

# AM-33

## 3 3/4 DIGITS INTELLIGENT ONESWITCH AUTO DMM 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.

### INTERNATIONAL SYMBOLS

	Important information see manual		Continuity
	AC		Ground
	DC		Double insulation

### FEATURES

- λ One switch operation.
- λ Auto polarity with engineering units annunciator.
- λ DC volt, AC volt, Resistance (4V threshold voltage to determine V or R function)
- λ Continuity test
- λ Auto power off with power resume
- λ Data hold
- λ Full range 600V overload protection
- λ Conform to IEC1010-1 CAT III 600V

#### 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 slope integration A to D converter system.
Over range indication	: Only the "OL" is displayed.
Power	: Single, standard 9 volt battery NEDA 1604, JIS 006P, IEC6F22.
Dimension	: 70 (H) x 144 (W) x 40 (D) mm.
Weight	: Approx. 270gm. (including batteries and packaging)

#### 3.2 Electrical Specifications

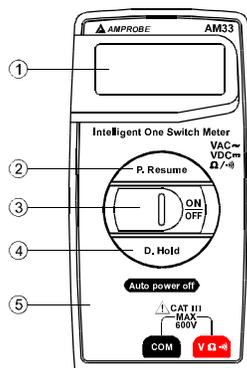
Accuracies are ± (% of reading + number of least significant digits) at 23°C ± 5°C, <75% RH.

DC Voltage	Range	Resolution	Accuracy	Input Impedance	
	4V	1mV	±(0.8%+1)	10MΩ	Response time: 2 sec. max.
	40V	10mV			
	400V	100mV			
	600V	1V			
AC Voltage	Range	Resolution	Accuracy	Frequency (Hz)	
	4V	1mV	±(1.2%+3)	40-400	Input Impedance: 10MΩ Response time: 2 sec. max.
	40V	10mV			
	400V	100mV		40-100	
	600V	1V			
Resistance	Range	Resolution	Accuracy	Open circuit Voltage	
	400Ω	100mΩ	±(1.0%+2)	3V	
Continuity Test	Range	Resolution		Buzzer sound generation resistance	
	400Ω	100mΩ		~47Ω	

Overload protection on all range: 600V DC/AC rms <30sec.

### PANEL DESCRIPTIONS

- 1) 3 3/4 digit LCD display
- 2) Power resume button
- 3) ON/OFF switch
- 4) Data hold button
- 5) Case
- 6) Input and common terminals



## WARNING OPERATION

- 1) When measuring voltage ensure that the instrument is not connected. 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 test, ensure that the circuit under test is de-energised.
- 6) 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.
- 7) Ensure that the test leads and prods are in good condition with no damage to the insulation.
- 8) Take care not to exceed the over-load limits as given in the specifications.
- 9) 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 "V Ω ~)" socket.
- 2) Connect the test prods across the source or load under measurement.

#### 5.2 Resistance measurement

- 1) Connect the black test lead to the "COM" socket and red test lead to the "V Ω ~)" socket.
  - 2) 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 < 30sec.

#### 5.3 Continuity test

- 1) Connect the black test lead to the "COM" socket and red test lead to the "V Ω ~)" socket.
- 2) Connect the prods across the circuit to be tested, if the resistance less than approx. 47Ω, buzzer will be activated.

#### 5.4 Data hold

A push switch is used to hold data during measurement. Pressing the key, reading is held and "H" appears on display. Pressing the switch again to release the hold data.  
Note : In auto AC/DC voltage selection, if the source under test is AC, hold function will operate only when source under test is in continuous contact with the test probes.

#### 5.5 Auto power off

The meter will turn off automatically to extend the battery life after approx. 30 minutes without operation. Resume power by pressing "P. Resume" button.

### 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

- 1) Ensure that the instrument is not connected to any external circuit, switch off the meter and remove the test leads from the terminals.
- 2) Remove the screw of the back case.
- 3) Replace the spent battery with the same type.
- 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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