

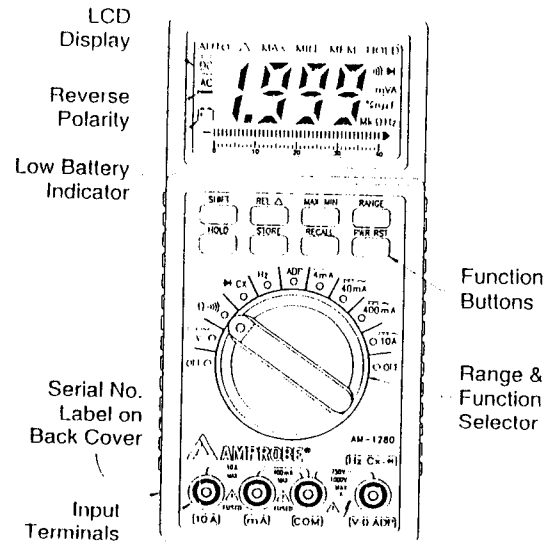
OPERATING INSTRUCTIONS

for

AMPROBE®

Digital Multimeter

Model AM-1280



See "Precautions for Personal and Instruments Protection" on Page 4

See "Limited Warranty" on Page 2

 **AMPROBE INSTRUMENT®**
DIVISION OF CORE INDUSTRIES INC., LYNBROOK, NEW YORK 11563

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LIMITED WARRANTY

Congratulations! You are now the owner of an AMPROBE® instrument. It has been quality crafted according to quality standards and contains quality components and workmanship. This instrument has been inspected for proper operation of all of its functions. It has been tested by qualified factory technicians according to the long-established standards of AMPROBE INSTRUMENT.

Your AMPROBE instrument has a limited warranty against defective materials and/or workmanship for one year from the date of purchase provided that, in the opinion of the factory, the instrument has not been tampered with or taken apart.

Should your instrument fail due to defective materials, and/or workmanship during the one-year warranty period, return it along with a copy of your dated bill of sale which must identify instrument by model number and serial number.

For your protection, please use the instrument as soon as possible. If damaged, or should the need arise to return your instrument, it must be securely wrapped (to prevent damage in transit) and sent prepaid via Air Parcel Post insured or UPS where available to:

Service Division
AMPROBE INSTRUMENT
630 Merrick Road (For U.P.S.) • P.O. Box 329 (For P.P.)
Lynbrook, NY 11563-0329

Outside the U.S.A. the local Amprobe representative will assist you. The above limited warranty covers repair and replacement of instrument only and no other obligation is stated or implied.

SAFETY

This Instruction Manual has warnings and safety precaution information which must be followed in order to ensure safe operating conditions.

WARNING

PRECAUTIONS FOR PERSONAL AND INSTRUMENT PROTECTION

- 1) Read these instructions thoroughly and follow them carefully.
- 2) In many instances, you will be working with dangerous levels of voltage and/or current; therefore, it is important that you avoid direct contact with any uninsulated, current-carrying surfaces. Appropriate insulating gloves, clothing and eye protection should be worn.
- 3) To avoid electrical shock to the user and/or damage to the instrument, do not apply more than 1000V between any terminal and earth ground.
- 4) Before applying test leads to circuit under test, make certain that leads are plugged into proper jacks and switches are set to proper range and function.
- 5) Before using any electrical instruments or tester for actual testing, the unit should be checked on a low energy high impedance source. **Do not use power distribution lines or any other high energy sources.**
- 6) If the instrument should indicate that voltage is not present in circuit, do not touch circuit until you have checked to see that all instrument switches are in proper position and instrument has been checked on a known live line.
- 7) Make certain no voltage is present in circuit before connecting ohmmeter to circuit.

CAUTION

To avoid damage to the meter:

- 1) Disconnect the test leads from circuit under test before changing functions.
- 2) Never connect instrument to a voltage source with the rotary switch in the Ohms position.
- 3) Always use the correct replacement fuse. Check manual for proper fuse rating.

INTRODUCTION

Amprobe's model AM-1280 Digital Multimeter is a rugged hand-held 4000 count instrument designed for use in the field, laboratory and the home. This 3 $\frac{3}{4}$ digit instrument is average sensing and calibrated to read out in RMS. It has a 42 segment analog bargraph with an update rate of 20 times per second.

In addition to measuring Volts, Ohms and Amps, etc. it can also measure capacitance, frequency and has an Adp range. This meter also provides the user with a number of control keys that enhances its usefulness. These keys are discussed in more detail under "*Input Terminals and Controls*". To protect it against damage from accidental drops, the instrument is supplied with a holster.

SPECIFICATIONS

Display: 3½ digits (4000 counts), 42 segment analog bargraph with full annunciators and automatic polarity indication. Digits 11/16" high.

Update Rate: Digital Display – 2 times per second; analog bargraph 20 times per second; capacitance and frequency – 1 time per second.

Input Impedance: 10 Megohms

Over-range Indication: Blinking in the MSD (Most Significant Digit)

Low Battery Indication:  2.4V

Polarity: Automatic “(-)” negative indication

Response Time: Not more than 3.5 seconds

Frequency Response: 40-1K Hz

Power Source: 2 AA alkaline or zinc carbon batteries

Auto Shut Off: 30 minutes after last mode or function change.

Battery Life: 1200 hours typical with alkaline battery

Operating Temperature: 32°F (-0°C) to 122°F (50°C)

Storage Temperature/Humidity: -14°F (-10°C) to 131°F (55°C) 80%RH

Operating Humidity: Up to 80% RH non-condensing

Temperature Coefficient: 0.15X (specified accuracy) per °C <18°C or >28°C

Size with Holster: 7.00" (17.78cm) x 3.375" (8.57cm) x 1.562" (3.96cm)

Weight with Holster: 12.4 oz. (0.35kg)

Case Breakdown Voltage: 3000 VAC

Circuit Protection: All milliamp ranges – 600 Volt fast blow fuse; Capacitance, Ohms, Frequency Diode Check, Continuity Buzzer and ADP – overload protected to 550 VAC for up to 15 seconds; 10 Amp range fused to 600 Volts.

Function	Range	Resolution	Accuracy			Input Impedance
			50 - 60 Hz	60 - 100 Hz	100 - 1K Hz	
AC Volts	400mV	0.1mV	± 1.0% of rdg ± 5 LSD	± 1.5% of rdg ± 5 LSD	± 1.5% of rdg ± 5 LSD	10 MΩ
	4V	1mV				
	40V	10mV				
	400V	100mV				
	750V	1V				
15KV		See Note 1 on page 20				

Function	Range	Resolution	Accuracy	Input Impedance
DC Volts	400mV	0.1mV	± 0.3% of rdg ± 2 LSD	Approx. 100MΩ
	4V	1mV		
	40V	0.01V		
	400V	0.1V		
	1000V	1V		
15KV		See Note 1 on page 20		

Function	Range	Resolution	Accuracy	Burden Voltage
AC Amps 40 to 1K Hz	4mA	1µA	± 1.2% of rdg ± 5 LSD	600mV MAX
	40mA	10µA		
	400mA	0.1mA		1V MAX
	10A	0.01A	± 1.5% of rdg ± 5 LSD	600mV MAX
	0-300; 0-1000	See Note 2 on page 20		
DC Amps	4mA	1µA	± 1.0% of rdg ± 2 LSD	600mV MAX
	40mA	10µA		
	400mA	0.1mA		1V MAX
	10A	0.01A	± 1.0% of rdg ± 3 LSD	600mV MAX
	0-600 Amps	See Note 3 on page 20		

Function	Range	Resolution	Accuracy	Open Ckt. Vltg.
Ohms	400 Ω	0.1	± 0.7% of rdg + 4 LSD	0.4V
	4KΩ	1	± 0.7% of rdg ± 3 LSD	
	40KΩ	10		
	400KΩ	100		
	4MΩ	1K	± 0.7% of rdg ± 4 LSD	
40MΩ	10K	± 1.5% of rdg ± 5 LSD		

Function	Range	Resolution	Accuracy
Capacitance	4NF	1PF	± 1% of rdg ± 5 LSD
	40NF	10PF	
	400NF	0.1NF	
	4μF	1NF	
	40μF	10NF	± 3% of rdg ± 5 LSD

Function	Range	Resolution	Accuracy	Sensitivity
Frequency	100 Hz	0.01Hz	± 0.2% of rdg ± 4 LSD	40mV RMS
	1KHz	0.1Hz		
	10KHz	1Hz		400mV RMS
	100KHz	10Hz		
	1MHz	100Hz		

Function	Test Voltage	Resolution	Accuracy	Test Current
Diode Check	2.2 to 3.3VDC	1mV	± 1.0% of rdg ± 3 LSD	Approx. 0.8mA

Function	Input	Resolution	Accuracy	Overload Protection
ADP	MILLIVOLTS*DC	1 COUNT	± 0.5% of rdg ± 3 LSD	550 VOLTS

*Note: 1 Millivolt is displayed as 10 counts

Leakage: 0-3.999mA AC (120 or 230 VAC appliance)
See Note 4 on page 21.

Power (KW) Ranges (also AC Amps):
0-19.99/199.9 KW; 0-40/400 KW; 0-1000 Amps AC
See Note 5 on page 21.

Temperature: -50°F to 300°F; -55°C to 150°C
See Note 6 on page 21.

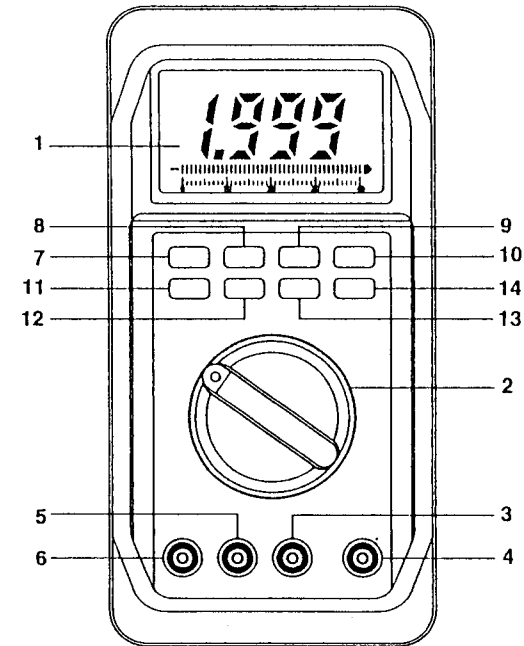


Fig. 1
Input Terminals and Controls

INPUT TERMINALS AND CONTROLS

See Figure 1 for location of terminals and controls.

- Digital Display** – The digital display has a 3¹/₄ digit LCD readout (maximum reading 3999) with a 42 segment analog bargraph; and auto polarity, decimal point, over-range, memory, AC/DC, Ω, $\frac{1}{f}$, $\frac{1}{C}$, AUTO, HOLD, $\frac{1}{\Delta}$, REL., MAX. MIN., and units indicator.
- Rotary Switch** – Selects the function and Range needed.
- COM** – Common input terminal.
- Hz-Cx- $\frac{1}{f}$, V- Ω - ADP** – Positive input terminal for Volts, Ohms, Diode, Frequency, Capacitance and ADP measurements.

- 5) mA – Positive input terminal for current measurements.
- 6) A – Positive input terminal for current measurements.
- 7) **Function Key (Blue)** – Press this key to toggle between AC and DC for voltage and current measurements or to toggle between Ohm and Continuity checking or Diode and Capacitance.
- 8) **Relative Key** – Press the REL Δ Key to turn annunciator on, enter the relative mode, zero the display and store the displayed reading as a reference value. Press REL Δ again and hold for two seconds to exit the relative mode. In the relative mode, the value shown on the LCD is always the difference between the stored reference value and the present reading. For example, if the reference value is 0.04 ohm and the present reading is 15.05 ohms, the display will indicate 15.01 ohms.
- 9) **MIN MAX Key** – Press the MIN MAX key to enter the MIN MAX recording mode. The minimum, maximum values are then reset to the present input. The HOLD and MAX or MIN annunciator turns on. In the MIN MAX recording mode, the minimum and maximum readings are stored in memory. The beeper emits a tone when a new minimum or maximum value is over 4000 counts. In the MIN MAX recording mode, press the HOLD button to stop the recording of readings; press again to restart recording. If recording is stopped, the present values and bargraph are frozen. In the MIN MAX recording mode, the minimum or maximum value is held in the display, but the bargraph continues to be active.
- 10) **Range Key (Manual Range)** – The RANGE key is pressed to select manual ranging and to change ranges. When the RANGE Key is pressed once, the AUTO indicator turns off. Push RANGE key to select the appropriate range for the measurement you want to make. Press RANGE key and hold for two seconds to return to Autorange.
- 11) **Hold Key** – Press the HOLD key to go in and out of the Touch HOLD mode, except if you are already in the MIN MAX recording mode. In the Touch HOLD mode, the HOLD annunciator is displayed and the last reading is detected, the beeper emits a tone and the display is automatically updated. Pressing MIN MAX when you are in the

Touch HOLD mode causes you to exit Touch HOLD and enter the MIN MAX recording mode. In the MIN MAX recording mode, press the HOLD key to stop the recording of readings. Press HOLD again to resume recording. In the HOLD mode, the automatic power off feature is disabled.

- 12) **Store Key** – In the STORE mode, the MEM annunciator is displayed and the last reading is stored on the meter. If the meter powers down automatically, the stored data is not erased. If the meter rotary switch is rotated to "OFF" position, the data you stored will be erased.
- 13) **Recall Key** – Press the RECALL key, the data stored will be displayed. Annunciators HOLD and MEM will be visible with MEM flashing. During this time the auto power off feature is disabled. Touch the HOLD key to release the recall mode.
- 14) **Power Reset Key, PWR RST** – If the instrument is automatically powered off, push this button to power on.

MAKING MEASUREMENTS

Preparation & Caution Before Measurement

1. Wait 10 seconds after turning on the meter before making a measurement.
2. The rotary switch should be set to the function which you want to use before connecting the probes to the device being tested. Be sure to remove the test leads from the equipment being measured before switching the rotary switch to a new function.
3. If the meter is used near equipment that generates electro-magnetic interference, the display may be unstable or indicate incorrect measurement values.
4. Inspect the test leads periodically for breaks in the insulation or the wire. Make a continuity check whenever in doubt. Replace leads if found defective.

Operation

This instruction manual contains some information and warnings which have to be followed by the user to ensure safe operation and to retain the apparatus in safe condition.

Voltage Measurement



Do not apply more than 1000 VDC or 750 VAC to the input. Do not apply more than 1000 Volts between any input terminal and earth ground. Exceeding these limits creates a shock hazard and may damage the meter.

Use extreme caution to avoid personal contact with high voltage when making high voltage measurements.

1. Connect the BLACK test lead to the COM terminal and the RED test lead to the "V-Ω-ADP" terminal.
2. Set the Rotary switch to Volts.
3. Press blue button to toggle between AC or DC.
4. Select manual ranging, if so desired, by pressing RANGE button.
5. Connect the test leads across the source or load under measurement. The polarity of the RED lead connection will be indicated at the same time as the voltage. When the input voltage over-ranges the meter, a buzzer is turned on to beep in both auto and manual range modes. In over-range, the MSD (most significant digit) of the LCD display flashes, and the three least significant digits (LSD) are set at zero.

Current Measurement

WARNING

Do not apply voltage between "10A", "mA" and "COM" terminals. The terminals have built in intelligence. If the selection of switch position and input jack is not right, a continuous beep will be heard until the proper selection is made.

1. Connect the BLACK test lead to the COM terminal and the RED test lead to the "mA" terminal for a measurement of 400mA MAX. For a maximum of 10A, move the RED test lead to the "10A" terminal.
2. Set the rotary switch to the desired range (4mA-400mA) for the current to be measured. Select AC or DC current measurement using the blue function key.



Do not exceed the current rating of current ranges


If the current range needed is not known, start at the highest range and work down.

3. Connect the test leads in series with the load under measurement.
4. If no reading is obtained, check for open fuses if hook-up is correct.



Resistance Measurement

WARNING


To prevent possible personal injury or damage to the meter, make sure the device being tested is turned off and no source of voltage is present. Do not apply voltage while instrument is in resistance measuring mode.

1. Connect the BLACK test lead to the COM terminal and the RED test lead to the "V-Ω-ADP" terminal.
2. Set the rotary switch to "Ω" position to measure resistance. Select "Ω" measurement using the blue function key.
3. Connect the test leads across the resistance to be measured. For the best accuracy in measurements of low resistance, press "Range" to set the 400Ω range, short the test leads together and press the "REL"  key. This compensates the resistance measurement for the resistance of the test leads.

Audible Continuity Test

1. Connect the BLACK test lead to the COM terminal and the RED test lead to the "V- Ω -ADP" terminal.
2. Set the rotary switch to " Ω  " position. Select " " measurement using the blue function key.
3. Connect the test leads across the resistance to be measured. The buzzer sounds if the resistance of the circuit measured is lower than approximately 40 ohms.

Frequency Measurement

1. Connect the BLACK test lead to the COM terminal and the RED test lead to the "Hz-Cx-  " terminal.
2. Set the rotary switch to "Hz" position.
3. Connect the test leads across the source or load under measurement.




Note: The last one or two digits of the digital display could be unstable at the frequency below 1K Hz and above 20K Hz.

Adapt (ADP) Measurement

1. Connect the BLACK test lead to the COM terminal and the RED test lead to the "V- Ω -ADP" terminal.
2. Set the rotary switch to "ADP" position.
3. Connect the test leads across the source or load under measurement.

Note: When making ADP measurements, the digital display will indicate 10 counts for every mVDC input. e.g. A reading of 100 indicates a 10mVDC input.


Diode Check



1. Set the rotary switch to " -Cx" position. Select " " measurement using the blue function key.
2. Connect the BLACK test lead to the COM terminal and the RED test lead to the "Hz-Cx-  " terminal.

Note: The polarity of the RED test lead is "+".

3. Connect the test leads across the diode to be checked. Normally the forward voltage drop of good silicon diodes is shown between 0.500V to 0.900V. If the diode under test is defective, "000" (short circuit) or approximately 3.2V (non-conducting) is displayed.
4. Reverse Check of the diode. If the diode under test is good, approximately 3.2V is displayed with the diode reverse biased. If the diode is shorted (or resistive) "000" or some other value lower than 3.2V is displayed.

Capacitance Measurement

 The capacitor to be tested should be discharged before starting the testing procedure.

1. Connect the BLACK test lead to the COM terminal and the RED test lead to the "Hz-Cx-  " terminal.
2. Set the rotary switch to " Cx" position. Select "Cx" measurement using the blue function key.
3. Observe the polarity when measuring polarized capacitor.
4. Connect the test leads to the capacitor to be tested.

USING ACCESSORIES WITH AM-1280

High Voltage Measurement 15KV with AM-1280

(See Operating Precautions on page 4).

1. To use accessory High Voltage Probe HV-2 with the AM-1280, unscrew handle from main probe and insert resistor model HVR-4, (not supplied with probe) with the spring on the resistor toward the handle.
2. Screw handle back onto probe.
3. Move rotary switch to volts position on AM-1280.
4. Select AC or DC using shift key.
5. Using Range key, select the 40 or 400 volt range depending on resolution desired.

6. Plug Black test lead into AM-1280 "COM" jack on multi-meter and connect the other end of the lead to "ground" of circuit being tested. (Red test lead is not used).
7. Plug HV-2 (with resistor installed) into "V-Ω-ADP" jack.
8. With your hand behind the protective discs on the handle of the probe, touch the probe tip to the circuit under test.
9. Take reading and multiply by 100.

CAUTION: DO NOT EXCEED 15,000 Volts AC or DC.

Note: Tip of the HV-2 probe is replaceable.

High Current Measurement with AC Clamp-On Transducer and AM-1280

AC Current can be measured using a Clamp-On Current Transducer available as an accessory – model A663-4B for 0-300 Amps; model A664-4B for 0-1000 Amps.

1. Select appropriate AC voltage range.
 - a. For currents below 400 Amps, select the 400mV range.
 - b. For currents above 400 Amps, select the 4V range.
 - c. If current is unknown, select the 4V range.
2. Plug the leads of the transducer into the "COM" and "V-Ω-ADP" jacks of the AM-1280.
3. Clamp current transducer around a single conductor.
4. Read display directly using the conversion of 1mV = 1 Amp. e.g. if the instrument is in the 4 Volt range and display is showing 0.976, ignore decimal point and interpret reading as 976 Amps.

Transducers are calibrated to give an output of 1mV/1 Amp AC from 45-500 Hz based on sinusoidal waveforms.

Note: The AMPTRAN[®] 50:1 transformers (models CT50-1 and CT50-2), the Deca-Tran[™] 10:1 transformer (model A50-1) and the Energizer line splitter (model A-47L) may be used with the A663-4B/A664-4B transducers to further expand the current measuring capability of the AM-1280.

Using A663-4B/A664-4B and AM-1280 Range

Using A663-4B/A664-4B and AM-1280 Range	To get actual current
400mV with CT50-1 or 2	Multiply AM-1280 reading by 50
400mV with A50-1	Multiply AM-1280 reading by 10
400mV with A-47L 1X Loop	Read AM-1280 display directly
400mV with A-47L 10X Loop	Divide AM-1280 reading by 10
4V with CT-50-1 or 2	Disregard decimal point in AM-1280 reading and multiply reading by 50*
4V with A50-1	Disregard decimal point in AM-1280 reading and multiply reading by 10*

* Example – Reading is .600, drop decimal point and multiply by 50; $600 \times 50 = 3,000$ amps.

The Amptran[®] CT50-1 has a maximum rating of 6,000 amperes intermittent duty and 5,000 amperes continuous duty. The CT50-2 has a maximum rating of 3,600 amperes intermittent duty and 3,000 amperes continuous duty.

The Deca-Tran[™] A50-1 has a maximum rating of 1,200 amperes intermittent duty and 600 amperes continuous duty. The Energizer A-47L has a maximum rating of 20 amperes intermittent duty and 15 amperes continuous duty.

Note: Accuracy of reading on the DMM is the accuracy of the AM-1280 plus accuracy of each transducer.

High Current Measurement with AC/DC Clamp-On Transducer and AM-1280

AC or DC current can be measured using Current Transducer model CT-600 AC/DC.

1. Select 4 Volts DC range on AM-1280. For current below 40 Amps use the 400mV DC range.
2. Plug the Black leads of the AC/DC transducer into the "COM" jack. Plug the RED leads into the "V-Ω-ADP" jack.
3. Turn the transducer on by moving the range switch to either the 100 Amps or 600 Amps position.
4. If DC Amps is being measured, zero adjust output of transducer. Using the AM-1280 as a readout device, rotate DCA zero adjust until a zero or close to zero reading is achieved.

5. Clamp jaws of transducer around conductor centering it as accurately as possible.
6. Read display on AM-1280 using the conversion on the front panel of the transducer. i.e. For 100 Amp range, 1 Amp equals 10mV and for 600 Amp range, 1 Amp equals 1mV.

Note: *The accuracy of the reading on the DMM is the accuracy of the AM-1280 plus the accuracy of the CT-600. Refer to instruction booklet of the CT-600 for its accuracy.*

Temperature Measurement with AM-1280

Temperature measurement from -50°F to 300°F or -55°C to 150°C is possible with the temperature accessory model TMA-1. The following probes available only from Amprobe are used in conjunction with the TMA-1; TPIF - Fahrenheit Immersion Probe; TPSF - Fahrenheit Surface Probe; TPAF - Fahrenheit Air Probe; TPIC - Centigrade Immersion Probe; TPSC - Centigrade Surface Probe; TPAC - Centigrade Air Probe.

1. Install battery and connect appropriate probe or probes to TMA-1 as per its operating instructions.
2. Select 400mV DC range on AM-1280.
3. Insert banana plugs from TMA-1 observing polarity, into jacks of AM-1280. ("+" from TMA-1 to "V-Ω-ADP" jack, "-" from TMA-1 to "COM" jack).
4. Insert temperature probes into medium to be tested.
5. The AM-1280 should now be indicating a mV reading equal to the temperature being measured.
i.e. 72mV = 72°.

Note: *For resolution and accuracy, refer to operating instructions of model TMA-1. The accuracy of reading on the DMM is the accuracy of the AM-1280 plus accuracy of probe.*

Leakage Current Measurement with AM-1280

(See Operating Precautions on page 4)

AC Leakage Current can be measured using the model ACL-1280 Leakage Detector, available separately as an accessory. (For 120/230 VAC appliances).

1. Select 4mA AC range on the AM-1280.
2. Plug the Black banana lead from the ACL-1280 into the "COM" jack on the Multimeter.
3. Plug the Red banana lead from the ACL-1280 into the "mA" jack on the Multimeter.
4. Fasten the alligator clip test lead of the ACL-1280 to an earth ground (metal cold water pipe, radiator, etc.) or to the power line ground or ground contact of a three prong socket.

IMPORTANT: *If the appliance to be checked has a three prong plug with a ground, the ground connection inside the appliance must be disconnected. Disconnect appliance from power while doing this.*

5. If the appliance has been disconnected from the power supply, reconnect it.
6. a. Using the test lead probe of the ACL-1280, touch various parts (bare metal) inside and outside the appliance. If appliance has a multiple-cycle switch and/or a multiple-level power switch, test the appliance with the switch(es) in each position.
b. Refer to table below for levels of leakage which are considered acceptable according to ANSI.

MAXIMUM LEAKAGE CURRENT TABLE*

Type of Appliance	Maximum Leakage Current (milliamperes)
Two-wire cord-connected appliance	0.50
Three-wire (including grounding conductor) cord-connected portable appliance	0.50
Three-wire (including grounding conductor) cord-connected stationary or fixed appliance	0.75

Note: *Additional leakage-current requirements may be found in individual product standards.*

* Reference ANSI Publication C101.1-1973

Power Measurement with AW-80/81 and AM-1280

See Operating Precautions on page 4.

Power (KW) single phase or AC current can be measured using the model AW-80 or AW-81 Watt/Amp Transducer available separately as an accessory.

Model AW-80 ranges 0–19.99/199.9KW with voltage inputs up to 240 VAC (+10% max) and current inputs of 0–150/1000 Amps AC.

Model AW-81 ranges 0–40/400KW with voltage inputs of 208 to 550 VAC (+10% max) and current inputs of 0–150/1000 Amps AC.

Both units may also be used to measure current 0–1000 Amps AC (50 – 60 Hz)

For complete instructions, see separate AW-80/81 operating instructions booklet, Pt. No. 981759.

Note: Accuracy of reading on DMM is accuracy of AM-1280 plus the accuracy of the power transducer. Refer to operating instructions of the AW-80/81 for correct accuracy.

REFERENCE NOTES

Note 1: This range capability is available through the use of High Voltage Probe model HV-2 and resistors models HVR-4 and HVR-41. Resistor is not supplied with probe.

Note 2: These ranges are available through the use of accessory Current Transducers model A663-4B (0–300 Amps) and model A664-4B (0–1000 Amps) 45 – 500 Hz.

Note 3: This range capability is available through the use of Current Transducer model CT-600 AC/DC.

BATTERY REPLACEMENT

The meter is powered by a pair of 1.5V AA batteries. Refer to Figure 2 and use the following procedure to replace the batteries:

1. Remove the instrument from its holster.
2. Disconnect the test leads from any circuit under test and turn off the meter.
3. Remove the test leads from the meter.
4. Lay the meter face down on a work surface that will not damage its face.
5. Remove a single screw from the case bottom.
6. Gently lift the end of the case bottom from which the screw was removed until it unsnaps from the case top.
7. Remove the old batteries from the holder and replace with new ones. Be careful to observe polarity when installing the new batteries.
8. Replace the case bottom, securing the lower end first. Snap the top end in, insert screw and tighten.

Note 4: This capability is available through the use of Leakage Detector model ACL-1280.

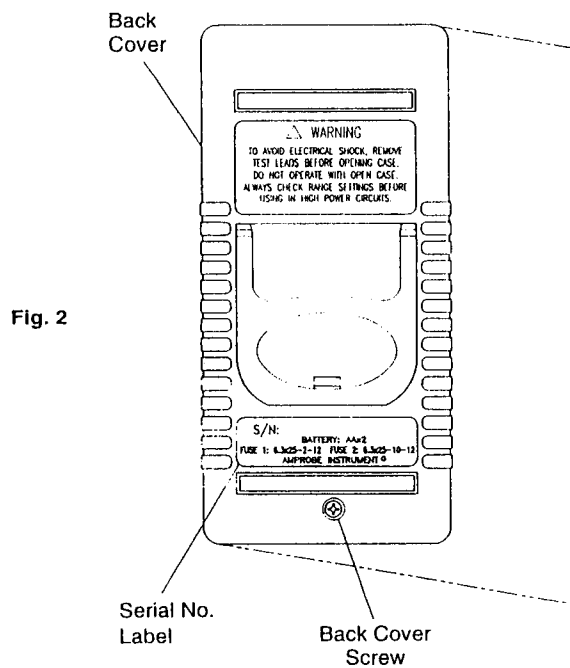
Note 5: These ranges are available through the use of accessory Transducers models AW-80 and AW-81. Both models also measure 0–1000 Amps AC (50-60Hz).

Note 6: Temperature measurement is available through the use of Temperature accessory model TMA-1 and probes models TPIF, TPIC, TPSF, TPSC, TPAF and TPAC.

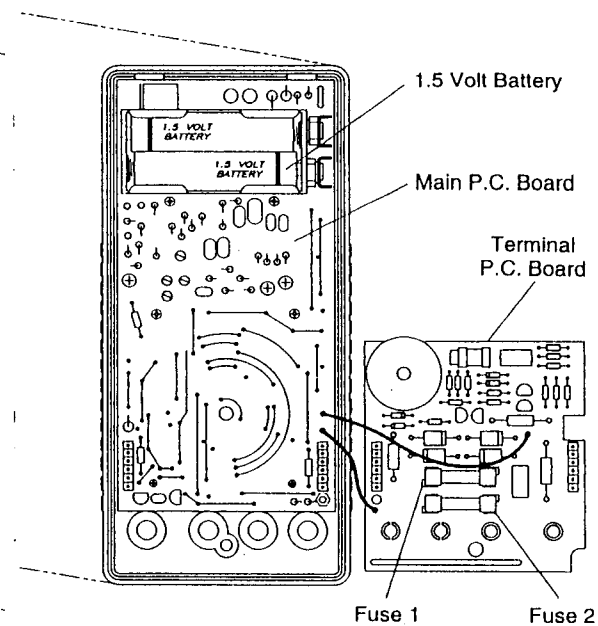
FUSE REPLACEMENT

Refer to Figure 2 and use the following procedure to replace the 2 Amp or 10 Amp fuse:

1. Follow steps 1 through 6 from the "Battery Replacement" procedure.
2. Remove the small Phillips head screw from the lower right hand corner of the Terminal PC Board.
3. Lift the Terminal PC Board and rotate CW 180° as shown in Fig. 2. Do not remove the main PC Board.
4. Remove defective fuse and replace with a new one of the same size and rating. See back of manual for replacement parts.



4. Remove defective fuse and replace with a new one of the same size and rating. See back of manual for replacement parts.
5. Rotate terminal board CCW 180°, line up terminals with holes on front case and press firmly.
6. Line up hole on lower right hand side of the Terminal PC Board with the post on the main board. Insert the small Phillips head screw and tighten.
7. Replace bottom case, securing the ends where the screw goes in first. Snap the top end in.
8. Reinstall the single screw in the lower end of the back case and tighten.



REPLACEMENT PARTS

Item	Description	Catalog/Part No.
BT	Battery	912
F1	Fuse - 600V - 2 Amps	6.3x25-2-12
MTL-1200	Test Lead Set	MTL-1200
15	Holster	H-1200
16	Instruction Manual	967754
F2	Fuse - 600V - 10 Amps	6.3x25-10-12

SERVICE

If the instrument fails to operate, check battery, fuse(s), leads, etc. and replace as necessary. If the instrument still does not operate, double check operating procedure as described in the instruction manual. If the instrument still malfunctions, place it with packing slip along with a brief description of the problem in sufficient cushioning material in a shipping carton. Be sure to indicate the serial number located on the back of the instrument. Amprobe is not responsible for damage in transit. Make certain your name and address also appears on the box as well as packing slip; ship prepaid via U.P.S. (where available) or Air Parcel Post insured to:

Service Division
AMPROBE INSTRUMENT
630 Merrick Road (use for U.P.S.)
P.O. Box 329 (use for Parcel Post)
Lynbrook, NY 11563-0329

Outside the USA, the local Amprobe representative will assist you.

