting and replacing the battery and fuse

- 1) Ensure that the instrument is not connected to any external circuit, set the selector switch to OFF position and remove the test leads from the terminals.
- 2) Remove the screw of the back case.
- 3) Replace the spent battery or fuse with the same type and rating.
- 4) Reinstall the back case, tighten and securing screw.

6.2 Cleaning

Periodically wipe the case with a soft damp cloth and mild household cleanser. Do not use abrasives or solvents. Ensure that no water gets inside the equipment to prevent possible shorts and damage.

**FOR TECHNICAL ASSISTANCE,
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